



Non-Instrument Weather Forecasting

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Photo below by S. Low: The appearance and movement of clouds are used to forecast weather

Before the invention of modern weather instruments, seafarers relied on observations of nature to predict weather; today, while weather station and buoy reports, National Weather Service forecasts, and satellite photos are excellent sources of weather information, a mariner should also understand seasonal weather patterns and be able to read signs in the environment both before and during a trip: the wind, sea state, clouds, appearance of celestial bodies, smells, and animal behavior contain clues to current and approaching weather. The art of non-instrument weather forecasting can be used to confirm weather reports or to predict weather when instruments and reports are not available.



Winds

Basic to any observation of weather for sailing is knowing the direction and strength of the wind. Face the wind: when the pressure is even on both cheeks and ears, you are looking directly at the wind. You can tell direction also by watching in which direction the clouds are moving, the leaves of the trees are streaming, or the ripples on the ocean are running. Wind strength can be determined by feeling the wind, by watching the speed of clouds or the bend of trees and branches, and by observing the sea state (See "Wind Speed Tables" on what signs indicate what wind velocity.) But remember: the wind on land is affected by the land and may not be from the same direction or of the same strength as the wind at sea; you must be able to observe the sea or get a report from a vessel or buoy at sea to get an accurate reading of conditions at sea. Also, when you are on a moving vessel at sea, the true wind is different from the apparent wind: the apparent wind (the wind you feel) is a combination of the true wind, plus the wind your vessel is creating by moving.

Knowing the direction of winds around high and low pressures systems can help a mariner understand wind patterns. The winds around high pressure systems move clockwise and outwards in the northern hemisphere and counterclockwise and outwards in the southern hemisphere. The winds around low pressure systems move counterclockwise and inwards in the northern hemisphere and clockwise and inwards in the southern hemisphere.

In Hawai'i the prevailing ENE wind, called Moa'e or A'eloa, is generated by a high pressure system that is generally located to the N or NE of the islands. Hawai'i is situated toward the

bottom edge of this system (called the North Pacific High), where the clockwise winds are blowing easterly. These so-called trade winds average about 14 knots, but may gust well over gale force, particularly when they are funneled through channels or mountain gaps. Wind strength is determined by (1) the strength of the high pressure; and (2) the steepness of the pressure gradient (the closer together the isobar lines are, the steeper the pressure gradient). The greater the pressure and the steeper the pressure gradient, the stronger the winds. The trade winds are the steadiest during the summer months, from May to September; during the winter months, the high pressure systems moves farther to the east, and the trade winds weaken, from October to April; however, migratory highs can bring strong and gusty easterlies during these months: "Winter months have the strongest trade wind episodes because of the passages north of the Islands by these highs but the average wind speeds do not reflect this-the average wind speed in summer is higher than that of winter in Hawaiian waters" (Haraguchi 12). When the high is centered directly over the islands, winds become light and variable. "The area under the center has light winds and low-height clouds with little precipitation outward to within about 300 miles of the center" (Haraguchi 12).

Shifts in wind direction may indicate changes in weather. As low pressure systems travel from west to east, pushed along by the jet stream north of Hawai'i, or when low pressure systems form west of Hawai'i, the prevailing winds may shift southerly. Low pressure systems that remain stationary to the west of the islands bring warm, humid air from the south, and we experience a period of mugginess called Kona weather.

As low pressure systems pass north of Hawai'i, cold fronts (cold air wedging under warm air) may sweep over the islands. At the leading edge of a cold front, the winds are southwesterly; rain and blustery winds often accompany these fronts. As the cold front passes, northerly winds fill in behind it, bringing dry cold air. As the cold front moves away from the islands to the east, the ENE trades may return.

Ocean Surface-Swells, Seas, Currents

Navigator Nainoa Thompson explains the difference between swells and seas, or locally-generated waves: "Swells are big waves generated by pressure systems far beyond the horizon, and they maintain their direction for long periods of time [and travel in the general direction of the winds generating them]. Seas are generated by local winds. Seas generally come downwind, but they may vary by as much as 30° on either side of the wind. When the wind changes, the seas become more of a mish-mash" (Kyselka 167-8).

The height of swells depends on the strength of the wind generating them (velocity), the distance over which the wind is blowing (fetch), and the duration of the wind (time). Given a particular wind velocity, swells grow to a maximum size as the fetch and duration increase; they may persist for several days. "A 20-knot wind might make waves of some 6 to 8 feet ('significant wave height,' meaning the average height of the highest one-third of all the waves), if the wind blows for a day or so, over a distance of about 100 miles" (Burch 36). A diminishing swell indicates the wind generating it is diminishing. The farther away the wind generating the swell, the rounder the swells will appear, and the greater the distance between the swells. A 7-8 second interval between swells indicates a well-established wind pattern far off. Shorter intervals and steeper swells indicate that the wind system is closer.

Major swells in Hawaiian waters include an ENE Swell generated by the trades; a North Swell, generated by winter storms in the North Pacific; and a South Swell, generated by southern hemisphere winter storms (bringing summer surf to the northern hemisphere).

While not directly related to weather, currents affect the sea state: "A strong current flowing against the wind causes an enhanced chop and steepness to the seas, whereas a current flowing with the wind diminishes the seas just as dramatically. To recognize the effect, however, requires some experience at sea, since you must be able to conclude that the seas are not consistent with the wind" (Burch 132).

Grimble notes that navigators in the Gilbert Island observe the ocean surface to determine the strength of currents before departure: "Before setting sail in the fair weather season, a Gilbertese mariner will sometimes spend several days in looking at the sea. If it is streaked in places with calm patches of an oily appearance he will refuse to start until these disappear, for they speak to him of strong currents" (238).

Clouds

David Seidman writes, "Clouds are the harbingers of weather. Their shape, height, color, and sequence foretell coming events."

"High clouds are associated with the upper atmosphere and distant weather systems up to six hours away. If they are wispy and white, the weather will be fine. Lower clouds relate to the current weather or that which is soon to come. If they are dense and dark, change is imminent, usually for the worse. Notice if clouds are lowering or lifting, and if they are gathering or dispersing. Lowering or gathering usually brings wet weather. Lifting or dispersing means the weather will improve. A cloud's color seems obvious: the darker, the more dangerous. And a sharp-edged dark cloud is the most dangerous of all. In shape, flat clouds are characteristic of stable air, while lumpy, well-rounded clouds live in unstable air" (166).

Satawal navigator Mau Piailug describes how to read an approaching squall or squall line: "If the rain cloud is black, the wind isn't strong. If the cloud is brown, the wind is probably strong. If the cloud is high, there's not much wind, but maybe a lot of rain. If it's low, probably lots of wind. [As the clouds approach, if the ocean surface beneath the clouds] is black, you know it is a real strong wind. If it's the same color as the ocean near you, then it is not a strong wind. If the water is bumpy [beneath the cloud] you know there's a strong wind" (Kyselka 145). Dark, "bumpy" water (i.e., water full of ripples and small waves, which create shadows) is a sign of a strong local gust of wind; to anticipate such gusts, an experienced sailor watches for dark patches of water moving across the ocean surface. When the sun is relatively low on the horizon (e.g. in the afternoon), the ripples caused by a local gust may reflect sunlight and the patches of wind glitter with light.

The following classification of clouds and information about the significance of types of clouds are from *Weather for the Mariner* by William J. Kotsch.

Meteorologists classify clouds by the heights at which they appear: high clouds (above 18,000 feet); middle clouds (7,000 feet to 18,000 feet); low clouds (from near ground up to 7,000 feet).

Some words and roots used in naming clouds include: cumulus ("to heap up"; dense, sharply outlined clouds with high vertical development, usually rising domes or towers, with the upper part looking like a cauliflower); stratus ("spread"; cloud layers, with spread horizontally); nimbus ("rain-producing"); alto ("high"; used to refer to middle or high clouds, as opposed to low clouds); cirri, cirro, cirrus ("curl of hair," wispy high clouds).

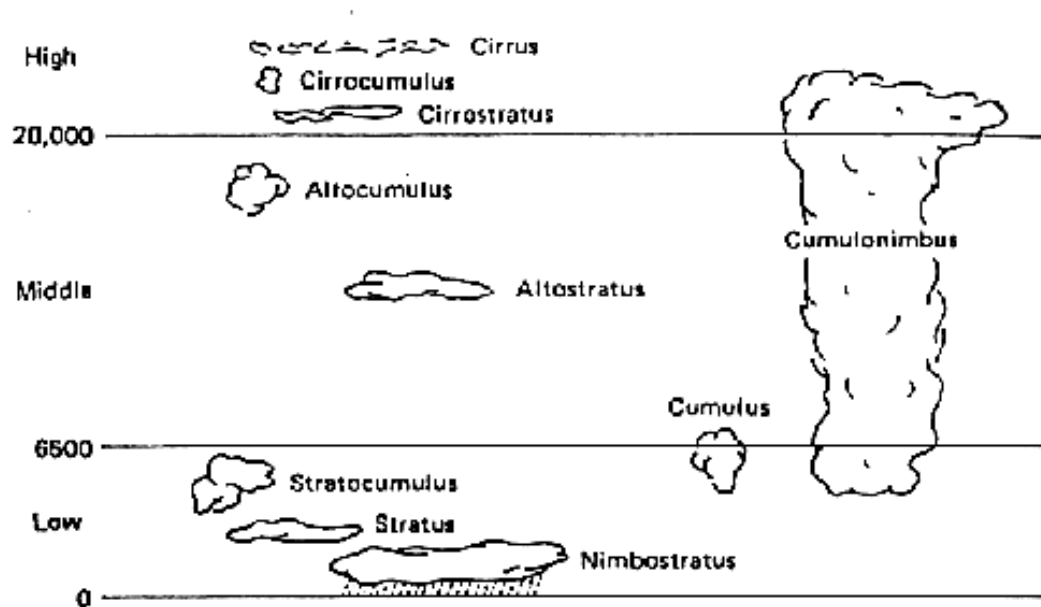


Figure 68. Prevailing cloud designations by appearance and height.

(Drawing from William Crawford's *Mariner's Weather*. New York: Norton, 1992.)

High Clouds

Cirrus: "detached wisps of hair-like (fibrous) clouds, formed of delicate filament patches, or narrow bands"; "Cirrus clouds that are scattered and are not increasing have little weather meaning except to signify that any bad weather is at a great distance. Cirrus clouds in thick patches mean that showery weather is close by. These clouds are associated with, and formed from the tops of thunderstorms. Cirrus clouds shaped like hooks or commas indicate that a warm weather front is approaching, and that continuous-type rain will follow-especially if the cirrus is followed by cirrostratus."

Cirrostratus: "transparent, whitish clouds that look like fine veils or torn, wind-blown patches of gauze"; "when in a continuous sheet and increasing, [cirrostratus] signify the approach of a warm weather front with attendant rain and stormy conditions. If these clouds are not increasing and are not continuous, this means that the storm is passing to the south of you and no bad weather will occur at your location."

Cirrocumulus: "thin, white, grainy, and ripped patches, sheets, or layers showing very slight vertical development in the form of turrets and shallow towers. When these clouds are arranged uniformly in ripples, they form what seafaring men call a mackerel sky"; "quite rare and of mixed significance. In some areas, these clouds foretell good weather; in others, bad weather."

Middle Clouds

Altostratus: "grayish layers of clouds usually uniform in appearance and cover part, or all, of the sky"; among the most reliable weather indicators of all the clouds. They are indicative of warm air flowing up over colder air and impending rain or snow of the continuous type, especially if the cloud layer progresses and thickens. These clouds are a good indication of a new storm development at sea with poor visibility, large waves, and heavy swell."

Altostratus: "extensive 'cloudlets' arranged in a regular pattern"; "significant primarily when they are followed by thicker high clouds or cumuliform low clouds. When they are in parallel bands, these clouds are in advance of a warm front with its associated steady rain or snow. When altostratus clouds occur in the form of turrets rising from a common flat base, they are usually the forerunner of heavy showers or thunderstorms."

Low Clouds

Nimbostratus: These rain clouds are "low, amorphous, dark and usually quite uniform"; they are of "little help as a forecasting tool, since the bad weather is already at hand when these dark clouds with their associated heavy rain are overhead. But if they are at some distance from you, and you have a report that they are coming your way, you know bad weather, high winds, and hazardous sea conditions (for small boats) will persist for many hours."

Stratus: "low, gray cloud layers with rather uniform bases and tops . Only a fine drizzle falls from true stratus clouds because there is little or no vertical motion in them"; "Stratus clouds do not signify much danger. If the wind speed should decrease markedly when stratus clouds are present in a large quantity, the base of the cloud could lower to the earth's [or ocean's] surface, resulting in a thick fog."

Stratocumulus: "gray or whitish irregular layers of clouds with dark patches formed like rolls. These clouds look like altostratus clouds, but they are at a much lower level. These clouds do not, as a rule, produce anything but light rain or snow"; stratocumulus clouds "form from degenerating cumulus clouds," and "are usually followed by clearing at night and fair weather . Visibility, however, can be seriously reduced in stratocumulus drizzle or snow."

Cumulus: "puffy, cauliflower-like clouds whose shapes constantly change brilliant white in the sunlight, often extending from a relatively dark and horizontal base"; "when detached and with little vertical development [the] weather is fine, and nothing hazardous is in the offing. However, when cumulus clouds swell to considerable vertical extent, heavy showers are likely, associated with gusty surface winds in the vicinity of the showers. Since these clouds normally cover about 25 percent of the sky, they can often be circumnavigated."

Cumulonimbus: "heavy dense clouds of considerable vertical extent (often to 45,000 feet and higher) in the form of a mountain or huge tower. These clouds are the familiar thunderheads. The upper part of these clouds is usually smooth, sometimes fibrous, with the top flattened to an anvil shape or a vast cirrus plume"; "very gusty surface winds in the vicinity of the thunderstorm, heavy rain, lightning, frequently hail, and in general, a bad time can be expected in the immediate vicinity of these clouds. a tornado or waterspout could possibly develop."

Readings the Clouds and Sea State: During Hokule'a's voyage from Tahiti to Hawai'i in February, 2000, documentor Sam Low photographed clouds and sea state and recorded navigator

Nainoa Thompson's readings of them: (1) [February 11](#); (2) [February 14](#); (3) [February 15](#); (4) [February 20](#)

Color in the Atmosphere

Red skies at sunrise or sunset indicate humidity in the air. As raindrops form, the water particles scatter the short-wavelength blue light so that only the long-wavelength red light reaches the observer (Freier 32, 96-96). The observer needs to know which way the weather is coming from, though, east or west, to read this sign. If the eastern sky is red at dawn, and the weather is coming from the east (i.e., on the trade winds), then the red sky could indicate rain or stormy weather is approaching; if the weather is moving from west to east, then red skies at dawn indicate that the bad weather has past.

Light Around Celestial Bodies

"A halo around the moon is another sign of rain. The halo is caused by the moon shining through ice crystals of moisture-laden clouds. If the halo is a tight fit, rain is still far off. If the halo forms a large ring, rain is near. If the clouds close in and the moon loses its outline, rain can be expected in about ten hours. The same is true with the sun" (Seidman 167).

Navigators in the Gilbert Islands count stars in the halo around the moon: "if [the moon] had a halo in which more than ten stars could be counted, there would perhaps be rain, but not a great downpour; if fewer than ten stars were visible there would be much rain and probably wind.

"If, again, the moon had a double halo, the inner one reddish brown in colour, it promised a torrent on the wings of a gale" (Grimble 237-8).

The appearance of stars is also a clue to weather-twinkling indicates that the atmosphere is unstable and turbulent, a sign of stormy weather. (Freier 54-55)

When the dark side of the moon can be seen, the air is usually clear and stable in the direction of the moon, hence a sign of good weather if the weather is coming from that direction (Freier 55).

Smells

Rising humidity and increasing moisture in the air (accompanying dropping air pressure) enhances smells. Particles of odor become "hydrated"(wet) and cling more easily to the olfactory membranes in the nose. Thus stronger smells may be a sign of rain or stormy weather approaching (Freier 29).

Animals Behavior

Hawaiian proverbs suggests that observations of the flights of seabirds were used to predict weather; generally birds and other animals hunt for food in good weather and seek shelter from stormy weather:

Lele ka 'iwa, malie kai ko'o: "When the 'iwa [frigate bird] flies [out to sea], the rough sea will be calm." (Pukui 'Olelo No'eau, No. 1979)

'Olelo ke kupa o ka 'aina ua malie; ua au koa'e: "The natives of the land declare that the weather is calm when the tropic bird travels afar." (Pukui 'Olelo No'eau, No. 2498)

Ua ho'i ka noio 'au kai i uka, ke 'ino nei ka moana: "When the noio bird returns from sea to land, the sea will be stormy." (Pukui 'Olelo No'eau, No. 2787)

A western proverb suggests, "Porpoises in a harbor, expect a storm." Freier explains "These animals need to come to the surface to breathe. Apparently this is more difficult in rough water" (122). Emma Kauhi remembers that when she was growing up in Kapa'ahu, Puna, on the Big Island, she was told, "Ina 'au ka nai'a ma Hilo, 'a, e malie ana ke kai. Ke 'au ka nai'a ma Ka'u, 'a, e 'ino'ino ana ka moana: "If dolphins swim toward Hilo, the sea will be calm; if the dolphins swim toward Ka'u, the ocean will be rough" (61). The proverb suggests a sheltered sea toward Ka'u.

Navigators in the Gilbert Islands also use observations of animals to predict weather: "When a voyage had to be made during the bad season, the navigator knew several weather signs to help him choose his day. He would watch the small red ants which infest most houses: if they were returning in numbers to their nests, laden with food, and were blocking up their doors with particles of sand, foul weather was impending; but if they swarmed out, leaving their doors wide open, it promised good weather.

"The spider was another prophet: when the weather was set fair he would stay in the middle of his web; but if wind and rain threatened, he would retire to something more solid."

"But the most reliable barometer in the opinion of the Gilbertese navigator was (and still is) the shellfish nimatanin (*Nerita plicata*). This is found in the shallows on the reef by the ocean beaches of the islands. When fair weather promises, it remains on the surface of the rock, and if it is found thus in any great numbers there is every hope of a long fine spell; but if the creature remains in the crevices of the reef, it is an infallible sign of heavy weather, and the deeper it hides itself the worse will be conditions for sailing" (237-8).

Hawaiian Traditions of Weather Prediction

Paka'a, who served as ho'okele-wa'a, or navigator, for Keawenui-a-'umi, a ruling ali'i of the Big Island during the 16th century, was famous for his ability to read the signs of the sky to predict weather and winds. In a 19th century account of his life, Samuel Kamakau describes Paka'a's ability to read weather signs: "Paka'a was trained to read signs (kilokilo) and knew how to manage a canoe in the ocean, out of sight of land. He knew how to tell when the sea would be calm, when there would be a tempest in the ocean, and when there would be great billows. He observed the stars, the rainbow colors at the edges of the stars, the way they twinkled, their red glowing, the dimming of the stars in a storm, the reddish rim on the clouds, the way in which they move, the lowering of the sky, the heavy cloudiness, the gales, the blowing of the ho'olua wind, the a'e wind from below, the whirlwind, and the towering billows of the sea" (Ruling Chiefs of Hawai'i 36).

Another account of **Paka'a** depicts him as not only able to predict weather, but to control winds with a gourd containing all the winds of Hawai'i, which **Paka'a** called forth by name. (For chants containing the dozens of wind names of each island, see Moses K. Nakuina's *Moolelo o Paka'a* a

me **Ku-a-paka'a**, or the English translation of Nakuina's work, *The Wind Gourd of La'amaomao* by Esther T. Mookini and Sarah Nakoia; or a shorter version of the **Paka'a** legend accompanied by an English translation, in the Fornander collection, Vol. 4, 72-135). In Nakuina's story, **Paka'a** is given the wind gourd by his mother, who received it from her grandmother La'amaomao, the Hawaiian wind goddess. (In other Hawaiian traditions, La'amaomao is said to be a god rather than a goddess; he came to Hawai'i with the voyaging chief Mo'ikeha, and settled at Hale-o-Lono, Moloka'i).

The notion of a wind gourd is traditionally Polynesian: "In Mangaia of the Cook [Islands], the high priest possessed a magic calabash, a miniature universe, which had holes bored in a circle at equal distances around its middle, representing the openings on the horizon through which the thirty-two winds of the compass were supposed to blow. When a voyage was contemplated to a distant island the priest was induced to stop up all the holes in the calabash except the one at the particular point of the compass from which the prospective travelers desired the wind to blow for the speedy consummation of the voyage" (Makemson 147). Lewis quotes Gill about the importance of knowledge of the winds: "In olden times, great stress was laid on this knowledge for the purpose of fishing, and especially for their long sea voyages from group to group. At the edge of the horizon are a series of holes through which Raka, the god of winds, and his children, love to blow" (75).

David Malo, in *Hawaiian Antiquities* (12-13), gives the following classification of Hawaiian cloud names and their significance: "The clouds, objects of importance in the sky, were named for their colors. A black cloud was termed 'ele'ele; if blue-black, it was called uliuli; if glossy black hiwahiwa or polo-hiwa. Another name for such a cloud was panopano [Pukui-Elbert: "thick clouds"; PE also lists ao lalahiwa, "dark clouds," and ao kokoli'i, "thick, black clouds; Andrews gives ao pouli, "dark clouds"]

"A white cloud was called ke'oke'o, or kea. [Another name for a white cloud was ao 'opiopio.] If a cloud had a greenish tinge, it was termed maomao; if a yellowish tinge, lena. A red cloud was termed ao 'ula or kiawe 'ula [PE: "faint streaks of red in a cloud"] or 'onohi-'ula, red eye-ball [PE: ao 'onohi-"cloud with rainbow colors," and '-onohi 'ula-"clouds with red hues of a rainbow."]

"If a cloud hung low in the sky, it was termed ho'o-lewa-lewa ["suspended"], or the term ho'o-pehupehu, "swollen," was applied to it. [PE: ao ho'opehupehu-billowy, swollen clouds; cumulus clouds]. A sheltering cloud was called ho'o-malumalu; ["darkened," "shady"]; a thick black cloud was called ho'o-kokoli'i; a threatening cloud was called ho'o-weli-weli.

"Clouds were also named according to their character. If a cloud was narrow and long, hanging low in the horizon, it was termed 'opua, a bunch or cluster. There were many kinds of 'opua, each being named according to its appearance. If the leaves [lau] of the 'opua are slanting downward [hina], it might indicate wind or storm, but if the leaves [lau] were upright [kuponu], calm weather. If the cloud was yellowish and hung low in the horizon it was called newe-newe, "plump," [PE: "full, billowy"] and was a sign of very calm weather. [PE: 'opua or kaupua: "cumulus clouds; puffy clouds as banked up near the horizon"]."

[In Kona, on the west side of Hawai'i Island, the appearance of 'opua over the ocean to the west was a promise of rain: **Mama Kona i ka wai kau mai i ka maka o ka 'opua**: "Kona is relieved,

knowing that there will be no drought, when the clouds promise rain." (Pukui 'Olelo, No. 2134).

[Two other proverbs link 'opua to rain: Aia ka wai i ka maka o ka 'opua: "Water is in the face of the 'opua" (Pukui 'Olelo, No. 55); Ola i ka wai a ka 'opua: "There is life in the water from the 'opua" (Pukui 'Olelo, No. 2483).]

"If the sky at the west horizon was blue-black, uli-uli, at sunset, it was said to be **pa-uli** ["gloomy"] and was regarded as prognosticating a high surf, kai-ko'o. If there was an opening in the cloud, like the jaw of the au (swordfish), it was called 'ena and was considered a sign of rain.

"When the clouds at the eastern heavens were red in patches before sunrise, it was called **kahea** ("a call, alarm") and was a sign of rain. [PE gives this cloud name as kaha'ea-"cumulus clouds, often colored and thought to be a sign of rain."] If the cloud lay smooth over the mountains in the morning, it was termed **papala** [PE-"haze, fog"] and foretokened rain. It was also a sign of rain when the mountains were shut in with blue-black clouds, and this appearance was termed **palamoa** [PE: **palamoa**: "thick, dense, as clouds"]. There were many other signs that betokened rain.

"If the sky was entirely overcast, with almost no wind, it was said to be **po'i-pu** (shut up), or **ho'o-ha-ha** [PE: "overcast, calm"], or **ho'o-lu-luhi** [PE: "overcast, threatening"]; and if the wind started up, the expression **ho'o-ka-ka'a**, "a rolling together," was used. If the sky was shut in with thick, heavy clouds, it was termed **hakuma**; and if the clouds that covered the sky were exceedingly black, it was thought that **Kulani-ha-ko'i** [a lake in the sky] was in them, the place whence came thunder, lightning, wind, rain, violent storms.

"When it rained, if it was with wind, thunder, lightning and perhaps a rainbow, the rain storm would probably be a prolonged storm. When the western heavens are red at sunset, the appearance is termed **aka-'ula** (red shadow or glow) and it was looked upon as a sign that the rain will clear up."

The Pukui-Elbert dictionary contains the following additional cloud names (compiled by Nalani Minton):

'ala'apapa: long cloud formation (stratus)

ao ku: rain clouds, mist

ao loa: long cloud; high or distant cloud; stratus cloud along the horizon

ao nui-ho'olaholaho: broad mass of clouds extending over a great space [from Andrews]

ao poko: short cloud (cumulus)

ao pua'a: banks of clouds often gathered over a mountain summit; a sign of rain (altocumulus)

'ilio 'ehu: dog-shaped cloud with a ruddy tint

'ilio mea: reddish dog-shaped cloud

'ilio uli: dark, dog-shaped cloud

ka'apeha: a large mass of clouds

kaha'ea: cumulus clouds, often colored, thought to be a sign of rain

kia ao: cloud pillar (cumulonimbus?)

ki'ikau: drifting clouds of different colors, including black and white

ko'i'ula: rainbow-hued rain, mist, or cloud

'ohu: mist, fog, vapor, light cloud on a mountain

pae ki'i: row of clouds on the horizon.

popuaki'i: clusters of cloud banks

A proverb notes the weather significance of the ao pua'a: Kaka'i ka puapua'a i ka malie, he 'ino: "When the piglets follow one after another in the calm, bad weather is coming" (When the clouds called ao puapua'a or pua'a "pig" clouds, follow one after the other on the mountaintops in calm weather, bad weather is to be expected.) (Pukui 'Olelo, No. 1416). (The ao pua'a are apparently altocumulus clouds. See a description of this cloud and its weather significance under "Clouds").

Some Comments by European Explorers Concerning Polynesian Traditions of Weather Prediction

Andia y Varela made the following observation of Tahitian weather predicting skills: "What took me most in two [Tahitians] whom I carried from [Tahiti] to [Ra'iatea, 160 miles away] was that every evening or night, they told me, or prognosticated, the weather we should experience on the following day, as to wind, calms, rainfall, sunshine, sea, and other points, about which they never turned out to be wrong: a foreknowledge worthy to be envied, for, in spite of all that our navigators and cosmographers have observed and written about the subject, they have not mastered this accomplishment (Corney 286-287).

Oliver notes: "For sailors and fishermen, livelihood and even survival sometimes depended upon ability to predict the weather, a skill which, some observers such as Banks claimed, the Maohis had in considerable measure: 'The people excell much in predicting the weather, a circumstance of great use to them in their short voyages from Island to Island. They have many various ways of doing this but one only that I know of which I never heard of being practised by Europeans, that is foretelling the quarter of the heavens from whence the wind shall blow by observing the Milky Way, which is generally bent in an arch either one way or the other: this arch they conceive as already acted upon by the wind, which is the cause of its curving, and say that if the same curve continues a whole night the wind predicted by it seldom fails to come some time in the next day; and in this as well as their other predictions we found them indeed not infallible but far more clever than Europeans.'

"Banks' high opinion of Maohi weather prediction was not, however, shared by Cook, who, after describing the more common local changes in wind direction and velocity, wrote, 'The natives

seem not to have a very accurate knowledge of these changes'."

[Bibliography-Winds and Weather Prediction](#)

Course Strategy and Departure Time	Holding the Canoe's Course	Compensating for Leeway	Calculating Distance	Determining Position East or West	Determining Latitude	Locating Land	Predicting Winds and Weather	Bibliography - Wayfinding and Astronomy
1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui		
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions			
Home	Search	Archives	Educational Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)			

Weather Analysis--Sunrise, February 11, 2000

Source: Nainoa Thompson

Weather Analysis: View from Hokule`a's beam--towering cumulus clouds.



"A Navigator always looks for signs of weather at sunset and sunrise," Nainoa says. "Generally, at sunrise and sunset you try to predict the weather for the next 12 hours. Today I see strong evidence in the clouds of a change in the weather from what we have experienced in the last 2 to 3 days. Looking to the east--off the beam of the canoe (this is picture 1) I see various complicated towering high cloud masses, which are the remnants of the squalls that we went through last night. Yesterday and the day before I looked out and saw actual squalls there--today there are no squalls evident. You can't really predict the weather, as Mau taught me, from a single snapshot like this. You have to

observe changes over time. In this case, I see a change from seeing squalls off the starboard yesterday to this view today where there are no active squalls. The wind definitely feels stronger today and I can see wing wavelets on the surface of the ocean. The wind is also coming from the normal direction of the SE trades, so I can presume that the trades are reasserting themselves."

Weather Analysis / Photo 2: View towards the bow of the canoe from roughly dead ahead to 45 degrees off the bow.



"I see a lot of low level cumulus clouds ahead of us in the direction we are moving. There are no indications of any squalls in those clouds so I think I can predict we are approaching an area of clean flowing wind--trades from the SE--which will be steady. That is quite different than the variable winds we have been experiencing. So, for the next 12 hours, I believe that the wind will remain steady from the SE at a fairly constant speed, maybe 10 knots, so we will be able to sail N today."

"Every time I attempt to predict the weather or sail on this canoe I am constantly reminded of how smart our ancestors were. My understanding of nature is feeble compared to theirs. We can have today only a glimpse into their world--into the strength and courage that made them the greatest navigators and explorers on earth. We sail in comfort with foul weather gear to protect us on a canoe partly made of modern materials, with all kinds of safety devices on board. They had none of that. They were attuned intimately to nature in a way that we cannot be. At best, our voyages are just beginning to give us a glimpse into their world."

To Next Reading of the Clouds: [February 14](#)

Back to the [Predicting Wind and Weather](#).

1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
Home	Search	Archives	Educational Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)	

Road to the Wind

Nainoa Thompson

Mau taught me to call clouds that look like this "the road to the wind." Imagine at the far horizon there is a factory producing the clouds and, like smoke from a haystack, they follow the wind. This road indicates the wind is coming from the horizon. and because the road is straight, the wind is steady. If you see the road curve--it means that the wind direction will change and the way it curves will tell you the new direction. It is interesting to me that meteorologists call this kind of phenomenon "cloud streets", pretty close to Mau's term "Road of the Wind."



To Next Reading of the Clouds: [February 15](#)

Back to the [Predicting Wind and Weather](#).

<u>1976: Tahiti</u>	<u>1980: Tahiti</u>	<u>1985-87: Aotearoa (New Zealand)</u>	<u>1992: Rarotonga</u>	<u>1995: Marquesas</u>	<u>1995: West Coast, British Columbia, & Alaska</u>	<u>1999-2000: Rapanui</u>
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<u>Voyages</u>	<u>Canoe-Building</u>	<u>Wayfinding</u>	<u>Life on a Canoe</u>	<u>Polynesian Migrations</u>	<u>Proverbs and Traditions</u>
--------------------------------	---------------------------------------	-----------------------------------	--	--	--

<u>Home</u>	<u>Search</u>	<u>Archives</u>	<u>Educational Programs and Materials</u>	<u>On-Line Visuals</u>	<u>Bibliographies (Books and Films)</u>
-----------------------------	-------------------------------	---------------------------------	---	--	---



Hawai'i to Tahiti and Return: 1976

Photo Below: Hokule'a Arrives in Tahiti, 1976

The first voyage of the Hokule'a from Hawai'i to Tahiti and back took place in 1976, as part of the Bicentennial Celebration of American Independence. The official purpose of the voyage was to show that the two-way voyages celebrated in Hawaiian oral traditions could be done in a replica of an ancient voyaging canoe navigated without non-instruments.



Maps: (1) [the 1976 voyage to Tahiti and back \(color\)](#); (2) [the 1976 voyage to Tahiti \(black and white\)](#).



Herb Kawainui Kane: [In Search of the Ancient Polynesian Voyaging Canoe \(Designing Hokule'a\)](#)



[Building Hokule'a: 1973-1975](#)



Kenneth Emory: [Launching Hokule'a: March 8, 1975](#)



Ben Finney: [the founding of the Polynesian Voyaging Society, the Building of Hokule'a](#), and [the 1976 voyage to Tahiti](#), originally published in "Voyaging into Polynesia's Past" in *From Sea to Space* (Palmerston North: Massey University, 1992. 5-65).

Other accounts of the 1976 voyage to Tahiti can be found in Ben Finney's *Hokule'a: The Way to Tahiti* (New York: Dodd, Mead, 1979) and in David Lewis *We, the Navigators: The Ancient Art of Landfinding in the Pacific*, 2nd Edition (Honolulu: Univ. of Hawai'i Press, 1994, pp. 312-341). For a 59-minute video on Mau Piailug, Polynesian navigation and migrations, and the first voyage of Hokule'a, see ["The Navigators: Pathfinders of the Pacific"](#).

CREW MEMBERS: HAWAI'I-TAHITI, 1976--Mau Piailug-Navigator, Clifford Ah Mow, Shorty Bertelmann, Ben Finney, Tommy Holmes, Sam Kalalau, Boogie Kalama, Kawika Kapahulehua, Buffalo Keaulana, John Kruse, Dukie Kauhulu, David Lewis, Dave Lyman, Billy Richards, Rodo Williams

CREW MEMBERS: TAHITI-HAWAI'I, 1976--Snake Ah Hee, Andy Espirto, Kawika Kapahulehua, Mel Kinney, Kainoa Lee, Kimo Lyman, Gordon Pi`ianai`a, Leonard Puputauiki, Penny Rawlins, Keani Reiner, Nainoa Thompson, Maka`ala Yates, Ben Young

1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
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Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions
-------------------------	--------------------------------	----------------------------	-------------------------------------	---	---

Home	Search	Archives	Past Education Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)
----------------------	------------------------	--------------------------	---	-------------------------------------	--



Hawai'i to Tahiti and Return: 1980

Photo Below: Nainoa Thompson / Rikitea, Mangareva, 1999.

"Culturally, the 1976 voyage was ... a great success. Hawaiians and Tahitians regarded the voyage as tangible proof of the nautical abilities of their ancestors, and saw the canoe as a symbol of their heritage as an exploring, pioneering people. However, despite the fact that the canoe had been designed, captained and largely crewed by Hawaiians, many Hawaiians felt that



a crucial element had been missing in the venture: a Hawaiian had not navigated the canoe along the seaway between Hawai'i and Tahiti as their ancestors had once done" (Ben Finney; see [the 1980 voyage to Tahiti](#) below). Nainoa Thompson, a young Hawaiian on the crew of the 1976 voyage home, set out to learn how to navigate as his ancestors had. In 1980, he successfully guided Hokule'a to Tahiti and back. (See "[Finding a Way: 1974-1980](#)" and "[The Wayfinder](#)" below.) "In replicating Mau's feat of navigating the canoe to Tahiti, and then guiding it back to Hawai'i, Nainoa was able to validate and extend the results of the 1976 navigational experiment" (Finney).



Maps: (1) [the 1980 voyage to Tahiti and back \(color\)](#); (2) [the 1980 voyage to Tahiti \(black and white\)](#).



Nainoa Thompson: "[Finding a Way: 1974-1980](#)" (learning to navigate without instruments from navigator Mau Piailug; the 1980 voyage from Hawai'i to Tahiti).



Nainoa Thompson: "[The Wayfinder](#)" (navigating from Tahiti to Hawai'i in 1980; this account was originally published in Will Kyselka's *Ocean in Mind* (Honolulu: University of Hawai'i, 1987).



Ben Finney: [the 1980 voyage to Tahiti](#), originally published in "Voyaging into Polynesia's Past" in *From Sea to Space* (Palmerston North: Massey University, 1992. 5-65).

More on the 1980 voyage to Tahiti and back can be found in Will Kyselka's "Ocean in Mind" (Honolulu: University of Hawai'i, 1987) and in David Lewis's "We, the Navigators: The Ancient Art of Landfinding in the Pacific," 2nd Edition (Honolulu: Univ. of Hawai'i Press, 1994, pp. 312-341).

CREW MEMBERS: HAWAI'I-TAHITI, 1980: Nainoa Thompson-Navigator. Pat Aiu, Chad Baybayan, Shorty Bertelmann, Harry Ho, Sam Ka`ai, Buddy McGuire, Marion Lyman-Mersereau, Mau Piailug, Gordon Pi`ianai`a, Steve Somsen, Jo-Anne Sterling. Leon Sterling, Tava Taupu

CREW MEMBERS: TAHITI-HAWAI'I, 1980: Nainoa Thompson-Navigator, Snake Ah Hee, Wedemeyer Au, Chad Baybayan, Bruce Blankenfeld, John Kruse, Kainoa Lee, Kimo Lyman, Gordon Pi`ianai`a, Mau Piailug, Steve Somsen, Leon Sterling, Michael Tongg, Nathan Wong

1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
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<u>Voyages</u>	<u>Canoe-Building</u>	<u>Wayfinding</u>	<u>Life on a Canoe</u>	<u>Polynesian Migrations</u>	<u>Proverbs and Traditions</u>
<u>Home</u>	<u>Search</u>	<u>Archives</u>	<u>Past Education Programs and Materials</u>	<u>On-Line Visuals</u>	<u>Bibliographies (Books and Films)</u>



The Voyage of Rediscovery: 1985-87

Photo Below: Nga Toki Matawhaorua, a Maori Canoe Greets Hokule'a, 1985

Replicating a legendary voyage from Hawai'i to Tahiti and back in 1980 awakened in those who sailed Hokule'a a desire to sail to other ancestral homelands of Polynesia and reconnect the family of the Pacific. From 1985 to 1987, Hokule'a carried out the Voyage of Rediscovery to Aotearoa (New Zealand) and back, with stops in Tonga, Samoa, the Cook Islands, Tahiti, and the Tuamotus. The purpose was to take the canoe to the peoples of Polynesia who share a common ancestry and to reawaken pride in their common traditions of navigation and voyaging. During this voyage, Hokule'a retraced ancestral migration routes while continuing to answer questions of scientific interest about how Polynesia was settled in ancient times.



Maps: (1) [the 1985-87 voyage to Aotearoa and back \(color\)](#); (2) [the 1985-86 legs from Tahiti to Aotearoa and back \(color\)](#); (3) [the 1985-87 voyage to Aotearoa and back \(black and white\)](#).



Nainoa Thompson: [Recollections of the Voyage of Rediscovery](#)



Ben Finney: "Voyaging into Polynesia's Past" / Part 4: [The Voyage of](#)

[Rediscovery and its Anthropological Significance](#), originally published in "Voyaging into Polynesia's Past" in *From Sea to Space* (Palmerston North: Massey University, 1992. 5-65). For a longer account of the 1985-87 voyage to Aotearoa, see Finney's *Voyage of Rediscovery: A Cultural Odyssey Through Polynesia* (Berkeley: UC Press, 1994).



Carlos Andrade: Recollections of the Voyage from Aotearoa to Samoa: [One Memorable Stormy Night with Mau and a Song](#)



Herb Kawainui Kane: [The Seekers](#): A Story of Hokule'a's 1985 Visit to Taputapuatea

Crew Lists

Hawai'i - Tahiti (July 10, 1985 - Aug. 11, 1985): **Navigator:** Nainoa Thompson; **Captain:** Shorty Bertelmann; **Crew:** Clay Bertelmann, Dennis Chun, Richard Tai Crouch, Harry Ho, Dr. Larry Magnussen, Buddy McGuire, Mau Piailug, Thomas Reity, James Shizuru, Tava Taupu

Tahiti - Cook Islands (Aug. 30 1985 - Sept. 14, 1985)--**Navigator:** Nainoa Thompson; **Captain:** Gordon Pi`ianai`a; **Crew:** Dr. Patrick Aiu, Snake Ah Hee, Chad Baybayan, John Kruse, Vic Lipman, Mel Paoa, Mau Piailug, Abraham Pi`ianai`a, Chad Pi`ianai`a, Michael Tongg, Andrew Tutai (Cook Islands), Peter Sepelalur, Leon Sterllng, Cliff Watson, Bob Krauss, journalist, was a crew member from Tahiti to Raiatea

Cook Islands - Aotearoa (New Zealand) (Nov. 21, 1985 - Dec. 7, 1985): **Navigator:** Nainoa Thompson; **Captain:** Shorty Bertelmann; **Crew:** Dr. Patrick Aiu, Chad Baybayan, Bruce Blankenfeld, Stanley Conrad (New Zealand), Dr. Ben Finney, Harry Ho, Buddy McGuire, Billy Richards, James Shizuru, Leon Sterling, Tava Taupu, Michael Tongg

Aotearoa - Tonga (May 1, 1986 - May 11, 1986): **Navigator:** Nainoa Thompson; **Captain:** Leon Sterling; **Crew:** Snake Ah Hee, Dr. Patrick Aiu,

Carlos Andrade, Chad Baybayan, Philip Ikeda, John Keolanui, Kimo Lyman, Mau Piailug, Scott Sullivan, Michael Tongg, Sione Ula (Tonga)

Tonga to American Samoa (May 23, 1986 - May 25, 1986): **Navigator:** Nainoa Thompson; **Captain:** Leon Sterling; **Crew:** Dr. Patrick Aiu, Carlos Andrade, Gil Ane, Gail Armstrong, Chad Baybayan, Hector Busby (New Zealand), Philip Ikeda, Sam Ka`ai, John Keolanui, Kimo Lyman, Mau Piailug, Scott Sullivan, Jo Anne Sterling, Sione Taupeamuhu (Tonga), Michael Tongg, Sione Uaine Ula (Tonga)

American Samoa to the Cook Islands (July 7, 1986 - July 16, 1986): **Navigator:** Nainoa Thompson; **Captain:** Shorty Bertelmann; **Crew:** Clay Bertelmann, Harry Ho, Pauahi Ioane, Bernard Kilonsky, Ben Lindsey, Mel Paoa, Mau Piailug, Tua Pittman (Cook Islands), Tava Taupu

Cook Islands to Tahiti (Aug. 12, 1986 - Aug. 21, 1986): **Navigator and Captain:** Nainoa Thompson; **Crew:** Dr. Patrick Aiu, Snake Ah Hee, Chad Baybayan, Bruce Blankenfeld, Wallace Froiseth, Harry Ho, Glen Oshiro, Mau Piailug, Richard Rhodes, Michael Tongg, Aaron Young

Tautira, Tahiti - Pape'ete, Tahiti (One-day sail, Mar. 27, 1987): **Navigator:** Nainoa Thompson; **Captain:** Chad Baybayan; **Crew:** Wallace Froiseth, Harry Ho, Kilo Kaina, Michele Kapana, Will Kyselka, Russell Mau, Abraham Pi`ianai`a, Tutaha Salmon (Tahiti), Cary Sneider, Tava Taupu, Michael Tongg, Aaron Young

Tahiti - Rangiroa (April 2, 1987 - April 4, 1987): **Navigator:** Nainoa Thompson; **Captain:** Chad Baybayan; **Crew:** Clay Bertelmann, Wallace Froiseth, Rey Jonsson, Sol Kahooalahala, Will Kyselka, Charles Larson, Mel Paoa, Cary Sneider, Tava Taupu, Michael Tongg, Cliff Watson, Dr. Nathan Wong, Elisa Yadao, Aaron Young

Rangiroa - Hawai'i (April 24, 1987 to May 21, 1987 Hilo; May 23, 1987, Kualoa): **Navigator:** Nainoa Thompson; **Captain:** Shorty Bertelmann; **Crew:** Snake Ah Hee, Dr. Patrick Aiu, Chad Baybayan, Bruce Blankenfeld, Stanley Conrad (New Zealand), Eni Hunkin (Samoa), Tua Pittman (Cook Islands), Dixon Stroup, Puaniho Tauotaha (Tahiti), Sione Taupeamuhu (Tonga), Tava Taupu, Michael Tongg, Cliff Watson, Elisa Yadao

<u>1976: Tahiti</u>	<u>1980: Tahiti</u>	<u>1985-87: Aotearoa (New Zealand)</u>	<u>1992: Rarotonga</u>	<u>1995: Marquesas</u>	<u>1995: West Coast, British Columbia, & Alaska</u>	<u>1999-2000: Rapanui</u>
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<u>Voyages</u>	<u>Canoe-Building</u>	<u>Wayfinding</u>	<u>Life on a Canoe</u>	<u>Polynesian Migrations</u>	<u>Proverbs and Traditions</u>
--------------------------------	---------------------------------------	-----------------------------------	--	--	--

<u>Home</u>	<u>Search</u>	<u>Archives</u>	<u>Past Education Programs and Materials</u>	<u>On-Line Visuals</u>	<u>Bibliographies (Books and Films)</u>
-----------------------------	-------------------------------	---------------------------------	--	--	---



No Na Mamo: For the Children The Voyage to Ra'iatea and Rarotonga: 1992

[Photo Below: The Gathering of Pacific Canoes at Rarotonga, 1992. Photo by Moana Doi]

The 1992 Voyage to Ra'iatea and Rarotonga, called No Na Mamo, For the Children, was designed to train a new generation of voyagers to sail Hokule'a, to share the knowledge and values of voyaging with students in Hawai'i and to celebrate the revival of canoe building and traditional



navigation throughout the Pacific with a visit to the Sixth Pacific Arts Festival held that year in Rarotonga. On each of the four legs of the voyage, Hokule'a had new navigators to guide her. In addition to training new navigators and crew members, PVS reached out to thousands of school children in Hawai'i through a long-distance education program. During the voyage students tracked the canoe on nautical charts, learned about their Pacific world, and used the canoe and its limited supply of food, water, and space, to explore issues of survival, sustainability, and teamwork. On the voyage back to Hawai'i, the crew of the canoe contacted the crew of the Space Shuttle Columbia flying overhead and shuttle crew member Lacy Veach, a Hawai'i native. The two vessels participated in conversations with students in Hawai'i about the importance of exploration.



Maps: (1) [the 1992 voyage to Rarotonga and back \(color\)](#); (2) [the 1992 voyage to Rarotonga \(black and white\)](#); (3) [the voyage from Hawai'i to Rarotonga](#) (with Navigators' Daily Estimated Positions and Actual Positions of the Canoe); (4) [the voyage from Rarotonga to Hawai'i](#) (with Navigators' Daily Estimated Positions and Actual Positions of the Canoe); (5) [the voyage from Tahiti to Rarotonga](#).



The Voyage

[Hawai'i to Tahiti](#)

[Sail to Ra'iatea](#)

[Sail to Rarotonga](#)

[The Voyage Home](#)



Journal of Wallace Wong, Rarotonga to Hawai'i: Oct.-Dec., 1992

[Oct. 17-31](#): Waiting in Rarotonga, Cook Islands; Departure; Arrival in the Society Islands

[Nov. 1-15](#): Pape'ete, Tahiti; Depature; Voyage to Hawai'i.

[Nov. 16-30](#): Voyage to Hawai'i; Sighting Mauna Kea

[Dec. 1-6](#): Homecoming Ceremonies and Celebration

1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	

[Home](#)

[Search](#)

[Archives](#)

[Past Education
Programs and
Materials](#)

[On-Line
Visuals](#)

[Bibliographies
\(Books and
Films\)](#)



Na Ohana Holo Moana: The Voyaging Families of the Vast Ocean

The 1995 Voyage to Nukuhiva

Photo Below: Polynesian Canoes Gathered in Taiohae Bay, Nukuhiva, 1995 (Monte Costa)

The 1995 Voyage to the Marquesas, called Na 'Ohana Holo Moana ("The Voyaging Families of the Ocean") carried on the work of the 1992 voyage--training new crew members and navigators, sharing voyaging traditions across the Pacific, and re-connecting Polynesian peoples through the heritage of the canoe. On the voyage from Tahiti and the Marquesas to Hawai'i, **Hokule'a** was joined by five canoes, Hawai'iloa and Makali'i from Hawai'i, the **Maori** canoe Te Aurere, and two Cook Islands canoe, Takitumu and Te Au o Tonga.



The prelude to this voyage was the building of Hawai'iloa (1990-1994), a project designed to recover canoe-building arts and strengthen community in a joint effort to fashion a canoe entirely from native natural materials. The project faltered at first because of a startling discovery: there were no koa trees left in Hawai'i's forests large enough to build voyaging canoes. This alarming condition led to a new level of awareness about the interdependence of culture and environment and a commitment to **malama Hawai'i**--take care of our island home. It also created another bridge across the Pacific--from Hawai'i to Alaska, whose native people offered the people of Hawai'i a gift of logs.



Maps: (1) [the 1995 voyage to Nukuhiva and back \(color\)](#); (2) [the 1995 voyage to Tahiti \(black and white\)](#); (3) [The 1995 Voyage to Tahiti \(Hokule'a and Hawai'iloa\), with reference courses](#); (4) [The 1995 Voyage Home \(Hokule'a, Hawai'iloa, and Makali'i\), with reference courses](#).



Nainoa Thompson: [Recollections of the Building of Hawai'iloa and the 1995 Voyage to Nukuhiva](#)



Sam Low: ["Sacred Forests"](#): The Story of the Logs for the Hulls of Hawai'iloa



Ben Finney: ["Sin at Awarua"](#)



[Background of the Voyage to Nukuhiva](#)



[Daily Reports from the Voyage \(Feb.-May 1995\)](#)



[Isles of Hiva \(Marquesas Islands\)](#): Notes on the Geography, Language, Archaeology, History, and Ethnography of the Isles of Hiva; Bibliography included.



For a filmmaker's version of the 1995 voyage to Nukuhiva, see ["Wayfinders: a Pacific Odyssey"](#), a PBS website in conjunction with an hour-long film by Maiden Voyage Production (Gail Evenari).

<u>1976: Tahiti</u>	<u>1980: Tahiti</u>	<u>1985-87: Aotearoa (New Zealand)</u>	<u>1992: Rarotonga</u>	<u>1995: Marquesas</u>	<u>1995: West Coast, British Columbia, & Alaska</u>	<u>1999-2000: Rapanui</u>
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<u>Voyages</u>	<u>Canoe-Building</u>	<u>Wayfinding</u>	<u>Life on a Canoe</u>	<u>Polynesian Migrations</u>	<u>Proverbs and Traditions</u>
--------------------------------	---------------------------------------	-----------------------------------	--	--	--

<u>Home</u>	<u>Search</u>	<u>Archives</u>	<u>Past Education Programs and Materials</u>	<u>On-Line Visuals</u>	<u>Bibliographies (Books and Films)</u>
-----------------------------	-------------------------------	---------------------------------	--	--	---



West Coast and Northwest Tours / 1995

Photo Below: A Kwaigutl Paddling Canoe Greet the Hawaiian Voyaging Canoe Hawai'iloa Off Port Hardy



[Summary of West Coast and Northwest Tours](#)



[Map of the 1995 West Coast Tour](#)



[Background of the Northwest Tour](#)



Sam Low: ["Sacred Forests"](#): The Story of the Alaskan Logs for the Hulls of Hawai'iloa



[Map of 1995 Northwest Tour](#)



Press Releases from British Columbia and Alaska

[Port Hardy, British Columbia--June 17](#)

[Prince Rupert, British Columbia--June 22](#)



[Ketchikan, Alaska--June 26](#)[Angoon, Alaska--July 2](#)[Sitka, Alaska--July 4](#)[Hoonah, Alaska--July 7](#)[Haines, Alaska--July 10](#)[Haines, Alaska--July 12](#)[Juneau, Alaska--July 15](#)

For a filmmaker's version of the 1995 voyage to Alaska, see "The Voyage Home: Hawai`iloa's Northwest Voyage" (Producer: Williams Communications, 1996, 56 minutes), available from [the PIC \(Pacific Islanders in Communications\) video catalog](#).

1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
Home	Search	Archives	Past Education Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)	



The Voyage to Rapa Nui / 1999-2000

Photo Below: Hokule'a Lifts from the Water in Brisk Winds on the Way to Rapa Nui

At dawn on October 8, 1999, crew member Max Yarawamai, a lookout posted at the bow of the voyaging canoe Hokule'a, sighted Rapa Nui (Easter Island)--a speck on the horizon, visible through a small hole in a wall of clouds. The canoe landed the next day, completing an amazing, improbable 19-day, 1,450-mile voyage from Mangareva to the most remote and isolated



island in Polynesia. The twelve-member crew under navigators Nainoa Thompson, Chad Baybayan, and Bruce Blankenfeld had expected to sail against the wind for thirty-five days, navigating by celestial bodies and ocean swells and searching thousands of square miles of trackless ocean for a tiny island. Instead, blessed by favorable winds--a gift of their ancestors--they sailed directly east toward Rapa Nui for most of the way, and sighted the island on the first pass.

Landfall at Rapa Nui brought closure to Hokule'a's twenty-five years of exploration and rediscovery of Polynesia which began in 1975, with the launching of the canoe at Hakipu'u-Kualoa in Kane'ohe Bay, O'ahu. Click here for [thoughts of the three navigators--Nainoa Thompson, Bruce Blankenfeld, and Chad Baybayan--on finding Rapa Nui and reaching the third corner of the Polynesian Triangle.](#)



Maps: (1) [the 1999-2000 voyage to Rapanui and back \(color\)](#); (2) [the 1999 voyage to Rapanui and back \(black and white\)](#). (3) [the 1999 voyage from Mangareva to Rapanui \(color\)](#); (4) [a map of the voyage from Mangareva to Rapa Nui \(black and White\)](#); (5) [another map of the 1999-2000 voyage from Hawai'i to Rapa Nui and back](#); (6) [map of the Marquesas Interisland Leg: Nukuhiva, Ua Pou, Ua Huka, Tahuata, Fatu Hiva, and Hiva Oa.](#)



Sam Low: ["Gift of the Wind: Aboard Hokule'a on Her Miraculous Voyage to Rapa Nui"](#) (This article first appeared in Hawaiian Airlines In-flight Magazine "Hana Hou," February/March 2000.)



Sam Low: ["Rapa Nui: The Navel of the World"](#).



Ben Finney: ["Voyaging and Isolation in Rapa Nui Prehistory"](#)



[Background on the Rapa Nui Expedition and Educational Projects](#)

Reports and Photos from the Voyage to Rapa Nui

Leg 1: [Hawai'i to Nukuhiva \(June 15-July 13, 1999\)](#)

Leg 2: [Nukuhiva to Mangareva \(July 31-August 29, 1999\)](#)

Leg 3: [Mangareva to Rapa Nui \(Sept. 15-Oct. 8, 1999\)](#)

Leg 4: [Rapa Nui to Tahiti \(Nov. 9-Dec. 3, 1999\)](#)

Leg 5: [Tahiti to Hawai'i \(Feb. 5-Feb. 27, 2000\)](#)

<u>1976: Tahiti</u>	<u>1980: Tahiti</u>	<u>1985-87: Aotearoa (New Zealand)</u>	<u>1992: Rarotonga</u>	<u>1995: Marquesas</u>	<u>1995: West Coast, British Columbia, & Alaska</u>	1999-2000: Rapanui
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<u>Voyages</u>	<u>Canoe-Building</u>	<u>Wayfinding</u>	<u>Life on a Canoe</u>	<u>Polynesian Migrations</u>	<u>Proverbs and Traditions</u>
--------------------------------	---------------------------------------	-----------------------------------	--	--	--

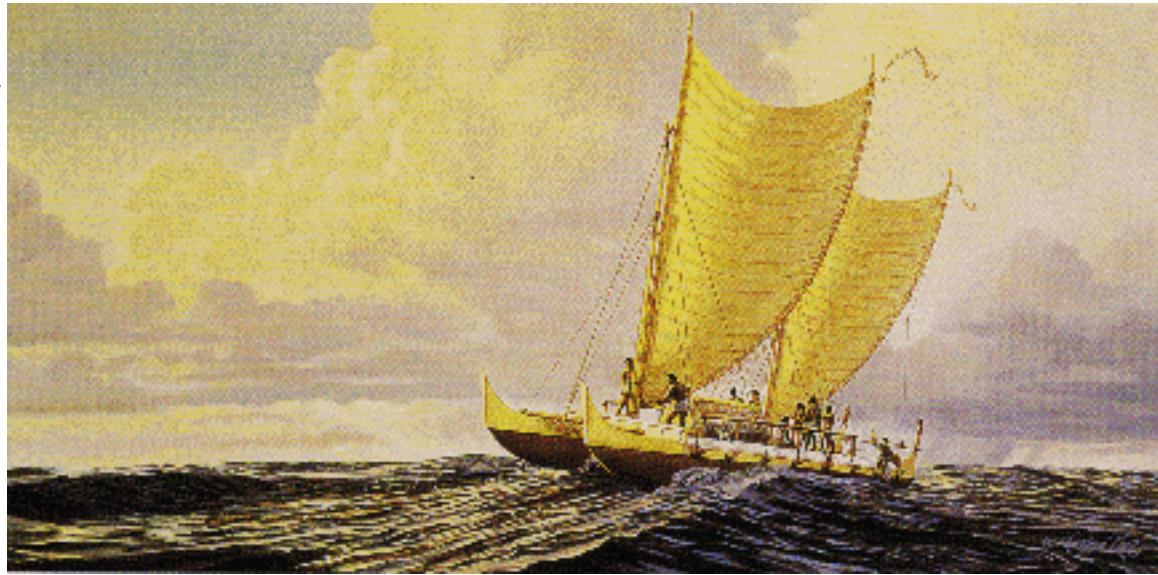
<u>Home</u>	<u>Search</u>	<u>Archives</u>	<u>Past Education Programs and Materials</u>	<u>On-Line Visuals</u>	<u>Bibliographies (Books and Films)</u>
-----------------------------	-------------------------------	---------------------------------	--	--	---



Voyages: 1976-2000

Painting Below: *Hokule'a I* by Herb Kawainui Kane

The voyages sponsored by the Polynesian Voyaging Society have provided a wealth of information for scientists, anthropologists and



archaeologists about traditional Polynesian migrations, documenting one of the greatest achievements of humanity--the exploration and settlement of islands in an area of over 10 million square miles during a period of over 1,000 years.

At the same time, as Hokule'a and Hawai'iloa traveled throughout Polynesia, they inspired among Polynesians an increased awareness and native pride in their seafaring heritage. They also sparked a revival of canoe building and sailing, arts that had not been practiced in over a hundred years. Hokule'a, the first modern replica of a voyaging canoe to make the voyage from Hawai'i to Tahiti and back, became a symbol of the richness of Polynesian culture and the seafaring heritage which links together all of the peoples of the Pacific.



1999-2000: Voyage to Rapa Nui. Hokule'a reached the far

southeastern corner of Polynesia, completing its modern exploration of the Polynesian Triangle.



Summer 1995: Hokule'a's West Coast Tour / Hawai'iloa's Northwest Tour. In the summer of 1995, the voyaging canoes Hokule'a and Hawai'iloa were shipped to Seattle; Hokule'a travelled down the West Coast to San Diego to share the mana of the canoe with Hawaiians, native Americans, and other Americans living there. Hawai'iloa, meanwhile, went from Seattle to Juneau Alaska to visit the land of the Tlingit, Haida, and Tshimshian, who donated the logs for its hulls.



Spring 1995: Na 'Ohana Holo Moana/The Voyaging Family of the Vast Ocean. the voyaging canoes Hokule'a, Hawai'iloa, and Makali'i sailed from Hawai'i to the Marquesas and back via Tahiti and Ra'iatea. Early settlers to Hawai'i are believed to have come from the Marquesas because of the similarities of the Hawaiian and Marquesan languages.



1992: No Na Mamo/For the Children. Hokule'a sailed from Hawai'i to Rarotoga and back via Tahiti and Ra'iatea. In Rarotonga, the canoe participated in the Sixth Pacific Arts Festival celebrating the revival of traditional canoe building and navigation in the Pacific. Called "The Voyage for Education," this voyage incorporated an educational program that allowed students to follow the canoe on its journey through live, daily radio reports.



1985-87: The Voyage of Rediscovery took Hokule'a on a 16,000 mile journey along the ancient migratory routes of the Polynesian Triangle--from Hawai'i to the Society Islands, the Cook Islands, New Zealand, Tonga, Samoa, and back home via Aitutaki, Tahiti, and Rangiroa in the Tuamotu Archipelago. This voyage showed that it was possible for Polynesian canoes to sail from west to east in the Pacific when the prevailing easterly tradewinds were replaced by seasonal westerlies.



1980: Hawai'i to Tahiti and Back; [Nainoa Thompson](#), who studied under Satawalese navigator Mau Piailug (see "1976: Hawai'i to Tahiti and

Back" below), became the first Hawaiian navigator in over 500 years to guide a canoe over this traditional route without instruments.



[1978: Voyage to Tahiti Cancelled After Canoe Swamping](#) In 1978, a voyage to Tahiti was cancelled because Hokule'a swamped south of Moloka'i in heavy seas; [crew member Eddie Aikau](#), who attempted to paddle on a surfboard to get help on land, was lost at sea.



[1976: Hawai`i to Tahiti and Back](#); Satawelese navigator Mau Piailug, with a Hawaiian crew, guided Hokule'a without instruments to Tahiti, a distance of 2400 miles. Piailug was called upon to navigate because no Hawaiian knew the ancient art of guiding canoes by the celestial bodies and ocean swells.

1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
Home	Search	Archives	Past Education Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)	



Canoe Building

Painting Below: *A Tree for a New Canoe* by Herb Kawainui Kane



Herb Kawainui Kane: [In Search of the Ancient Polynesian Voyaging Canoe \(Designing Hokule'a\)](#)



Building Hokule'a: 1973-1975



Kenneth Emory: [Launching Hokule'a: March 8, 1975](#)



Building Hawai'iloa: 1991-1994



Koakanu: [Traditional Hawaiian](#)

[Canoe-Building](#), first published in the *Fornander Collection of Hawaiian Antiquities and Folk-lore* (Honolulu, Bishop Museum: 1916-1919, Vol. 5, pp. 610-614 and 630-636).



Edgar Henriques: [Hawaiian Canoes](#), first published in 1925 in the *34th Annual Report of the Hawaiian Historical Society* (pp. 15-19).



S.M. Kamakau: [The Building of Keawenui'umi's Canoe](#), from "The Story of Keawenui'umi" in *Ruling Chiefs of Hawaii* (Honolulu, Kamehameha Schools: 1992 (Revised Edition), pp. 38, 41-42).





Herb Kawainui Kane: [Evolution of the Hawaiian Canoe](#) (1998).



[Hawaiian Deities of Canoes and Canoe Building](#)



[Parts of a Traditional Canoe](#)



[Plants Used for Building Traditional Canoes](#)



[Tools for Building Traditional Canoes](#)



[Bibliography--Canoes and Canoe Building](#)

1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
Home	Search	Archives	Past Education Programs & Materials	On-Line Visuals	Bibliographies (Books and Films)	



Life Aboard a Canoe

Painting Below: *Readying Canoes for a Voyage* by Herb Kawainui Kane



Tommy Holmes:
[Provisioning for Polynesian Voyages](#), an excerpt from his book "The Hawaiian Canoe"



Chad Baybayan:
[Traditional Foods and their Preparation for Voyaging](#)



Provisions for Voyaging on Hokule'a: What the Canoe Carries on a Modern Voyage



Thomas Gladwin: [Provisions for a Micronesian Voyage](#), an excerpt from his "East is a Big Bird"



Elisa Yadao: [Daily Living Aboard Hokule'a](#)



Elisa Yadao: [Jobs and Duties of Hokule'a Crew Members](#)



[Fishing Aboard Hokule'a](#)



[Sealife: Birds, Mammals, and Fish of the Open Ocean](#)



[Dangers at Sea](#)



Dr. Pat Aiu: [Medical Needs Aboard Hokule'a](#)



[Crew and Navigational Training Programs](#)



[Hawaiian Terms Used in Voyaging](#)

<u>1976: Tahiti</u>	<u>1980: Tahiti</u>	<u>1985-87: Aotearoa (New Zealand)</u>	<u>1992: Rarotonga</u>	<u>1995: Marquesas</u>	<u>1995: West Coast, British Columbia, & Alaska</u>	<u>1999-2000: Rapanui</u>
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<u>Voyages</u>	<u>Canoe-Building</u>	<u>Wayfinding</u>	<u>Life on a Canoe</u>	<u>Polynesian Migrations</u>	<u>Proverbs and Traditions</u>
--------------------------------	---------------------------------------	-----------------------------------	--	--	--

<u>Home</u>	<u>Search</u>	<u>Archives</u>	<u>Past Education Programs and Materials</u>	<u>On-Line Visuals</u>	<u>Bibliographies (Books and Films)</u>
-----------------------------	-------------------------------	---------------------------------	--	--	---



Polynesian Migrations

Painting Below: *A Tipairua of Tahiti* by Herb Kawainui Kane



Cecilia Kapua
Lindo: [The Spirit of 'Ohana and the Polynesian Voyagers](#)



[Map of Polynesia](#)



[Polynesian Migrations, Part 1:](#)

Exploration and Discovery; Settlement of Polynesia; Settlement of Hawai'i



[Polynesian Migrations, Part 2:](#) Two-Way Voyaging after Settlement; The End of Voyaging; Voyaging and Human Survival



Dr. Harold St. John and Kuaika Jendrusch: [Plants Introduced to Hawai'i by the Ancestors of the Hawaiians](#)



[Bibliography--Migrations](#)



<u>1976: Tahiti</u>	<u>1980: Tahiti</u>	<u>1985-87: Aotearoa (New Zealand)</u>	<u>1992: Rarotonga</u>	<u>1995: Marquesas</u>	<u>1995: West Coast, British Columbia, & Alaska</u>	<u>1999-2000: Rapanui</u>
<u>Voyages</u>	<u>Canoe-Building</u>	<u>Wayfinding</u>	<u>Life on a Canoe</u>	<u>Polynesian Migrations</u>	<u>Proverbs and Traditions</u>	
<u>Home</u>	<u>Search</u>	<u>Archives</u>	<u>Past Education Programs and Materials</u>	<u>On-Line Visuals</u>	<u>Bibliographies (Books and Films)</u>	



Voyaging Traditions

Painting Below: *A Va'a Kaulua (Double-hulled Canoe) of Hawai'i* by Herb Kawainui Kane



[Hawaiian Voyaging](#)

[Proverbs](#): selected from Mary Kawena Pukui's *Olelo No'eau: Hawaiian Proverbs and Poetical Sayings* (Honolulu: Bishop Museum Press, 1983), with illustrations by Melanie Lessett and Helene Iverson.



[Voyaging Stories](#)

[Hawai'i Loa and the Discovery of Hawai'i](#) (Hawai'i)

[Mo'ikeha and Kila](#) (Hawai'i-Tahiti)

[Lonopele and Pa'ao](#) (Hawai'i-Tahiti)

[Ru & Hina: Two Tahitian Explorers](#) (Tahiti)

[Tangiia](#) (Tahiti)

[Hiro](#) (Tahiti)

[Tafa'i](#) (Tahiti)

[Rata](#) (Tuamotu)

[Ru](#) (Cook Islands)

[Te Erui Ariki](#) (Cook Islands)

[Ruatapu](#) (Cook Islands)

[Aka and Pepe-iu](#)(Marquesas Islands)

[Kupe](#) (Aotearoa)

[Hotu Matua](#) (Rapa Nui)



[Bibliography--Polynesian Voyaging Traditions](#)

1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
Home	Search	Archives	Past Education Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)	



The Polynesian Voyaging Society (PVS) was founded in 1973 to research how Polynesian seafarers discovered and settled nearly every inhabitable island in the Pacific Ocean before European explorers arrived in the 16th century. Some scholars have argued that the Polynesian drifted to these islands by accident; PVS set out to show that a voyaging canoe of Polynesian design could be navigated without instruments over the long, open ocean [migration routes of Polynesia](#).



Since 1975, PVS has built and launched two replicas of ancient canoes--[Hokule'a and Hawai'iloa](#)--and completed six [voyages to the South Pacific](#) to retrace migration routes and recover [traditional canoe-building](#) and [wayfinding](#) (non-instrument navigation) arts.

- [Our Vision, Mission, and Brief History](#)
- Click here to order [a Polynesian Voyaging Society T-Shirt](#).
- Help support Hokule'a and the Polynesian Voyaging Society Education Programs with [a Donation](#).

Where We Are Today...

Hokule'a Dry Dock Update: "It takes an ahupua'a to launch a canoe." Dry dock work has been completed and on Dec. 23, 2002, Hokule'a was placed back into the ocean at the Ke'ehi Marine Center and towed to Honolulu Community College's Marine Education Training Center on Sand Island, where she was blessed. Mahalo nui loa to all the groups and

individuals who came out to help during the year-long dry-dock, dedicating their time and energy to the canoe. Great job! Hokule'a is in top shape for more voyaging, including an interisland tour in the spring of 2003, with a visit (weather permitting) to Nihoa and Mokumanamana. A sail up the Northwestern Hawaiian Islands to Midway is also being planned for 2003. (Click here for [a map of the NWHI and the locations of Nihoa and Mokumanamana](#). Click here for reports and photos from [a research expedition to the Northwestern Hawaiian Islands](#) in the fall of 2000.)

Free Public Viewing and Celebration of Hokule'a, Jan. 19, 2003: To celebrate Hokule'a's return to the ocean and to thank the hundreds of volunteers and supporters of her restoration, PVS will be hosting a free family and community event from 10 a.m. to 5 p.m. at Honolulu Community College's Marine Education Training Center, 10 Sand Island Parkway Road (first right after the Sand Island bridge). Everyone is invited.

[Timeline of 2002 Drydock / Ka'iulani Murphy](#)

Drydock Photo Gallery:

Haul Out: (1) [Hokule'a lifted from the water by a crane at Ke'ehi Marine Center \(KMC\)](#); (2) [Jim Leveille driving the Marine Travel Lift](#); (3) [Paul Cobb-Adams \(left\) and Carlos Lopez discussing the next step to in hauling out the canoe; PVS leadership in the background](#); (4) [Yoshi Muraoka, the administrative director at KMC](#); (5) [Modrel Keju, KMC office staff](#).

At Pier 61: (1) [Hokule'a at Pier 61, Workshop Home of the Friends of Hokule'a and Hawai'iloa](#); (2) [Bruce, Wally, and Jerry discuss repairs](#).

Maintenance and Dryrot Repairs: (1) [Nitty Gritty--patching and sanding the hull](#); (2) [Cat Fuller standing over the open hull](#); (3) [Tim Gilliom chisels out some dry rot](#); (4) [Russell Amimoto with Kevin San Miguel and Tim Gilliom fiberglass over the dry rot](#)

repairs; (5) Ann-Marie Mizuno sanding the railing; (6) Dry rot repair work on the starboard hull; (7) Keao Meyer preparing for the outer hull for fiberglass work ; (8) Russell Amimoto glassing the outer hull; (9) Jerry Ongais sanding the outer hull; (10) Russell Amimoto and Kawai Hoe fiberglassing; (11) Russell Amimoto working inside the hull; (12) Kawai Hoe glassing inside the hull.

Lashing: (1) Kawai Hoe, Brad Cooper and Bobby Takei pull the line tight from below while Bruce Blankenfeld and Lyle Fukumoto maintain the lashing pattern above; (2) Below deck, Catherine Fuller and Dennis Chun pull tight the lashings of the deck to the 'iako ; (3) Meanwhile, cousins Kealoha Hoe and Kawai Hoe pull tight from above; (4) More Lashing, with Liz Kashinsky, Bob Bee, Cindy Macfarlane and Sean Marrs. Hokule'a is lashed together with a couple of miles of intricate ropework, no nails or bolts!; (5) Kawai and Russell lashing one of eight 'iako, or crossbeams, that join the two hulls.

The Ocean Learning Academy (OLA) is a combined effort of the Polynesian Voyaging Society, the UH School of Ocean and Earth Science and Technology (SOEST), the Hawaii Department of Education and other community partnerships. Open to juniors and seniors from public high schools on O'ahu, this charter school program allows students to learn about Hawaii's cultural, social and natural environments through education and active ocean stewardship. Rather than learning in the traditional classroom setting of their high schools, students of the Ocean Learning Academy spend their junior and senior years taking internet courses while studying in a variety of locations such as Maunalua Bay and Kane'ohe Bay, learning about ocean tides, coastal mapping and coral reef conservation....([continued](#))

Myron Bennett Pinky
Thompson (1924-2001):
Myron B. "Pinky" Thompson,
President of the Polynesian



Voyaging Society and a force for the betterment of Native Hawaiians and all of Hawai'i's people for more than 30 years, passed away on Christmas day. He was 77. In addition to providing visionary leadership as the Society's president for almost two decades, he also served "as a social worker, a land use planner, a state administrator under Governor Burns, and a trustee of the Bishop Estate. He was also one of the founders of Alu Like and Papa Ola Lokahi--among many other achievements. Throughout his



career he was guided by the wisdom of his ancestors, finding in his Hawaiian heritage ancient values with modern day applications." Click here for more of [Sam Low's biography of Pinky, "A Life of Service."](#) Click here for [an article on Pinky](#) by Mike Gordon of the Honolulu Advertiser (Dec. 27, 2001). Click here for [an article on Pinky](#) by Treena Shapiro and Pat Omandam of the Honolulu Star Bulletin (Dec. 26, 2001).**(Photo right: Pinky at Keauhou Forest, Moku o Hawai'i, June 1999.)**

Services for Pinky were held Thursday, Jan. 3, 2002, at the Bernice Pauahi Bishop Memorial Chapel on the Kapalama Campus of The Kamehameha Schools. His ashes were scattered on Saturday, Jan. 5, in Maunalua Bay.

Where We've Been ... (1) [Past Voyages of Hokule'a](#), from the daring and courageous first voyage from Hawai'i to Tahiti in 1976 to the amazing 1999-2000 voyage to Rapa Nui; (2) [Recovery of Voyaging Traditions](#); and (3) [Hokule'a's 2000-2001 Statewide Education Sail--"Our Islands, Our Canoe"](#)



What We've Learned...[Ten Themes of Learning](#); **Teacher Resources:** (1) [Past Education Programs and Materials](#); (2) [On-Line Visuals \(Paintings, Drawings, Photos of Hokule'a; Video Clips; Maps of the Voyages of Hokule'a; Hawaiian and Micronesian Star Compasses\)](#); (3) [Bibliographies \(Books and Films\)](#); (4) [Related Websites](#).

Where We're Going...[Malama Hawai'i: A Vision for the Future](#)

This website is a service of [the Polynesian Voyaging Society](#). All writings and graphics are copyrighted by the Polynesian Voyaging Society, except those writings and graphics that are in the public domain, or those that have been used from copyrighted documents with the permission of the copyright owners. Acknowledgements: Paintings by Herb Kawainui Kane; electronic graphics by Tim Chun; drawings by Melanie Lessett and Helene Iverson; photos by Monte Costa, Anne Kapulani Landgraf, and Doug Peebles; and by Moana Doi and other crew members of Hokule'a and Hawai'iloa.



Send comments and questions about the website to dennisk@hawaii.edu; send inquiries about the Polynesian Voyaging Society to pvs@lava.net or to Pier 7, 191 Ala Moana Blvd., Honolulu, HI 96813. Phone: (808) 536-8405; FAX: (808) 536-1519.

This site has been accessed **220070** times since June 24, 1999.



Archives



[**Voyages \(1976-2000\)**](#): Past voyages sponsored by the Polynesian Voyaging Society, from the first triumphant voyage of Hokule'a to Tahiti in 1976, to the amazing voyage to Rapa Nui in 1999.



[**Life on a Canoe**](#): What it's like to live for a month on board a replica of an ancient voyaging canoe.



[**Wayfinding \(Non-instrument Navigation\)**](#): The art of wayfinding as it was practiced by ancient Tahitians and Hawaiians, as well as how it is practiced today during its modern revival.



[**Polynesian Migrations**](#): How Polynesia was settled; Map of Polynesia.



[**Canoe Building**](#) : The building of the voyaging canoes Hokule'a (1973-1975) and Hawai'iloa (1990-1993); the ancient art of canoe-building.



[**Hawaiian Proverbs and Polynesian Traditions of Voyaging**](#): Proverbs related to voyaging, with illustrations by Melanie Lessett and Helene Iverson; stories of legendary Hawaiian and Polynesian voyagers.

<u>Home</u>	<u>Search</u>	Archives	<u>Past Ed Programs and Materials</u>	<u>On-Line Visuals</u>	<u>Bibliographies (Books and Films)</u>
-----------------------------	-------------------------------	-----------------	---	--	---



Education Program (1996-1998)

Kau (Dry Season) 1998: Restoring Hokule'a, Center for Marine Sciences, A Gift from the Northwest.

Kau (Dry Season) 1997: Aloha, Wrighto; Joining Islands; Inspired Learning.

Ho'oilu (Rainy Season) 1997: [Malama Hawai'i--1996-1997 Statewide Sail; Project Ho'olokahi: High School Voyaging Programs--1997.](#)

Ho'oilu (Rainy Season) 1996: [The Exploration Learning Center \(High School and College Voyaging Education Programs--1996\).](#)

Education Materials

[Education Packet for A Quest for Rapa Nui, 1999-2000.](#)

[Virtual Voyage / Research and Action Project](#): Students imagine what it's like to voyage on a traditional Hawaiian double-hulled canoe.

["An Odyssey in Voyaging"](#): This Hawaii State Department of Education e-school course for grades 9-12 will allow students to follow Hokule'a's Voyage to Rapa Nui as well as engage them in other scientific and cultural projects.

["Let's Go Voyaging"](#): cultural and environmental curriculum around voyaging and Rapa Nui for grades 4-6 developed by the Moanalua Garden Foundation in collaboration with the Polynesian Voyaging Society and the Hawai'i State Department of Education.

[Home](#)

[Search](#)

[Archives](#)

**Past Ed
Programs and
Materials**

[On-Line
Visuals](#)

[Bibliographies
\(Books and
Films\)](#)



Visuals

GO TO BELOW: (1) Paintings of Canoes; (2) [Drawings of Hokule'a](#); (3) [Video](#); (4) [Canoe Photos](#); (5) [Maps of Voyages](#); (6) [Star Compasses](#)

Herb Kawainui Kane's Paintings

Herb Kawainui Kane's paintings appear in his two books "Voyagers" (Honolulu: Whalesong, 1991) and in "Ancient Hawai'i" (Captain Cook, Hawai'i: Kawainui Press, 1997).

[Hokule'a I](#) (From "Voyagers" / page 30)

[Hokule'a II](#) (From "Voyagers" / page 31)

[A Wa'a Kaulua of Hawai'i](#) (From "Voyagers" / page 18)

[A Hawaiian Interisland Sailing Canoe](#)

[A Tree for a New Canoe](#) (From "Voyagers" / page 52)

[Readying a Canoe for a Voyage](#) (From "Voyagers" / page 67)

[Navigator](#) (From "Ancient Hawai'i" / page 21)

[A Double-Masted Tahitian Tipairua](#) (From "Voyagers" / page 26)

[A Va'a Motu \(Coastal Sailing Canoe\) of Tahiti](#) (From "Voyagers" / page 25)

Drawings

[Construction Drawings for Hokule'a](#)

[Black and White Diagram of Hokule'a, with Names of Each Part.](#)

[Color Drawing of Hokule'a](#) by Honolulu Star Bulletin artist David Swann

[Color Drawing of Hokule'a](#) by Honolulu Advertiser Artist Greg Taylor

Video: [A Hokule'a Gallery](#)

Canoe Photos

[Hokule'a \(Hawai'i\)](#): Profile, with Inverted Triangular Sails, Sailing off Honolulu, 1995; see [1995 Voyage to Nukuhiva](#)

[Hokule'a \(Hawai'i\)](#): Profile, with Boomless Triangular Sails, Sailing to Rapa Nui, 1999; see [1999 Voyage to Rapa Nui](#)

[Hawai'iloa \(Hawai'i\)](#): Profile, Sailing off Honolulu, 1995; see [1995 Voyage to Nukuhiva](#)

[Hawai'iloa \(Hawai'i\)](#): Sailing off Honolulu, 1995; see [1995 Voyage to Nukuhiva](#)

[Hawai'iloa \(Hawai'i\)](#): With Kwaguitl Canoe, British Columbia, 1995; see [1995 Voyage to Alaska](#)

[Hawai'iloa \(Hawai'i\)](#): Sailing in the Icy Straits, Alaska, 1995; see [1995 Voyage to Alaska](#)

[Makali'i \(Hawai'i\)](#): Sailing off Honolulu, 1995; see [1995 Voyage to Nukuhiva](#)

[Te Aurere \(Aotearoa / New Zealand\)](#): Sailing off Honolulu, 1995; see [1995 Voyage to Nukuhiva](#)

[Nga Toki Matawhaorua \(Aotearoa / New Zealand\)](#): Paddling Canoe Greeting Hokule'a in Aotearoa, 1985; see [1985 Voyage to](#)

[Aotearoa](#)

[Nga Toki Matawhaorua \(Aotearoa / New Zealand\)](#): At the Sixth Pacific Arts Festival in Rarotonga, 1992; see [1992 Voyage to Rarotonga](#)

[Takitumu \(Rarotonga, Cook Islands\)](#): Sailing off Honolulu, 1995; see [1995 Voyage to Nukuhiva](#)

[Te Au Tonga \(Rarotonga, Cook Islands\)](#): Sailing off Honolulu, 1995; see [1995 Voyage to Nukuhiva](#)

[Ngapuariki \(Aitutaki, Cook Islands\)](#): At the Sixth Pacific Arts Festival in Rarotonga, 1992; see [1992 Voyage to Rarotonga](#)

[Waan Aelon Kein \(Marshall Islands\)](#): At the Sixth Pacific Arts Festival in Rarotonga, 1992; see [1992 Voyage to Rarotonga](#)

Maps / the Voyages of Hokule'a and Hawai'iloa:

Maps: Rapa Nui Voyage / 1999-2000: (1) [Hawai'i to Rapanui and back \(color\)](#); (2) [Hawai'i to Rapanui and back \(b&w 1\)](#); (3) [Hawai'i to Rapanui and back \(b&w 2\)](#); (4) [Mangareva-Rapa Nui \(color\)](#); (5) [Mangareva-Rapa Nui \(b&w\)](#); (6) [Marquesas Interisland Leg: Nukuhiva, Ua Pou, Ua Huka, Tahuata, Fatu Hiva, and Hiva Oa \(b&w\)](#). For stories of the voyage, see [the 1999-2000 voyage to Rapanui](#).

Maps: Alaska and West Coast Voyages / Summer 1995: (1) [Hawai'iloa to British Columbia and Alaska](#). For stories of the Alaska voyage, see [the 1995 voyage to the West Coast, British Columbia, & Alaska](#); (2) [Hokule'a's West Coast Voyage](#). For a summary of the West Coast voyage, see [the 1995 voyage to the West Coast, British Columbia, & Alaska](#).

Maps: Nukuhiva / 1995: (1) [Hawai'i to Nukuhiva and back](#)

(color); (2) [Hawai'i to Nukuhiva and back \(b&w\)](#); (3) [Map of the Voyage South, with course lines](#); (4) [Map of the Voyage Home, with course lines](#). For stories of the voyage, see [the 1995 voyage to the Marquesas](#).

Maps: Rarotonga / 1992: (1) [Hawai'i to Rarotonga and back \(color\)](#); (2) [Hawai'i to Rarotonga and back \(b&w\)](#). For stories of the voyage, see [the 1992 voyage to Rarotonga](#).

Maps: Aotearoa / 1985-87: (1) [Hawai'i to Aotearoa and back \(color\)](#); (2) [Hawai'i to Aotearoa and back \(b&w 2\)](#); (3) [Tahiti to Aotearoa and back \(color\)](#). For stories of the voyage, see [the 1985-87 voyage to Aotearoa \(New Zealand\)](#).

Maps: Tahiti / 1980: (1) [Black and White Map](#); (2) [Color Map](#). For stories of the voyage, see [the 1980 voyage to Tahiti](#).

Maps: Tahiti / 1976: (1) [Black and White Map](#); (2) [Color Map](#). For stories of the voyage, see [the 1976 voyage to Tahiti](#).

Star Compasses

[Hawaiian Star Compass](#). Click here for [an explanation of the directional houses](#).

[Hawaiian Star Compass with the Rising and Setting Points of the 21 Brightest Stars and the Sun](#)

[Mau's Micronesian Star Compass](#)

Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions
Home	Search	Archives	Educational Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)



Bibliographies

Books and Articles

(1) [Polynesian Migration and Voyaging](#); (2) [Wayfinding \(Non-Instrument Navigation\)](#); (3) [Winds and Weather Prediction](#); (4) [Canoes and Canoe-Building](#); (5) [Isles of Hiva \(Marquesas Islands\)](#); (6) [Rapanui and Mangareva](#)

Films and Videos

["The Navigators: Pathfinders of the Pacific"](#): 59-minutes, color video. This award winning PBS documentary - an archeological detective story - follows Mau Piailug in Satawal where he teaches the fundamentals of wayfinding; visits Fiji where archeologists find evidence of the first Polynesian settlers, explores sites in Hawaii where ancient navigators first landed hundreds of years ago and features the first voyage of Hokule'a to Tahiti. Available from:

The New Film Company, Inc.

7 Mystic Street, Suite 28

Arlington, MA 02174, U. S. A.

Tel: Toll free 1/800/462-2306 or 1/781/641-2580

Fax: 1/781/641-2581

E-mail: newfilmco@aol.com

Order form and description at:

<http://www.xensei.com/users/newfilm/NFC/navpage.htm>

["Wayfinders: a Pacific Odyssey"](#): a PBS website in conjunction with an hour-long film by Maiden Voyage Production (Gail Evenari). (You may order this film by clicking on the title.) This one-hour program sweeps

viewers into a seafaring adventure with a community of Pacific Islanders as they build traditional sailing canoes, learn how to follow the stars across the ocean, and embark on a 2,000-mile voyage from the Marquesas Islands to Hawai'i in the wake of their ancestors. Through on-board interviews, training sessions, archival images and breathtaking sailing footage, "Wayfinders: A Pacific Odyssey" reveals how the legacy of wayfinding connects modern Polynesians to their past and helps them face the challenges of the future. The islanders embark on a wayfinding journey using oral traditions, archaeological discoveries and experimental voyages to help them resolve controversial issues in their history and reclaim their cultural heritage as skilled oceanic explorers.

"The Voyage Home: Hawai`iloa's Northwest Voyage" (Producer: Williams Communications, 1996, 56 minutes) follows the historic journey of the Hawaiiiloa sailing canoe from Seattle, Washington to Juneau, Alaska through the northwest Inside Passage uniting thousands of native peoples in a celebration of their heritage and culture. Award: Best Global Indigenous Award, Dreamspeakers Festival, 1998. Available from Pacific Islanders in Communications (PIC) / (808) 591-0059 /FAX (808) 591-1114 / 1221 Kapiolani Blvd. Suite 6A4, Honolulu HI, 96814.To purchase this video or for price information please contact PIC at piccom@aloha.net For other videos on Hawaiian and Pacific Islanders cultural topics and issues, see [the PIC video catalog](#)

"Daring To Dream - Hokulea's Quest for Rapa Nui": This half-hour video produced by KGMB-TV includes interviews with navigator Nainoa Thompson and other crew members, conversations with Rapa Nui locals about what the voyage means to them, reports on Rapa Nui's culture and landmarks, the history of the Moai (stone statues), and exclusive coverage of Nainoa's last visit to the island to prepare. Contact Kim Gennaula for copies for the video to use in teaching....(there are 7 segments of about 3 minutes each). Interested teachers can e-mail Kim at KGennaula@aol.com.

["Te Pito o Te Henua / The Navel of the World"](#): Hawaii State Department of Education website for an hour-long Film about Rapa Nui.

Ke Ala o Hokule'a / The Way of Hokule'a: Half-hour specials on the

voyage to Rapa Nui, featuring conversations of crew members with students in Hawai'i over a satellite phone and video and photos from the voyage, are broadcast every Thursday at 8 p.m. on 'Olelo Channel 53 (Oceanic Cablevision). The specials are re-broadcast on Tuesday mornings at 11 a.m. A half-hour program on the voyage in 'Olelo Hawai'i (Hawaiian Language) is also available. Producers: Na'alehu Anthony and Brad Evans. Sponsors: Bishop Museum/NASA, 'Olelo/Oceanic Cablevision, Outriggers Hotels, and the Polynesian Voyaging Society. For more information about the programs or to request copies, contact Guy Kaulukukui at guy@bishopmuseum.org.

1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
Home	Search	Archives	Educational Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)	

Feb. 15, 2000; 10 days since departure

Nainoa's view of the sea at sunrise, and what he sees in the shape of the clouds--[Photo 1](#): "The sky where the sun is rising is very clear--I don't see any smoke (which is caused by strong winds stirring salt into the atmosphere)--so I think the winds will be relatively light today." [Photo 2](#) and [Photo 3](#): "Ahead of us, I see two squalls, but there are no squalls beyond them so we should have good weather once we pass through them."

To Next Reading of the Clouds: [February 20](#).

Back to the [Predicting Wind and Weather](#).

1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
Home	Search	Archives	Educational Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)	







Weather Analysis--February 20, 2000

Source: Nainoa Thompson

Weather Analysis: Normal trade wind clouds and sea state on February 20, 2000. "On the horizon you see what we call zone -based trade wind cumulus clouds. There is little vertical development, meaning no high clouds, and no squalls are visible. These clouds suggest to me a stable weather pattern. The wind is clean and predictable, blowing 20-25 knots. I judge the wind speed by the feel of the wind against my body, also by the fact there are a lot of white caps and wind streaks along the ocean surface, also the size of the swells which are about ten feet high. (On feb 20 the wind blew from the NE, forcing us to steer too far to the west; since then the wind has shifted more easterly allowing us to head north.)



Back to the [Predicting Wind and Weather](#).

1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
Home	Search	Archives	Educational Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)	



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Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
Home	Search	Archives	Educational Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)	



Wayfinding (Non-Instrument Navigation)

Painting Below: *Navigator (Kahuna Kilo Hoku)* by Herb Kawainui Kane



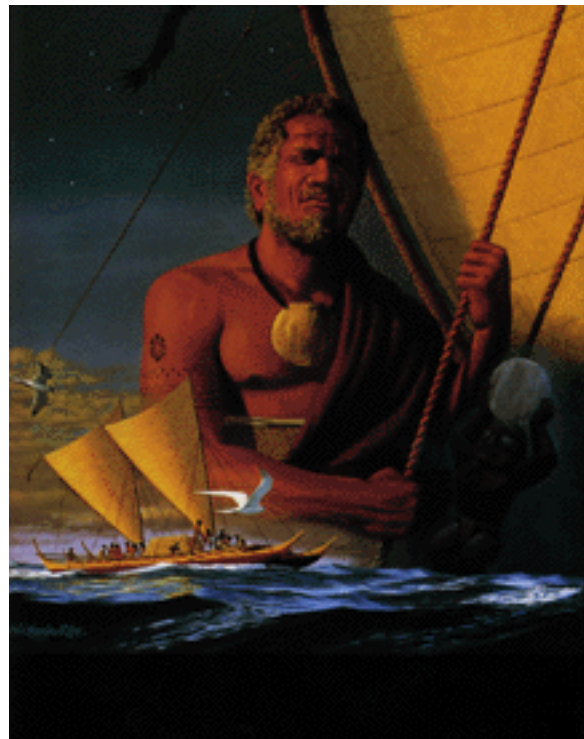
[An Account of Traditional Tahitian](#)

[Navigation](#): from *The Quest and Occupation of Tahiti* by Emissaries of Spain during the Years 1772-6 (London: Hakluyt Society, 1913-1919 Vol. II., 284-287). The account is from the journal of Andia y Varela, who visited Tahiti in 1774.



["Hawaiians as Navigators and](#)

[Seaman](#)": by Samuel Wilder King, published in the *34th Annual Report of the Hawaiian Historical Society*, 1925, 11-14.



[Wayfinding Summary](#): A Summary of Wayfinding Techniques



[Modern Wayfinding](#): A more detailed description of the art of modern Hawaiian wayfinder [Nainoa Thompson](#).



[Bibliography--Wayfinding](#)

1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
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Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions
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Home	Search	Archives	Past Education Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)
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Modern Wayfinding: Course Strategy and Departure Time

[Photo Below: A Voyage from Hawai'i to Tahiti Takes the Canoe Across the Doldrums]

Before a voyage by sail begins, the wayfinder designs an ideal course for reaching the destination from the starting point, given the capabilities of the vessel and the winds, currents, and weather conditions anticipated along the way. The course should represent the most efficient way of getting to the destination, given all the factors listed above. The wayfinder must also choose the right time to go (when the wind and weather conditions are the most favorable), taking into account the timing of the return voyage as well.



Hawai'i to Tahiti

A course strategy can be illustrated using a Hokule'a voyage to Tahiti as an example. The best time to sail to Tahiti is in the late spring or early summer—in between the storm seasons and the hurricane seasons north and south of the equator in a typical year.

Sailing to Tahiti is a challenge because Tahiti lies to the south southeast of Hawai'i, upwind and upcurrent, so the canoe must sail east into the wind and current for most of the way. The canoe crosses the NE and SE tradewind zones as well as two great west-flowing ocean currents—the north and south equatorial currents, which can carry the canoe 14-20 miles westward per day.

On the 1992 voyage to Tahiti, Hokule'a's reference course line ran SE by S, sailing on a close reach, full and by the wind, until about 9 degrees N latitude or 700 miles from Hawai'i. This course line represents the course the canoe would sail to get to Tahiti under average wind conditions, given the sailing capabilities of the canoe. However, wind conditions are never average, and the canoe deviates from this reference course, sailing in whatever direction the winds allow it to sail, and the wayfinder modifies his course accordingly. The objective of the wayfinder is not to stay on his reference course, but to get to his destination.

At about 9 degrees N, the canoe enters an area called the Intertropical Convergence Zone (ITCZ), which lies between the NE and SE trade wind systems (and the west flowing north and south equatorial currents). This region, where the NE and SE trade winds converge, is noted for its heavy cloud cover, squalls, light and variable winds, and dead calms, all of which make sailing and navigating less than ideal. The windless weather, a condition known as the doldrums, could stall the canoe for days. The heavy cloud cover hides the stars, so navigating by the celestial bodies is difficult. Under such conditions, the wayfinder uses the ocean swells to orient the canoe. However, confused seas in the area, without clear swell patterns, may make steering by the swells difficult as well.

The days of calm and heavy cloud-cover test the patience and intuition of the wayfinder, but the doldrums have a unique beauty: on days when sunlight is diffused in the heavy cloud cover, the sea mirrors the golden light; on clear nights, the sea surface can be so smooth that the stars and constellations are reflected in it; on nights of 100 percent cloud cover, the ocean and sky are pitch black.

In the ITCZ, between the two west-flowing equatorial currents, is the eastflowing equatorial countercurrent, which results from the water pushed west by the tradewinds flowing back east parallel to the equator. This countercurrent could help the canoe gain easting. However, the countercurrent is sporadic and shifting. It is generally weakest in May/June and strongest in September- November, when its speed can reach about 1 knot. Occasionally the countercurrent becomes stronger, as it has in 1992, because of El Niño, a weather condition which brings westerly winds to the Southern Pacific and dangerous hurricanes. During the last major occurrence of El Niño, in 1982-1983, Tahiti was hit by six hurricanes.

The canoe tries to get out of the ITCZ as quickly as possible, sailing SSE in the shifting winds.

Once the canoe is in the south east trade wind zone, at about 3 degrees N, the strategy is to sail south against the E to ESE winds, without losing any easting, until the canoe reaches one of the islands in the target screen, which stretches 400 miles E to W from Manihi in the Tuamotus to Maupiti in the Society Islands. If the canoe has enough easting, it will make landfall east of Tahiti and it can head downwind (SW) to its destination (Adapted from Will Kyselka's *Ocean in Mind*. Honolulu: UH Press, 1985.)

Rarotonga to Hawai'i-1992

Course Strategy Designer: Nainoa Thompson, Sailmaster of the Hokule'a

Starting Point: Rarotonga in the Cook Islands (21 degrees 14 minutes S latitude; 159 degrees 46 minutes W longitude)

Target Screen: The Hawaiian Islands, between 18 degrees 30 min. N latitude (25 miles south of Ka Lae, or South Point) and 22 degrees 30 min. N latitude (16 miles north of Kaua'i), or 240 miles S to N; and between 154 degrees 40 min. W longitude (25 miles east of Cape Kumukahi) and 160 degrees 20 min. W longitude (Ni'ihau), or 340 miles E to W.

Destination: Hilo, Hawai'i

Estimated Length of Voyage: 2,749 miles; about 26 days.

Sailing Plan

1. NNE at 5 knots from Rarotonga to 3 degrees N latitude
2. N by W at 2.5 knots through the doldrums (3 degrees N to 9 degrees N)
3. N by W at 5 knots to 20.5 degrees N latitude, arriving about 85 miles east of the Hawaiian Islands.
4. W at 5 knots until one of the Hawaiian Islands is sighted.

Based on the average wind and currents between Rarotonga and Hawai'i in November, and the

sailing capabilities of the canoe (5 knots or 120 miles per day in 10-20 knot winds, with a windward ability of 68 degrees off the direction of the wind), the voyage is designed in four segments:

Segment 1: In the Southeast Trades

Latitudes: 21 degrees S to 3 degrees N

Average Wind Conditions: Southeast trades, from E to ESE at 10 to 20 knots. Current: South Equatorial Current; west-flowing; 0.5 knots; 12 miles per day (0.5 knots x 24 hours)

Average Canoe Speed: 5 knots; 120 miles per day (5 knots x 24 hours); Heading: NNE; Actual heading with current factored in: between NNE and N by E

Total Distance to be Travelled: 1,572 miles (Pre-voyage estimate); Total Time: 13.1 days (1572 miles ÷ 120 miles per day)

Segment 2: In the Intertropical Convergence Zone (ITCZ)

Latitudes: 3 degrees N to 9 degrees N

Average Wind Conditions: Variable; generally out of the east; 0 to 10 knots

Current: Equatorial Countercurrent; east-flowing, but unpredictable

Average Canoe Performance: 2.5 knots; 60 miles per day (2.5 x 24 hours); Heading: NNE; Actual heading: NNE (No compensation for current drift. While the Equatorial Countercurrent runs east in this area, it is unpredictable and may or may not take the canoe eastward. However, if the countercurrent is flowing, it will benefit the canoe by helping it to get east of its target of Hawai'i. And if the canoe is in the doldrums for a great length of time, the wayfinder may have to take this east-flowing current into account and reestablish the position of the canoe farther east of the position estimated without compensating for the current.)

Total Distance to be Travelled: 390 miles (Pre-voyage estimate); Total Time: 6.5 days (390 miles - 60 miles per day)

Segment 3: In the Northeast Trades

Latitudes: 9 degrees N to 20.5 degrees N

Average Wind Conditions: NE Trades, generally from NE by E; 10 to 20 knots Current : North Equatorial Current; west-flowing; 0.5 knots; 12 miles per day (0.5 knots x 24 hours)

Average Canoe Performance: 5 knots; 120 miles per day (5 knots x 24 hours); Heading: N by W; Actual heading with current factored in: between N by W and NNW

Total Distance to be Travelled: 702 miles (Pre-voyage estimate); Total Time: 5.85 days (702 - 120 miles per day)

Segment 4: Westward Home

Latitude: 20.5 degrees N

Average Wind Conditions: NE Trades, generally from Noio Ko'olau (NE by E); 10 to 20 knots

Current: North Equatorial Current; West-flowing; 0.5 knots; 12 miles per day (0.5 knots x 24 hours)

Average Canoe Performance: 5 knots; 120 miles per day; Heading: W; Actual performance with current factored in: 132 miles per day

Total Distance to be Travelled: 85 miles (Pre-voyage estimate); Total Time: 0.7 days

Departure

The departure date of October 20 from Rarotonga was determined by two factors. First, to avoid the winter storm seasons in the southern and northern hemispheres. October is ideal because it is in-between the southern hemisphere winter (June-September) and the northern hemisphere winter (December-March) when the probability of encountering storms is greater than at other times of the year. October also falls between the hurricane season in the northern hemisphere (June-September) and the hurricane season in the southern hemisphere (December- February).

Another important factor in setting a departure date is the moon phases during the voyage. The voyage is timed so that there is moonlight at strategic points. A bright moon is desirable while the canoe is in doldrum conditions (around 3 degrees N to 9 degrees N), so the wayfinder can see the ocean swells at night when heavy cloud cover is hiding the canoeguiding stars. An experienced wayfinder can steer by maintaining a consistent pitch and roll in the movement of the canoe; but seeing the

swells is an added clue in maintaining his direction.

Moonlight is also important as the canoe approaches Hawai'i because the wayfinder will use the altitude of stars above the horizon to determine his latitude; on cloudy nights with little or no moonlight, the horizon line cannot be seen; moonlight renders the horizon visible. The voyage from 1992 voyage from Rarotonga to Hawai'i was planned so that the canoe would have a waxing (increasing) quarter moon as it reached the doldrums (approximately Nov. 3) and a waxing crescent moon as it approached Hawai'i (around Nov. 24).

Two other factors need to be met for the canoe to depart on a voyage:

1. the canoe and crew have been properly prepared;
2. the weather is right, based on (a) meteorological reports (no major storms are headed for the course) and (b) observations of wind direction and speed, the shapes of clouds, and the color of the sky at the horizon at sunrise to determine that good sailing weather would hold for a couple of days.

Islands Along the Way

When the canoe sails out of Rarotonga on a NNE course, the wayfinder is aware of islands along the way, on which he will want to avoid running aground in the dark. Manuae (Hervey Island) is only 15 miles east of the course at 19 degrees 21 minutes S and Aitutaki is 42 miles west of the course at 18 degrees 54 minutes S. The canoe will leave early enough in the day to pass these islands during daylight.

As the canoe continues NNE, it will pass on its port side:

Manahiki - 10 degrees 23 min. S

Rakahanga - 10 degrees S

Penrhyn - 9 degrees S

Starbuck - 5 degrees 37 min. S

Malden - 4 degrees 03 min. S

Kiritimati (Christmas) - 1 degree 52 min. N And on its starboard side:

Flint - 11 degrees 26 min. S

Vostok - 10 degrees 06 min. S

Filippo Reef - 5 degrees 31 min. S

These islands and reefs represent both a danger and a safety margin. The danger is running aground on one of them in the dark; however, if the wayfinder sights one of them and can identify it, he will know the canoe's position, whether it is too far east or west of his intended course. Even without sighting the islands, seabirds can be a clue that an island or islands are nearby. The two most reliable indicators of land are the manu-a-Ku (fairy tern) and the noio (noddy tern), which often fly out at sunrise from their nesting islands to fish in large groups and return at sunset. The general range of the manu-a-Ku is around 120 miles from land, though it can fly farther out and remain out at sea for days, or it can fly back to land in the dark without being sighted. The range of the noio is about 40 miles from its home island.

The Turn West

As Hokule'a approaches the latitude of Hawai'i upwind from the islands (i.e., to the east of it, as his course strategy requires), the wayfinder has to make a major course decision: when to turn the canoe downwind, west toward Hawai'i. Ideally, this turn should be made at 20.5 degrees N (the latitude of the midpoint of the S to N target screen between the Big Island and Kaua'i). The wayfinder determines his latitude by the altitude of Polaris and by the altitude of stars as they cross the meridian. (See "How the Wayfinder Determines Latitude")

Landfall

The manu-a-Ku (fairy tern) and the noio (noddy tern) will help to expand landfall, indicating the presence of the islands before any island can actually be seen. When the canoe crew sights and identifies any one of the Hawaiian islands, the wayfinder will know exactly where the canoe is and head toward Hilo. Given clear atmospheric conditions, the high dome of Mauna Kea, about 14,000 feet in elevation, can be seen from over 100 miles away; when the dome is obscured by clouds or volcanic haze, visibility is reduced to about 20 miles. If the canoe approaches the Big Island from the SE at night, the first sign of land may be the glow of volcanic activity in Puna.

The Reference Course.

The reference course represents the course the canoe would sail given average wind and current conditions and the canoe's performance capabilities. It is highly unlikely that the canoe will stay on the reference course because wind direction will vary along the way, and the canoe can only sail in the direction the wind allows it to sail. The art of wayfinding involves adapting to variable and unexpected conditions of wind and weather while maintaining progress towards the windward side of the targeted islands.

The reference course is used as a local longitude line between the starting point and destination. The wayfinder can plot his position east or west of the line as the voyage progresses. If the wind pushes the canoe off the reference course, the canoe will eventually try to get back to it, or close to it, when the wind allows the canoe to do so.

The wayfinder's reports of his position east or west of the reference course are estimates based on his estimates of the following:

1. the speed and direction of the canoe is traveling
2. the speed and direction of ocean currents
3. latitude (based on measurements of the altitudes of stars crossing the meridian)

These estimates are made without instruments, and can be hampered by poor weather conditions which obscure the sky and confuse the seas. The speed and direction of ocean currents cannot be measured or even estimated without instruments, so the figures used are seasonal averages rather than actual measurements. The accuracy of the estimates can also be affected by mental fatigue. The wayfinder must track and memorize the canoe's performance over 2,000 miles and three-and-a-half weeks at sea, while getting as little as a couple of hours of sleep a day.

But wayfinding doesn't require exact positions to be successful. The wayfinder will be successful if he is able to

- keep track of where he is in relationship to his reference course and destination
- guide the canoe to the general vicinity of his destination
- locate land in that vicinity and use known landmarks to get to his destination

Within the limitations of the wayfinder's estimates, these three things are possible, as the success of Hokule'a in making landfalls in the past has proven.

The 1992 Voyage

During the actual 1992 voyage, the wayfinders modified the sail plan from the beginning. Instead of leaving October 20, they waited for winds that would allow them to go east. Southerly winds came on October 26; instead of heading NNE, the canoe took advantage of the winds and headed E to Tahiti, arriving in Pape'ete on November 1. The canoe again waited for the right winds, and on November 5 left for Hawai'i, heading N by E. Instead of taking just 26 days, the voyage took

35 days (including the 4 day stop in Pape'ete). The crew saw the lights of Hilo town and the beacon from the lighthouse at Kumukahi on the night of November 29; they sighted the Hamakua coast of the Big Island on the morning of November 30.

Nukuhiva to Hawai'i

Question: What course will Hokule'a sail from Nuku Hiva to Hawai'i?

Preliminary Considerations-What month, time of the month, and time of the day would you depart? Given the average winds and currents, what course would you sail to Hawai'i? From which direction would you approach your destination? How far might the currents carry you east or west as you head north?

How wide is the target screen (from Ni'ihau to Hawai'i)? Draw a box around the target on a nautical chart or map and give the N-S, E-W dimensions of the target. How far north or south of the islands could you be and still see them? How far east or west could you be and still see them?

Formula for the range for sighting land: Square root of h + square root of H = the distance in miles from which an object can be seen; h = height of observer in feet; H = height of object in feet. The deck of Hokule'a is about 4 feet high.

Givens

- Position of islands (on Nautical Chart 526, if available)
- Size of Targeted Islands (North-South, East-West dimensions).
- Average Wind and Currents between Nuku Hiva and Hawai'i:

Southeast Tradewind Zone (Nukuhiva to 3 degrees N Latitude): Average Wind Speed: 15 knots (nautical miles per hour) from the East; Average Current Speed: West-Flowing at 0.5 knots.

Intertropical Convergence Zone (3 degrees N Latitude to 9 degrees N Latitude): Average Winds: Doldrum conditions; light and variable, averaging 7.5 knots from the East; Average Current: Unpredictable; cannot be factored into your course line.

Northeast Tradewind Zone (9 degrees N Latitude to the Latitude of Hawai'i): Average Wind Speed: 15 knots from the ENE; Average Current Speed: WestFlowing at 0.5 knots.

- Canoe Performance: windward ability = about 67.5 degrees or six houses off the direction of the wind; speed of canoe = 1/3 speed of wind.

Supplementary Questions

Length of Trip: Using your course line and assuming average wind conditions, how many days will it take you to sail to Hawai'i? How many miles would you travel?

Capacity: Given the carrying capacity of the canoe 5.5 tons (11,000 pounds), how many people would you take? How many gallons of water? How much food?

Assume: The food supplies needed per day for each crew member will weigh 5 pounds; he or she

will consume a gallon of water a day; water weighs 8.6 pounds per gallon; each crew member will be allowed to take 20 pounds of personal gear. The equipment on board the canoe will weigh about 2.5 tons. (Equipment includes electrical and communication equipment, safety gear, anchors, various sizes of sails and extra ropes and lines, galley and cooking utensils, and tools.)

At the end of the exercise have the participants compare their course lines, estimates of the time and distance of the trip, number of crew members, and amount of food and water they plan to carry.

Questions for Open Discussion

1. What would you take for survival at sea and why?
2. Who would you take and why?

Course Strategy and Departure Time	Holding the Canoe's Course	Compensating for Leeway	Calculating Distance	Determining Position East or West	Determining Latitude	Locating Land	Predicting Winds and Weather	Bibliography - Wayfinding and Astronomy
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1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
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Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions
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Home	Search	Archives	Educational Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)
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Wayfinding, or Non-Instrument Navigation

Dennis Kawaharada

Photo: Swells Help a Navigator Hold a Course in the Daytime

Introduction

Before the invention of the compass, sextant and clocks, or more recently, the satellite-dependant Global Positioning System (GPS), Polynesians navigated open ocean voyages without instruments, through careful observation of natural signs. ([See "Hawaiians as Seaman and Navigators".](#))



Navigator Nainoa Thompson of the Polynesian Voyaging Society, who was taught by Mau Piailug, a master navigator from Satawal in Micronesia, explains how a star compass is used to tell direction without instruments: "[The star compass](#) is the basic mental construct for navigation. We have Hawaiian names for the houses of the stars-the places where they come out of the ocean and go back into the ocean. If you can identify the stars, and if you have memorized where they come up and go down, you can find your direction. The star compass is also used to read the flight path of birds and the direction of waves. It does everything. It is a mental construct to help you memorize what you need to know to navigate.

"How do we tell direction? We use the best clues that we have. We use the sun when it is low on the horizon. Mau has names for how wide and for the different colors of the sun path on the water. When the sun is low, the path is tight; when the sun is high it gets wider and wider. When the sun gets too high you cannot tell where it has risen. You have to use other clues.

"Sunrise is the most important part of the day. At sunrise you start to look at the shape of the ocean-the character of the sea. You memorize where the wind is coming from. The wind generates the swells. You determine the direction of the swells, and when the sun gets too high, you steer by them. And then at sunset we repeat the observations. The sun goes down-you look at the shape of the waves. Did the wind change? Did the swell pattern change? At night we use the stars. We use about 220 stars by name-having memorized where they come up, where they go down.

"When I came back from my first voyage as a student navigator from Tahiti to Hawaii the night before he went home, Mau took me into his bedroom and said "I am very proud of my student. You have done well for yourself and your people." He was very happy that he was going home. He said, "Everything you need to see is in the ocean but it will take you twenty more years to see it." That was after I had just sailed 7000 miles.

"When it gets cloudy and you can't use the sun or the stars all you can do is rely on the ocean waves. That's why he said to me, "If you can read the ocean, you will never be lost." One of the problems is that when the sky gets black at night under heavy clouds you cannot see the swells. You cannot even see the bow of the canoe. And that is where people like Mau are so skilled. He can be inside the hull of the canoe and just feel the different swell patterns moving under the canoe and he can tell the canoe's direction lying down inside the hull of the canoe. I can't do that. I think that's what he learned when he was a child with his grandfather.

"The Southern Cross is really important to us. It looks like a kite. These two stars in the Southern Cross always point south (Gacrux on top and Acrux on the bottom). If you are traveling in a canoe and going south, these southern stars are going to appear to be traveling the higher and higher in the sky each night. If you went down to the South Pole, these stars are going to be way overhead. If you are going north to Hawai'i, the Southern Cross travels across the sky in a lower and lower arc each night. When you are at the latitude of Hawai'i, the distance from the top star (Gacrux) to the bottom star (Acrux) is the same distance from that bottom star to the horizon. That only occurs in the latitude of Hawai'i. If you are in Nuku Hiva at 9° S, the distance between the bottom star in the Southern Cross and the horizon is about nine times the distance between the two stars."

The following techniques are used by Hawaiian and Polynesian navigators taught by Mau and Nainoa. The art, as it is practiced today in Hawai'i, uses a Hawaiian star compass developed by Nainoa, incorporating principles from Mau's Micronesian star compass and traditional Hawaiian names for directions and winds.

The Sun

The sun is the main guide for the navigator without instruments. Twice a day, at sunrise and sunset, it gives a directional point to the traveller, as it rises in the east and sets in the west. The exact direction changes during the year. As the earth, tilted at at 23.5° angle, orbits the sun, the sun appears to move in the sky against the background of the stars along a curving path called the ecliptic and through a series of 12 constellations called the zodiac. (See "The Ecliptic".) At the spring and fall equinoxes (Mar. 21 and Sept.23) the sun appears to be on the celestial equator and rises due east and sets due west. During the summer, the sun is north of the celestial equator, rising and setting north of east and west; at summer solstice (June 21), the sun rises 23.5° north of east ('Aina Ko'olau, or ENE) and sets 23.5° north of west ('Aina Ho'olua, or WNW). During the winter, the sun is south of the celestial equator, rising and setting south of east and west; at winter solstice (Dec. 22), the sun rises at 23.5° S of east ('Aina Malanai, or ESE), and sets 23.5° S of west in 'Aina Kona (WSW).

[Click here for a Diagram of the Rising and Setting Points of the Sun.](#)

To hold a course, the navigator aligns the rising or setting sun to marks on the railings of the canoe. There are 8 marks on each side of the canoe, each paired with a single point at the stern of the canoe, giving bearings in two directions, 32 bearings in all to match the 32 directional houses of the Hawaiian star compass.

[Click here for a Diagram of the 32 Bearings Marked onto the Canoe Rails.](#)

The Stars

Like the sun, most stars rise in particular directions on the eastern horizon, travel across the sky, and set in particular directions on the western horizon. The directional house in which a star rises on the Hawaiian Star Compass has the same name as the house in which it sets (e.g., a star rising in 'Aina of the Ko'olau quadrant (ENE), sets in 'Aina of the Ho'olua quadrant (WNW). The directional point at which a star sets is at the same angular distance (delincation) and in the same direction (i.e., north or south) from west as the house in which it rose is from east. For example, at the equator, **Hokulei** (Capella) rises at 46° N of east in Manu Ko'olau (NE) and sets at 46° N of west in Manu Ho'olua (NW).

[Click Here for the Rising Points of the 21 Brightest Stars.\)](#)

The navigator holds his course by orienting his canoe to these rising and setting points. For example, when the navigator with a favorable wind wants to head Manu Malanai (SE), and a star is rising at the point Manu Malanai (SE), he points the bow toward the star. If there is no star rising or setting in the direction he is heading, the navigator can orient the canoe using a star rising or setting anywhere else on the horizon, as long as he knows its direction. He keeps the star at a bearing that will head the canoe in the desired direction.

[Click here for a Diagram of Steering by the Stars.](#)

As wind drift may be carrying the canoe to the right or left of its apparent heading, the navigator corrects his steering for this sideways drift, called leeway ; as the night passes and stars rise and set, moving about 1 degree across the celestial sphere every four minutes, the navigator uses as many stars as possible as clues to hold his direction.

If the star is above the horizon, the navigator imagines a line from it down to its rising or setting point. The angles at which the stars rise and set will change with latitude. Only at the equator do stars appear to rise perpendicular to the horizon. In Hawai'i, at 20° N, stars rise and set at a 20° angle, leaning south from straight up; in Tahiti, at 17° south, stars rise and set at a 17° angle, leaning north from straight up. In other words, the angle at which stars rise and set from a line perpendicular to the horizon is equal to the latitude of the observer. The pathways of the stars lean south in the northern hemisphere and north in the southern hemisphere.

As the navigator moves north or south of the equator, the rising and setting points will begin to shift north for stars north of east and west and south for stars south of east and west. The shift will be smaller for stars near the celestial equator, and greater for stars toward the north and south celestial poles. (This shifting is due to the changing angle of the curved surface of the earth over which the observer sees the sky.)

As the observer moves toward the poles, the angles of rising and setting of the stars will tilt closer and closer to the horizon until at the poles, the stars will not rise or set, but circle around the observer like figures on a merry-go-round, with the observer standing in the middle. At the north pole, only the northern half of the celestial sphere is visible; at the south pole, only the southern half of the celestial sphere is visible.

A star which angles as it arcs through the sky is useful for determining direction when it is within

30-35 ° of the horizon; beyond this it becomes difficult to tell exactly where it rose or will set. At the equator, where stars rise perpendicular to the horizon, a star may be traced back to the horizon from a greater altitude.

During a voyage, stars may be available for navigation only about 20 percent of the time; daylight and cloud-cover at night hide them from the navigator during the other 80 percent of the time.

North and South Pointers

Pairs of stars that cross the meridian at the same time are oriented north and south. (The meridian is an imaginary line from due north to due south passing through the zenith, the point in the sky directly overhead; the meridian is perpendicular to the horizon; stars move from east to west through the sky and cross the meridian at the midpoint of their journeys from horizon to horizon.) Meridian pairs, or pointers, in the northern sky point north; pairs in the southern sky stars point south. For example, the top and bottom stars in the Southern Cross, a meridian pair, point south when the Cross is upright.

Meridian Pointers to the North Celestial Pole

- Alpheratz (00h 8.4m) + Polo'ula / Caph (00h 9.2m)
- Alpha Trianguli (01h 53.1 m) + Segin (01h 54.4m)
- Theta Aurigae (05h 59.7m) + Menkalinan (05h 59.5m)
- Puana / Procyon (07h 39.3m) + Nanamua / Castor (07h 34.6 m) & Nanahope / Pollux (07h 45.3 m)
- Hikulua / Merak (11h 1.8 m) + Hikukahi / Dubhe (11h 3.7m)
- Cor Caroli (12h 56m) + Hikulima / Alioth (12h 54m)
- Ed Asich (15h 24.9m) + Pherkad (15h 20.7m)
- Gienah (20h 46.2m) + Pira'etea / Deneb (20h 41.4m)
- Markab (23h 2.8m) + Scheat (23h 3.8m)

Meridian Pointers to the South Celestial Pole

- Mirzim (06h 27.7m) + Ke Ali'i o Kona i ka Lewa / Canopus (06h 23.9m)
- Suhail (09h 08m) + Star in the False Cross (09h 11m)
- Cross Dividers: Mu Velorum (10h 46.8m) + Unnamed star cluster (10h 46.3m)
- Hanaiakamalama / Southern Cross: Kaulia / Gacrux (12h 31.2m) + Ka Mole Honua / Acrux (12h 26.6m)
- Menkent (14h 6.7m) + Mailemua / Beta Centauri (14h 3.8m)

- Alpha Lupi (14h 41.9m) + Mailehope / Alpha Centauri (14h 39.6m)
- Top stars in Kamakau / Scorpio: Dschubba (16h 0.3m) + Pi Scorpii (15h 58.8m)
- Middle stars in Kamakau / Scorpio: Epsilon Scorpii (16h 50.2m) + Mu2 Scorpii (16h 52.3m) + Zeta Scorpii (16h 54.6m)
- Bottom stars in Kamakau: Kamaka / Shaula (17h 33.6m) + Sargas (17h 37.3m)

The Moon

Like the sun, the moon travels along the path called the ecliptic; however, it completes its cycle in 29.5 days—the time it takes for the moon to orbit the earth. (See "The Moon Along the Ecliptic.") The moon rises about 48 minutes later each night at a different position on the eastern horizon from where it rose the night before. Its rising point moves back and forth between 'Aina Ko'olau (ENE) and 'Aina Malanai (ESE) during its 29.5 day orbit around the earth; its setting point between 'Aina Ho'olua (WNW) and 'Aina Kona (WSW). As it changes its position in relationship to the sun and earth, it goes through 29-30 phases.

The Hawaiian Lunar Month

In the traditional Hawaiian calendar, the lunar month was determined by the 29.5-day cycles of mahina, the moon, and the passage of days were marked by the phases of the moon. The approximately 30 days of the moon cycle were divided into three 10-day periods (anahulu). The first 10-day period was called "ho'onui," "growing bigger."

1. Hilo (faint thread; cf. puahilo, "faint, wispy").
2. Hoaka (crescent; arch over the door; Handy and Handy say the name means "faint light" or "casting a shadow.")
- 3-4-5-6. Kukahi, Kulua, Kukolu, Kupau (Literally, First, Second, Third, and Last Ku)
- 7-8-9-10. 'Olekukahi, 'Olekulua, 'Olekukolu, 'Olekupau (Literally, First, Second, Third, and Last 'Oleku. 'Olekulua was the first quarter of the moon; the names for days 7-10 match the names of days 21-24 of the last quarter moon; days 7-10 mark the transition from less than half-lit moon to the more than half-lit moon.)

The second 10-day period was called "poepoe," "round" or "full," when the moon appears full and round. The nights of the bright moon—possibly Akua, Hoku, and Mahe-a-lani—were referred to as "na po mahina konane"; konane means "bright moonlight."

11. Huna ("to hide"; when the moon hides its "horns" and appears more rounded)
12. Mohalu ("to unfold like a flower," "to blossom")
13. Hua (fruit, egg)
14. Akua (god; the first night of fullness)

15. Hoku (the second night of fullness; if the moon is still out at sunrise, it is called Hoku ili, "Stranded moon"; if it has set just before sunrise, it is called Hoku palemo, "sunken moon.")

16. Mahe-a-lani (the third night of fullness; "mahea" means "hazy, as moonlight")

17. Kulua (E.S. Craighill Handy, with Mary Kawena Pukui, gives this day name as "Kulu," which could mean "to drop" or "to pass, as time does")

18-19-20. La'aukukahi; La'aukulua; La'aukupau (Literally, First, Second, and Last La'auku; during this sequence, the sharp "horns" of the moon begin to appear again.)

The third 10-day period was called "'emi," "decreasing" or "waning." The moon begins to lose its light. The last quarter moon rises around midnight and sets around noon. Muku, the new moon, is unseen between the earth and the sun.

21-22-23. 'Olekukahi; 'Olekulua; 'Olekupau (Literally, First, Second, and Last 'Oleku; 'Olekulua was the last quarter; the names of days 21-23 match the names of 7-10 days of the first quarter moon, and mark the transition from more than half-lit moon to less than half-lit moon.);

24-25-26. Kaloakukahi; Kaloakulua; Kaloapau (Literally, First, Second, and Last Kaloaku;

27. Kane

28. Lono

29. Maui ("ghost," "spirit"; Malo: "fainting"; Kepelino: "last breath")

30. Muku ("Cut-off." The new moon; the end of the moon cycle. The moon is in front of the sun; its backside is lit; its frontside, facing the earth, is dark.)

Determining the rising and setting points of the moon each night in relationship to another celestial body allows the moon to be used for navigation, day or night.

The line separating light and dark on the moon's surface is aligned approximately north and south since the moon is positioned east or west of the sun as they travel across the sky.

Hoku hele / "Traveling Stars" (Planets)

Planets ("Wanderers") appear to move among the fixed stars over time; hence, their Hawaiian names hoku hele, "Traveling Stars", or hoku 'ae'a, "Wandering Stars." Their rising and setting points can be determined from nearby stars; they can be used for navigation once their positions have been determined. The Hawaiian names for the visible planets are:

Mercury: Ukaliali'i ("Following the chief," i.e. the Sun)

Venus: Hokuloa ("Long Star"), Hokuao ("Morning Star"), Hokuahiahi ("Evening Star"), Hokuali'i ("Chiefly Star"), Hokuali'iwahine ("Chiefly [female] Star")

Mars: **Hoku'ula** ("Red Star"), **Holoholopina'au**, 'Aukelenuiaiku ("Great travelling swimmer, son of Iku")

Saturn: **Makulu** ("A drop of mist")

Jupiter: **Aohoku** ("Starlight"), 'Iao ("Dawn"), Ikaika ("Strong," "Powerful")

Ocean Swells

During midday and on cloudy nights when celestial bodies are not available at the horizon as directional clues, the navigator uses the wind and swells to hold a course. However, the direction of wind and swells cannot be determined independently; their direction can only be determined by reference to celestial bodies such as the rising or setting sun.

Swells are waves that have travelled beyond the wind systems or storms that have generated them, or waves that persist after the generating storm has died away. Swells are more regular and stable in their direction than waves. ("Waves," as opposed to "swells," are generated by local, contemporary winds.) Sometimes swells can be felt better than they can be seen, having flattened out after travelling long distances. In the Pacific, the northeast trade winds generate a northeast swell; the southeast tradewinds create a southeast swell, and so on. Storms in the South Pacific during the Hawaiian summer generate a south swell; storms in the north Pacific during the Hawaiian winter generate a north swell.

Swells move in a straight line from one house on the star compass to a house of the same name on the opposite side of the horizon, 180 ° away. Thus, a swell from the direction of **Manu Ko'olau** (NE) will pass under the canoe and head in the direction of **Manu Kona** (SE); a swell from **'Aina Malanai** (ESE) will pass under the canoe and head in the direction of **'Aina Ho'olua** (WNW).

The navigator can orient the canoe to these swells. For example, if the canoe is heading SE **Manu** with a swell coming from the SE **Manu**, the person steering keeps the canoe headed directly into the swell, which lifts the bow, passes beneath, then lifts the stern. If the canoe is travelling SW, a SE swell would roll the canoe from side to side, lifting first the port hull, then the starboard hull as it passes beneath. (See ["Steering by the Swells."](#))

After the navigator orients the canoe to a swell pattern, he gets used to the pitching, rolling, or corkscrewing of the canoe; when the motion changes the navigator knows that the canoe is no longer going in the same direction (assuming the direction of the swell remains constant). The motion gets complex when more than one swell is running; an experienced traditional navigator like **Mau** can feel as many as four or five swells.

Swells may change direction after a time because the storm generating them may be moving. In places such as the doldrums, the swell pattern can be confused by waves generated by variable local winds from isolated and passing squalls. When the seas are confused, navigation by ocean swells is difficult.

Winds

The direction of the wind can be used to hold a course—the person steering simply holds the wind at a constant bearing to the canoe. However, the wind may change directions during the day (it is

less stable than swells), so the direction of the wind must be checked frequently against rising or setting celestial bodies and the ocean swells. ([See "An Account of Tahitian Navigation".](#))

Landmarks

On coastal voyages, a navigator can steer by landmarks. Lining up two landmarks (e.g. a hill and a mountain) allows him to hold a straight line. Two pairs of landmarks allow him to find a spot, such as a deep-sea fishing ground, where the two lines intersect. One can also navigate by knowing the shape of reefs or underwater topography which can be seen from the surface. While leaving an island for the open ocean, the navigator backsights on the island, lining up two landmarks to hold his desired direction.

Seamarks

On the 1992 *Hokule'a* voyage from Hawai'i to Tahiti, Mau Piailug shared with navigator Shorty Bertelmann a seamark he had remembered from previous voyages along the route: Mau told Shorty to look for a school of porpoises; it would indicate that he had reached a point around 9 ° N latitude on the route to Tahiti. Bertelmann sighted the porpoises at around 9 ° N, confirming for him that he was on course and solidifying his faith in the traditions of Pacific navigation.

In Micronesia, these living seamarks are called "aimers" and are "purported to be associated with particular locales in the vicinity of islands or midway between them. They comprise such things as a tan shark making lazy movements, a ray with a red spot behind the eyes, a lone noisy bird, a swimming swordfish, and so on. Each of these phenomena has its own individual name and is located within a particular 'drag' on a particular star course from its associated island. on the long course from Puluwat to Eauripik there is said to be a row of whales, each situated a day's sail directly south of an island. Each whale has its own distinctive characteristic" (University of Pennsylvania).

Grimble notes that Gilbert Island navigators also have a tradition of seamarks: "As Europeans use landmarks, so the Gilbertese [navigators] use seamarks to check their daily position. These signposts in mid-ocean consist of swarms of fish, flocks of birds, groups of driftwood, or conditions of wave and sky peculiar to certain zones of the sea. Hundreds of such traditional betia [seamarks] were stored up in the race memory as a result of cumulative experience of generations" (Grimble, *Tungaru Traditions* 48). These seamarks are found along routes between islands and indicate to the navigator that he was at a certain point along his route. For example, the seamark called "the swarming of beasts" consisted of an extraordinary number of sharks" and indicated the canoe was "a day's sail downwind of land." Other marks include a region where flying fish leaped in pairs, a zone of innumerable jellyfish, an area of numerous terns, an area of sharks and numerous red-tailed tropic birds, a place marked by a school of porpoises, a place where pairs of porpoises point their heads "in the direction of the passage into Tarawa lagoon" (*Tungaru Traditions* 49-50).

Signs of Landfall

Once the canoe is in the vicinity of its destination according to the navigator's dead reckoning and latitude measurements, the navigator starts looking for land.

Navigating without instruments is not a precise science. Poor weather and mental lapses on a long voyage adversely affect its accuracy. But the navigator need not sail to a destination with pinpoint accuracy to be successful. Instead, the navigator in the Pacific tries to hit a "screen" of islands, that is, a group of islands that stretches out on either side of his destination. The longer or wider the screen, the less likely the navigator will miss it. Islands in the Pacific are seldom isolated; they are usually found in clusters. The Tuamotu Archipelago stretches 550 miles north to south and 500 miles east to west; the Society Islands stretches 160 miles north to south and 310 miles east to west; the Hawaiian islands extend more than a 1000 miles across the ocean east to west; the major islands form a north-south screen of about 240 miles.

While sailing to Tahiti from Hawai'i, the navigator can target a 400-mile wide screen of islands between Manihi in the western Tuamotus, and Maupiti in the eastern Society Islands. If the navigator can hit any one of the islands in this target screen, he can reorient the canoe after he identifies the island and determines its position in relationship to his destination; if he does not recognize the island and the island is inhabited, he can ask the islanders where he is and if possible, get directions to his destination.

While there are open-ocean gaps between islands in a screen, a navigator looks for signs to let him know the proximity and direction of land even when he cannot see it. Signs of land include drifting land vegetation; clouds piled up over islands; the loom above an island created by sunlight or moonlight reflecting up from the white sand and smooth water of a lagoon; distinctive patterns of swells created by swells refracting around and / or reflecting off islands; and seabirds.

Land-Based Seabirds

Seabirds such as the manu-o-Ku (white tern) and the noio (noddy tern) go out to sea in the morning to feed on fish and return to land at night to rest.

The diurnal flights of such birds are the most useful signs for expanding landfall, since their flights to and from an island gives a fairly specific direction to the navigator. As the birds leave an island in the morning, the navigator can sail in the direction the birds are coming from to find land; as the birds rise up from fishing and return to an island in the late afternoon, the navigator can follow the birds to land.

During nesting season, the habits of birds change. Nainoa Thompson tells this story about his first voyage to Tahiti in 1980-2400 miles navigated without instruments: "We saw two birds after the 29th day and I was extremely relieved. At least we were in the ball park. The birds rose up high and flew away, and we sailed in that direction; at night we couldn't see the island so we took the sails down and waited. The next morning, we looked for the birds to see what direction they were coming from and that would be the direction of the island. We waited for the first bird. All hands on deck. Not a single bird. I began to worry-it was my first voyage, and I was unsure of myself. Mau Piaulug was very calm and didn't say anything. We waited and we waited. The canoe was just sitting in the water, facing south. One of the canoe members was at the back of the canoe and a bird flies right over his head. The night before that we saw the birds flying south so how come late in the morning with the sun very high was this bird coming out of the north? That would suggest that we passed the island during the night. In my panic, I thought we had better start sailing back in that direction to find the island before the sun goes down again. We

turned the canoe around. But when I started to sail north Mau, who has always said that his greatest honor would not be as a navigator but as a teacher, came to me and said, "No." It was the first time that he interrupted the trip. He said, "turn the canoe around and follow the bird." I was really puzzled. I didn't know why. He didn't tell me why. But we turned the canoe around and now we see other birds flying also. Mau said, "you wait one hour and you will find the island you are looking for." And after about an hour, Mau, who is about twenty years older than me-my eyes are physically much more powerful than his-he gets up on the rail of the canoe and says: "The island is right there." And we all stood up and we climbed the mast and everything and we just couldn't see it. Vision is not so much about what you do-but how you do it. It's experience. Mau had seen in the beak of the bird a little fish and he knew that the birds were nesting. They had flown out to sea before sunrise and were taking food back at mid-morning to feed their young, before they flew out to sea again to feed themselves."

A low atoll with coconut trees can be seen at sea from about 7 -10 miles away; observing the daily flight patterns of seabirds can indicate the direction of islands far out of the range of sight. Thompson gives the following estimates of ranges of two seabirds that are the most reliable indicators of land:

manu-o-Ku (fairy tern): 120 miles (though this bird may stay out at sea, or fly back to land unseen at night)

noio (noddy tern): 40 miles

Generally, sighting of large groups of birds are more reliable signs of islands than one or two birds stray birds or small groups. ([See "How the Wayfinder Locates Land."](#))

Course Strategy and Departure Time	Holding the Canoe's Course	Compensating for Leeway	Calculating Distance	Determining Position East or West	Determining Latitude	Locating Land	Predicting Winds and Weather	Bibliography - Wayfinding and Astronomy
1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui		
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions			
Home	Search	Archives	Educational Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)			



Compensating for Leeway in the Canoe's Heading

When a canoe is sailing with the wind forward of its beam, its actual heading is not the same as its apparent heading because it is being pushed off its course by the wind. The angle between the apparent heading of the canoe and the direction the canoe is actually traveling through the water is referred to as leeway. This angle may vary from 4-15 degrees to leeward, depending on (1) the strength of the wind; (2) the angle the canoe is sailing into the wind (the greater the angle, the greater the leeway); (3) the draft of the canoe (deep-keeled boats have a smaller leeway than shallow-keeled boats); (4) the speed of the canoe (the greater the speed, the less the leeway).

The wayfinder must compensate for leeway by pointing the canoe more sharply into the wind, or if the canoe is pointed as far as possible into the wind as it can go, he subtracts leeway to determine his course made good, or actual heading. For example, when the wayfinder wants to go in the direction of Manu Malanai (SE) and the wind and current is pushing the canoe one house further south (toward Nalani Malanai, or SE by S), the wayfinder must point the canoe one house further north (toward Noio Malanai or SE by E) to make good his direction of Manu Malanai; if he cannot point the canoe any farther into the wind, then his course made good is actually Nalani Malanai (SE by S), rather than its heading of Manu Malanai (SE).

The wayfinder can calculate the amount of leeway he must compensate for in his heading by observing the wake of the canoe in relationship to the direction of the canoe. The angle between the direction of the canoe and the wake behind the canoe tells the wayfinder how much sideways displacement there is due to the wind. Another method, if it is practical, would be to attach a line near the center of the sail effort of the canoe and to calculate the angle of this line from the centerline of the canoe. An experienced wayfinder, knowing well the capabilities of his canoe, will be able to estimate leeway given the direction of his heading and the speed of the wind working against the canoe

Course Strategy and Departure Time	Holding the Canoe's Course	Compensating for Leeway	Calculating Distance	Determining Position East or West	Determining Latitude	Locating Land	Predicting Winds and Weather	Bibliography - Wayfinding and Astronomy
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Home	Search	Archives	Educational Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)
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How the Wayfinder Calculates His Distance Made Good

The wayfinder uses a dead reckoning system in to determine his course. He knows his starting point and the distance and direction to his destination. He develops a course strategy and draws an imaginary reference course (based on average conditions) to his destination. As he estimates his direction and distance traveled each day, he mentally plots his position against this reference course to his destination and estimates how many more days it will take him to reach his destination.

He sets the direction in which the canoe is heading by celestial bodies and ocean swells, and subtracts leeway; he estimates his distance traveled by multiplying his estimated speed by the time lapsed since his last position determination.

An experienced wayfinder can estimate speed by watching the motion of the water as it passes the canoe. An inexperienced wayfinder can determine the speed of the canoe by timing marks (bubbles or objects in the water) moving past two points on the canoe. On Hokule'a, the wayfinder times bubbles moving between the front and back 'iako (crossbeams joining the two hulls together), a distance of 42.2 feet.

The approximate speed in knots for various time intervals of objects passing Hokule'a can be memorized in the following table:

3 seconds -	8.5 knots
4 seconds-	6.5 knots
5 seconds-	5 knots
6 seconds-	4 knots
7 seconds-	3.5 knots
8 seconds-	3 knots
10 seconds-	2.5 knots
12 seconds-	2 knots
15 seconds-	1.5 knots
25 seconds-	1 knot

An estimate of speed can be gotten by dividing 25 by the number of seconds it takes the object to travel 42.2 feet: e.g. 25 divided by 3 seconds = 8.33 knots, rounded up to 8.5 knots. The exact formula is: nautical miles per hour equals distance, converted to nautical miles, divided by time, converted to hours: 42.2 feet = .007 nautical miles (42.2 divided by 6077 feet in a nautical mile); 3 seconds = .0008 hours (3 divided by 3600 seconds per hour); nautical miles per hour equals .007 divided by .0008, or 8.75 knots.

Time during the day can be estimated by the position of celestial bodies; twenty-four hours from sunrise to sunrise; around twelve hours from sunrise to sunset; around six hours from sunrise till

noon; and so on. The sun, moon, or stars travel at about one degrees every four minutes, taking about three hours to get 45 degrees on the celestial sphere. Knowing direction, speed, and time elapsed, the wayfinder can estimate the course and distance made good per day. The calculations can become quite complex if the canoe changes direction during the day, or when wind speed varies; the calculation for the day is then the sum of various separate calculations. To simplify calculations and to monitor his food and water supplies, the wayfinder may use sailing days rather than miles to keep track of how far is from his departure point and how far his destination is. One sailing day for Hokule'a is about 120 miles in the trade wind zones where winds average 10-20 knots; two sailing days from Hawai'i equal 240 miles.

Course Strategy and Departure Time	Holding the Canoe's Course	Compensating for Leeway	Calculating Distance	Determining Position East or West	Determining Latitude	Locating Land	Predicting Winds and Weather	Bibliography - Wayfinding and Astronomy
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1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
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Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions
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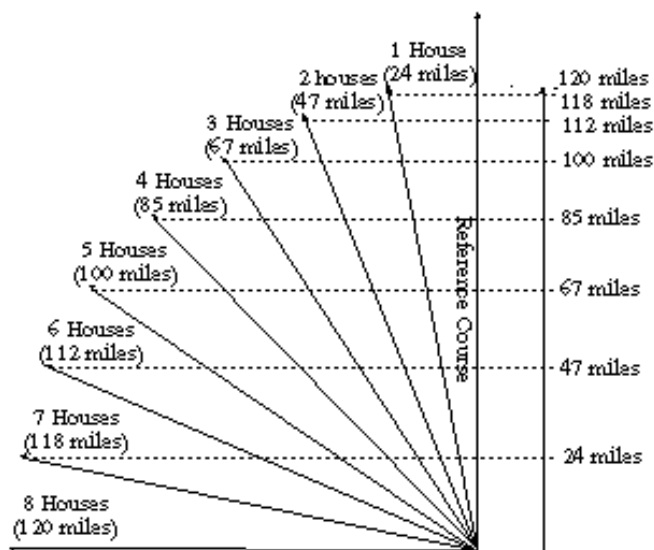
Home	Search	Archives	Educational Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)
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Determining Position East or West of the Reference Course

The reference course which runs between the point of departure and the destination (see "[Course Strategy and Departure Time](#)") serves as a local 0 degree longitude line against which the wayfinder can keep track of his east-west position. During the voyage, the wind will either allow the canoe to sail along the reference course, or what is more likely, the wind will push the canoe off the reference course. Thus the canoe is either on the course line (0), or a certain number of miles to the east or west of it. When the wind pushes the canoe off the reference course, the wayfinder must keep track of how far off he is.

Nainoa Thompson keeps track of deviation from the reference course in units called houses. If the canoe goes one sailing day in a direction one house to the west of the direction of the reference course, the canoe is one house to the west of the reference course; if, on the next day, the canoe goes one sailing day in a direction three houses to the east of the reference course, it would be two houses to the east of the reference course. The houses east or west of the reference course are distances (not to be confused with directional houses) and can be translated into miles using a trigonometric formula for right triangles, given the distance of one leg (one sailing day = 120 miles) and one angle (one house = 11.25 degrees):



Deviation from the Reference Course
Polynesian Voyaging Society

Number of Houses / Miles
the Canoe is Off Course
after sailing one directional house off course
for an average 24-hour sailing day (120 Miles)

If the wayfinder loses track of his position in relationship to his reference course (e.g., during a

prolonged storm or in prolonged cloudy conditions), he is lost; he can determine his north-south position (latitude) through observations of the stars, but he can't determine how far east or west he is along that latitude. He remains lost until some landfall (or seamount) allows him to determine his location and reorient himself. When lost, the wayfinder can look for land by tacking back and forth across an area where he thinks his destination or some other island might be located.

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Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions
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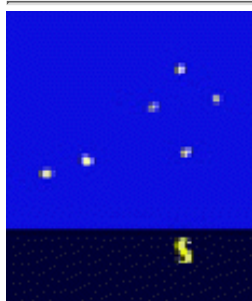
Home	Search	Archives	Educational Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)
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How the Wayfinder Determines Latitude

(Revised: January 8, 2001, based on questions and comments from Ilyan Thomas, Carmarthen, Wales, UK.)

Illustration below: The Southern Crux as it Crosses the Meridian is a Clue to Latitude.



Latitude-Height of Stars Crossing the Meridian

Latitude is the distance on the earth's surface from the equator. It is given in degrees north or south of the equator (One degree of latitude equals 60 nautical miles; each degree contains sixty minutes; one latitude minute equals one nautical mile.)

One strategy of locating an island without navigational instruments is called latitude sailing. It involves sailing to the latitude of an island, preferably upwind, then searching for the island along that latitude. For this strategy to work, the navigator must be able to tell when he is at the latitude of the island. The navigator can make a rough estimate from his dead reckoning, but there are more precise methods to determine latitude without instruments.

The North Star / Hokupa'a

North of the equator, the altitude of the relatively fixed star **Hokupa'a** (Polaris, the North Star) is approximately equal to the latitude of the observer. (**Hokupa'a** is actually 44' from the celestial north pole and inscribes a 1.5° circle around it.)

- At the equator (0 ° latitude), **Hokupa'a** is about at the horizon (0 ° altitude);
- at 10 ° N latitude, **Hokupa'a** is about 10 ° above the horizon;
- at 20 ° N latitude--within the latitudes of Hawai'i--**Hokupa'a** is about 20 ° above the horizon, and so on.

The altitude of the star can be measured using the hand stretched out in front of the eyes, with shoulders squared. Different configurations of the hand (e.g., a fist, a span, two fingers, three fingers, etc.) can be calibrated to distances (degrees) in the sky.

Meridian Pairs

Stars crossing the meridian can also be used to estimate latitude. At given latitudes, a star crosses the meridian at a certain altitude. If the navigator knows the altitude of the meridian crossing of a star at a particular latitude, and he can tell when the star is crossing the meridian, he can estimate his latitude by measuring the altitude with his hand. To know when a star is crossing the meridian, the navigator uses meridian pairs--stars which cross the meridian together. When the pair is perpendicular to the horizon, the stars are crossing the meridian. (The meridian is an imaginary line on the celestial sphere passing through the north and south celestial poles and the

zenith, the point directly above the observer's head. The closer a star is to the horizon, the more accurately its altitude can be measured without instruments. However, stars that cross the meridian too close to the horizon, 1-3 ° from it, often cannot be seen because of clouds, dust, sea spray, etc.)

At the equator, the altitude of a star as it crosses the meridian is equal to 90 ° minus the star's declination. (The declination of a star gives the position of a star on the celestial sphere, measured in degrees away from the celestial equator, an imaginary circle that passes through due east and due west.

- A star on the celestial equator has a declination of 0°;
- a star 30° north of the celestial equator has a declination of 30°, and so on.

(The declinations of stars are published in astronomical handbooks.)

The Southern Cross / Hanaiakamalama: One meridian pair is the top and bottom stars in the Southern Cross, Gacrux (Kaulia) and Acrux (Ka Mole Honua).

- At the equator, Kaulia (Gacrux) crosses the meridian 33 ° above the horizon due south: $90^\circ - 57^\circ$ (dec. of Kaulia) = 33 °.
- At the equator, Ka Mole Honua (Acrux) crosses the meridian 27 ° above the horizon due south: $90^\circ - 63^\circ$ (dec. of Kaulia) = 27 °.

As the observer moves north of the equator, these two stars will cross the meridian at lower and lower altitudes above the south celestial pole; the observer can subtract his latitude from the altitude of the star crossing the meridian at the equator to get the altitude at which the star crosses the meridian at his new latitude.

- At 10 ° N, Kaulia (Gacrux) crosses the meridian 23 ° above the horizon due south: $33^\circ - 10^\circ$ (lat. N of the equator) = 23 °.
- At 10 ° N, Ka Mole Honua (Acrux) crosses the meridian 17 ° above the horizon due south: $27^\circ - 10^\circ$ (lat. N of the equator) = 17 °.

As the observer moves south of the equator, the two stars in the Southern Cross would cross the meridian at a higher and higher altitude; the observer adds his latitude south of the equator to the altitude of the star crossing the meridian at the equator to get the altitude at which the star crosses the meridian at his new latitude.

- At 10 ° S, Kaulia will be 43 ° high as it crosses the meridian: $33^\circ + 10^\circ$ (lat. S of equator) = 43 °.
- At 10 ° S, Ka Mole Honua will be 37 ° high as it crosses the meridian: $27^\circ + 10^\circ$ (lat. S of equator) = 37 °.
- At 21 ° N (about mid-latitude of Hawai'i), Kaulia (Gacrux) crosses the meridian at 12 ° above the horizon: $33^\circ - 21^\circ = 12^\circ$

- At 21 ° N, Ka Mole Honua (Acrux) crosses the meridian 6 ° above the horizon due south: $27^\circ - 21^\circ = 6^\circ$

[Click here for a Diagram of the Southern Cross at the Meridian in Hawai'i.](#)

The fact that the distance between Ka Mole Honua and the horizon, and Kaulia and Ka Mole Honua are equal (6 °) is an additional clue to the latitude of Hawai'i.

As the sun passes through the zodiac over the course of the year, the stars in the portion of the sky in which the sun is located are not visible. So those stars would not be available for determining latitude at that time of the year. The navigator uses meridian pairs that are visible after sunset and before dawn at the time of the voyage. Voyages are planned for times of the year when the weather and winds are optimum and also when certain meridian pairs are visible. For example, when sailing to Hawai'i from the South Pacific, the navigator wants to have the Southern Cross crossing the meridian in the night sky for determining when the canoe has reached the latitude of Hawai'i. Click here for [lists and diagrams of meridian pairs used during the voyage to Rapanui \(1999-2000\)](#). The Southern Cross was visible crossing the meridian in the predawn sky as Hokule'a returned to Hawai'i in February, 2000.

Latitude-Rising and Setting Pairs

Pairs of stars that rise or set at the same time can also be clues to latitude. Pairs rise and set together only at specific latitudes. For example, when 'A'a (Sirius) and Nana-hope (Pollux) set together, the observer is at the latitude of Tahiti, or 17 ° S. As the observer moves north or south of that latitude, one or the other star will begin to rise or set before or after the other star. It is easier to use setting rather than rising pairs of stars to determine latitude, because the observer can watch the pair as it approaches the horizon instead of trying to anticipate their appearance.

Zenith Stars

At a given latitude, only certain stars will pass through the zenith, the imaginary point in the sky directly overhead. The most conspicuous (i.e. brightest) of these stars is called the zenith star of that latitude. The zenith star of Hawai'i is Hokule'a (Arcturus); the zenith star of Tahiti is 'A'a (Sirius). The declination of the zenith star is equal to the latitude it is associated with. Thus the declination of Hokule'a (Arcturus) is 19 ° N; the latitude of South Point on the Big Island of Hawai'i is about 19 ° N; the declination of 'A'a (Sirius) is 17 ° S; the latitude of Tahiti is 17 ° S.

If the navigator knows the zenith stars of different latitudes, he can tell what latitude he is at by observing what star passes directly overhead at night. However, while the observer can make a rough estimate, it is difficult to tell when a star is passing directly overhead on a canoe that is pitching, rolling, or corkscrewing along. The observation is not as precise for determining altitude as the other methods: (1) measuring altitude of Hokupa'a north of the equator; (2) measuring the altitude of stars as they cross the meridian; or (3) watching for pairs of stars that rise or set together.

Course Strategy and Departure Time	Holding the Canoe's Course	Compensating for Leeway	Calculating Distance	Determining Position East or West	Determining Latitude	Locating Land	Predicting Winds and Weather	Bibliography - Wayfinding and Astronomy
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Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions
-------------------------	--------------------------------	----------------------------	---------------------------------	---------------------------------------	---

Home	Search	Archives	Educational Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)
----------------------	------------------------	--------------------------	--	---------------------------------	--



How the Wayfinder Locates Land

Photo below: An atoll appears as a thin black line on the horizon.

Once the canoe is in the vicinity of its destination according to the wayfinder's dead reckoning and latitude measurements, the wayfinder starts looking for land.

Navigating without instruments is not a precise science. Poor weather and mental lapses on a long voyage adversely affect its accuracy. But the wayfinder need not sail to a destination with pinpoint accuracy to be successful. Instead, the wayfinder in the Pacific tries to hit a "screen" of islands, that is, a group of islands that stretches out on either side of his destination. The longer or wider the screen, the less likely the wayfinder will miss it. Islands in the Pacific are seldom isolated; they are usually found in clusters. The Tuamotu Archipelago stretches 550 miles north to south and 500 miles east to west; the Society Islands stretches 160 miles north to south and 310 miles east to west; the Hawaiian islands extend more than a 1000 miles across the ocean east to west; the major islands form a north-south screen of about 240 miles.



Thus while sailing to Tahiti from Hawai'i, the wayfinder can target a 400-mile wide screen of islands between Manihi in the western Tuamotus, and Maupiti in the eastern Society Islands. If the wayfinder can hit any one of the islands in this target screen, he can reorient the canoe after he identifies the island and determines its position in relationship to his destination; if he does not recognize the island and the island is inhabited, he can ask the islanders where he is and if possible, get directions to his destination.

While there are open-ocean gaps between islands in a screen, a wayfinder looks for signs to let him know the proximity and direction of land even when he cannot see it. Signs of land include drifting land vegetation; clouds piled up over islands; the loom above an island created by sunlight or moonlight reflecting up from the white sand and smooth water of a lagoon; distinctive patterns of swells created by swells refracting around and / or reflecting off islands; and seabirds such as the manu-o-Ku (fairy tern) and the noio (noddy tern), which go out to sea in the morning to feed on fish and return to land at night to rest.

The diurnal flights of such birds are the most useful signs for expanding landfall, since their flights to and from an island gives a fairly specific direction to the wayfinder. As the birds leave an island in the morning, the wayfinder can sail in the direction the birds are coming from to find land; as the birds return to an island in the late afternoon, the wayfinder can follow the birds to land.

While a low atoll with trees can be seen at sea from about 7 -10 miles away, observing the daily flight patterns of seabirds can indicate the direction of islands out of sight range. Nainoa Thompson gives the following estimates of ranges of two seabirds that are the most reliable indicators of land:

[manu-o-Ku \(white tern\)](#): approximately 120 miles (though this bird may stay out at sea, or fly back to land unseen at night)

[noio \(noddy tern\)](#): approximately 40 miles



White Tern (Photo by Monte Costa)



Noddy Tern (Photo by Monte Costa)

Generally, sighting of large groups of birds are more reliable signs of islands than one or two birds stray birds or small groups. (Click here for a photo of [a large bird pile](#) near Rangiroa Atoll in the Tuamotu Archipelago. The atoll is faintly visible at the horizon. Hokule'a was looking for the Tuamotus on the way to Tahiti after having left Rapa Nui and finding Fatu Hiva in the Marquesas. Tahiti lies about 170 miles to the SW of Rangiroa. December 1999. Photo by Na'alehu Anthony.)

Course Strategy and Departure Time	Holding the Canoe's Course	Compensating for Leeway	Calculating Distance	Determining Position East or West	Determining Latitude	Locating Land	Predicting Winds and Weather	Bibliography - Wayfinding and Astronomy
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Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions
-------------------------	--------------------------------	----------------------------	---------------------------------	---------------------------------------	---

Home	Search	Archives	Educational Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)
----------------------	------------------------	--------------------------	--	---------------------------------	--



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Course Strategy and Departure Time	Holding the Canoe's Course	Compensating for Leeway	Calculating Distance	Determining Position East or West	Determining Latitude	Locating Land	Predicting Winds and Weather	Bibliography - Wayfinding and Astronomy
--	--	---	--------------------------------------	---	--------------------------------------	-------------------------------	--	---

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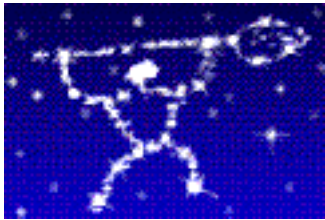
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions
-------------------------	--------------------------------	----------------------------	---------------------------------	---------------------------------------	---

Home	Search	Archives	Educational Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)
----------------------	------------------------	--------------------------	--	---------------------------------	--



Hawaiians as Navigators and Seamen

Samuel Wilder King



[From the *34th Annual Report of the Hawaiian Historical Society*, 1925, 11-14]

I was reading recently an article that advanced the proposition that the man who first made use of a rude paddle to propel a crude raft was essentially a greater inventor than the many who later developed the rowing boat to its present mechanical excellence. So, in other fields the first germ of an idea was the most important, the big step forward, the later improvements following as a matter of course, inevitable as midday after morning. Our complicated modern civilization gives us immense knowledge, the use of all the stored experience of thousands of years of people of many races; but the big new ideas are still few and far between. It is doubtful if we excel our ancestors in intellect, however much we may be their superiors in knowledge. Judged on their grasp of the fundamentals, the ancient Hawaiians had a splendid foundation in seamanship and navigation. Remote and isolated as they were, and had been for years, what they knew was either part of the scanty heritage brought with them from their ancient home in the west and treasured through all the thousands of miles of eastward migrations, and generations of residence on the fair isles of Polynesia, or was of their own devising. Perhaps some unrecorded Galileo or Lord Kelvin added a mite or two to their original store of knowledge. At any rate we know that the Hawaiians could not benefit from the discoveries and improvements being made in the European world, that the narrow limitations of their islands confined their progress in countless ways, and that the lack of writing made it extremely difficult to standardize their knowledge and keep it clear of error.

When the Haole first came to Hawaii it was a source of wonder to them how

the Hawaiians got here. Further acquaintance with the mele (songs) of old voyages increased the wonder. Finally it was borne upon them that the Hawaiians, like their kin throughout Polynesia, were great seamen, with a clear knowledge of the prevailing winds, the moods of the sea, and the signs and portents that foretold the weather. In their canoes, the greatest of which were frail craft compared with the vessels of Cook or Vancouver, they traveled the seas of Hawai'i daringly, braving the currents and tempestuous waves of the island channels, and making far trips beyond the horizon. With mat sails and paddles they accomplished voyages upon which we moderns would hesitate to venture. With neither compass nor chart, sextant nor chronometer, but with mind filled with the ancient lore, handed down through the generations, the lore of wind and sea and sky, they set out, and counted not the mischance of failing to make a landfall.

A priestly astrologer, the kilo hoku would give the more important of the prospective trips a good clearance, or hold the boat for a better day; and mixed with his rites there were always the realities of keen weather observing. Of course the pig must be baked, the 'awa chewed and mixed, the gods propitiated with offerings and prayers, and then the heavens and sea scanned for portents. If the rainbow stood arched in the wrong quarter, if the clouds were flying in scattered fragments, the wind and sea from the wrong direction, the sailing was delayed. But if the indications were fair the astrologer completed the prognosis with an inspired dream, and the voyage was well begun.

The canoe captain, the ho'okele then took command. He knew the different waves with their specific names, equivalent to our own cross sea, following sea, head sea, etc.; and the winds of many kinds, each with its name and peculiar characteristic; and he knew his boat, and how it should be handled under every condition, even to righting it if overturned. To make the desired landfall the ho'okele first located the North Star, in Hawaiian, Hokupa'a, or fixed star, and kept it on the proper bearing; and then selected from the heavens the steering star, the star from among many that would carry him safely to his port. If the little star near Na Hiku (The Seven, or The Dipper) was seen to wink frequently, or if other signs were present, a storm was approaching, and he steered for a safe haven.

In this manner the Polynesians populated every habitable rock and coral island in an area of ocean greater than a continent. There is no record of those who failed; but of those who achieved a new landfall, and carried the news back to their kinfolk, we have some record, fragmentary it is true, because the Polynesians lacked the art of writing. From what we have we can piece together epic poems of great journeys, sagas of our Pacific Vikings less known perhaps than those of their Norsemen brothers of the sea, but of equal daring and romance, a tribute to the virility and courage of that ancient Polynesian race.

Our modern astrologer is the weather bureau, and our modern ho'okele has many aids in his struggle with the elements, but the principles of taking a vessel from port to port are much the same, based on good seamanship and navigation.

For the long trips, the great voyages to the far off islands of the South Pacific, the navigator knew his astronomy, Ka 'oihana kilokilo, and his geography, kukulu o kahiki, and became he ho'okele-moana, a deep-water sailor. His chart might be the circular base of a gourd, lines burnt in to show the meridian of Hawaii, and the tropics. From Hokupa'a, the North Star, to Newe, the Southern Cross, was the Hawaiian Greenwich; the northern tropic was Kealanui Polohiwa a Kane, the black shining highway of the sun; the southern tropic was Kealanui ka piko o Wakea, the highway to the middle of the earth. The east was Keala'ula a Kane, the red track of the sun; and the west was Kealanui ma'awe'ula a Kanaloa, the wide red track of Kanaloa. In the celestial sphere so bounded moved the stars, na hoku pa'a o ka 'aina, among them the navigational stars (na hoku ho'okele); and the planets, na hoku hele (moving stars). Beyond were strange stars, na hoku o ka lewa. Of the planets the Hawaiians knew five: Mars as Hoku 'ula, the Red Star; Venus as Hoku loa, the Great Star; Jupiter as Ka'awela, the Brilliant One; Mercury as Ukali, the [Sun] Follower; and Saturn as Makulu. Of the stars a great many were listed in the old instructions and mele (songs), many not identified today. Besides the North Star and the Southern Cross, Altair, Vega, Sirius, Orion, the Pleiades, the Dipper, Castor and Pollux, and others were known and studied.

With this stock of knowledge, the Hawaiians used a calendar based on the

moon, knew and corrected its error by reference to the stars, named each month, and each night of the month by the characteristics of the moon, and judged the hour closely by the stars at night, or the sun by day. Thus equipped many brave chieftains of the olden times made the great voyage to Tahiti and back. How they provided sufficient food and water, how they survived storms and calms and submerged reefs and lee shores, is but briefly known from the chants that have come down to us. What captains failed and died unsung will never be known. But we do know of many who succeeded, and brought back new chiefs and priests to Hawai'i, new customs and ideas, dances and drums, plants and dresses, and started ferment in Hawai'i that did not end until Kamehameha the Great ruled supreme over the eight islands.

Of Hawai'i specifically, such names as Pa'ao, Kaulu-a-Kalana, Paumakua, and the famous old sea-going family headed by Mo'ikeha and including his foster son La'a, named La'a-maikahiki, the son Kila, and the grandson Kaha'i, have come down to us as great voyagers of a later period, when Hawai'i and the southerly islands revived the old bond, and exchanged ideas and peoples, after several centuries had been allowed to elapse since the original settlers had come north to "Green-backed Hawai'i" as they called it.

The exploits of these Hawaiian Vikings surpass in daring and danger that of the Norsemen. Among those who go down to the sea in ships, the ancient Hawaiians hold a high and honorable place; and the seamen's bent and flavor holds with their children today.

1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
Home	Search	Archives	Past Education Programs & Materials	On-Line Visuals	Bibliographies (Books and Films)	



Hawaiian Star Compass

Developed by Nainoa Thompson, Based on the
Micronesian Star Compass of Mau Piailug



Click here for [a color Hawaiian Star Compass](#). Click here for [a black and white Hawaiian Star Compass](#).



Click here for [Mau's Star Compass](#).

To help him orient the canoe to the rising and setting points of stars, the wayfinder uses a **star compass** with thirty-two equidistant directional points around the horizon, each point 11.25 degrees from the next point (11.25 degrees x 32 points = 360 degrees). Each point is the midpoint of a house of the same name, and each house is 11.25 degrees wide (11.25 degrees x 32 houses = 360 degrees).

The four cardinal directions have traditional Hawaiian names:

East is called Hikina ("Arriving" or "Coming"), where the sun and stars "arrive" at the horizon;

West is called Komohana ("Entering"), where the sun and stars "enter" into the horizon;

North is called 'Akau;

South is called Hema.

The four cardinal directional points divide the circle of the horizon into four

quadrants, which have been given names associated with wind directions:

Ko'olau is the NE quadrant, named for the windward side of the islands, the direction from which the NE trades, the most constant of the Hawaiian winds, blow.

Malanai is the SE quadrant, named for "a gentle breeze" (PE) associated with Kailua O'ahu (SE part of the island) and Koloa, Kaua'i (S by E part of the island); on a wind map of Pukapuka, two "Malangai" winds blow from the SE.

Kona is the SW quadrant, named for the leeward side of the islands, away from the NE trades; winds blowing from the south or SW are called kona.

Ho'olua is the NW quadrant, named for a strong north wind, generated by storm systems passing north of the islands. (The Pukui-Elbert dictionary gives Kiu as the name of a northwesterly wind.)

Each quadrant contains seven directional points and houses with the following names. The names were devised by Nainoa Thompson, the first Hawaiian in over 500 years to practice long-distance, open-ocean navigation without instruments:

La: "Sun"; the sun stays in this house for most of the year as it moves back and forth between its southern limit at the Tropic of Capricorn (23.5 degrees S) at Winter Solstice to its northern limit at the Tropic of Cancer (23.5 degrees N) at Summer Solstice.

'Aina: "Land"; This house between 17 degrees and 28 degrees on the horizon from east and west can be remembered because Hawai'i ('Aina, or Land) is at 21 degrees N latitude and Tahiti ('Aina, or Land) is at 18 degrees S latitude.

Noio: named for the Hawaiian tern, which helps a navigator find islands because it flies out to sea in the morning to fish (range about 40 miles) and returns to land at night to rest.

Manu: "Bird"; the four houses of Manu, midway between the four cardinal directions, can be seen as the points of the beak, tail, and outstretched wing-tips of a bird; the bird is the traditional Polynesian metaphor for the canoe. On early voyages to Tahiti, the Hokule'a sailed in the direction of Manu Malanai, with its wings and Manu Ko'olau and Manu Kona, and its tail pointed back at Manu Ho'olua.

Nalani: Named for the brightest star in this house, Ke ali'i o kona i ka lewa (Canopus), which rises in Nalani Malanai and sets in Nalani Kona.

Na Leo: "The Voices," referring to the voices of the stars speaking to the wayfinder.

Haka: "Empty"; named for the relatively empty skies around the north and south celestial poles; Kamakau say the names of these areas are Uliuli ("deep, dark blue") and Lipo ("deep, dark night").

(Information about the name of these houses is from Will Kyselka's Ocean in Mind 96-97).

Seven directional houses in each of the four quadrants combine to give 28 compass directions between the four cardinal points:

La Ko'olau = E by N
'Aina Ko'olau = ENE
Noio Ko'olau = NE by E
Manu Ko'olau = NE
Nalani Ko'olau = NE by N
Na Leo Ko'olau = NNE
Haka Ko'olau = N by E

La Ho'olua = W by N
'Aina Ho'olua = WNW
Noio Ho'olua = NW by W
Manu Ho'olua = NW
Nalani Ho'olua = NW by N

Na Leo Ho'olua = NNW
 Haka Ho'olua = N by W

La Malanai = E by S
 'Aina Malanai = ESE
 Noio Malanai = SE by E
 Manu Malanai = SE
 Nalani Malanai = SE by S
 Na Leo Malanai = SSE
 Haka Malanai = S by E

La Kona = W by S
 'Aina Kona = WSW
 Noio Kona = SW by W
 Manu Kona = SW
 Nalani Kona = SW by S
 Na Leo Kona = SSW
 Haka Kona = S by W

A star that rises in a house on the NE horizon travels across the sky, and sets in a house of the same name on the NW horizon; A star that rises in a house on the SE horizon travels across the sky, and sets in a house of the same name on the SW horizon. Thus, the rising and setting points of stars are clues to direction. Recognizing a star as it rises or sets and knowing the house it rises or sets in gives you a directional point by which you can orient the canoe and head in the direction you want to go. Ocean swells, also used to hold a course, travel from one house on the horizon to a house directly opposite on the horizon (180 degrees away), passing under the canoe, which is always at the center of the compass.

Star Groups and Hawaiian Names for Stars

The wayfinder must memorize the position of as many stars as possible on the celestial sphere. On cloudy nights, when only parts of the sky are visible, he must be able to recognize isolated stars or star groups and to imagine the rest of the celestial sphere around them. To help remember the pattern of stars in the sky, Nainoa Thompson has organized the sky into three star

lines, which appear one after another in the sky.

The three groups have been given the names Ke Ka o Makali'i ("The Canoe-Bailer of Makali'i"), Ka Iwikuamo'o ("The Backbone"), and Manaiakalani ("The Chief's Fishline"). Each group takes up about one fourth of the celestial sphere; a fourth group of stars, as yet unnamed, includes 'Iwa Keli'i (the constellation Cassiopeia) and the Great Square of Pegasus. (Some of the following star names are traditional; others are new; the Polynesian Voyaging Society is in the process of naming in Hawaiian all the major stars, constellations, and quadrants of the celestial sphere.)

One way to remember the sequence of the four quadrants of the sky is to use the mnemonic patterns:

A bowl (the bailer, a half circle of stars); followed by a line (Iwikuamo'o is sometimes called the "North-South Star Line"); followed by a triangle (Manaiakalani contains the three bright stars of the Navigator's Triangle); followed by a square (the fourth quarter of the sky includes the Great Square of Pegasus);

Or a bailer (Ke Ka); followed by a backbone (Iwikuamo'o); followed by a fishhook (Manaiakalani is the name of Maui's fishhook); followed by a seabird ('Iwa)

[KE KA O MAKALI'I \("The Canoe-Bailer of Makali'i"\)](#). Click here for a chart of [the declinations and houses of the stars in and around Ke Ka o Makali'i](#).

Ke Ka o Makali'i is formed by five stars curving across the sky from 'akau (north) to hema (south) in the shape of a bailer, with the bottom toward hikina (east) and the rim toward komohana (west). During Ho'oilo (the winter season from November to April), these stars are visible for most of the night in the Hawaiian sky; during Kau (the summer season from May to October), these stars are in the sky overhead mostly during the daylight hours. The five stars of Ke Ka o Makali'i are the following:

Hoku-lei ("Star-Wreath"ÑMakemson): This sun-yellow star is at the 'akau point of Ke Ka o Makali'i. According to Makemson, Hoku-lei is also the

name for a circle of five stars forming a star-lei, the star Hoku-lei being the brightest star in the lei. The haole name for Hoku-lei is Capella (Alpha Aurigae); the name of the constellation formed by the circle of five stars is Auriga ("Charioteer"). According to Johnson and Mahelona, Hoku-lei is an "unidentified star. Lit., 'star-suspended over land'" (5).

Na Mahoe ("The Twins") is a pair of stars. The first of the pair to appear in the Hawaiian sky, a whitish green star, is called Nana-mua ("Look forward" ðPukui-Elbert); the sun yellow star that follows is called Nana-hope ("Look behind" ðPukui-Elbert). Johnson-Mahelona and Makemson give the name as "Nana," equivalent to "Ana," or star, so "Nana-mua" means "First star" and "Nana-hope" means "Last star." The pair of stars is also called Nana-mua-ma ("Nana-mua and associate"). Other Hawaiian names: Mahau ("Twins" ÑM), [Ka-Mahana ("Twins"), Na Hoku-Mahana, and Na-lalani-a-Pili-lua ("The lines of the clinging ones" ÑJ & M). The haole name for this pair is Gemini ("The Twins"); Nana-mua is called Castor (Alpha Geminorum) and Nana-hope is called Pollux (Beta Geminorum).

Puana ("Blossom"; a new Hawaiian name based on a Maori name): This light yellow star has no recorded Hawaiian name; in Maori it is called Puanga-hori ("False Puanga") to distinguish it from its pair Puanga or Puanga-rua ("Blossom-cluster"), or Rigel. The haole name for Puana is Procyon (Alpha Canis Minoris).

'A'a ("Burning brightly"): This blue-white star, the brightest in the sky, is at the hema point of Ke Ka o Makali'i. Johnson and Mahelona suggest 'A'a is also a name for the seabird known as the booby (52), which is used to locate islands; these birds leave their nesting island in the morning to hunt for fish at sea, and return to the island in the evening (range: 30-50 miles ÑLewis 171). Other names for this star: Hiki-kau-[e]-lia; Hiki-kau-e-lono (cf. A-iki-kau-e-lono, "The-small-booby-bird-of-Lono" ÑJ & M); Hiki-kau-lono-meha ("Star of solitary Lono"; also Lono or Lono-meha); [Hiki] kaulana-o-meha; Kau-ano-meha ("Standing alone and sacred" ÑM); Hoku-kau'opae ("Star for placing shrimp" ÑJ & M; cf. Kau-opae: "name for Sirius as patron of shrimp fishing" ÑM); [Hoku-ho'okele-wa'a" ("Canoe-guiding star" ÑJ & M); Kaulu-lena, Kaulua-lena ("Yellow star"), or

Lena; Kaulua[-i-ha'i-mohai] or [-a-ha'i-mohai] ("Flower of the heavens" ÑM). Makemson says Kaulua means "Bright star"; Kaulua is also the name of a month: February on Hawai'i, June on Moloka'i, and December on O'ahu. The haole name for this star is Sirius (Alpha Canis Majoris).

Stars in and around Ke Ka o Makali'i

Makali'i ("Little eyes" or "Little stars"): This cluster of seven little stars rises ahead of the stars of Ke Ka o Makali'i. According to Makemson, "Maka-li'i" may be interpreted as "High-born stars" ("Maka-ali'i"); Beckwith (367) suggests "Eyes of the chief," Makali'i being the ho'okele (navigator-steersman) for the famous voyager Hawaii-loa. Makali'i was the "guiding star [cluster] for the first month of the year (November-December); also marked the beginning of the year when it rose at sunset. A thousand years ago, the rising of this group of stars in the east would have occurred a month earlier (October-November)." Makali'i was the name of a month (December on Hawai'i, April on Moloka'i, October on O'ahu-Malo 33). Other names for Makali'i: Hu[i]hui ("Group"); Kupuku ("Cluster"). Beckwith says that Makali'i was actually Hoku'ula (Aldebaran), and the cluster of seven stars called Makali'i had the following names: Na-Huihui-o-Makali'i ("The Cluster of Makali'i"), Huihui-koko-a-Makali'i-kau-i-luna ("Makali'i's rainbow colored nets hung above"), Na Wahine-o-Makali'i ("The wife of Makali'i"), Na-ka-o-Makali'i ("The bailers of Makali'i"), Na-koko-a-Makali'i ("The nets of Makali'i"). According to Makemson, Makali'i is the bow of the Maori canoe Tainui, with the Cross as the anchor, "the Belt of Orion as stern, the Sword as cable, and the Hyades [the face of Taurus] as sail [Te Ra-o-Tainui]" (249). The cluster of seven stars is called the Pleiades in the west.

Hoku'ula ("Red star") or Kapu-ahi ("Sacred fire"): This giant red star appears after Makali'i and Hoku-lei in the Hawaiian sky. Other Hawaiian names include 'Au-kele-nui-a-iku (a legendary hero, "the seeker of the water-of-life, grandson of the mo'o Mo'oinanea, who gave him three magic objects with which to achieve his goals on a long sea journey of forty days"-Johnson and Mahelona, ix; see Fornander, Vol. 4, 32-111, for a version of the legend of 'Au-kele-nui-a-iku); Kao-ma'aiku; Kao. The haole name for this star is Aldebaran (Alpha Tauri).

Ka Hei-hei o na Keiki ("The Cat's Cradle of the Children"; a new Hawaiian name): This constellation with two bright star pairs separated by a row of three stars appears in front of Ke Ka o Makali'i. The name was given because the star group resembles a pattern created in the traditional Hawaiian string game called Hei or Hei-hei. In the West, the two pairs are seen as the points of the shoulders and knees of Orion; the row of three stars is seen as Orion's belt.

Kao-Makali'i, Na Kao ("The Darts of Makali'i"): The three stars in the middle of Ka Hei-hei o na Keiki. In Tonga, the three stars are seen as three canoe paddlers (Kyselka 48). In Kiribati (Gilbert Islands) the three are seen as three fishermen. The haole names for the three stars are Mintaka (Delta Orionis), Alnilam (Epsilon Orionis), and Alnitak (Zeta Orionis).

Kaulua-koko ("Brilliant red star"-Makemson; "koko" means "blood; rainbow-hued"-Pukui Elbert): This red star is the northeast corner of Ka Hei-hei o na Keiki. Other Hawaiian names for this star: Ka'elo (the name of a month: January on Hawai'i, May on Moloka'i, November on O'ahu, and June on Kaua'i-Malo); 'Aua; Hoku-'ula ("Red star"); Koko; Melemele (Name of an ancestral homeland in the north?-J & M). The haole name for this star is Betelgeuse (Alpha Orionis).

Pu'uhonua (westernmost point, the City of Refuge at Honaunau on the Big Island): This star is the southwest corner of Ka Hei-hei o na Keiki. The name is a pun on the Arabic name for the star, "Saiph" ("safe"). The Greek name is Kappa Orionis.

Puana-kau ("Suspended Blossom"-Makemson): This blue-white star, "suspended" above Ke Ka o Makali'i, is the southeast corner of Ka Hei-hei o na Keiki. The haole name for this star is Rigel (Beta Orionis).

Ke ali'i o kona i ka lewa ("The chief of the southern heavens"-Johnson and Mahelona): This bright blue-white star, the second brightest in the sky, appears south of 'A'a. The house of Nalani on the Star Compass was named for it. Its haole name is Canopus (Alpha Carinae).

[KA IWIKUAMO'O \("The Backbone"\)](#) Click here for a chart of [the declinations and houses of the stars in and around Ka Iwikuamo'o.](#)

This star line runs from Hoku-pa'a at the north celestial pole to Hanai-a-ka-malama near the south celestial pole. The stars may be seen as vertebrae along a backbone; Iwikuamo'o (lit. "Bone back-lizard") is also a metaphor for a genealogical line, with each vertebra representing a generation. This star line follows Ke Ka o Makali'i into the sky.

Hoku-pa'a ("Fixed star"): This circumpolar star, which does not rise or set in the Hawaiian sky, appears "fixed" at the north celestial pole with other stars circling around it. Actually it is inscribing a circle 1.8 degrees wide around the pole, and because of precession, the wobbling of earth on its axis, Hoku-pa'a is not actually "fixed" permanently. A circle of precession is completed in 26,000 years, and in 13,000 years the north pole will be pointing to the opposite side of the circle of precession, between Hawaiki (Deneb) and Rapanui (Vega) and Hoku-pa'a will appear to be circling the north celestial pole (Kyselka and Lanterman 24-8). Still, in our era, the names for this star suggest its stationary appearance: Noho-loa ("Eternal"), Kumau ("Standing Perpendicularly"), Kio-pa'a/Kio-pa ("Fixed projection"), Kia-pa'akai (Biblical: "Pillar of salt"), Maka-holo-wa'a ("Sailing-canoe eye"-J & M, or "Star of the sailing canoe"-M). The haole name for this star is Polaris (Alpha Ursae Minoris).

Holopuni ("To circle"; "To sail or travel around"; a new Hawaiian name for this star); also, Hoku-Mau (a new Hawaiian name, in honor of Mau Piailug, the Satawalese navigator who taught non-instrument navigation to Nainoa Thompson; in Hawaiian, "mau" means "constant," "perpetual," "always"). This star appears to circle perpetually around Hoku-pa'a. The haole name for this star is Kochab (Beta Ursae Minoris).

Na Hiku ("The Seven"): This constellation of seven stars arcs around Hoku-pa'a farther out than Holopuni. "Donaghho gives the full name as Na Hiku-ka-Huihui-a-Makalii, the Cluster-of-the-Seven-of-Makalii. The stars of Na Hiku are individually designated by numbers: Hiku-kahi [Dubhe], Hiku-[a]lua [Merak], Hiku-kolu [Phad], Hiku-[a]ha [Megrez], Hiku-lima [Alioth], Hiku-ono [Mizar], and Hiku-pau, 'Finished' [Alkaid] (Beckwith, *The Kumulipo: A Hawaiian Creation Chant* 208). Hiku-kahi and Hiku-[a]lua point toward Hoku-pa'a. The haole name for this constellation of seven stars is the Big Dipper.

Hoku-le'a ("Clear Star"): This orange red star, the brightest in the northern hemisphere, appears south of Na Hiku. "A celestial beacon marking the northern destination in the long voyages from the Marquesas and Tahiti to Hawai'i as the zenith star" (Johnson and Mahelona 5). Makemson translates Hoku-le'a as "Star of gladness." The haole name for this star is Arcturus (Alpha Bootis).

Hiki-analia ("Hiki" could mean star; "analia" means?): This blue-white, medium bright star appears at about the same time as, but to the south of Hoku-le'a. Hiki-analia was "Used as a guide to mariner and fisherman; computed as Spica [Alpha Virginis]" (Johnson and Mahelona 3).

Hiki-'au-moana is the Kaua'i name for Hiki-analia (Johnson and Mahelona).

Me'e ("Voice of Joy"-Makemson): Four stars which rise before and to the south of Hikianalia. Me'e is the name of this constellation in the Marquesas, according to Johnson and Mahelona. No recorded Hawaiian name. "Mee is the Marquesan form of the widespread Polynesian star name Mere, Meremere, or Melemele, signifying 'Voice of joy'" (Makemson 235). The Hawaiian form of Me'e, "Mele," means "song" or "chant" or "to sing" or "to chant." "Me'e" in Hawaiian means "hero or heroine" or "heroic," "admired," or "prominent." Johnson and Mahelona identify Melemele or Mere as a name for Orion's belt and a homeland in the north (17). Serepwen and Sarapori are Micronesian names for this constellation. In Pukapuka, it is called Te Manu ("The Bird"-M). The haole name for this constellation is Corvus ("Crow").

Hanai-a-ka-malama ("Cared for by the moon"-Johnson and Mahelona): This group of four stars appears near the southern horizon; it forms a cross with the top and bottom stars pointing toward the south celestial pole. Other Hawaiian names: Newa ("War club"-Pukui-Elbert), Newe, or Newenewe (Guide star to Tahiti-J & M); Ka-pe'a ("The Cross" or "Bat"); Makeaue'a or Mekeaue'a (possibly names for the Cross-J & M); Pu-koloa ("Wild duck overhead," possibly the Cross because of a similarity to Tongan and Samoan "Toloa," for the Cross-Makemson); Hoku-kea [-o-ka-mole honua] ("Star-cross-of-the-barren-lands"-M). The haole name for this constellation is the Southern Cross or Crux.

Kaulia ("Suspended" or "Hanging"): This cool red giant is at the top of the cross of Hanai-a-ka-malama. Kaulia has been described traditionally as a prominent star in the Southern Cross; "called the chief of the month of Ikiiki [May] because it appears in that month" (Johnson and Mahelona). The haole name for this star Gacrux (Gamma Crucis).

(Ka) Mole Honua ("The barren lands"-Makemson; a new Hawaiian name for this star based on a possible name for Hanai-a-ka-malama, Hoku-kea [-o-ka-mole honua]-"Star-cross-of-the-barren-lands"-Makemson): This bright blue star is at the bottom of the cross of Hanai-a-ka-malama. Pukui-Elbert define mole as "tap root," "bottom," "ancestral root," "foundation," "source"; "smooth" or "bald" [Makemson's "barren"]; "to linger," "to loiter." "Honua" means "land" or "earth." Mole Honua may be seen as the ancestral root or foundation of Ka Iwikuamo'o, which metaphorically refers to a genealogical line. The haole name for this star is Acrux (Alpha Crucis).

Na Kuhikuhi ("The Pointers"; translation of the haole name for a pair of stars which points to Hanai-a-ka-malama): These two stars follow Hanai-a-ka-malama into the southern sky and point to it. The first of the pair of stars is called Ka-maile-mua ("The first maile"-Johnson and Mahelona); the haole name of this star is Hadar (Beta Centauri). The second star of the pair is called Ka-maile-hope ("The last maile"-Johnson and Mahelona); the haole name is Rigel Kentaurus (Alpha Centauri). In Kapingamarangi, Ka-maile-mua and Ka-maile-hope are also a pair: Ti-humu-uri and Ti-humu-te (Johnson and Mahelona 129).

[MANAIKALANI \("The Chief's Fishline"\)](#) Click here for a chart of [the declinations and houses of the stars in and around Manaiakalani.](#)

Manaiakalani ("The Chief's Fishline"-Johnson and Mahelona; "Come-From-Heaven"-Beckwith and Makemson) is the name of the demi-god Maui's fishhook, which he used to hook land at the bottom of the ocean, in some areas of Polynesia to drag up new islands, but in Hawai'i to pull the islands closer together. Manaiakalani is also the name of the fishhook of the Hawaiian fishing god Ku'ula-kai and his son 'Ai'ai. This star line ("The Chief's Fishline") goes from 'Iwa Keli'i in the north to Ka Makau

Nui o Maui in the south, and is dominated by the northern triangle (Huinakolu) formed by three bright stars seen as representing the Polynesian triangle, with Hawaiki, Rapa-nui, and Aotearoa at the corners. The Manaiakalani star line follows the Iwikuamo'o star line into the sky. In the Hawaiian sky of Kau (summer season, May to October), Manaiakalani is visible for most of the night, just as Ke Ka o Makali'i is visible for most of the night in the sky of Ho'oilu (winter season, November to April). Ka Makau Nui o Maui in Manaiakalani is on the opposite side of the sky (180 degrees away) from Ka Hei-hei o na Keiki in Ke Ka o Makali'i.

Hawaiki (Hawai'i; a new name): This brilliant white super giant is the northernmost star in Huinakolu. No recorded Hawaiian name; in the Society Islands, it is called Pira'e-tea ("White sea swallow") or Taíurua-i-te-haíaparaía-manu ("Festivity-of-the- ascending-bird"-Johnson's pronunciations; Makemson's definitions). The Pira'e was the pet bird of Ra'i-tupua, Sky-builder, who in Tahitian mythology, puts the sky in order after Tane raises it on posts: "Tane measured the spaces between the skies with his sky measure. And while Ra'i-tupua reached up from below and set the Sun and stars and other heavenly bodies in the blue heights, his artisan Ma-tohi, Clearing adze, adjusted them nicely from above. Thus the sky Atea became clear and unobstructed for the gods to fly through" (Makemson 70). The haole name for this star is Deneb (Alpha Cygni).

Rapa-nui (a Polynesian name for Easter Island; a new name): This bright blue star is the first in Huinakolu to appear. Keoe, Keoea, Keho'oea are traditional Hawaiian names: "Keoe is a Hawaiian name which Alexander believes was applied to Vega (Alpha Lyrae); but Kupahu describes it as a group of four stars forming a diamond. Hence it probably stood for the entire constellation of Lyra" (Makemson 220).

Aotearoa (the Maori name for New Zealand; a new name): Traditionally called Humu; this star and the two around it were called Humu-ma and were named for a famous ho'okele and his two sons. The legend told by Kupahu (Johnson and Mahelona 167-8) suggests Humu was a guide star to Kaua'i when a canoe sailed from O'ahu. Humu's two sons sail with the first canoes; the older son who knows star lore gives his advice on which direction to sail in, which angers the steersman. The steersman throws Humu's two sons

overboard; they swim behind the stars known as Humu-ma and are rescued by their father, who sails in the last canoe with the King; Humu and his two sons reach Kaua'i, while the rest of the canoes are lost at sea. The haole name for this star is Altair (Alpha Aquilae).

Other Constellations and Stars of Manaiakalani

Nai'a ("Dolphin" or "Porpoise"): This constellation rises after Aoteraroa. The name is a translation of the haole name Delphinus, or Dolphin.

Ka Makau Nui o Maui ("The Big Fishhook of Maui"): This constellation is also called Manaiakalani. The haole name for this constellation shaped like a fishhook is Scorpius.

Lehua-kona ("Southern Lehua blossom"): This red star is on the shank of Ka Makau Nui o Maui. Lehua indicates the color red; or Lehua could be the Hawaiian form of Rehua, the Maori name for Lehua-kona: "Rehua is a star, a bird with two wings; one wing is broken. Under the unbroken wing is Te Waa-o-Tamarereti [the Canoe of Tamarereti is the Tail of Scorpius in this instance]. When Rehua mates with his wife Pekehawani [a star close to Lehuakona] the ocean is windless and motionless.' The generally accepted version of the Rehua myth, according to Best, is that Rehua had two wives, the stars on either side of [Lehua-kona]. One was Ruhi-te-rangi or Pekehawani, the personification of summer languour [ruhi], the other Whak-aonge-kai, She-who-makes food scarce before the new crops can be harvested. Rehua was the guiding star of the Aotea canoe, the craft in which Turi arrived on the west coast of New Zealand, following Kupe's sailing directions"-Makemson 249-50); Lehua-kona is also called Hoku'ula ("Red star"). The haole name for Lehua-kona is Antares (Alpha Scorpii).

Ka Maka ("The point of the fishhook"; a new name for this star at the point of Ka Makau Nui o Maui; Maka also means "eye" or "favorite"; could be related to the Polynesian name for star "mata"): No recorded Hawaiian name. The Maoris see the hook portion of Ka Makau Nui o Maui as Te Waka-o-Tamarereti, the Canoe-of-Tamarereti (Makemson 267-8). The haole name for this star is Shaula (Lambda Scorpii).

[KA LUPE O KAWELO \("The Kite of Kawelo"\)](#) Click here for a chart of

[the declinations and houses of the stars in and around Ka Lupe o Kawelo.](#)

The fourth quarter of the sky contains Ka Lupe o Kawelo ("The Kite of Kawelo"), the Hawaiian name given to the Great Square of Pegasus; this quarter also includes the constellation 'Iwa Keli'i (Cassiopeia), as well as the constellations Aries, the Ram, and Cetus, the Whale, and the bright stars Fomalhaut and Achernar in the south.

'Iwa Keli'i ('Iwa, the Chief; the 'iwa is the frigate or man-of-war bird; a new name): This new name refers to the bird-like figure of the constellation Cassiopeia, which rises and sets north of the Great Square of Pegasus. The 'iwa (man-of-war bird), like the noio (Hawaiian tern), the manu-o-Ku (fairy tern), and the 'a (the booby), were helpful in locating islands, as they fly out to fish in the morning and return to their islands in the evening.

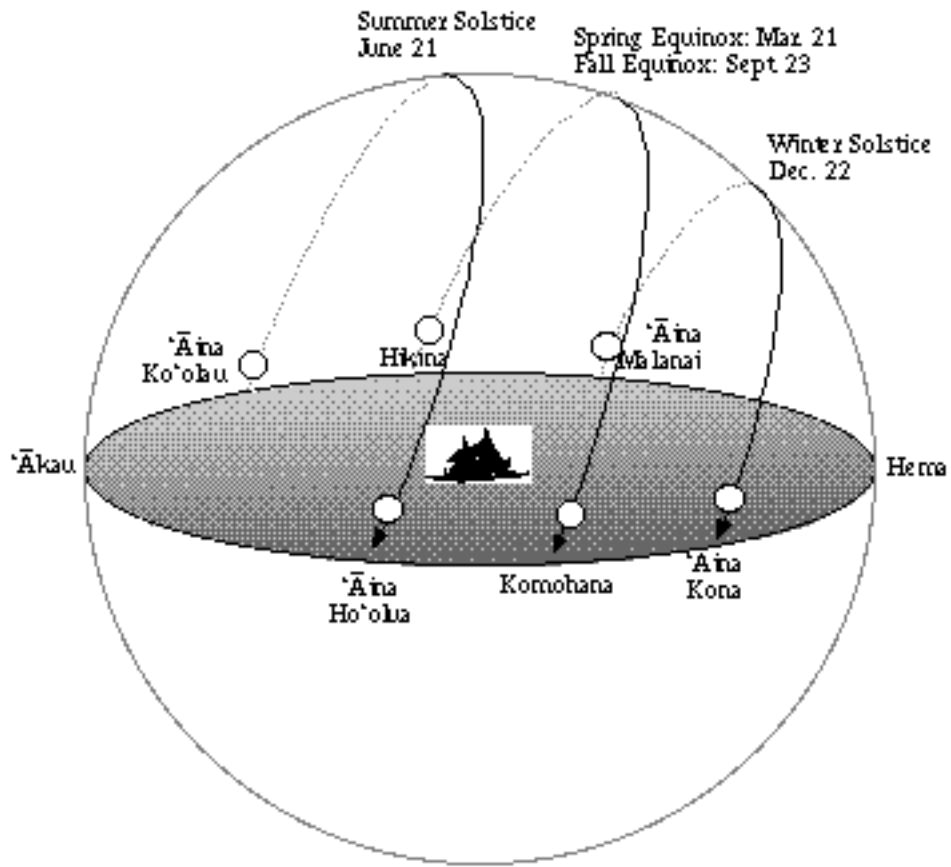
Traditionally, Schedir (Alpha Cassiopeiae) may have been called Polo-ahi-lani ("Shining in heaven"; also Polohilani, the name of one of Hawaii-loa's mariners); Caph (Beta Cassiopeiae) may have been called Polo'ula ("Shining red"; this star may also have been known as Pohina); and Navi (Gamma Cassiopeiae) may have been called Mulehu ("Twilight," cf. Lehu, "ashes"). According to Makemson, Poloahilani was "named for a blind king of Hawaii. Kupahu remarks: 'The character of this star is blindness, and it shows a whiteness when observed in the night. Poloahilani had two attendants to guide him in and out, one to hold him by the right hand, the other by the left. Through the blindness of this king, his misfortune is applied in the heavens and placed with those stars of the three names mentioned above'" (237). In Micronesia, 'Iwa is seen as a fish or porpoise (Johnson and Mahelona).

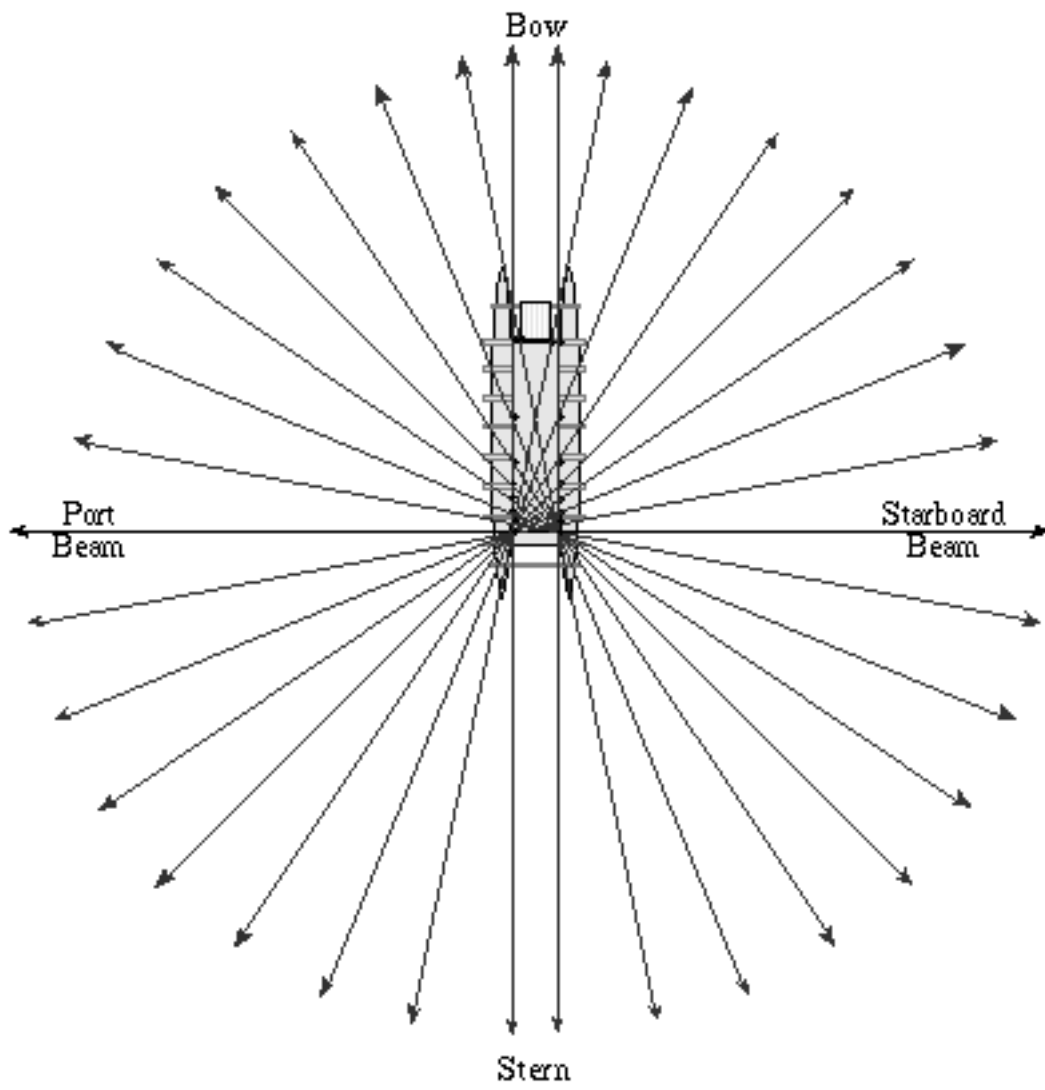
A wayfinder uses many more stars than those listed in the four star groups above; while many more stars were probably named and known in ancient Hawai'i, their names have been lost. Some of these other wayfinding stars are given on the graphics of each star group; eventually, the Polynesian Voyaging Society hopes to give all these stars Hawaiian names. (See the bibliography for a list of sources for Hawaiian star names.)

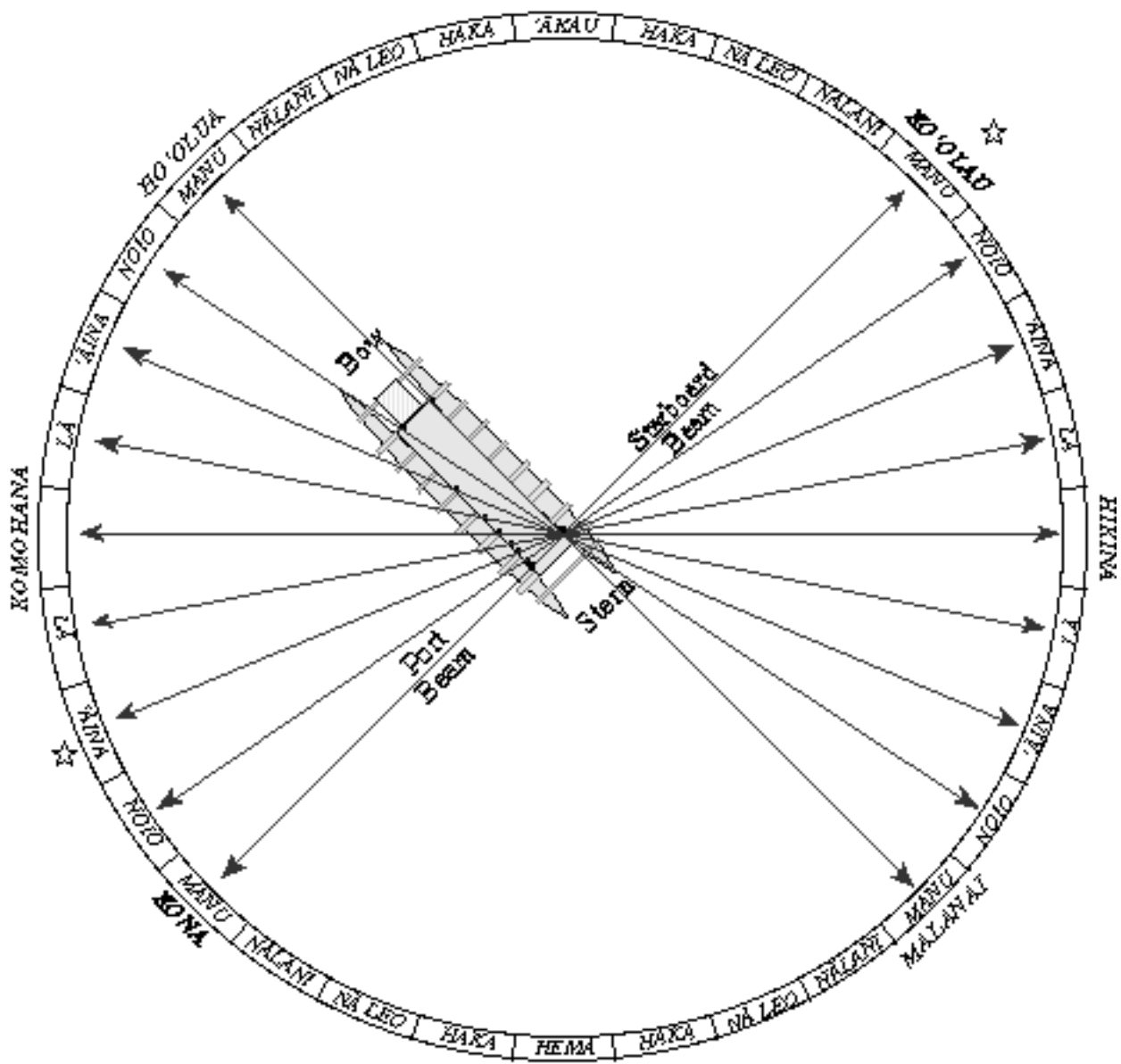
<u>1976: Tahiti</u>	<u>1980: Tahiti</u>	<u>1985-87: Aotearoa (New Zealand)</u>	<u>1992: Rarotonga</u>	<u>1995: Marquesas</u>	<u>1995: West Coast, British Columbia, & Alaska</u>	<u>1999-2000: Rapanui</u>
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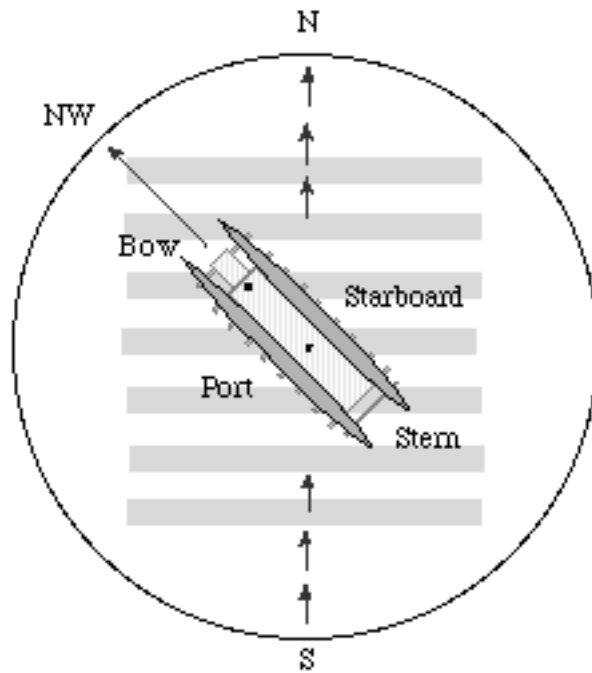
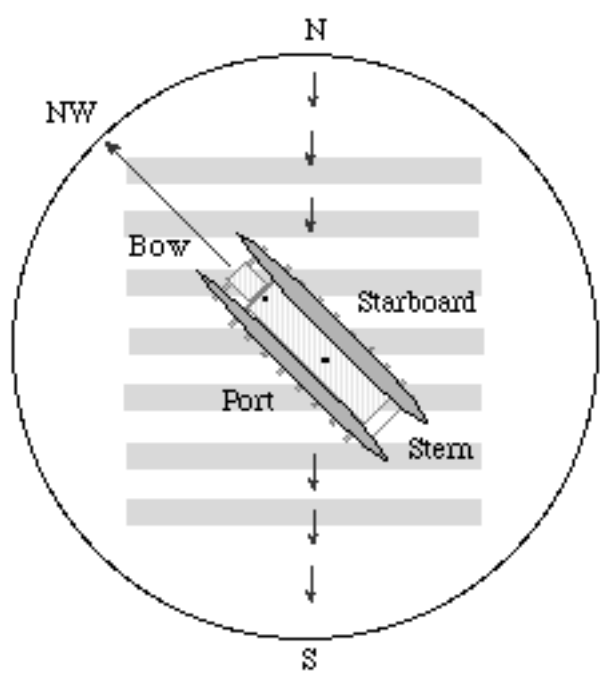
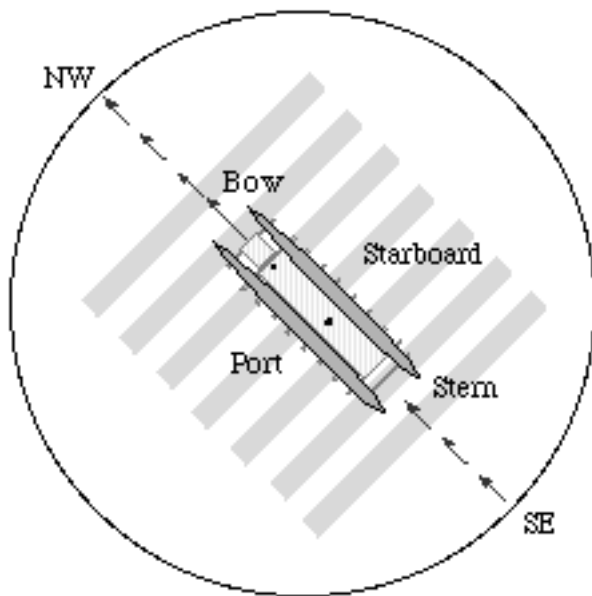
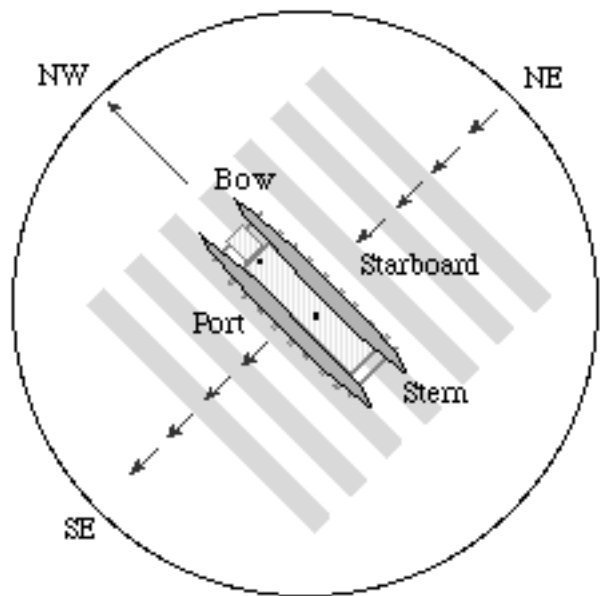
<u>Voyages</u>	<u>Canoe-Building</u>	<u>Wayfinding</u>	<u>Life on a Canoe</u>	<u>Polynesian Migrations</u>	<u>Proverbs and Traditions</u>
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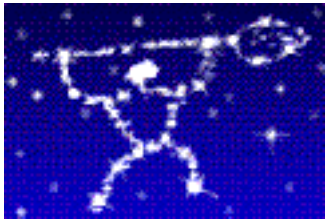






Traditional Tahitian Navigation

Andia Y Varela



[The following account of traditional Tahitian navigation was taken from B.G. Corney (ed.), *The Quest and Occupation of Tahiti by Emissaries of Spain during the Years 1772-6* (3 vols.), London: Hakluyt Society, 1913-1919, Vol. II, 284-287). The account is from the

journal of Andia Y Varela, who visited in Tahiti in 1774.]

There are many sailing-masters among the people, the term for whom is in their language *fatere* [*faatere*; Hawaiian: *ho'okele*]. They are competent to make long voyages like that from Otahiti [Tahiti] to Oriayatea [Ra'iatea], which counts forty or fifty leagues [one league equals 30 nautical miles, so 120-150 miles], and others farther afield. One of them named Puhoro came to Lima on this occasion in the frigate; and from him and others I was able to find out the method by which they navigate on the high seas. They have no mariner's compass, but divide the horizon into sixteen parts, taking for the cardinal points those at which the sun rises and sets. Their names, with the corresponding ones in our own language, are as follows:

- East--E *maoae*
- East-north-east--E *apiti*
- Northeast--E *tauguaru*
- North-north-east--E *faarua*
- North--Paofaeti
- North-north-west--Moehio

- Northwest--Arueroa
- West-north-west--Etaparay
- West--E toerau
- West-south-west--E rapatia
- Southwest--E rayu
- South-south-west--E tuitipapa
- South--Tuamuri
- South-south-east--Erahenua
- Southeast--Maray
- East-south-east--Tuauru

[Footnote in Corney's Text: "About half the terms here quoted are recognizable, allowing for differences in the spelling of some. Maoae, faarua, arueroa, toerau are correct; apiti is haapiti; maray is maraai, erahenua is arafenua, and tuauru may be uru. They are the names of winds, according to the direction from which they blow, and their force. But the directions given in this list do not all quite accord with the names. There are slight variants in the different manuscripts, but none of moment."]

When setting out from port the helmsman reckons with the horizon. Thus partitioned counting from E, or the point where the sun rises; he knows the direction in which his destination bears: he sees, also, whether he has the wind aft, or on one or other beam, or on the quarter, or is close-hauled: he knows, further, whether there is a following sea, a head sea, a beam sea, or if it is on the bow or the quarter. He proceeds out of port with a knowledge of these [conditions], heads his vessel according to his calculation, and aided by the signs the sea and wind afford him, does his best to keep steadily on his course. This task becomes more difficult if the day be cloudy, because of having no mark to count from for dividing out the horizon. Should the night be cloudy as well, they regulate their course by the same signs; and, since

the wind is apt to vary in direction more than the swell does, they have their pennants, made of feathers and palmetto bark, to watch its changes by and trim sail, always taking their cue for a knowledge of the course from the indication the sea affords them. When the night is a clear one they steer by the stars; and this is the easiest navigation for them because, there being many stars not only do they note by them the bearings on which the several islands with which they are in touch lie, but also the harbours in them, so that they make straight for the entrance by following the rhumb of the particular star that rises or sets over it; and they hit it off with as much precision as the most expert navigator of civilized nations could achieve.

They distinguish the planets from the fixed stars, by their movements; and give them separate names. To the stars they make use of in going from one island to another, they attach the name of the island, so that the one which serves for sailing from Otahiti to Oriayatea has those same names, and the same occurs with those that serve them for making the harbours in those islands.

What took me most in two Indians whom I carried from Otahiti to Oriayatea was that every evening or night, they told me, or prognosticated, the weather we should experience on the following day, as to wind, calms, rainfall, sunshine, sea, and other points, about which they never turned out to be wrong: a foreknowledge worthy to be envied, for, in spite of all that our navigators and cosmographers have observed and written about the subject, they have not mastered this accomplishment.

1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
Home	Search	Archives	Past Education Programs & Materials	On-Line Visuals	Bibliographies (Books and Films)	

Hānaiakamalama (Southern Cross)

Kaulia / Gacrux

Becrux ☆

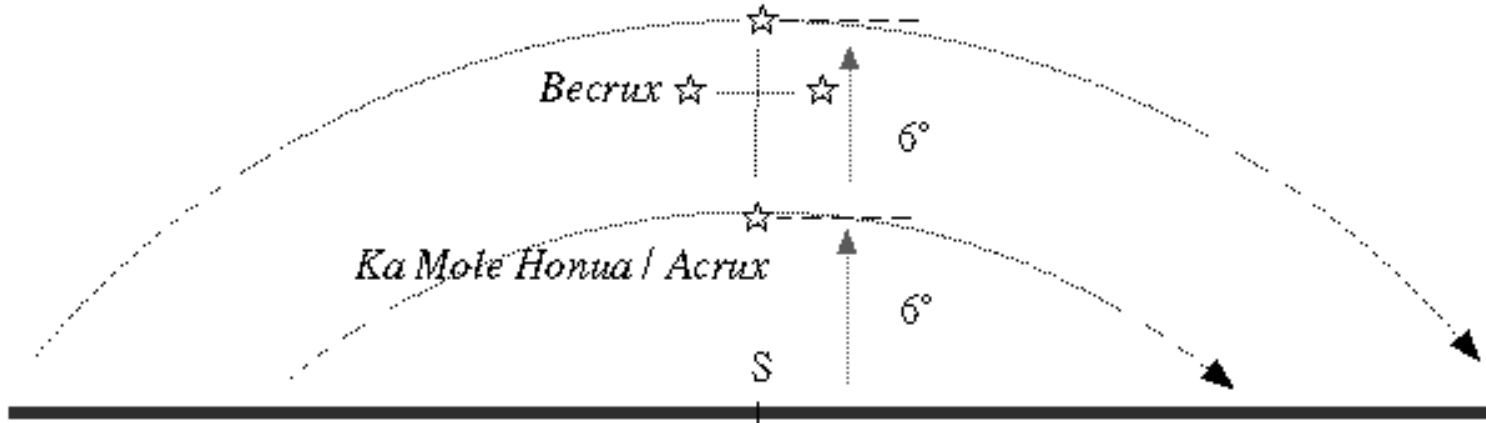
Ka Mole Honua / Acrux

S

Horizon at the Latitude of Hawai'i

6°

6°



Naked-Eye Astronomy and Navigation

Data for June 1999 to January, 2000
Last Updated: March 2, 1999

Directional Stars: Directional stars are called Hoku ho'okelewa'a: "Canoe-Guiding Stars." Any star can be used for direction, as long as the wayfinder knows the star's rising or setting point. A star rises, like the sun, in a particular direction on the eastern horizon, travels across the sky, and sets in a corresponding direction on the western horizon. The direction that a star sets in is at the same angular distance & in the same direction (i.e., north or south) from west as the house in which it rose is from east. Thus, the rising & setting points of stars are clues to directions. Recognizing a rising or setting star and knowing the direction it rises & sets in gives the observer a point by which to orient himself. The "declination of a star gives its rising and setting points in angular distance from east and west (0 degrees) at the Equator. As the observer moves away from the Equator, rising & setting points shift north for stars rising north of east; and south for stars rising south of east. Each night, at the equator, all the stars are visible, half the sky rising and half setting, except for the stars that are lost in the rising and setting sun. As the observer moves north of the equator, stars in the southern sky are lost, and stars in the northern sky become circumpolar; as the observer moves south of the equator, stars in the northern sky are lost, and stars in the southern sky become circumpolar. [The Rising Points of the 21 Brightest Stars.](#)

Planet and Star Data

- [Hawaii/June 15,1999](#)
- [Nukuhiva/August 1,1999](#)
- [Mangareva/Sept. 15,1999](#)
- [Rapa Nui/Nov. 15,1999](#)
- [Tahiti/Dec. 15,1999](#)
- [Hawaii/Jan. 15, 2000](#)

Sun: The sun is the main clue to direction, rising and setting each day in known directions. The rising and setting points shift during the year, from due east and west during Equinox (March and September, north of east and west in the summer, and south of east and west in the winter. During the voyage to Rapa Nui (June 15-January 1), the rising and setting points will be moving from 23.5 degrees north of east and west on June 21 (Summer Solstice); to due east and west on Sept. 23 (Fall Equinox); to 23.5 degrees south of east and west on December 22 (Winter Solstice). [Movement of the sun along the Ecliptic \(June-December.\)](#)

Latitude Stars: North of the equator, the altitude of the relatively fixed star Hokupa'a (Polaris, the North Star) is approximately equal to the latitude of the observer. At the equator (0 ° latitude), Hokupa'a is about at the horizon (0 ° altitude); at 10 ° N latitude, Hokupa'a is about 10 ° above the horizon; at 20 ° N latitude--the latitude of Hawai'i--it is about 20 ° above the horizon, and so on.

Stars crossing the meridian can also be used to estimate latitude. (The meridian is an imaginary line from due north to due south passing through the zenith, the point in the sky directly overhead;

the meridian is perpendicular to the horizon; stars cross the meridian at the midpoint of their journeys from east to west.) At given latitudes, stars cross the meridian at specific altitudes. If the wayfinder knows the altitudes of stars crossing the meridian at particular latitudes, he can estimate his latitude by estimating the altitudes of these stars crossing the meridian.

The wayfinder uses pairs of stars that cross the meridian together to help him determine when stars are crossing the meridian. A line through two stars crossing the meridian together will be perpendicular to the horizon. The two stars are called a meridian pair. When the pair is upright, the stars are crossing the meridian together.

The altitude of the star can be measured using one's outstretched hand. (Each person's hand must be calibrated with distances [in degrees] in the sky; e.g., the height of the closed fist of an outstretched hand might be equal to 10 degrees of altitude on one person's hand, and 7° on another person's hand, depending on the size of one's fist.) [Latitude Stars for Nukuhiva, Mangareva, Rapa Nui and Hawai'i.](#)

Moon: Like the sun, the moon travels along the path called the ecliptic; however, it completes its cycle in 29.5 days (not one year)--the time it takes for the moon to orbit the earth. As it travels along the ecliptic, the moon rises about 48 minutes later each night at a different position on the eastern horizon from where it rose the night before. Its rising point moves back and forth between 'Aina Ko'olau (ENE) and 'Aina Malanai (ESE); its setting point back and forth between 'Aina Ho'olua (WNW) and 'Aina Kona (WSW). As it changes its position in relationship to the sun and earth, it goes through 29-30 phases (See "Moon Phases" below.) Determining the rising and setting points of the moon each night in relationship to another celestial body allows the moon to be used for navigation, day or night.

The line separating light and dark on the moon's surface is aligned approximately north and south since the moon is positioned east or west of the sun along the ecliptic.

Moon phases are an important factor in setting a departure date. Departures are timed so that the moon is bright during certain segments of the voyage. A bright moon in the often cloudy ITCZ (around 3 degrees N to 9 degrees N) allows the wayfinder to see ocean swells at night when heavy cloud cover is hiding the canoe-guiding stars. Moonlight is also important when the wayfinder needs to determine latitude precisely, as in his approach to Nuku Hiva, Mangareva, Rapa Nui, and Hawai'i. The wayfinder will use the altitude of stars above the horizon to determine his latitude (see above); on cloudy nights with little or no moonlight, the horizon line cannot be seen clearly; moonlight renders the horizon visible. [Moon Phases, June-December 1999](#)

Manu-o-ku / White Tern

Manu-o-ku are white birds that dive for small fish at sea. They fly erratically but effortlessly above the waves. They roost and nest in trees or low vegetation or rocks. Colonies live in parks around Honolulu. Found in small flocks or alone. Like the [noio, or noddy tern](#), they return to land daily, so their flights can be used as clues to the direction of land--from islands in the morning and to islands in the late afternoon, though they sometimes leave an island before dawn to return at dawn to feed their young. Non-breeding white terns sometimes range far from shore. Approximate Range from Land: 120 miles.

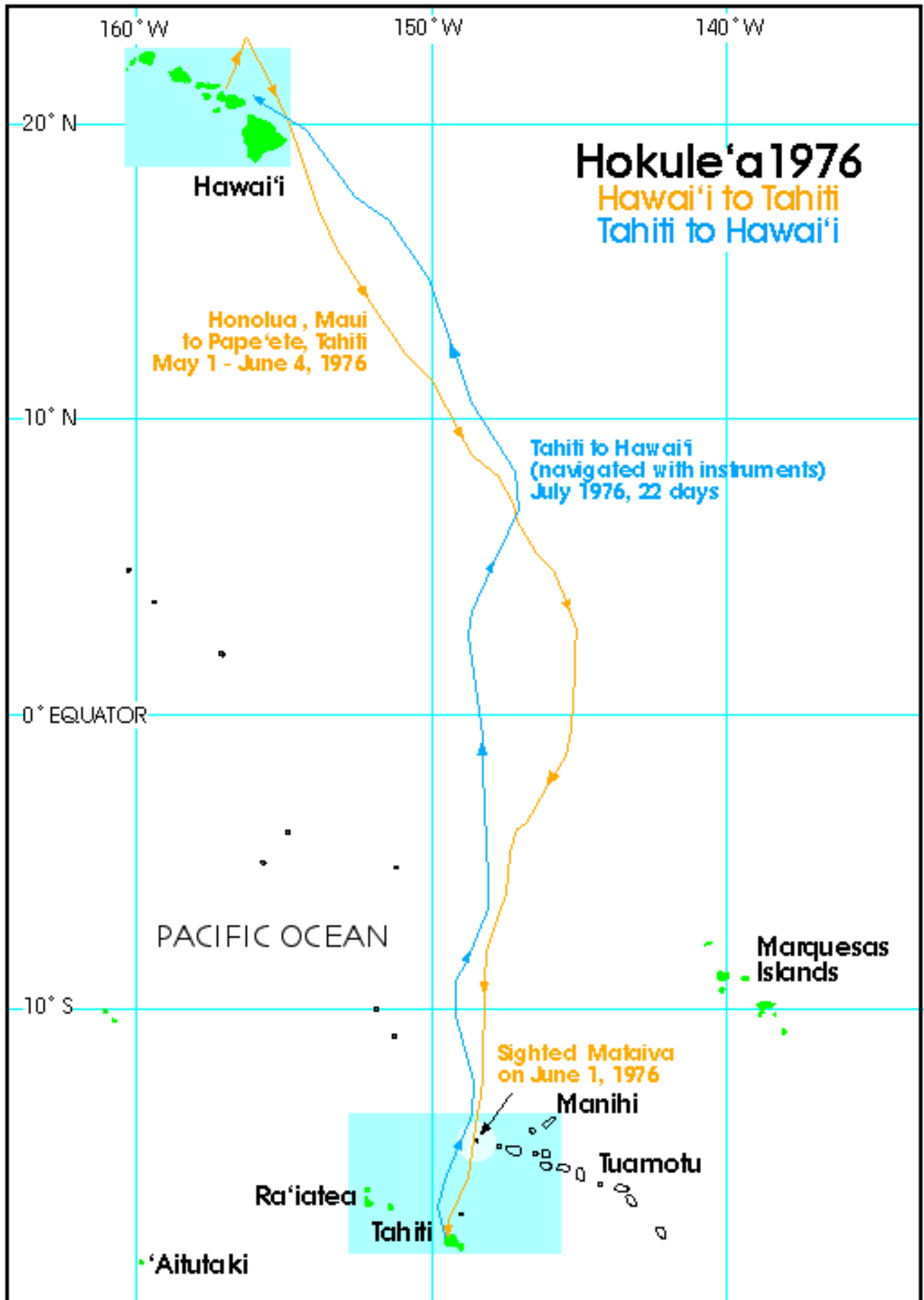


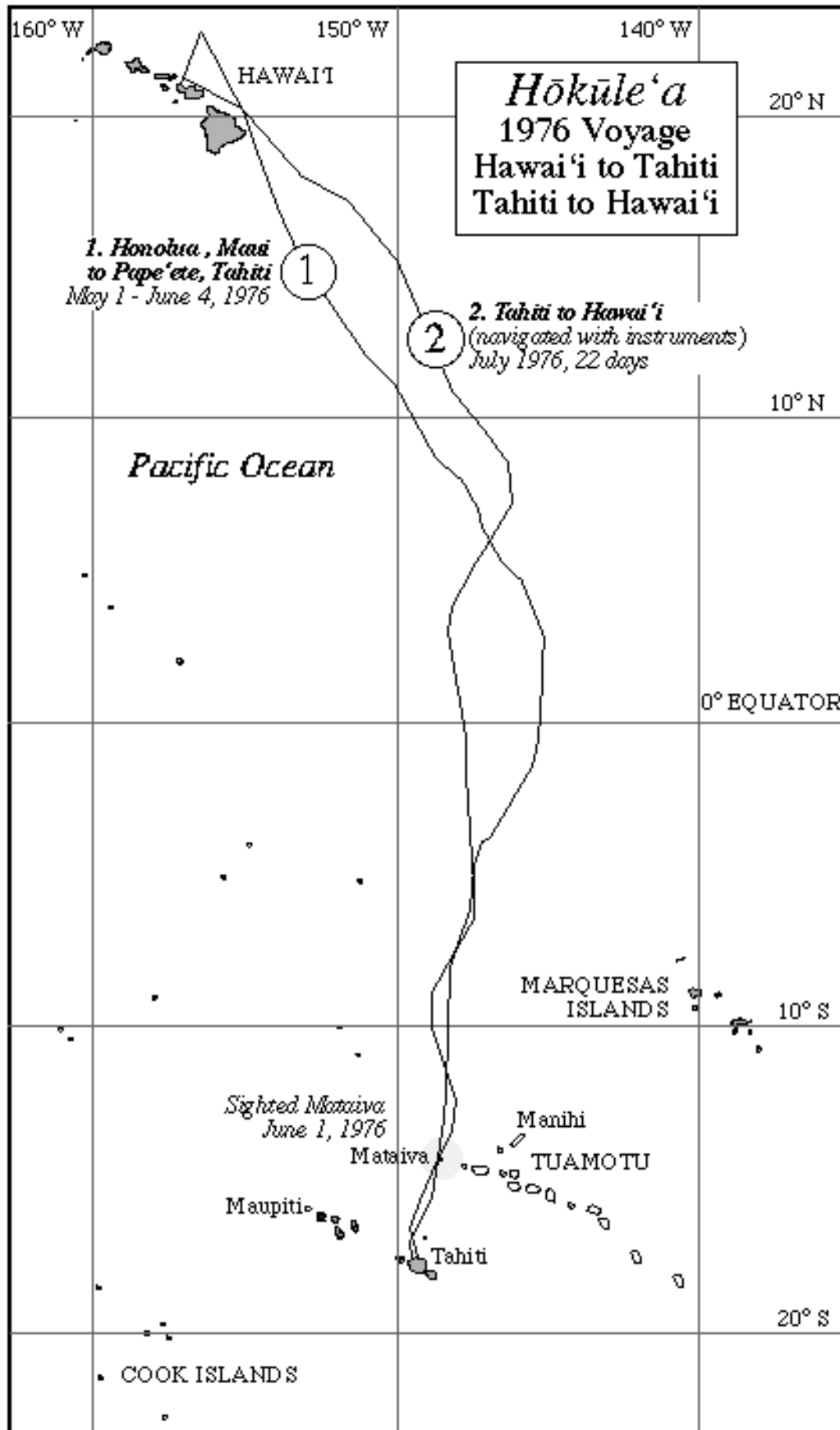
Noio / Noddy Tern



Brown or black, with the brown one larger, the noio nests in a range of habitat, from beaches to forest trees. Noddy terns feed in flocks by plunging or dipping for fish and squid; black noddies often fish near shore. These birds fish in the day and return to their home island at night; thus, like the [manu o ku or white tern](#), their flight is a clue to the direction of an island, from the island in the morning, to the island in the late afternoon. Approximate Range from Land: 40 miles.









In Search of the Ancient Polynesian Voyaging Canoe

Herb Kawainui Kane (All Rights Reserved.)

[NOTE: Artist, writer, and sailor, Herb Kawainui Kane is one of the founders of the Polynesian Voyaging Society and the principal designer of Hokule'a. The following are some of his notes on the design, construction, and sailing of Polynesian and Hawaiian voyaging canoes.]

Polynesia began with the voyaging canoe. More than three thousand years ago, the uninhabited islands of Samoa and Tonga were discovered by an ancient people. With them were plants, animals, and a language with origins in Southeast Asia; and along the way they had become a seafaring people. Arriving in probably a few small groups, and living in isolation for centuries, they evolved distinctive physical and cultural traits. Samoa and Tonga became the cradle of Polynesia, and the center of what is now Western Polynesia.

More than two thousand years ago, Polynesians exploring eastward, during times when winds shifted away from the prevailing easterlies, discovered the Tahitian and Marquesas Islands. From these "centers of diffusion" explorers reached outward as far as Hawai'i to the north, Easter Island to the east, and New Zealand to the southwest. Before European open ocean exploration began, Eastern Polynesia had been explored and settled.

Canoe Design Evolution

Because the exploration and settlement of Eastern Polynesia originated from

the same centers, the design of the canoes must have been much the same throughout. But that design disappeared. Ships are as mortal as their makers. Except for fragments of ancient canoes excavated on New Zealand and pieces of a large canoe recently unearthed from a bog on Huahine, there is no hard evidence.¹ Except for a petroglyph on Easter Island, and passing references in the old legends, there is no descriptive record. (Click here for [an illustration](#) of the Easter Island canoe petroglyph found at Orongo and Herb's rendition of what the original canoe may have looked like.)

Over the following centuries, this "archaic" form evolved into designs which became "classical" to each island group-specialized to meet the challenges of local winds and seas and timber resources. When Europeans arrived, they found pronounced differences in canoe designs from one island group to another.

One such design change was witnessed by Europeans. Schouten in 1619 saw only the tongiaki double canoe in Tongan waters. When the Cook expedition arrived in 1773, the drawings of double canoes by the artist Hodges depicted a transition from the tongiaki to the swift kalia--a borrowing of the Micronesian "double-ender" concept. When Cook visited again five years later, the artist Webber's drawings suggest that he saw only the new kalia.²

Design Strategy for Hokule'a³

What were the design features of the ancient double-hulled voyaging canoes (vaka taurua)? Applying the "age-distribution" method, we assume that similarities in hull shape, sail shape, and construction techniques which were widely distributed when Europeans arrived must have been carried outward from the centers of cultural diffusion during ancient eras of exploration and settlement, and may be accepted as features of the ancient canoes. By limiting the design of a voyaging canoe to these features, a performance-accurate replication of the ancient canoe is possible. Such features formed the design vocabulary of the replica Hokule'a. [(Click here for [Construction Drawings for Hokule'a.](#)]

Kenneth Emory and I went through all designs of canoes recorded in early

drawings and in other evidence and sifted out those features of hull design and sail plan which by their wide distribution may be taken to be most ancient. These I applied to the conceptual design. From my own experience with the Pacific swell and in consultation with more experienced sailors, I arrived at a waterline length of 55 to 60 feet as one that could handle the swells yet recover easily in the troughs, and Emory found that this could be taken as an average for the length of canoes used in the 18th and 19th centuries for long distance voyaging in the Tuamotus and Tahitian islands. Canoes of far greater length would put great stress on the lashings. The double-ended ndrúa of Fiji and kalia of Tonga were of greater length, but these carried a smaller hull to windward involving less stress on lashings than two hulls of equal length, and were generally used on shorter voyages, which means during periods of predictable weather. (Click here for a photo of "[Takitumu](#)," a modern reconstruction of a Cook Islands kalia.)

Some classical Hawaiian features were included which did not affect performance, such as the styling of the bow and stern pieces (manu) and the arched cross-beams (not really ancient, invented by Kanuha several centuries ago).

[Black and White Diagram of Hokule'a, with Names of Each Part.](#)

Kino (Hull): Hulls were carved from logs wherever timber of sufficient size was found. The depth of a hull might be increased by adding one or two courses of boards (strakes) fitted and lashed above the hull's upper edges (gunwales). On atolls where large timber was not available for dugout hulls, the use of gunwale strakes was transformed into a method of building entire hulls "plank-built" over a dugout keel piece, with ribs and thwarts inserted to strengthen the planking.

All hull and sail design features must be compromises. Where paddling was the primary power mode with sail as auxiliary power, round-bottomed hulls were favored for their maneuverability; but where sailing was the primary purpose, hulls were deeper or had a greater amount of "V" shape along the keel for better tracking through the water. Such hulls are less maneuverable but offer lateral resistance to the water, reducing leeway (the sideways skidding of a boat hull away from the wind when sailing against or across

the wind). Because the great distances covered by some ancient voyages could not have been accomplished by paddling, we may assume that the voyaging canoes were primarily sailing machines, with paddling being auxiliary. These were not the flat-sided "V" hulls of modern catamarans, but a rounded "V" by which the maximum floatation capacity could be carved from the natural shape of a log. A rounded "V" hull, with the sides swelling outward in convex curvature, is also stronger than a flat-sided "V" hull because it adds the strength of an arch against the impact of waves.

Where hulls were of unequal length, the smaller hull was carried on the left, and called the ama-the same term for the float outriggered from the left side of single-hull "outrigger" canoes. The one exception is the island of Tubuai in the Australs, where the ama is carried on the right; but today no canoe maker on Tubuai can explain why.

Below the waterline the curvature of all Polynesian hulls is convex, both in length and in section, with no cavities. Longitudinal curves below the waterline are smooth-flowing from bow to stern, creating a gentle entry at the bow and an equally gentle departure at the stern-features necessary for a "soft" ride and maximum hull speed. In these curves there are no abrupt breaks-no "chisel" bows to snag the water and make steering difficult, no abrupt departure at the stern which creates turbulence. For best speed the hull curves are faired out as much as possible (canoe builders knew how to use a flexible fairing strip to check their hull curves), with no hollows or flat areas to cause turbulence.

The volume of Polynesian hulls aft of the midsection is slightly greater than the volume forward of the midsection. This extra floatation aft offsets the tendency of canoes to "squat" at the stern when under a hard press of sail.

Because double canoes are held together by rope lashings, the hulls must be assembled closer together than the hulls of modern catamarans. This narrows the space through which water must pass between the hulls. To avoid excessive turbulence between the hulls, the greater volume aft of the midsection should be obtained by greater hull depth, rather than increasing hull width.

[Black and White Diagram of Hokule'a, with Names of Each Part.](#)

Pe'a (Sails): My first preliminary drawing for **Hokule'a** (1973) featured triangular sails carried with the peak of the triangle downward and mounted on straight spars, a design which by its simplicity and wide distribution seemed to be the most ancient form. This sail plan was modified later in 1975 and again in 1976 with a curved boom to more closely resemble the Hawaiian sails at the time of European contact. However, experiments in 1991 and subsequent voyages have demonstrated that the simple triangular sail carried on straight spars is no less efficient; moreover, it is easier to furl and handle on deck when the rig is dropped to ride out bad weather.

Sails were of pandanus matting except in New Zealand, where pandanus could not be naturalized and flax was substituted. Sails were cut from long rolls of matting seldom more than 18" wide, double plaited of strips 3/16" to 3/8" wide in a twill pattern, changing to a check pattern along the edges for strength.

The sail was built up by overlapping the edges of these strips and sewing them with a running stitch. The outer edges of the sail were hemmed over a rope. A line was fastened with a running hitch at intervals along the outer edges. This line was then tied to the spars with a spiral lashing or with many short lengths of line.

Curved booms, if desired, could be scarfed up from shorter poles to achieve the desired overall curvature and length. The long scarf joints were strengthened with splints and seized up with small line. Spars could also be strengthened at those places where sheets and stays were attached by seizing splints to them.

For a large voyaging canoe having no labor-saving winches, two sails are easier to handle than one large sail. The foresail should be the larger. By distributing the effort over two sails, the moment of capsize is lowered, imparting greater stability to a vessel which, being held together by lashings, is necessarily narrower than a modern multi-hull. If the vessel appears to be overpowered while sailing off the wind, sail area can be quickly reduced by dropping the aftersail.

[Black and White Diagram of Hokule'a, with Names of Each Part.](#)

'Iako (Connecting Cross-beams): A true replication of an ancient canoe should have crossbeams shaped from straight poles-the method most widely distributed. The arched crossbeam is a feature of the classical Hawaiian double canoe, invented only four centuries ago by the designer Kanuha in the time of Keawe.[4](#)

In a quartering sea the hulls of a double canoe will work against each other. By inter-connecting the crossbeams with diagonal bracings of strong rope, this motion can be restrained, adding very little weight to the vessel.

While most cross-beams were lashed to the gunwales, the connection of the two hulls could be strengthened by two or more lower crossbeams let through the hulls, as seen in the drawing of a beached Tahitian double hulled sailing canoe by Webber, with Cook.[5](#)

The flashing speed of modern catamarans results from their wide beam and rigidity of construction, made possible by steel fastenings. The vaka taurua is a slower sailer. Assembled with cordage, it lacks the rigidity of modern multihulls, and the hulls must be closer together to reduce stress on the cross-beams. Assembly by lashings seems to offer one advantage. As noted on the replica Hokule'a, the cross-beam lashings absorb much of the shock of waves that beat against the hulls, a pounding that is transmitted throughout a modern vessel.

[Black and White Diagram of Hokule'a, with Names of Each Part.](#)

Pola (Decking): Decking may be of light planks if these are supported by a webbing stretched between the crossbeams. Lighter planking means less weight. Deck planks should be spaced with gaps through which heaping waves can rise. Without such gaps to relieve wave pressure, strong surges can break the decking. In this compromise, it's better to be safe than dry.

Planks can be added over certain areas of the windward hull on long tacks, even out to the ends of the crossbeams, where they will deflect the splash of waves, and serve as hiking boards for the crew during gusts of wind.

Mast steps: Wind pressure on the sail drives the mast downward. Such pressure should not be borne by only one crossbeam. The masts may be

stepped upon strong longitudinal beams (kua), each distributing the downward thrust over a least three crossbeams. Once the optimum center of effort is found by experimentally moving the masts forward or aft over these steps, additional crossbeams may be added under those points.

Manu (Bow and Stern pieces): As I discovered while sailing Hokule'a, end pieces have a practical function. Eastern Polynesian end pieces typically rise higher at the stern than at the bow. The sternpiece appears to break a following wave crest that might otherwise board the canoe. When the canoe surfs on a following wave, plunging forward, the bowpiece, in a burst of spray, helps prevent the bow from "boneyarding" into the back of the wave ahead.

As expressed in the carving of end pieces, symbolism associated with birds or bird-man (manaia) forms was widely distributed. The term manu for the abstract shape of the classical Hawaiian end piece suggests that the archaic form may have represented birds. A pre-classical Maori bowpiece unearthed on New Zealand has a long neck and the head of a bird-man figure. European drawings of some Marquesan canoes, and old Marquesan canoe models, have bird-like shapes when viewed in profile, with the head at the bow, the gunwale strakes resembling wings, and the stern-piece appearing as the tail. Feathers were widely used as pennants flown from the end of a spar (Tahiti, Hawai'i), or black feathers hung from the stern piece (New Zealand); as bunches of feathers at the stern (Marquesas); and as feathers worked into the gunwale lashings (New Zealand, Marquesas).

Hale (Deck Shelter, pronounced "ha-lay"): This may be a construction of light poles and purlins covered by thatching and/or tightly plaited matting. The shelter should be easily moved. On long reaches or tacks it should be positioned over the windward hull.

[Black and White Diagram of Hokule'a, with Names of Each Part.](#)

Sailing the Vaka Taurua

Steering: The idea of steering a sixty-foot multihull without a rudder has intrigued conventional yachtsmen on their first sails aboard Hokule'a. On a downwind course the steering paddle is handled in the manner of a rudder,

and long sweeps were used on some Polynesian canoes. On any other tack, however, the steering paddle is held against the lee side of the hull near the stern. The pressure of the water against the blade helps hold it fast, and very little effort is required to hold a heavy steering paddle in place. A slight twisting pressure to hold the leading edge of the blade firmly against the hull prevents the flow of water from getting under the blade and kicking it away. For this reason, steering paddles were often carved flat on the side held against the hull, and concave on the other.[6](#)

At a canoe's first sea trials, the masts should be experimentally shifted forward or aft until the center of effort is balanced with a slight weather helm, so that when the paddle is raised, decreasing its lateral resistance to the water at the stern, the stern will fall off the wind, turning the vessel into the wind. When the paddle is lowered, creating more lateral resistance at the stern than exists at the bow, the canoe will turn off the wind.

The Polynesian paddle creates less drag than the modern rudder, and is put in the water only when needed.

Steering with the Sails: On long reaches, steering paddles may not be needed at all; the canoe can be rigged to steer itself by sails alone. The aftersail is eased out slightly more than the foresail. As the canoe rounds up into the wind, the aftersail luffs and loses power. Pressure on the foresail now causes the vessel to turn off the wind a few degrees. The aftersail is again presented to the wind; it fills, and the vessel begins another slight turn to windward. Sawing slightly into the wind and off the wind, the canoe will steer itself on a close reach for hours.

Tacking: In light or moderate winds the double canoe will come about (turn into and through the eye of the wind) without stalling if the crew backs the foresail, harnessing the wind to push the bows over. In a strong breeze, however, it's difficult to come about without sailing. Then it is better to jibe (make the turn with the wind astern) by luffing the aftersail until the foresail powers the vessel well off the wind, then close-hauling both sails as the stern passes through the eye of the wind. Here, the blades of the steering paddles are held at full depth to grip the stern in the water. A double hulled vessel is slow to turn because its two hulls give it twice the waterline length of a

sailboat of the same length.

Shortening the Sails: Sails and booms were brailed up to the mast while temporarily not in use.

In the path of a dangerous squall, the prudent act would be to release stays and drop spars and sails, lowering the center of capsize as much as possible. The canoe is brought into the wind, and the forestay (a running line) is eased out, lowering the mast aft. The shrouds will hold the mast in fore-and-aft alignment with the canoe as it comes down.

Lacing between sections of sail matting might be quickly removed to shorten sail.

Storm sails may be simple, small, strongly made sails lashed to short straight spars with stays and shrouds already attached. Rolled up and stored away, these can be raised to power a canoe in moderate gales.

Leeboards: The use of leeboards to diminish leeway and help a vessel without a keel go to windward was a Chinese invention which never got to Polynesia, but the same effect was accomplished, when required, by a row of men holding paddles against the lee side of a hull. This takes practice, but it can add ten degrees to a canoe's windward performance.

Storm Survival: An approaching storm meant getting down sails and spars, even jettisoning the deck shelter if necessary to reduce windage, and laying out a sea anchor on a very long line. Strong baskets are said to have been used in Hawai'i.

If necessary, the next step would be to deliberately swamp the canoe, a technique that modern minds find incomprehensible, but which is still commonly practiced in Micronesia. Wooden hulls provide sufficient floatation so that the crew can ride within the hulls with their heads and shoulders above water.

Being mostly under water, the canoe will not be buffeted about. Most important for navigation, it will not skate downwind, but will hold position fairly well.

After the storm has passed, the hulls can be bailed out and the voyage resumed. It's helpful to have additional positive floatation to raise the gunwales with enough freeboard to facilitate the bailing. On the old canoes, coconuts served as positive floatation as well as providing food and drink. These, and other cargo, were held down in the bottoms of the hulls under netting. Today, any inflatable devices secured under netting can be inflated to give the hulls more freeboard. Rigid foam or empty containers packed under the bow and stern covers will also add floatation.

Other Writings by Herb Kawainui Kane: [Evolution of the Hawaiian Canoe](#); [The Seekers--A Story of Hokule'a's 1985 Visit to Taputapuatea](#).

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Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
Home	Search	Archives	Past Education Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)	

Notes

1. "The main evidence that we have of what the voyaging canoes were like came from an island called Huahine, which is about 110 miles west of Tahiti. In an area called Maeva, a hotel called the Bali Hai was being built and when they were digging up the ground, they found some canoe bailers. They called Dr. Sinoto from the Bishop Museum and he went down and conducted an excavation. He thinks that six hundred to a thousand years ago there was a canoe under construction here and the work place was hit by a tsunami which buried the canoe under mud and sand and preserved it by

cutting off the oxygen that causes wood to rot.

"Sinoto unearthed planks of the canoe with coconut fiber (aha) still holding them together. There was a knot in the plank and what the builders did was to put wood in from behind and lashed the two pieces of wood together to make a sandwich. Dr. Sinoto guesses that this canoe was 72 feet long, ten feet longer than **Hokule'a**" (Nainoa Thompson, Speech at Kamehameha Schools, April 1998).

2. [Haddon & Hornell explain, "The principal features wherein the tongiaki differed from the kalia were: (1) in the approximate equality of the two hulls; (2) in sailing, the same ends were always directed forward and in consequence the manipulation of the sail was entirely different; (3) the mast was much shorter and had a forked head in which the yard rested, with the tack of the sail confined by ropes between the prows and not stepped at the fore end of one hull; (4) the presence of an outrigger balance spar; (5) the deck platform was relatively larger and extended considerably farther aft than in the kalia; (6) the deck shelter was a tunnel-shaped hut without a platform above the roof. (Canoes of Oceania, Bishop Museum, 1936, reprinted 1975, 271-272).] (Click here for a photo of "[Takitumu](#)," a modern reconstruction of a Cook Island kalia.)

3. Kane lists the following people as important contributors to the design and building of **Hokule'a**:

Kenneth Emory: consultation on ancient design features.

Herb Kawainui Kane: conceptual design and establishing design parameters in a general drawing.

Rudy Choy: consultation and advice on hull design.

Vince Bartelone: the hull-lines drawing

Kim Thompson: the lines drawings for the end pieces (manu)

Warren Seaman: lofting the hulls and laying up sections and stringers on the strongbacks.

Curt Ashford and Malcolm Waldron: chief shipwrights.

Jim Ebersold, Calvin Coito, and others: boat carpenters.

Wright Bowman, Sr. and Wright Bowman, Jr.: crossbeam construction.

Keola Sequeira: carver of the koa mast heads (he donated the koa).
Bob Fortier: protective fiber-glassing of the wooden hulls.

Kane recalls: "These were most of the hands-on guys. Additionally there were part-time carpenters and a host of volunteers. Most of the board members donated some time. Publisher Carl Lindquist brought his family down to help with the disagreeable task of poisoning the interiors of the hulls to prevent rot. Kawika Kapahulehua facilitated air transportation for materials and supplies. Slim's Power Tools donated the use of power tools. Many merchants helped procure supplies and materials at cost. Dillingham Corporation donated the use of the building premises. I don't remember the name of the trucking company that gave us a price break to haul the completed parts over the island to Kualoa Park (how I obtained that launching site from mayor Frank Fasi after the State gave me the run around for months on San Souci beach is another story). The U.S. Marines at Kane'ohe brought equipment to lift and set the hulls in perfect position for the lashing up, which was done over five weekends by many volunteers.

4. Malo, David. *Hawaiian Antiquities*. Honolulu: Bishop Museum. 130.

5. Beaglehole, *The Voyage of the Resolution and Discovery*, Cambridge, 1967, Pl. 25-b.

6. "In the earliest days of **Hokule'a**, when she was going through sea trials, the steering mechanism was like the kind we use on a six man canoe but the problem was that a six-man canoe weighs 600 pounds and **Hokule'a** weighs-fully loaded-about 24,000 pounds and guys who were trying to steer her were getting knocked out, ending up in the hospital, and it wasn't working and I was looking at that thing and saying, 'Oh, man, it is really going to be a long trip.' And so some of the beach boys said, 'We are not going to do it this way anymore. We have got to come up with a steering sweep.' And so they designed a steering sweep that would work-from their experience at Waikîkî-and it solved the steering problem. And the steering sweep that they pulled out of that swamp in Huahine [see note 1]-it was discovered after the beach boys figured out how to design a sweep for **Hokule'a**-and this sweep [excataed in Huahine] is very similar in design and only two feet shorter than the ones we use to steer **Hokule'a**" (Nainoa Thompson, Speech at Kamehameha Schools, April 1998).



The Building of the Hokule'a - 1973-75

[Photo below: Hokule'a]

[Sources: Ben Finney's "Voyaging into Polynesia's Past" in *From Sea to Space*, Palmerston North, New Zealand: Massey Press 1992 and *Voyage of Rediscovery*, Berkeley: University of California Press, 1994; Notes from Herb Kawainui Kane on the early history of Hokule'a; also, David Lewis' *The Voyaging Stars: Secrets of the Pacific Island Navigators*, New York: W.W. Norton, 1978.]



Hokule'a was completed in 1975. It has two 62-foot hulls; eight `iako, or crossbeams, joining the two hulls; pola, or decking, lashing to the crossbeams between the two hulls; rails along the decking; and two masts.

Herb Kawainui Kane, who came up with the conceptual design for the canoe, notes, with Kenneth Emory. [Click here for details on how Hokule'a was designed: ["In Search of the Ancient Polynesian Voyaging Canoe"](#)]

Illustrations:

[Large Color Drawing of Hokule'a](#) by Honolulu Star-Bulletin Artist David Swann. (Appeared June 7, 1999).

[Large Color Drawing of Hokule'a](#) with New Sails by Honolulu

Star-Bulletin Artist Greg Taylor (Appeared June 6, 1999).

[Construction Drawings for Hokule'a](#)

[Black and White Diagram of Hokule'a, with Names of Each Part.](#)

How the Canoe was Named: "This happened when the parts of the canoe were close to being completed. One day when I visited the building site, a large shed at Young Bros., one of the guys had chalked 'Da Boat' on the side of one of the hulls. When I asked the reason for the graffiti, they said it was to remind me that it was time to come up with a name.

"According to Kenneth Emory, in the old days a name would come to a canoe designer in a dream. Be that as it may, we tossed the question around at the board meeting a few days later. Several names were suggested, mostly compound names, each including several words; none seemed to be what everyone was looking for. Several weeks went by.

"One exceptionally clear night I stayed up quite late, star chart in hand, locating and memorizing stars and their relative positions. I think I turned in around midnight. Some time later, I dreamed of stars. My attention was attracted to Arcturus, our Hokule'a. It appeared to grow larger and brighter, so brilliant that I awoke.

"It's been a habit for many years to keep a pad and pen on my nightstand. When the body is at rest, the mind half-awake, thoughts range about freely, and ideas form which I've found are sometimes worth noting down. Some painting ideas have come to me that way. I turned on my reading light and wrote 'Hokule'a.'

"The next morning, I saw the notation, and immediately recognized it as a fitting name for the canoe. As a zenith star for Hawai'i it would be a star of gladness if it led to landfall. I phoned Paige Kawelo Barber; she thought it appropriate. I tried it on a few others and got a positive response. The name was proposed at the next board meeting and adopted." (e-mail from Herb, 2/20/99).

Hokule`a was launched on March 8, 1975 at Kualoa on the windward side of O`ahu. Ka`upena Wong organized the religious ceremonies for the

launching, with Kalena Silva and Keli`i Tau`a assisting in the rituals. Kahu Kaupu gave the Christian blessing. Hokule`a made its first voyage to and from Tahiti in 1976.

The 8-ton Hokule`a can be loaded with about 11,000 pounds, or 5.5 tons, including the weight of a crew of 12-16 people and equipment and supplies. It can make up to 10-12 knots sailing on a reach in strong winds.

Since Hawaiians had ceased long-distance, open-ocean voyaging eight centuries ago in the 12th century, no examples of actual ancient voyaging canoes were available as models for Hokule`a. Hawaiian artist Herb Kane based the design of Hokule`a on drawings of canoes made by artists and draftsmen employed by Captain Cook and other early explorers of the Pacific.

How close to an ancient voyaging canoe is Hokule`a? Hokule`a is considerably smaller than the 100-foot plus Polynesian canoes seen by early European visitors. Also, while the design of the hulls and upper parts of the canoe was based on what is known of the traditional Polynesian canoe, the design of the sail-rig departed from traditional precedents. The traditional Polynesian sprit sail was typically laced to two spars, one of which acted as the mast and the other as the boom. The rig Hokule`a consists of a sail attached to spar and boom plus a shorter mast on which the spar, boom and sail are raised and lowered. Hokule`a's rig, with the mast first raised and stayed, was used to facilitate the raising and lowering of the sail.

Although the Polynesian Voyaging Society (PVS) wanted to use traditional materials (koa wood hulls, lauhala sails, sennit lashing) and traditional tools (adzes, bone gouges, coral files, and sharkskin for sanding) in building the canoe, the construction would have been too



time-consuming as the builders tried to relearn the arts of working with such materials and tools. Instead, the hulls were constructed out of plywood, fiberglass, and resin, and the sails were made from canvas; the lashings were done with synthetic cordage. (For the story of the recent effort to build a canoe out of traditional native materials, see ["The Building of Hawai`iloa"](#)).

Because of the use of modern materials, sailing the canoe could not tell PVS

about the strength and durability of traditional canoes. However, the builders strove to approximate the shape and weight of a traditional canoe, avoiding such innovations as wider stance for the hulls for greater stability and a deeper keel for improved sailing capability; so the canoe was a "performance accurate" replica, handling much like the voyaging canoes that once sailed in Polynesian seas.

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Home	Search	Archives	Past Education Programs & Materials	On-Line Visuals	Bibliographies (Books and Films)	



Launching Hokule'a

Kenneth P. Emory

[**Note:** On March 8, 1975, below the peak of Kanehoalani ("Kane, Heavenly Companion") and the broad cliffs of Mo'o Kapu o Haloa ("Sacred Section of Haloa") at the north end of Kane'ohe Bay, Hokule'a slid down a coconut log ramp and floated calmly at sea. The site in Kualoa Regional Park in windward O'ahu, at the border of the ahupua'a of Kualoa and Hakipu'u, was chosen for the launching because of its importance to the voyaging traditions of Hawai'i. Kualoa was the home of the voyaging chief La'amaikahiki ("Sacred One from Tahiti"), and Hakipu'u was the home of the voyaging chief Kaha'i, perhaps La'amaikahiki's grandson.]

Herb Kane says "the launching festivities and lu'au for 2,000 was entirely done by volunteers, led largely by Paige Barber. Eddie Kamae and the Sons of Hawaii donated entertainment as did a hula halau." The following notes by Kenneth P. Emory describe the ceremonies and chants used for its launching. Emory was an anthropologist for the Bishop Museum and a member of the Board of Directors of the Polynesian Voyaging Society. He and Hawaiian scholar Mary Kawena Puku'i were consultants to those who planned and carried out the launching ceremony.]

After the feather pennant and wooden image were secured to the canoe, the canoe on its lona (blocks), decorated with maile, 'ie'ie and Tahitian ti, was ready for the launching.

During the blowing of the conch shells, Herb Kane, Ben Finney and Kenneth Emory mounted the pola (deck); the steersmen, paddlers and Sam Ka'ai seated themselves on the beach between the imu and the canoe. The captain was Herb Kawainui Kane; the kahuna was Ka'upena Wong, assisted by Kalena Silva and Keli'i Tau'a, and kahu Kaupu.

Ka'upena Wong, Kalena Silva, Keli'i Tau'a and kahu Kaupu walked in the direction of the canoe. Kahu Kaupu stopped the group and offered a prayer to the Almighty.

The four continued their walk; Kalena and Keli'i took their positions at the imu and kahu stood in the shade of some trees. Ka'upena, coconut shell filled with seawater in hand, performed the pi kai (sprinkling of the seawater to purify) the canoe and paddlers as he uttered the words: "E kia'i, e alaka'i, e ho'ona'auao, e ho'olanakila, a pae ka wa'a i ke kula me ka lanakila." ("Guide, keep safely (the canoe) until the shore is reached safely.")

Ka'upena drank from the coconut shell before pouring the remaining seawater into the ocean.

Kalena and Keli'i proceeded to open the imu. Taking the cooked food from the imu, Kalena prepared a food offering-pieces of the pig's snout, tail and four feet, a piece of meat, one of the fishes, a banana-and placed them on a coconut-leaf platter covered with a section of banana leaf and 'awa leaves. The platter of food was given to Ka'upena.

Kalena and Keli'i now served the paddlers. After all were served Ka'upena and Kalena walked to the canoe; Ka'upena mounted the pola and received the food offering from Kalena. On the pola Ka'upena faced Herb, Ben and Kenneth. Herb said:

Eia ka wa'a i kalai ia; e kapa'ia ha'inoa 'o Hokule'a. Ke ui aku nei na alaka'i o ka po, na alaka'i o ke ao, na alaka'i o luna, na alaka'i o lalo.

("This is the canoe which has been built; its name is to be Hokule'a. Ask our gods of po and of ao, from above, from below to bless it.")

Ka'upena, food offering in hands, chanted [This chant can be found in an article written by Kalokuokamaile called Kala'i Wa'a ana a Me Kona Mau Ano, published in the Nupepa Kuokoa from Oct. 26-1922-Feb. 15, 1923. The chant is in the February 8, 1923 issue.]:

1. Mokuha'i'i, Kupa'aik'e, Lea

2. Eia ka pua'a,
3. He uku, he makana, he 'alana,
4. He mohai ia 'oukou.
5. Ua pa'a ka wa'a (Hokule'a) (he kaulua)
6. A e ho'olanaia aku ana i ke kai
7. O kona 'aina ia e huli ai i ka loa'a ame ka waiwai.
8. E nana pono loa 'oukou
9. E maka'ala i na puko'a, na pu'upohaku o kahi laupapa
10. Na nalu, na 'ale o ka moana.
11. Ho'oholo no 'oukou i ka wa'a ma kahi hohonu o ke kai,
12. I hele ai ka wa'a a nalukai,
13. A 'apulu, a ulu ka limu pakaiea, a kaniko'oko'o.
14. 'amama, ua noa.

1. O Mokuhali'i, Kupa'aike'e, Lea,
2. Here is pork,
3. A payment, a gift, an offering,
4. A sacrifice to you.
5. The canoe (Hokule'a) is finished (a double-hulled canoe),
6. Ready to be launched onto the sea,
7. Its home where it will seek gain and wealth;
8. Watch over it carefully
9. Be alert for coral beds and stone outcroppings of the reefs,
10. For the waves and the swells of the ocean.
11. Guide the canoe over the depths of the sea,
12. Let the canoe ride over the waves of the sea,
13. Till it is worn out, overgrown with limu, and aged.
14. The kapu is lifted, it is removed.

After the chant, Ka'upena left the pola and joined Kalena, Keli'i and paddlers at the imu. All ate the food prepared for them. In addition the paddlers drank coconut water. The eating pau Kalena and Keli'i collected the remains from the imu and platters and placed them into a coconut-leaf basket. They weighted the basket with a few imu rocks and tied it up with cord. Kalena and Keli'i carried the basket to Ka'upena who had mounted the pola. Ka'upena placed the food remains in the ti-thatched shelter on the pola. From the pola he shouted to the paddlers: "E ho'omakaukau!" ("Make ready!")

Herb **ma**, Ka'upena, Kalena, Keli'i, and paddlers took their positions to launch the canoe. Master of Ceremonies Moroni Medeiros invited all males in the audience to help pull the ropes for the launching of **Hokule'a**. With a signal from Herb, Ka'upena called out: "E alu like!" ("Let's all work together!")

Ka'upena began the hauling chant and was to be joined by the paddlers, encouraged by Kalena and Keli'i:

Kiauau, **ki**auau (Haul, haul)
Huk**ia**uau, huk**ia**uau (Pull on, pull on)
Ko**au**au, ko**au**au (Draw on, draw on)
Ho'omalo he kaula (Keep the rope taut)
Moku a he kaula (Keep the rope in position)

Hokule'a, anxious to be in her new home, was in the water seconds after Ka'upena chanted the first "**Kia**uau."

With **Hokule'a** majestically occupying her place in the water and receiving pats and shouts of joy from her admirers, Herb **ma**, and the paddlers scrambled aboard the handsome canoe. In the din of excitement, with **Hokule'a's** swift entry into the water, Ka'upena, Kalena and Keli'i waited, then walked down the beach to the water's edge. Here Ka'upena began to chant a couple of times but decided to stop because of the activity on and surrounding the canoe. Ka'upena, Kalena and Keli'i, **ti** stalks in hand, mounted the pola. Herb gave instructions to take the canoe out. As **Hokule'a** moved gracefully out to sea, Ka'upena sat down and chanted [From Malo, 129. The meaning of "kuwa," which appears in the first six lines is uncertain. Emerson, the translator and annotator of Malo, suggests "uplifter," from "**ku**" ("upright") and "**wa**" ("space"). See his note 14 on page 134.]:

1. O kuwa o ka lani,
2. O kuwa o ka honua,
3. O kuwa o ka mauna,
4. O kuwa o ka moana,
5. O kuwa o ka **po**,
6. O kuwa o ke ao,

7. O Malualani ke kuwa,
8. O Maluahopu ke kuwa,
9. Aia no ia ko'i la ke kuwa.
10. Ka wa'a nei o **ha** luahine makua.
11. Ka luahine! 'O wai?
12. Ka luahine o Papa,
13. Wahine a **Wakea**.
14. **Nana** i kuwa,
15. **Nana** i hainu,
16. **Nana** i hele,
17. **Nana** i a'e
18. **Nana** i ho'onoanoa.
19. Noa ke kuwa o **ha** wa'a o **Wakea**.
20. O ka wa'a nei o **ha** luahine rnakua.
21. Ka luahine! 'O wai?
22. Ka luahine o Lea,
23. Wahine a Moku**hali'i**.
24. **Nana** i kuwa,
25. **Nana** i hainu,
26. **Nana** i hele,
27. **Nana** i a'e
28. **Nana** i ho'onoanoa.
29. Noa ke kuwa o ka wa'a o Moku**hali'i**.
30. Hinu helele'i aku,
31. Hinu helele'i mai.
32. He miki 'oe **Kane**;
33. He miki 'oe **Kanaloa**.
34. O **Kanaloa** hea 'oe?
35. O **Kanaloa** inu 'awa.
36. Mai Kahiki ka 'awa,
37. Mai 'Upolu ka 'awa
38. Mai Wawau ka 'awa.
39. E hano 'awa hua
40. E hano 'awa pauaka;
41. **Halapa** i ke akua i **la'**au wai la!
42. **'amama**, ua noa.

43. Lele wale aku la.

1. Uplifter of the heavens,
2. Uplifter of the earth,
3. Uplifter of the mountains,
4. Uplifter of the ocean,
5. Who hast appointed the night,
6. Appointed the day,
7. Malualani is the kuwa
8. And Maluahopu,
9. That ax also is a kuwa.
10. This is the ax of our venerable ancestral dame.
11. Venerable dame! What dame?
12. Dame Papa,
13. The wife of **Wakea**.
14. She set apart and consecrated,
15. She turned the tree about,
16. She impelled it,
17. She guided it,
18. She lifted the kapu from it.
19. Gone is the kapu from the canoe of **Wakea**.
20. The canoe this of our ancestral dame.
21. Ancestral dame! What dame?
22. Dame Lea,
23. Wife of **Mokuhali'i**
24. She initiated,
25. She pointed the canoe,
26. She started it,
27. She guided it;
28. She lifted the kapu from it.
29. Lifted was the kapu from the canoe of **Mokuhali'i**.
30. Fat dripping here,
31. Fat dripping there.
32. Active art thou **Kane**;
33. Active art thou **Kanaloa**.
34. What **Kanaloa** art thou?
35. **Kanaloa** the 'awa drinker.

36. 'Awa from Tahiti,
37. 'Awa from 'Upolu,
38. 'Awa from Wawau,
39. Bottle up the frothy 'awa,
40. Bottle up the well-strained 'awa.
41. Praise be to the God in the highest heaven!
42. The kapu is lifted, removed.
43. It flies away.

During the trip out **Hokule'a** appeared to welcome all aboard by responding to Herb, the steersmen, paddlers. The feeling was good.

After it was some distance from shore, Herb directed that **Hokule'a** be turned around. He reminded everyone that when the food remains were given to the sea, no one should turn to look back. Kalena and Keli'i threw the basket overboard and the crew began to paddle **Hokule'a** back to shore. Ka'upena, Kalena and Keli'i moved up front and sat down. Together Ka'upena and Kimo Hugo worked out the rhythmic pattern for the next chant. About halfway in, Ka'upena began the chant; and he was joined by Kalena, Keli'i, the Kamehameha School chanter-paddlers, and Kimo ma:

Ia wa'a nui That large canoe
Ia wa'a kioloa / That long canoe
Ia wa 'a peleleu / That broad canoe
A lele mamala / Let chips fly
A manu a uka / The bird of the upland
A manu a kai / The bird of the lowland
'Tiwi polena / The red Hawaiian honeycreeper
A kau ka hoku / The stars hang above
A kau i ka malama / The daylight arrives
A pae i kula / Land ashore
'amama, ua noa / 'amama, the kapu is lifted

This chant was accompanied by the striking of the paddles against the sides of the canoe. Instructions for the chant rhythm were as follows: "The stroke is slow. The paddle is struck a little in front of the paddler on the return of the paddle. The timing is thus: Ia wa'a (thump) nui (thump), ia wa'a (thump) kioloa (thump), ia wa'a (thump) peleleu (thump)."

As **Hokule'a** neared the shore **Ka'upena** called for the chanting, to end with: "A pae i kula!" ("Land ashore!")

Ka'upena left the *pola* and announced to all: "'amama, ua noa!" ("The prayer is said, the *kapu* is over!")

Then he turned to **Hokule'a** and asked: "Pehea ka wa'a, pono anei?" ("How is the canoe, is it good?")

All aboard answered: "'Ae, maika'i loa ka wa'a **Hokule'a**!" ("Yes, the canoe **Hokule'a** is indeed very good!")

Ka'upena turned to *kahu Kaupu*, who had walked down to greet **Hokule'a** and her crew, and he said: "Eia ka wa'a e ho'opomaika'i ia." ("Here is the canoe in your care for a Christian blessing.") *Kahu Kaupu*, in celebration, offered a prayer:

E Ke Akua Manaloa, Ke Akua Ka Makua piha Ka 'ihi'ihī ame Kealoha, no Kou ka honua ame Kona mea i piha ai. Eia no ka wa'a **Hokule'a** e kalai 'ia no na moana me na kai, a he pono ia 'oia makou i na mea ma'a mau mai kupuna mai. E loa'a 'oia me ka malu ame Kealoha.

Na Ke Akua, me kokoke 'oe **Hokule'a**, e pale aku mai 'oe; a iloko 'oe **Hokule'a**, e ho'oikaika mai 'oe, a puni 'oe **Hokule'a**, e malama mai 'oe; a mamua ae 'oe **Hokule'a**, e alaka'i mai 'oe; a mahope iho 'oe **Hokule'a**, e ho'apono mai 'oe; a maluna 'oe **Hokule'a**, e ho'opomaika'i mai 'oe. Me Kealoha o ka Haku Ka Makua, Ke Keiki, a me Ka 'Uhane Hemolele, me 'oe ame e noho 'oia mau aku. 'Amene.

Almighty God, our Loving and Holy Father, the earth is yours and the fullness there of. Here is your canoe, the **Hokule'a**, built for the oceans and the seas. And we have consecrated her according to the traditions of our *Kupuna*. Receive her, O God with Aloha and peace.

May the Spirit of God be near you to defend you, within you to restrengthen you, around you to preserve you, before you to guide

you, behind you to justify you, and above you to bless you. May the Aloha of God, The Father, Son and Holy Spirit, be with you and remain with you always. Amen.

At the completion of Kahu Kaupu's prayer, he and Ka'upena embraced. Kahu was embraced by Kalena and Keli'i, the paddlers, Herb ma. Everyone felt good, proud. It was time for the lu'au, hula, songs, music, beer, talk-story.

<u>1976: Tahiti</u>	<u>1980: Tahiti</u>	<u>1985-87: Aotearoa (New Zealand)</u>	<u>1992: Rarotonga</u>	<u>1995: Marquesas</u>	<u>1995: West Coast, British Columbia, & Alaska</u>	<u>1999-2000: Rapanui</u>
<u>Voyages</u>	<u>Canoe-Building</u>	<u>Wayfinding</u>	<u>Life on a Canoe</u>	<u>Polynesian Migrations</u>	<u>Proverbs and Traditions</u>	
<u>Home</u>	<u>Search</u>	<u>Archives</u>	<u>Past Education Programs & Materials</u>	<u>On-Line Visuals</u>	<u>Bibliographies (Books and Films)</u>	



Voyaging into Polynesia's Past: Part 1 The Founding of the Polynesian Voyaging Society

Ben Finney

[Note: Originally published in *From Sea to Space* (Palmerston North: Massey University, 1992, 5-65). Figures referred to in the article appear in original publication only. Other parts of the article are on-line: Part 2--[Hawai'i to Tahiti and Return: 1976](#); Part 3--[Hawai'i to Tahiti and Return: 1980](#); Part 4--[Voyage of Rediscovery: 1985-87](#). Click here for Finney's account of the 1995 Voyage to Ra'iatea and Nukuhiva, [Sin at Awarua](#).

Ben Finney pioneered the reconstruction and sailing of Polynesian voyaging canoes. He first began dreaming about building a canoe and sailing it to Tahiti while studying at the University of Hawai'i in 1958. In the mid-1960s he built Nalehia, a replica of a Hawaiian double canoe that provided the basic information on sailing performance that went into planning Hokule'a's initial voyage to Tahiti. In 1973 he co-founded the Polynesian Voyaging Society, and served as its first president. He sailed aboard Hokule'a during the first voyage to Tahiti in 1976, the 1985 voyage to Aotearoa, and the 1992 voyage to Rarotonga, and also covered the 1995 voyage from the Marquesas to Hawai'i from Hokule'a's escort vessel. He has taught anthropology at the University of Hawai'i since 1970, and has published a number of books and articles on voyaging and exploration, including *Hokule'a, the Way to Tahiti* (1979), *Voyage of Rediscovery: A Cultural Odyssey through Polynesia* (1994) and "Traditional Navigation and Nautical Cartography in Oceania" (1998).]

The Founding of the Polynesian Voyaging Society

Since European explorers first chanced upon the islands of Polynesia and their handsome inhabitants in the 16th century, the issue of how these islands were discovered and settled has been one of the most fascinating puzzles of prehistory. Early navigators from Spain, Holland and England were largely mystified how stone age people could have found their way to these mid-ocean islands. These mariners from another world had only recently developed the technology to cross the oceans, yet on island after island they found people already living there-people who lacked ships, the compass or any of the other devices so vital to European oceanic expansion.

A number of these puzzled seafarers refused to recognize the possibility that the ancestors of the people they found living on the islands could themselves have sailed so far into the Pacific, and instead sought to explain their presence by other means. Consider, for example, the first sustained encounter between Polynesians and Europeans which occurred in 1595 when ships of Mendana's second expedition into the Pacific chanced upon the Polynesian archipelago they called Las Marquesas de Mendonca, now commonly known as simply "The Marquesas." The expedition's navigator, Pedro Fernandez de Quiros, was not at all impressed by the sailing canoes of the Marquesans or their claims that they could navigate far out of sight of land. Because they had no ships or navigational instruments, he judged that they lacked the "skill or the possibility of sailing to distant parts." In fact, Quiros seized upon this apparent dilemma of the presence of a people in the middle of the Pacific without the means to have sailed that far into the ocean, to support his own search for a rich "Southern Continent," the Terra Australis that many European cosmographers of that day thought must lie in the Southern Hemisphere. These islanders, he proposed, had been able to employ their primitive canoes and rudimentary ways of navigating to sail to the Marquesas from a continent lying not far to the south, or from a chain of closely-spaced islands located there, which stretched all the way to Asia and had provided the stepping-stones that enabled these primitive seafarers to expand so far into the Pacific.^{[1](#)}

On Easter Sunday in 1722, the Dutch navigator Jacob Roggeveen happened across a lonely island in the eastern Pacific he named Paaschen Eilandt

(Easter Island), but which the islanders now call Rapa Nui. Roggeveen was even more hard-pressed than Quiros had been to explain this human presence in the middle of the ocean. Whereas the Marquesans had large, double-hull sailing canoes, because of the deforestation of their island the Rapa Nui people had only miserable little outrigger canoes pieced together from scraps of native timber and driftwood. In his journal, Roggeveen records his struggle to comprehend how these people lacking the means for ocean voyaging came to be on the island. First, he asked himself whether the Spanish might have brought them, only to reject that notion because of the apparent lack of any Spanish influence on the island. He then considered that the islanders might be direct "descendants of Adam" who had "bred there naturally from generation to generation," but finally decided that "the ability of human understanding is powerless to comprehend" how these people ever reached their island.[2](#)

The common element in these and other such speculations as to the origins of the people European explorers kept finding on the mid-Pacific islands they chanced upon was the assumption that the slim canoes of the islanders, and whatever means they had of navigating without instruments, were simply not up to the task of exploring the Pacific and colonizing the many islands found there. It therefore seemed logical that the solution to the puzzle of how these islands had originally been settled must lie elsewhere than in the seemingly primitive nautical technology and abilities of the islanders themselves.

Such ethnocentric thinking was common during the first age of European exploration when explorers were seeking to develop new routes to the riches of Asia, or new lands for exploitation such as the hypothesized Southern Continent. They were little interested in the people they met along the way, much less in giving them any credit for great maritime achievements. This attitude began to change with the coming into the Pacific of Captain James Cook. His three voyages inaugurated the extension to the Pacific of Europe's second Age of Exploration, the era when, according to the historian Ferdinand Braudel, European maritime nations began sending out expeditions "to obtain new information about geography, the natural world, and the mores of different peoples," as well as for geopolitical and commercial advantage. In fact, Cook was not only the first Pacific explorer

to make a concerted effort to understand the people he encountered, but he was also the first to consider seriously how their ancestors might have actively explored and settled this island world.[3](#)

During his three voyages Cook criss-crossed the Pacific, touching on the extreme points of the Polynesian triangle, Hawai'i, Rapa Nui and Aorearoa, and many of the islands within. Because of the similarity of language and custom among the inhabitants of all these islands, he recognized the islanders to be members of the same great "nation," the first realization of the existence of the great cultural province we now call Polynesia. Although Cook did not survive the third voyage to return to England where he might have found time to write at length on his ideas about these islanders, in the journal of his first voyage-that made to Tahiti to observe the transit of Venus across the face of the sun-he sketched a theory that has formed the basis for thinking about Polynesian origins ever since.

Cook actually learned some Tahitian, and used his rudimentary linguistic skills to inquire into Tahitian nautical matters. His primary informant was Tupa'ia, a learned Tahitian who told Cook how they sailed their canoes and navigated by reference to the stars, moon and sun, and gave him sailing directions to islands as far away as the Marquesas to the northwest, the Australs to the South and at least as far west as Sāmoa, Fiji and Rotuma. Cook was apparently impressed enough with the practical seamanship and navigational skills of the Tahitians, and their wide geographical knowledge, to propose what had been unthinkable to Quiros, Roggeveen and other early European explorers: that the ancestors of these islanders could have sailed into the Pacific on their own, discovering and settling the many islands on which he found their descendants.

Cook thought the islanders (whom he called "Indians" or "South Sea Islanders," for the term "Polynesian" had yet to be applied specifically to them) had worked their way eastward across the Pacific in their canoes, which he calls "proes" from the Malay prahu, or "Pahee's" from the Tahitian pahi:[4](#)

In these Proes or Pahee's as they call them from all accounts we can learn, these people sail in those seas from Island to Island for

several hundred Leagues, the Sun serving them for a compass by day and the Moon and Stars by night. When this comes to be prov'd we Shall be no longer at a loss to know how the Islands lying in those Seas came to be people'd, for if the inhabitants of Uleitea [Ra'iatea] have been at islands laying 2 or 300 Leagues to the westward of them it cannot be doubted but that the inhabitants of those western Islands may have been at others as far to westward of them and so we may trace them from Island to Island quite to the East Indias.

Cook saw only one obstacle to accepting the linguistic evidence, supplied to him by his chief scientist Joseph Banks, pointing to the "East Indias," or roughly the archipelago of Indonesia, as the starting point for this migration: the route would have taken canoes eastward in the face of the trade winds that blow from the east-southeast. He evidently had doubts about the ability of the islanders' canoes to sail directly into the trade winds, and quizzed Tupa'ia accordingly. The Tahitian, whom he called "Tupia," had a ready answer that supplied Cook with the information he needed to complete the picture:[5](#)

Tupia tells us that during the Months of Novr Decembr & January Westerly Winds with rain prevail & as the inhabitants of the Islands know very well how to make proper use of the winds there will no difficulty arise in Trading or sailing from Island to Islands even tho' they lay in an East & West direction.

So, with his seaman's eye and eminently good sense, Cook proposed that the islanders came from the west, originally from the East Indies where related languages were spoken, and that they employed their sailing canoes, non-instrument navigational ability, and skill at utilizing westerly wind shifts to work their way eastward, from island to island, against the direction of the prevailing trade winds.

Cook's remarks and the reasoning behind them formed the basis for what might be called the orthodox view of intentional Polynesian settlement from the Asian side of the Pacific that was to be further developed in the decades that followed by a succession of navigators, scientists and other scholars. For

example, in 1828 the French navigator Dumont d'Urville precisely drew the cultural and geographic boundaries of Polynesia and gave the region that name. Horatio Hale, the linguist aboard the U.S.S. Exploring Expedition that cruised the Pacific between 1839-1842, systematically traced linguistic relationships within Polynesia and from there to island Southeast Asia, as well as confirmed how westerly wind shifts can be used to sail from west to east to and across Polynesia. Abraham Fornander of Hawai'i, New Zealander S. Percy Smith and other amateur scholars working in the latter half of the 18th century and the first decades of this one collected and analyzed the voyaging traditions of the Polynesians to trace their migrations within Polynesia and to there from the western side of the ocean.[6](#)

Not all those who pondered how the islands of the Pacific came to be settled accepted this orthodoxy, however. Prominent among dissenting theories were those proposed by Joaquin Martinez de Zuniga, a Spanish priest stationed in the Phillipines, and John Lang, a Presbyterian minister living in Australia.

In 1803 Martinez de Zuniga published a history of the Philippines in which he asserted that the people of Polynesia and many other Pacific Islands, including the Philippines, spoke languages closely related to those of South America, and that because the steady easterly trade winds of the tropical Pacific would have prevented canoes from sailing eastward, the Pacific Islanders must have come from the Americas, blown by the trade winds from island to island west across the Pacific. Lang, writing later in the 19th century, shared Martinez de Zuniga's idea that people were forced by the wind across Pacific, but reversed the direction of migration. Noting that the easterly trade winds were seasonally interrupted by monsoon winds from the west "which often blow in heavy gales," Lang proposed that Polynesia and other Pacific Islands had been settled by a long series of maritime misadventures when hapless voyagers had been blown eastward by violent westerly winds.[7](#)

Although they differed in direction of settlement, Martinez de Zuniga and Lang shared a dim view of islanders' nautical abilities, and, hence, the belief that the islands of the Pacific could only have been settled by voyagers pushed out into the ocean by the winds, be they steady trades or westerly

gales. Their theories did not gain wide credence, however, and were submerged beneath a broad consensus that Polynesian canoes, navigational methods and seamanship had been well adapted to the exploration of the Pacific and the settlement of far-flung islands, and that the ancestral Polynesians had intentionally set out from the western edge of the Pacific to explore the ocean and settle the islands they found there. Although within this orthodoxy there were conflicting opinions as to whether the ancestral Polynesians had sailed through Melanesia or Micronesia to reach the mid-Pacific, and other details of the migration, this consensus was not seriously challenged until the middle of this century when a Norwegian adventurer and a New Zealand historian burst into the then quiet waters of Polynesian scholarship to revive the heresies of Martinez de Zuniga and Lang.

One day in 1947 a raft crashed upon the reef of Raro'ia Atoll in the Tuamotus after drifting and sailing before wind and current for 101 days after leaving Peru. The expedition's leader, Thor Heyerdahl, was out to demonstrate how South American Indians could have settled Polynesia by raft. Although Heyerdahl made much of supposed linguistic and other cultural parallels between the American Indians and the Polynesians, the linchpin of his theory was the same as that of Martinez de Zuniga: Heyerdahl asserted that the "permanent tradewinds and forceful companion currents of the enormous Southern Hemisphere" would have prevented canoe voyagers from settling Polynesia directly from the west, while promoting colonization from the Americas by voyagers pushed westward by wind and current.[8](#)

A decade later, Andrew Sharp, a New Zealand civil servant turned historian, published a bombastically polemical book called *Ancient Voyagers in the Pacific*, in which, while accepting the orthodox view that settlement had been from the west, he resurrected Lang's theory that the islands of Polynesia had been settled accidentally by hapless canoe voyagers driven randomly across the sea by stormy westerly winds. The Polynesians could not have intentionally explored and settled the Pacific, claimed Sharp, because their canoes were not seaworthy and weatherly enough, and their navigation system not accurate enough, to have enabled them to set out on long, navigated voyages of exploration and colonization. Instead, said Sharp,

Polynesia had been settled over a long period of time by the survivors of maritime accidents. He proposed that canoes were periodically lost at sea when, while sailing along the coast of an island or between closely-spaced islands, they were blown out of sight of land by storms, or simply went off course because of cloudy weather or navigational incompetence. Wherever one of these lost canoes, or others containing people forced to flee their home islands because of war, famine or overpopulation, were randomly pushed by wind and current onto the shore of an uninhabited island a new Polynesian colony would result. This accidental process, multiplied many times over, and nothing more, said Sharp, accounted for the immense oceanic dispersion of the Polynesian nation.⁹

Although Heyerdahl gained wide popular support for his theory of "American Indians in the Pacific," because his ideas contradicted the linguistic and cultural evidence of an ultimate Southeast Asian origin of the Polynesians, professional prehistorians thought little of them. Nonetheless, despite scholarly protestations, it soon became apparent that Heyerdahl had pointed out a major weakness in orthodox thinking about Polynesian settlement. Relationships evident in language and cultural traits that pointed to a Polynesian derivation from the west, were not matched by island-by-island archaeological excavations demonstrating that the ancestors of the Polynesians had in fact migrated eastward into the mid-Pacific.

Accordingly, archaeologists directed their efforts toward discovering the migration trail to Polynesia, as well as to unravelling the sequence and timing of settlement within Polynesia. The results have supported a derivation of the Polynesians from the western side of the Pacific, not their migration from the Americas as Heyerdahl claimed.

Through a distinctively decorated pottery called Lapita, and associated artifacts, archaeologists have been able to trace the migration of the immediate ancestors of the Polynesians from the Bismarck Archipelago off the northeast coast of New Guinea across Melanesia to the oceanic archipelagos of Fiji, Tonga and Sāmoa where they arrived around 1500 B.C. These mid-Pacific islands, and not any distant continental shore, have emerged as the long-sought homeland of the Polynesians, for excavations show that it was in this oceanic setting that ancestral Polynesian culture

evolved from its Lapita roots.[10](#)

From this homeland region, now called West Polynesia, the trail of artifacts leads to the archipelagos of central East Polynesia-the Cooks, Societies, Australs, Tuamotus and Marquesas, and then from there to the distant islands of Hawai'i, Rapa Nui and Aotearoa. In all the hundreds of excavations conducted throughout Polynesia, no prehistoric pottery or other ancient artifacts that can be directly traced to either North or South America have been uncovered. Although the pre-European cultivation by Polynesians of the sweet potato, a plant of South American origin, indicates that there must have been some communication between the Americas and Polynesia, the archaeological record demonstrates that Polynesians are descended from seafarers who moved eastward across the Pacific from the western edge of the ocean.[11](#)

In contrast to the immediate and widespread opposition to Heyerdahl's thesis, Sharp's accidental settlement hypothesis found a degree of acceptance among many historians, cultural anthropologists and prehistorians. Not only was it congruent with orthodox thinking that migration into the Pacific had been from west to east, but it appealed to those scholars who, like the European explorers cited earlier, could not comprehend how people who had only slim canoes, and who lacked the compass and other navigational instruments, could have intentionally explored and settled Polynesia. Furthermore, they saw it as a welcome correction to overblown and ill-founded accounts of Polynesian seafaring and migration, one that offered a simple explanation of Polynesian settlement based on random processes rather than a complicated one based upon seafaring feats that were difficult to imagine.[12](#)

Sharp's thesis had a special appeal to some prehistorians who were then introducing modern archaeological methods into Polynesia. They had just come from archaeological centers in Europe and the United States where the focus on migrations that had long dominated the study of prehistory was being replaced by one centered on internal processes of adaptation and change within each cultural or social unit investigated. By embracing the idea of accidental settlement, pre-historians could rid themselves of scenarios-developed largely from oral traditions-involving long voyages of

exploration, colonization, and subsequent two-way communication, and of all the complications these would bring to their efforts to comprehend the development of individual island cultures. Instead, they had only to assume initial settlement of an island or archipelago by the random arrival of a canoe, and then, in the centuries that followed, cultural development in isolation from all but the nearest of neighboring islands, perhaps broken only occasionally by the landing of another drifting canoe from a distant island.[13](#)

Hokule'a

Not everyone, however, embraced Sharp's accidental settlement thesis, particularly the negative assessment of seafaring capabilities upon which it was based. The Polynesians, Sharp claimed, could not possibly have intentionally set out to explore and settle their island realm because their canoes were too flimsy and unseaworthy, their navigation methods too imprecise and their seamanship skills too rudimentary for the task. Unfortunately, however ethnocentric and ill-informed Sharp's assessment may have seemed to those who took exception to it, efforts to refute Sharp foundered on the lack of exact information about the seaworthiness and windward ability the Polynesians canoes, the accuracy of their navigation system, and the quality of their seamanship. The great canoes and their navigators had long since disappeared from Polynesian waters, and the descriptions of canoes and navigation in the explorer's journals were too imprecise and contradictory to settle the question definitively. Without the necessary information, the debate between Sharp and his supporters on the one hand, and champions of the idea that the Polynesians and their ancestors had played an active, seafaring role in the discovery and settlement of their island world, quickly reached an impasse marked more by polemics than insight.[14](#)

Initiatives developed to breakout of this stalemate included efforts by nautically-minded investigators to study canoe navigation in the central Caroline Islands of Micronesia, the only place in the Pacific where traditional techniques were still being widely used to guide canoes from island to island, and a massive computer simulation study designed to test whether the pattern of winds and current prevailing in the Pacific would

have been conducive to the settlement of the islands by drifting canoes. By detailing how it was possible to navigate without instruments, and how unlikely it was that the movement from West to East Polynesia and from there to Hawai'i, Rapa Nui and Aotearoa could have been accomplished by drifting canoes, these studies went a long way toward undermining Sharp's thesis. Nonetheless, however enlightening was the ability of Micronesian navigators to guide their canoes across the relatively short inter-island gaps of Micronesia, and the statistical unlikelihood that canoes could have drifted over the major inter-archipelago gaps of Polynesia, these studies did not supply the missing information on how canoes could have been intentionally sailed over the long seaways of Polynesia.[15](#)

Since the ancient voyaging canoes and their navigators had disappeared from Polynesian waters, the obvious course was to experiment, to recreate the voyaging canoes and ways of navigating without instruments and then try them out at sea. In other words, the situation called for a nautical application of experimental archaeology, that branch of prehistory concerned with the reconstruction and testing of ancient artifacts and techniques. This experimental effort got underway in the mid-1960s, when David Lewis navigated his catamaran from Tahiti to New Zealand without instruments, and when my students and I built a replica of a 40-foot long Hawaiian double-canoe which we used in a series of instrumented trials that showed that such a craft sailed well downwind and across the wind, and could be tacked slowly to windward.[16](#)

On the basis of these experiments, I proposed that it would be feasible to sail a reconstructed voyaging canoe over the legendary route from Hawai'i to Tahiti and return, and to navigate all the way by traditional methods. Hawai'i and Tahiti are separated by some 2,250 nautical miles of open ocean, yet Sharp had claimed that it had been impossible for Polynesians to make intentionally navigated round-trip voyages between islands separated by more than 300 nautical miles. To complete such a crossing in a reconstructed voyaging canoe would therefore challenge a key tenet of Sharp's theory.[17](#)

In 1973 a group of us from Hawai'i started the Polynesian Voyaging Society to raise funds and then build a large canoe for the Tahiti voyage. The design and construction of a craft that would represent a voyaging canoe of many

centuries ago posed a number of problems, for we could not start with an archaeologically-excavated specimen, and then copy it using all the tools and materials of the original builders-as is recommended for experimental archaeology projects. Aside from a few bits of canoes recovered from swamp sites and burial caves, we had no archaeological specimens to guide us, certainly nothing like the virtually complete craft that our colleagues in the Mediterranean and northern European waters have recovered and in some cases copied. Unlike ancient Mediterranean sailing vessels, unballasted Polynesian canoes do not sink. Nor had the Polynesians been so obliging to future archaeologists as had the Vikings, who buried their chiefs in their long boats. However, we did have abundant drawings and descriptions of Polynesian canoes in use during the European contact period, and we used these to develop a "common denominator" design to represent an archaic voyaging canoe ancestral to these local types.

We would have preferred to build our canoe using stone adzes, miles and miles of coconut fiber sennit line, and other features of traditional craftsmanship. But, beyond lashing some components of the canoe with sennit made for us on remote atolls where the old men still knew how to manufacture this cordage, and making an experimental sail out of strips of pandanus matting woven specially for us on the Polynesian Outlier of Kapingamarangi, we did not attempt to build the canoe with traditional materials and methods, for we knew that to try and recreate ancient tools and lost arts would have interminably delayed our project. Instead, we used some modern tools and materials, fabricating our hulls, for example, out of frames covered with layers of plywood strips, and then lashing the hulls, decking and other structures together mostly with modern line. However, we constantly strove to make our canoe in shape and weight a "performance accurate" replica of a traditional voyaging craft that would tell us much about how ancient canoes sailed. For example, despite numerous suggestions that we should widen the stance of the hulls to enable the canoe to carry more sail, add keel fins to the hulls to enhance their ability to resist leeway, and adopt a modern sail rig for greater speed, we stuck to traditional precedents of a narrow separation between hulls, a semi-rounded hull shape and the inverted-triangle sprit sail so that our canoe would sail no better than her ancient predecessors.

We assembled the components of our canoe—two hulls each 62 feet in length, eight crossbeams, decking, rails and two masts—at Kualoa on the north shore of O'ahu Island. The completed canoe was launched in 1975 and christened *Hokule'a*, Hawaiian for Arcturus, the bright star which passes directly over the island of Hawai'i. Although sea trials were not without mishaps, when properly sailed and maintained the craft proved to be stable and seakindly. Driven by two Polynesian sprit sails, and steered by long steering oars, *Hokule'a* could make 10 knots or more sailing on a broad reach before strong trades. Her speed of course dropped off when sailing to windward, but trials showed that in sailing full and by against brisk trades she could easily make at least 4 or 5 knots, an adequate windward performance, we felt, for the long voyage to Tahiti.

While we might have fallen somewhat short of the ideals of experimental archaeology in the construction of our canoe, we intended to follow a much more rigorous experimental protocol on our voyage than had been carried out on previous ocean crossings made in reconstructed craft, such as Heyerdahl's 1947 voyage from Peru to the Tuamotus Archipelago aboard the raft *Kon-Tiki*, and Magnusson's 1893 voyage from Norway to North America in a reconstruction of a Viking longship. Both these crossings had been one-way only, and had been navigated with magnetic compass, charts and other modern aids. In contrast, we intended to make a round-trip voyage between Hawai'i and Tahiti, replicating the two-way voyages celebrated in Hawaiian legend, and, furthermore, we planned to navigate by traditional, non-instrument methods.[18](#)

Voyaging into Polynesia's Past: Part 1--The Founding of the Polynesian Voyaging Society; Part 2--[Hawai'i to Tahiti and Return: 1976](#); Part 3--[Hawai'i to Tahiti and Return: 1980](#); Part 4--[Voyage of Rediscovery: 1985-87](#).

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Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions
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Home	Search	Archives	Educational Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)
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Voyaging into Polynesia's Past--Part 2 Hawai'i to Tahiti and Return: 1976

Ben Finney

The crossing from Hawai'i to Tahiti presented two main challenges, one in sailing, the other in navigation. The longitude of the Hawaiian island of Maui, our starting point, lies some 500 miles west of the longitude of Tahiti. Since the trade winds along the route generally blow from the northeast above the equator, and from the southeast below it, in order to reach Tahiti, **Hokule'a** had to sail well enough to windward to make up the 500 miles of longitude and while also fighting the westward moving current that typically accompanies the trades. Our strategy to accomplish this was to sail as hard into the wind as the canoe would point without losing too much speed in order to gain maximum easting in the northeast trades, and then to hold on to as much of that easting as possible when, below the equator, the winds shift to the southeast and would start pushing us to the southwest.

The navigational problem was also considerable: how to guide a canoe, without any instruments or other aids, over the open ocean from the Northern to the Southern Hemisphere and, after a month at sea, find the island of Tahiti. Because none of us could with confidence recreate and then precisely apply the methods needed to accomplish this daunting task, and because we knew of no traditional navigators from elsewhere in Polynesia who could do the job, for the voyage we recruited a traditional Micronesian navigator from the Carolinian atoll of Satawal, one of the few Pacific islands where traditional, long-distance navigation is still commonly practised. The strategy of our



navigator, Mau Pialug, was to use the rising points of the stars, supplemented by observations of the sun, moon, and ocean swells, as a natural compass to guide the canoe on its course. After mentally keeping track of our progress with a dead reckoning system which visualized the canoe in reference to the changing bearing of archipelagos to one side or the other of our course, Mau planned to make landfall on one of the atolls at the far western edge of the Tuamotu islands, and then make the short crossing from there to Tahiti.

The voyage went as planned. Despite a week spent becalmed in the doldrums, and then an encounter just below the equator with headwinds that for a time threatened to drive the canoe to the west of Tahiti, in 30 days at sea, **Hokule'a** made enough easting against the trades to reach the atoll of Matahiva, the westernmost island of the Tuamotus from where it was easy to sail on to Tahiti. Even when days of solid cloud cover hid from sight the stars, sun and moon, Mau was able to keep the canoe on course and to keep in his mind a picture of the canoe's progress toward Tahiti. And, obligingly, small, white terns skimming over the sea provided Mau with a sign that Matahiva was near before we could actually see this low island. [The canoe left from Honolua Bay, Maui, on May 1, 1976; the crew sighted Matahiva on June 1, 1976. After a day and a half on Mata`iva, the canoe sailed on a reach to Tahiti, arriving on June 4, thirty-four days after departing from Maui.]

With the canoe sailing freely across strong trade winds, the voyage back to Hawai'i was completed in only 22 days, although unfortunately we were forced to navigate **Hokule'a** home by modern means as right after arriving in Tahiti Mau had flown back to Micronesia. Nonetheless, the navigational feat of guiding the canoe to Tahiti without instruments, as well as the performance of the canoe over the entire round trip, effectively demonstrated how Polynesian canoes and traditional navigational methods were up to the task of planned, long-distance voyaging, effectively turning the tide against Sharp and his revival of the Lang accidental settlement hypothesis.

[During this historic first voyage to Tahiti, some of the Hawaiian crew members came into conflict with haole crew members. The conflict stemmed from two very different views of the voyage: for the haole crew members, the voyage was a scientific experiment to learn the techniques by

which Polynesians had explored and settled the Pacific; for some of the Hawaiians, the voyage was an highly emotional journey of cultural reawakening. The crew's family and work sacrifices and frustrations in preparing for Hokule`a's first long voyage, and the hardships and inequities during that voyage aggravated the differences. After landfall, both sides vented their frustration and anger, which eventually erupted in physical hostilities on board the canoe. For Finney's account of the blows on the canoe and the tensions that led up to it, see *Hokule'a: The Way to Tahiti*. Since the first voyage, the crew members have reconciled with each other, and crew members and volunteers of all ethnicities have contributed to and are working together to keep alive the voyaging traditions they cherish.]

[This account of the 1976 voyage to Tahiti was originally published as part of "Voyaging into Polynesia's Past" in *From Sea to Space* (Palmerston North: Massey University, 1992. 5-65). Other parts of this article: Part 1--[The Founding of the Polynesian Voyaging Society](#); Part 2--[Hawai'i to Tahiti and Return: 1976](#); Part 3--[Hawai'i to Tahiti and Return: 1980](#); Part 4--[Voyage of Rediscovery: 1985-87](#). Click here for Finney's account of the 1995 Voyage to Ra'iatea and Nukuhiva, [Sin at Awarua](#)].

1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
Home	Search	Archives	Educational Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)	



Voyaging into Polynesia's Past--Part 3 Hawai'i to Tahiti and Return: 1980

Ben Finney

Culturally, the 1976 voyage was also a great success. Hawaiians and Tahitians regarded the voyage as tangible proof of the nautical abilities of their ancestors, and saw the canoe as a symbol of their heritage as an exploring, pioneering people. In Hawai'i, the voyage is credited with helping to spark a cultural renaissance, while in Tahiti, the dramatic arrival of *Hokule'a* at a time when tough negotiations with French colonial authorities for increased local autonomy were in progress, raised the flagging morale of the French Polynesians and helped them achieve their aims. Later, they even adopted a double-canoe motif inspired by *Hokule'a* as their symbol of nationhood, placing it in the center of their new flag.

However, despite the fact that the canoe had been designed, captained and largely crewed by Hawaiians, many Hawaiians felt that a crucial element had been missing in the venture: a Hawaiian had not navigated the canoe along the seaway between Hawai'i and Tahiti as their ancestors had once done.

Quietly, a young man named [Nainoa Thompson](#) set out to remedy this. When first recruited for the Tahiti voyage, Nainoa had known nothing about navigation, traditional or modern. While sailing back from Tahiti on *Hokule'a*, and wondering how Mau had been able to navigate on the previous leg (on which Nainoa did not sail), he started studying the heavens and the sea to try and see for himself how the stars, sun and moon, as well as the patterning of ocean swells could be used to guide a canoe over thousands of miles of open ocean. Over the next four years, through spending many thousands of hours under the night sky and beneath the dome of Honolulu's Bishop Museum Planetarium, as well as months of intensive tutelage by Mau Piailug, Nainoa developed a workable system of navigation based upon traditional methods but incorporating some unique (but non-instrument) methods of observing the stars he had worked out for himself.



Like traditional navigators, Nainoa relies primarily on the stars for orientation and course setting. The points along the horizon where key stars rise in the east and set in the west provide him with accurate bearings. He has memorized these stars, as well as others that rise and set in the same location so as to be able to keep oriented when the key stars have risen too high in the sky to give an accurate bearing, or are below the horizon. Nainoa has learned how to constantly keep track of the direction of the dominant ocean swells, periodically calibrating his observations against the star field so that when clouds totally obscure the heavens he can keep the canoe on the right course by reference to the swells. When the sun is low on the horizon during the early morning and the late afternoon he uses it for orientation and steering, although since the sun is constantly shifting its rising and setting points, each dawn Nainoa must check the sun's position with reference to the fading star field. When the sun has risen too high in the sky to yield a reliable bearing, Nainoa keeps the canoe oriented with reference to the swell pattern.

Based on the teaching of Mau Piailug, Nainoa has developed a system of dead reckoning by which he uses his estimates of the distance and course

sailed to mentally track the canoe in terms of the changing distances and bearings from his departure point and to his destination, and in terms of how far the canoe may have strayed to one side or other of the planned course line. Nainoa also observes Polaris, the Southern Cross and other stars and estimates (with nothing more than his outstretched hand as a guide) their angular elevation above the horizon to get an idea of the latitude of the canoe, which he then mentally integrates with his dead reckoning to further refine where he thinks the canoe is at any one time.

To detect when the canoe is getting close to land before it can actually be seen, Nainoa relies primarily upon sighting of "landfinding birds"--those species of terns and boobies which sleep on land but fly out to sea each day to fish. When, for example, one sees a group of white fairy terns fishing together, this can mean that land is no farther than 20 or 30 miles--particularly during nesting season when adults must return periodically to land to feed their chicks.

In the summer of 1980 Nainoa successfully applied his non-instrument navigation system to guide **Hokule'a** from Hawai'i to Tahiti and return. [The canoe left Hilo on March 15, 1980 and arrived in Tahiti 33 days later on April 17, 1980. The canoe sailed back to Hawai'i on May 13, 1980, and arrived 24 days later on June 6, 1980.]

In replicating Mau's feat of navigating the canoe to Tahiti, and then guiding it back to Hawai'i, Nainoa was able to validate and extend the results of the 1976 navigational experiment. That he was the first Polynesian to accomplish this feat since the legendary voyages of the 12th and 13th centuries A.D. was not at all lost on the Hawaiians and the Tahitians. Not only did Nainoa's accomplishment remind them that their ancestors had been capable of the tremendous intellectual discipline required by non-instrument navigation, but he showed them how a modern Polynesian, cut adrift from his cultural roots by the events and developments of the last two centuries, could re-learn this ancestral art and apply it to sail over thousands of miles of open ocean. (For more on the 1980 voyage, see Ben Finney, Bernard J. Kilonsky, Stephen Somsen, Edward D. Stroup, 1986. "Re-Learning a Vanishing Art" in the *Journal of the Polynesian Society*. 95:41-90.)

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Finding a Way: 1974-1980

Nainoa Thompson

[Over the last 25 years, Nainoa Thompson, navigator for the Polynesian Voyaging Society, has inspired and led a revival of traditional voyaging arts in Hawai'i and Polynesia—arts which have been lost for centuries due to the cessation of such voyaging and the colonization and Westernization of Polynesia. In 1980, Thompson became the first Hawaiian to practice the art of wayfinding on long distance ocean voyages since voyaging ended between Hawai'i and Tahiti around the 14th century. Thompson has developed a system of wayfinding, or non-instrument navigation, synthesizing traditional principles of ancient Pacific navigation and modern scientific knowledge. This system of wayfinding is being taught in schools and practiced throughout Hawai'i and the Pacific. In addition to being a navigator, Thompson is a leader with a vision, and a charismatic, spell-binding storyteller. The following narrative has been compiled from Thompson's interviews, talks, and notes.[1](#)]

Becoming a Crew Member for the First Voyage of Hokule'a

It was the first year I was paddling for the Hui Nalu Canoe Club, and I happened to be in the right place at the right time. Herb Kane was living across the canal from the club at Maunalua Bay. It was 1974, and Herb, Tommy Holmes, and Ben Finney were designing Hokule'a. The canoe hadn't been built yet, but they had a smaller canoe then, and they'd ask us to paddle it out of the canal over the reef into the open ocean. That was great! I was at the club every day so I could take the canoe out.

Then one day, Herb invited two of the paddling coaches and me over to his house. Herb's house was filled with paintings and pictures of canoes,

nautical charts, star charts, and books everywhere! Over dinner Herb told us how he, Ben and Tommy were going to build a canoe and sail it 2,500 miles without instruments-the old way. "We're going to follow the stars, and the canoe is going to be named after that star," Herb said, pointing to **Hokule'a**. This voyage would help to show that the Polynesians came here to Hawai'i by sailing and navigating their canoes-not just drifting by accident here on ocean currents or driven off course by storms. The voyage would demonstrate something very important for the Hawaiian people and for the rest of the world.2

In that moment, all the parts of my life that had seemed disconnected came together in me. I was 20 and looking for something challenging and meaningful to do with my life. I had a hard time finding that inside the four walls of a classroom. But now here it was-the history, the heritage, the charts, the stars, the ocean, and the dream ... there was so much relevance in that dream. I wanted to follow Herb; I wanted to be a part of that dream.

Herb told us what the requirements would be to become a crew member on the first voyage. We would have to go through a training program to learn about the canoe and how to sail her; there would also be physical training and training in teamwork. The best thirty would be selected from the several hundred candidates in the program.

When **Hokule'a** was completed in the spring of 1975, I participated in the training and was assigned to the return crew. My dream was coming true.

The First Voyage to Tahiti: 1976

Back in the early seventies, before **Hokule'a** was even built, when the Polynesian Voyaging Society was putting the dream together, the organizers said, "We need to get a Polynesian navigator, someone who could sail to Tahiti in the way the ancient Hawaiians had, without modern instruments." There was no one in Hawai'i. The only Polynesian navigator that was known to be left on earth was a man named Tevake. He came from the Santa Cruz Islands, Polynesian outliers in Melanesia. A group from Hawai'i went down to his island to talk to him to see if he would agree to navigate a canoe that wasn't even built yet. They explained the project and all Tevake said was "We'll see." He gave no commitment. The group went back to Hawai'i and

six months later the group received a letter from Tevake's daughter. Apparently Tevake had a canoe house where he kept an old canoe that he never used. But one day he got up, said good-bye to his family, got in the canoe, went to sea, and never came back. That's the way Tevake was-he followed the old way. He chose his life in the ocean and he also chose his death there.

But the Polynesian Voyaging Society eventually did find a traditional navigator to guide **Hokule'a**-Mau Piailug from the island of Satawal in Micronesia. To provide for his people, Mau still sailed canoes for long distances across the Pacific, guiding them only by the stars and his knowledge of the ocean. Mau was willing to come.

In 1976, **Hokule'a** sailed on its historic voyage to Tahiti. Kawika Kapahulehua skippered the canoe, and Mau Piailug was the navigator. Never before had Mau been on such a long journey, never before had he been south of the equator where he could not see the North Star, a key guide for his travels. Nevertheless, sensing his way over 2,500 miles, using clues from the ocean world and the heavens, clues often unnoticed to the untrained eye, he found, after 30 days of sailing, the island of Mataiva, an atoll in the Tuamotu island group.³

At the arrival into Pape'ete Harbor, over half the island was there, more than 17,000 people. The canoe came in and touched the beach. There was an immediate response of excitement by everybody, including the children. So many children got onto the canoe they sank the stern. We were politely trying to get them off the rigging and everywhere else, just for the safety of the canoe.

None of us were prepared for that kind of cultural response-something very important was happening. These people have long traditions and genealogies of great navigators and canoes. What they didn't have was a canoe. And when **Hokule'a** arrived at the beach, there was a spontaneous renewal, both an affirmation of our great heritage, and also a renewal of the spirit of who we are as a people today.

On Learning Navigation

[Mau did not sail back to Hawai'i with Hokule'a. There had been dissension on the canoe offshore of Tahiti.⁴ Because of this dissension, Mau did not want to continue sailing and instead returned home to Satawal. Hokule'a was navigated back to Hawai'i with a compass and sextant. But back in Hawai'i, a group of Hawaiians, Nainoa among them, dreamed of voyaging to Tahiti again. Nainoa tried to teach himself traditional navigation by reading books, taking courses at the University of Hawai'i, and observing the night sky from land and at sea. But on one of the training sails on Hokule'a, he was puzzled by a moon rise and sought out a teacher who could answer his questions.]

The moon rose in a place I didn't expect. I expected the full moon to rise in the same place the sun had risen in the morning, but it came up somewhat to the south. Why? I thought I had understood the relationships between the path of the sun and the moon fully. This just didn't make sense.

When I got back home, I grabbed my astronomy books, but I couldn't find an answer in them-and I had no teacher. I thought someone at the planetarium at the Bishop Museum might have an answer to this riddle, so I called. The person who answered said, "Sorry, we don't have time to help you. Try Will Kyselka." So at 6 a.m., I called Will and said, "I've got this problem with the moon!" He agreed to meet me. In the planetarium, he could move the stars anywhere, anytime in the world. He seemed to be able to answer all of my questions.

After that first all-day session, I still wanted to learn so much from Will, but I didn't think it proper to ask him. I thought that would be an imposition, that he was very busy. But Will must have sensed my wish because he finally said, "Why don't you come back again?" I had found someone who cared, who was willing to give up time to help another person learn.

We spent hundreds of hours together at the planetarium. I would figure out at home what I didn't know and then come to Will at the planetarium with my questions. And together we would look at the different skies to find answers. Will was teaching me the fundamentals of the skies and how they can be reduced to geometry, math, and science.

But Will was not just someone who fed me information. When I considered the dangers involved in sailing to Tahiti without modern instruments, I often

thought it would be impossible. Will's calming, committed friendship helped me get through those difficult times. He wasn't just an astronomer teaching me about the stars. His lessons were about friendship.[5](#)

The Swamping of Hokule'a-1978

[A second voyage to Tahiti was planned for 1978. On this voyage Nainoa was to navigate without instruments while Norman Pi'ianai'a would check Nainoa's accuracy with instruments and give him fixes only if Nainoa was dangerously off course. Dave Lyman served as captain. Hokule'a left Honolulu Harbor at 6:30 p.m. on March 16. A few hours later, after taking on water, the heavily-loaded canoe capsized in gale force winds and 8-10 foot swells in the Moloka'i Channel. There was no escort boat to radio for help. The crew spent the night holding onto the leeward hull of the overturned canoe, hoping that a passing plane or ship would spot them. By mid-morning no one had come to the rescue. Fearing that the canoe would drift away from the islands and that crew members were physically tiring, the leadership allowed Eddie 'Aikau, an experienced lifeguard and big wave surfer, to leave on a surfboard to get help. 'Aikau left at 10:40 a.m. At 9 that night, a Hawaiian Airlines pilot spotted flares from the Hokule'a; the Coast Guard was alerted and rescued the crew from the canoe; 'Aikau was never seen again.]

Eddie was totally intense and strong, but he was also a very caring man. He loved his culture. He loved the canoes. He was a total Hawaiian. He stood out. I will always remember a crew meeting, before the trip, at the Honolulu Medical Group down on Lauhala Street. Eddie brought a guitar and he was playing music. We were talking in the back, just the two of us, and he told me that what he wanted most in the world was to see Hawaiki [the legendary homeland] rise up out of the ocean.

After Eddie's death, we could have quit. But Eddie had this dream about finding islands the way our ancestors did and if we quit, he wouldn't have his dream fulfilled. Whenever I feel down, I look at the photo of Eddie I have in my living room and I recall his dream. He was a lifeguard ... he guarded life, and he lost his own, trying to guard ours. Eddie cared about others and took care of others. He had great passions. He was my spirit.

He was saying to me, "Raise Hawaiki from the sea." But his tragedy also made us aware of how dangerous our adventure was, how unprepared we were in body, mind, and spirit.

Mau: Master Navigator, Master Teacher

We realized we did not know enough. We needed a teacher. Mau became essential. Mau is one of the few traditional master navigators of the Pacific left. And Mau was the only one who was willing and able to reach beyond his culture to ours.

I searched for Mau Piailug. Finally, I found him and flew to meet him. Mau is a man of few words, and all he said in answer to my plea for help was, "We will see. I will let you know." For several months I heard nothing. Then one day I got a phone call; Mau was going to be in Honolulu with his son the next day. When Mau arrived here back in 1979, he said, "I will train you to find Tahiti because I don't want you to die." He had heard somehow that Eddie had been lost at sea.

I asked him to teach me in the traditional ways. But Mau knew better. He said, "You take paper and pencil! You write down! I teach you little bit at a time. I tell you once, and you don't forget." He recognized that I could not learn the way he had learned.

Mau Piailug is from the island of Satawal. It's a mile and a half long and a mile wide. Population 600. Navigation's not about cultural revival, it's about survival. Not enough food can be produced on a small island like that. Their navigators have to go out to sea to catch fish so they can eat. Mau was not like me, who learned by using both science and tradition. I started at an old age, at about 21. He started at one. He was picked by his grandfather, the master navigator for his people, taken to the tide pools at different parts of the island to sit in the water and sense the subtle changes in the water's movements. To feel the wind. To connect himself to that ocean world at a young age. His grandfather took him out to sail with him at age four. Mau told me that he would get seasick and when he was seven years old, his grandfather would tie his hands and drag him behind the canoe to get rid of that. This was not abuse. This was to get him ready for the task of serving his community as a navigator.

Mau learned to turn the clues from the heavens and the ocean into knowledge by growing up at the side of his grandfather-he had been an apprentice in the traditional way. He had learned to remember many things through chants and would still chant to himself to "revisit information."

Mau's greatness as a teacher was to recognize that I had to learn differently. I was an adult; I needed to experiment, and Mau let me. He never impeded my experimenting and sometimes even joined in.

I never knew when a lesson started. Mau would suddenly sit down on the ground and teach me something about the stars. He'd draw a circle in the sand for the heavens; stones or shells would be the stars; coconut fronds were shaped into the form of a canoe; and single fronds represented the swells. He used string to trace the paths of the stars across the heaven or to connect important points.

The best was going out on my fishing boat with Mau ... every day! I watched what he watched, listened to what he listened to, felt what he felt. The hardest for me was to learn to read the ocean swells the way he can. Mau is able to tell so much from the swells-the direction we are traveling, the approach of an island. But this knowledge is hard to transmit. We don't sense things in exactly the same way as the next person does. To help me become sensitive to the movements of the ocean, Mau would steer different courses into the waves, and I would try to get the feel and remember the feel.

Mau can unlock the signs of the ocean world and can feel his way through the ocean. Mau is so powerful. The first time Mau was in Hawai'i, I was in awe of him-I would just watch him and didn't dare to ask him questions. One night, when we were in Snug Harbor, someone asked him where the Southern Cross was. Mau, without turning around or moving his head, pointed in the direction of a brightly lit street lamp. I was curious and checked it. I ran around the street light and there, just where Mau had pointed, was the Southern Cross. It's like magic; Mau knows where something is without seeing it.

I spent two Hawaiian winters with Mau. In the summer, ninety-five percent of the wind is trades, so it's easy to predict the weather. Tomorrow is going

to be like today. But in wintertime you have many wind shifts. When I had spent enough time with him, I realized that he was not looking at a still picture of the sky. If you took a snapshot of the clouds and asked him, "Mau, tell me what the weather is going to be," he could not give you an answer. But if you gave him a sequence of pictures on different days, he would tell you.

He said, "If you want to find the first sign of a weather change, look high." He pointed to the high-level cirrus clouds. "If you see the clouds moving in the same direction as the surface winds, then nothing will change. But if you see the clouds moving in a different direction, then the surface winds might change to the direction the clouds are moving. That's only the first indication, but you don't really know yet. If clouds form lower down and are going in the same direction as the clouds up high, there is more of a chance that the winds will change in that direction. When the clouds get even lower then you know the wind direction will change."

Satellite technology was in its infancy then, and many times Mau's predictions would be right and the National Weather Service would be wrong.

He used the same clouds that we use to predict the weather--mare's tails, mackerel clouds. But in his world, he practices a kind of science that is a blend of observation and instinct. Mau observes the natural world all day. That's how he relates to nature. There are no distractions, so his instincts are strong.

In November of 1979, Mau and I went to observe the sky at Lana'i Lookout. We would leave for Tahiti soon. I was concerned--more like a little bit afraid. It was an awesome challenge.

Then he asked, "Can you point to the direction of Tahiti?" I pointed. Then he asked, "Can you see the island?"

I was puzzled by the question. Of course I could not actually see the island; it was over 2,200 miles away. But the question was a serious one. I had to consider it carefully. Finally, I said, "I cannot see the island but I can see an image of the island in my mind."

Mau said, "Good. Don't ever lose that image or you will be lost." Then he turned to me and said, "Let's get in the car, let's go home."

That was the last lesson. Mau was telling me that I had to trust myself and that if I had a vision of where I wanted to go and held onto it, I would get there.

Solving a Navigation Problem

In 1980, not only would I have to get down to Tahiti but also return home. To find Hawai'i without instruments, we sail to the east of it by dead reckoning. When we determine we are at the latitude of the islands, we turn west to look for them. But how do you know when you are at the right latitude? How do you know when to turn?

Mau didn't have the answer. How could he? In Micronesia, he uses the height of the North Star to determine latitude. The North Star over Satawal is only 7 degrees above the horizon. It's easy to measure that with the naked eye. But it's 22 degrees over Hawai'i - and that's not easy to measure without instruments. I needed to find some other way to determine the latitude of Hawai'i.

When a voyager sees the star **Hokule'a** [Arcturus] passing through the zenith-the point directly overhead-he knows he is at the latitude of Hawai'i. Not a problem on land. But how can you tell where the zenith is while standing on a rocking canoe? The point above your head keeps moving. We [Nainoa, Will, and Bruce Blankenfeld] spent a lot of time in the planetarium distracted by figuring out how to use zenith stars to determine latitude. But the closer I got to the voyage, the more I recognized that zenith stars were not going to work.

There were other patterns going across the planetarium sky over and over again, and the answers were all there, right in front of us all the time, but we didn't see them. And, as we got closer to the trip, the anxiety made it even more difficult to see them.

At the time, I was still living in an old one-bedroom house in Kuliouou. I had been studying this latitude problem and not finding any answers. One

night I was asleep, and suddenly I sat up in my bed and said to myself, "That's it." In a dream, I saw the Southern Cross moving above the southern horizon-top star to bottom star, bottom star to the horizon, it was absolutely clear. It was so clear that I jumped up, ran down the hallway, jumped over my friend who was sleeping over, ran out the door, and sprinted down the road-because I knew that not only was the solution clear in my mind but this was the right time of the night to see it in the sky.

I ran past all the streetlights to Kuliouou Park where it was dark. There it was. The Southern Cross upright on the horizon-the top star to the bottom star, and the bottom star to the horizon, at the latitude of Hawai'i, are equidistant, 6 degrees apart.

I called Will early in the morning. We met at the planetarium, and there it was-we confirmed my observation from the night before. The answer was always there-the Southern Cross was constantly going by on the planetarium dome, but we were always looking at the zenith star instead. The solution just emerged in my dream and now the solution is taught to everyone who studies navigation with us.

Navigating to Tahiti-1980

[In the spring of 1980, Hokule'a made a second voyage to Tahiti and back. Nainoa navigated the canoe both ways.]

The difference between the second voyage and the first one was that on the second voyage, the canoe was guided by, captained by, and crewed by people from Hawai'i. For our culture to really be alive, we recognized that we had to practice it ourselves.

Before we left I was panicking. I had the safety of the entire crew in my hands. There was intense media pressure. I had to appear confident, but inside I was very much afraid. The part of the trip I dreaded the most was the doldrums. I had no confidence that I could get through it. I thought that I could only accurately navigate if I had visual celestial clues and that when I got into the doldrums there would be a hundred percent cloud cover, and I would be blind. And that's what happened.

When we arrived in the doldrums, the sky was black. It was solid rain. The wind was switching around. It was about twenty-five knots, and we were moving fast. That's the worst thing that can happen-you are going fast and you don't know where you're going. The guys steering the canoe were looking for direction and that increased the pressure, especially because it was my first voyage. I couldn't tell the steersmen where to steer. I was very, very tense. To prevent fatigue, you cannot allow yourself to get physically tense, but I couldn't stop feeling tense.

I was so exhausted that I backed up against the rail to rest. Then something happened that allowed me to understand where the moon was, without seeing it. When I gave up fighting to find the moon with my eyes, I settled down. I suddenly felt this warmth come over me and I knew where the moon was. The sky was so black, I couldn't see the moon, but I could feel where it was.

From the feeling of warmth and the image of the moon came a strong sense of confidence. I knew where to go. I directed the canoe on a new course and then, just for a moment, there was a hole in the clouds and the light of the moon shone through-just where I expected it to be. I can't explain it, but that was one of the most precious moments in all my sailing experience. I realized there was some deep connection I was making, something very deep inside my abilities and my senses that goes beyond the analytical, beyond seeing with my eyes. I cannot explain what this is from a scientific point of view. But it happened. And now I seek out these experiences. I don't always have them. I have to be in the right frame of mind and beyond that, internally, I have to be able to enter into a kind of spiritual realm. I don't want to analyze these experiences too much. I just want to make them happen more often. I don't think there's an explanation for them. There are certain levels of navigation that are realms of the spirit.

Before that happened, I tended to rely on math and science because it was so much easier to explain things that way. I didn't know how to trust my instincts. They were not trained enough to be trusted. Hawaiians call it na'au-your instincts, your feelings, rather than your mind, your intellect.

Non-Instrument Navigation

The star compass is the basic mental construct for navigation. We have Hawaiian names for the houses of the stars-the place where they come out of the ocean and go back into the ocean. If you can identify the stars as they rise and set, and if you have memorized where they rise and set, you can find your direction. The star compass also reads the flight path of birds and the direction of waves. It does everything. It is a mental construct to help you memorize what you need to know to navigate.

You cannot look up at the stars and tell where you are. You only know where you are in this kind of navigation by memorizing where you sailed from. That means constant observation. You have to constantly remember your speed, your direction and time. You don't have a speedometer. You don't have a compass. You don't have a watch. It all has to be done in your head. It is easy-in principle-but it's hard to do.

The memorization process is very difficult. Consider that you have to remember those three things for a month-every time you change course, every time you slow down. This mental construct of the star compass with its Hawaiian names is from Mau. The genius of this construct is that it compacts a lot information and enables you to make decisions based on that information.

How do we tell direction? We use the best clues that we have. We use the sun when it is low down on the horizon. Mau has names for the different widths and the different colors of the sun's path on the water. When the sun is low, the path is narrow, and as the sun rises the path gets wider and wider. When the sun gets too high you cannot tell where it has risen. You have to use other clues.

Sunrise is the most important part of the day. At sunrise you start to look at the shape of the ocean-the character of the sea. You memorize where the wind is coming from. The wind generates the waves. You analyze the character of the waves. When the sun gets too high, you steer by the waves. And then at sunset you repeat the process. The sun goes down-you look at the shape of the waves. Did the wind direction change? Did the swell pattern change? At night we use the stars. We use about 220, memorizing where they come up, where they go down.

When it gets cloudy and you can't use the sun or the stars all you can do is rely on the ocean waves. That's why Mau told me once, "If you can read the ocean you will never be lost." One of the problems is that when the sky gets black at night under heavy clouds you cannot see the waves. You cannot even see the bow of the canoe. This is where traditional navigators like Mau are so skilled. Lying inside the hull of the canoe, he can feel the different wave patterns as they come to the canoe, and from them tell the canoe's direction. I can't do that. I think that's what he started learning when he was a child with his grandfather, when he was placed in tide pools to feel the ocean.

In 1979, when Mau was confident that I could guide the canoe by myself, he said, "Now I am going to go to sleep; you follow this star path." And like an overly eager student, I wanted to try sailing in a different direction to experience what the wave patterns felt like when I changed directions. I thought he wouldn't notice because he was sleeping inside the hull. When morning dawned, he came up and said, "Okay, what course did you sail last night? What star bearing did you hold?" He knew I had changed course. Lying in the hull, he actually knew the course I had steered; he challenged me to tell him in order to make sure that I knew where we had gone.

Tahiti is smaller than Maui and it is a hard target to hit from 2500 miles away. Even hitting a target as large as the Big Island from that distance is outside of the accuracy of our navigation. When we go down to Tahiti, we have a mental image of our course line plotted for the trip. We try to stay on this course and end up in what I call a box. (See the map of [the 1980 voyage to Tahiti](#).) This box is large enough to compensate for any errors in our navigation. In this box there are many islands. All we have to do is to find one of them, and from that island we can find the others. For example, the target when we sail to Tahiti is a box four hundred miles wide, from Manihi in the Tuamotu islands to Maupiti in the leeward Tahitian islands. The first part of the journey to Tahiti is not trying to get to Tahiti but to make sure that we sail into this box and find an island. On different voyages, we have found Matahiva, Tikehau, and Rangiroa-all islands in the box. Since these are coral atolls it is very difficult to tell one from the other, so sometimes we have to land and ask the people what island it is that we've found. From any of these islands, we know Tahiti is only about 170-180 miles away and our

navigation system is accurate enough to find it from that distance.

Now consider another navigational problem-finding Hawai'i from Tahiti. The Hawaiian islands are 315 miles wide, from Ni'ihau to Kumukahi on the Big Island, but if you approach them from the southeast they are a narrow target because they are aligned southeast to northwest. The technique we use is to sail up to the latitude of Hawai'i on the east side of the islands, using the stars to tell our latitude. When we determine we are at the mid-latitude of Hawai'i, 20.5 degrees N, we turn west and try to sail into the islands on this side, 240 miles wide-the sight distance from South Point on the Big Island [18.5 degrees N] to the sight distance from Hanalei on Kaua'i [22.5 degrees N]. Again, our navigation system is accurate enough to hit this target. (See the map of [the 1980 voyage to Tahiti](#).)

The Southern Cross is really important to us in determining latitude. [It looks like a kite. The top and bottom stars in the kite always point south-Gacrux on top and Acrux on the bottom.](#) If you are traveling in a canoe and going south, these southern stars are going to appear to be moving higher and higher in the sky. If you went down to the South Pole, these stars are going to be way overhead. If you are sailing from Tahiti north to Hawai'i, the Southern Cross gets lower and lower the farther north you go. At the latitude of Hawai'i, the distance from the top star to the bottom star is the same distance from that bottom star to the horizon about 6 degrees. This configuration only occurs at the latitude of Hawai'i. If you are in Nukuhiva in the Marquesas Islands and looking at the Southern Cross, the distance between the bottom star in the Southern Cross and the horizon is about nine times the distance between the two stars.

Finding atolls, which are very low, is extremely difficult, but there are a lot of clues to the presence of islands. The wave patterns change when an island is near. The behavior of animals in the sea, such as dolphins, will change. Mau can read these clues. The main guide is sea birds. There are two general types of seabirds that Mau taught us about. There are the pelagic seabirds-after the young are hatched and learn to fly, they go to sea and stay there, normally sleeping on the water or in the air and fishing until they become adults; then they come back to land to nest. The 'iwa bird is pelagic and we see it all the way across the ocean. Following these birds will not

help you find land. The other type of birds are those that sleep on islands at night and at dawn go out to sea to fish. These land-based birds include the [manu o ku](#) (white tern) and [noio](#) (brown tern). Noio go about 40 miles out; the manu o ku go about 120 miles out. The Tuamotus are filled with these birds. After we sail about 29 days down from Hawai'i and starting seeing these birds, we know the islands are close even though we can't see them. When the manu o ku is fishing, it flutters above the ocean surface, but when the sun starts to go down, it will rise up from the water so it can see farther, and it will head straight back to land. When we see these birds in the day we keep track of them and wait for the sun to get low and watch the bird; the flight path of the bird is the bearing of the island. Then we turn on that bearing, sail as fast as we can, and at sunset we climb the mast to see if we can find the island. And if we can't see it, we heave to until the morning.

On my first voyage in 1980, we saw two birds after the 29th day and I was extremely relieved. At least we were in the ball park. I did everything that I was taught to do and the birds did everything that they were supposed to do. They went up high and they flew away and we sailed in that direction. We couldn't see the island at sunset, so we took the sails down at night and we waited. The next morning we looked for the birds to see what direction they were coming from. In the morning they go back out to the fishing ground, so the direction they are coming from is the direction to the island. We had a great crew of 14 and we made a ring around the canoe before dawn. We waited for the first bird. All hands on deck. Not a single bird. I was in near trauma-my first voyage, in my early twenties. Mau was very calm and didn't say anything. We waited and waited. The canoe was just sitting dead in the water, facing south. One of the canoe members was in the back of the canoe and a bird flew right over his head. The night before we saw the birds flying south so how could it be that late in the morning with the sun very high, this bird was also flying south? That would suggest that we passed the island during the night and now the island was back to the north. In my panic, I told the crew we should turn the canoe around and go north-to look for the island the bird was coming from. They turned the canoe around-and now we are sailing north, back toward Hawai'i. Now Mau has always said that his greatest honor would not be as a navigator but as a teacher-that he would come with us to make sure that the voyage to Tahiti would be safe, but if he didn't have to tell me anything, the honor as a teacher would be his. But after

I started to sail north he came to me and said, "No." It was the first time that he interrupted the trip. He said, "Turn the canoe around and follow the bird." I was really puzzled. I didn't know why. He didn't tell me why, but we turned the canoe around and now we saw other birds flying south. Mau said, "You wait one hour and you will find an island."

After about an hour, Mau, who is about twenty years older than me-my eyes are physically much more powerful than his-got up on the rail of the canoe and said, "The island is right there." We all started looking, and we couldn't see it. Vision is not so much about just looking, but knowing what to look for. It's experience. Mau had seen in the beak of the bird a little fish, and he knew that the birds were nesting, so they had flown out earlier that morning and were taking food back to their young before they fed themselves. He just did not tell me that in our training program.

Not everybody can navigate. We have some great navigators in Hawai'i-Shorty Bertelmann from the Big Island; my brother-in-law, Bruce Blankenfeld from O'ahu; and Chad Baybayan from Maui. We base our projected course line before the voyage on average winds and sea conditions for 24 hours, but these are never average. The majority of navigation is observation and adjusting to the natural environment. The rougher the weather, the more the navigator needs to be awake and the less he can leave the crew on their own. We estimate that our navigators stay up between 21 and 22 hours a day, sleeping in a series of catnaps.

Mau says the mind doesn't need much rest. But the physical body does. When the navigator is on the canoe, the crew does the physical work. When he is tired, he closes your eyes. Mau told me that for him maybe his eyes are closed but inside here, inside his heart, he is always awake.

The navigator sleeps whenever his mind needs to rest. You work until you can't think, basically, then you lie down. I close my eyes and go to sleep. I have no dreams in the beginning. My first dreams are fire. I see reds and oranges. Then I get up when my mind is awake again. I do a series of those catnaps. The main thing is to make sure that your physical body doesn't do any work because then you get sick.

Initially, I depended on geometry and analytic mathematics to help me in my

quest to navigate the ancient way. However as my ocean time and my time with Mau have grown, I have internalized this knowledge. I rely less on mathematics and come closer and closer to navigating the way the ancients did.

Mau's Legacy

Year after year Mau came and took us by the hand as we prepared for our voyages. He cares about people, about tradition; he has a vision. His impact will be carried beyond himself. His teaching has become his legacy, and he will not soon be forgotten.

On the 1980 voyage to Tahiti Mau Piailug made a fundamental step. He became, instead of the navigator, our teacher. This was an incredible feat, considering he could barely speak English. He was the one who came to Hawai'i and made this enormous cultural jump. I believe that the great genius of Mau Piailug is not just in being a navigator, but that he could cross great cultural boundaries and help us find our way at sea. All of this came from a very powerful sense of caring on his part.

At the end of the 1980 voyage, Mau told me, "Everything is there in the ocean for you to learn, but it will take you 20 years to see." Mau is right. For me to learn all the faces of the ocean, to sense the subtle cues, the slight differences in ocean swells, in the colors of the ocean, the shapes of the clouds and the winds, and to unlock these clues and glean information from them in the way Mau can, will take many more years.

Mau also told me, "Because of your age, you'll never see it all. If you want Hawai'i to have a navigator that knows all and sees all, send your children."

Mau is one of the last. He's 64 years old now. He was initiated in the ceremony called po, which is for the graduation of deep sea navigators. Not mastery. And let's keep in mind, I'll make it real clear right now. I'm not a master navigator, not by a long shot. I'm just a student. Mau graduated because he could sail long. But mastery is only something that is bestowed upon a deep sea navigator at the death of his teacher. Mau became a master navigator when his grandfather died. Mastery is not accomplishment, it's responsibility. He had the responsibility to carry on the survival of his

people-an unbroken tradition three thousand years old.

Mau worries about the future of his way of life. He is one of five master navigators left in Micronesia. He's 64 years old, and he's the youngest. Outside influences are changing the way young people in Micronesia look at life; it is a very confusing, turmoiled time. Young people are not learning the old ways. One of the things that he told me years ago is that a master navigator's life is not fulfilled until there is someone to carry on his legacy after his death. That's Mau's concern: he has not trained someone among his people in navigation. Every time Mau came unselfishly to Hawai'i to teach us about the old ways, we'd sit down and talk about that concern. Then in 1994, he came and told me. "It's too late. I am too old, our children have too much to learn, and it's too late." That's something I never wanted to hear. But he said, "It's okay. All navigators find a way out. When they put me in the ground, it's all right because I already planted a seed in Hawai'i. When my people want to learn, they can come to Hawai'i and learn about me." Mau does not see navigation as cultural revival; it's his way of life. His people will never come to learn from him until they want to live that way again.

[For Nainoa's Account of the 1980 voyage home, see ["The Wayfinder"](#), from Kyselka's *An Ocean in Mind* (Honolulu: University of Hawai'i Press, 1987). Click here for his [recollections of the 1985-87 voyage to Aotearoa](#). Click here for his [recollections of the building of Hawai'iloa and the 1995 for Nukuhiva](#)].

1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	

[Home](#)[Search](#)[Archives](#)[Educational
Programs and
Materials](#)[On-Line
Visuals](#)[Bibliographies
\(Books and
Films\)](#)

Notes

1. The following short biography of Nainoa's early life is from "The Ocean Is My Classroom" by Gisela E. Speidel and Kristina Inn (The Kamehameha Journal of Education, Fall 1994, 11-23).

Nainoa grew up on his grandfather's dairy and chicken farm in Niu Valley on the island of O'ahu-when the valley was still all country. It was Yoshio Kawano, the milkman, who introduced the ocean to Nainoa. Dawn would often find Nainoa sitting on Yoshi's doorstep, waiting for Yoshi to take him fishing. Yoshi would bundle Nainoa into the old car, and off they'd go to fish in the streams or on the reefs. He came to be at home with the ocean, feeling the wind, the rain, the spray against his body. To the five-year-old Nainoa, the ocean was huge, wild, free, and open. The ocean and the wind were always changing; this was so different from the serenity of the mountains and the farm. Nainoa came to sense and feel the tune of the ocean world, developing a personal relationship with the sea. These early experiences, Nainoa thinks, were an essential preparation for becoming a navigator: "We learn differently when we are young; our understanding is intuitive and unencumbered."

Nainoa learned from Yoshio; he learned from Dad, from Mom, from Grandma and Grandpa; he learned from those who loved him and showed him kindness. Nainoa thrived.

This all changed with school! How different learning was in school! Teachers were not close personal friends who cared for you, whom you trusted. One grade-school teacher made him stand the whole period in the back of the classroom with his face against the wall. More than 30 years later, Nainoa remembers sharply his mortification; what he doesn't remember is what he did to deserve that punishment.

Nainoa recalls, "My family didn't push competition. The idea of competition didn't make sense to me. Why should I compete with my friends, the guys I liked and played with? The idea of grades didn't make sense. What do grades have to do with learning. Learning should be something very special, very exciting. Rather than learning eagerly, I found that I was spending my energy avoiding bad grades. School should be relevant, exciting, and interesting. I used to ask, 'Why are we reading this book? Why are we reading about dead people in faraway lands?'"

Was it the teacher who had made him stand facing the wall who told his parents she worried that Nainoa was mentally slow? Or was it the tester who tested him for entry into Punahou School at third grade? Nainoa hadn't answered any of her questions because, as he explained to his dad, "I didn't know who she was." Whatever the cause, Dad decided to have Nainoa's intelligence tested by a psychologist—a family friend, a friend whom Nainoa trusted. Result: Nainoa scored off the top of the intelligence scale. But the psychologist sensed Nainoa's need for trusting and caring teachers and predicted trouble for Nainoa's learning under typical classroom conditions.

Nainoa now realizes this: "It was really important to me that I could trust a teacher and feel the teacher cared for me. Mrs. Hefty was great! She was my fifth-grade teacher. She was so understanding and sincere; she cared for me. Intuitively, she knew how to reach out to me. With her, I had no fear of failing; I could learn anything from her." Mrs. Hefty must have, indeed, been special. She lives on the mainland now, but Nainoa still corresponds with her, and whenever he comes back home from one of his long and dangerous voyages on **Hokule'a**, a letter is there from Mrs. Hefty to welcome him back and to congratulate him.

2. Nainoa explains the scientific and cultural motivation for voyaging: "About forty to fifty thousand years ago, when the earth was colder and much of the ocean that we know today was trapped in the polar caps, the sea level was lower by about a hundred meters, three hundred feet. Australia, Melanesia, and Indonesia were connected to the Asian continent. The first explorers into the Pacific came by foot and they walked out of the South China Sea area and occupied the land mass in Australia. As our ancestors went south, other people went to the north and crossed the Siberian

Peninsula on foot and occupied North and South America.

"Then the earth got warmer, the polar caps melted, sea levels rose and the people in Melanesia became islanders. We believe that they were able to island hop across short distances. Maybe they didn't even need to sail. They could have done it on crude rafts; they could have paddled. The longest distance between two islands in Melanesia was only eighty-seven miles. The islands farther east -Fiji, Tonga, and Samoa-were then found and settled. There the people became island-locked; to make the jump from Western Polynesia-Tonga and Samoa-into what we call Eastern Polynesia took them a thousand years. They had to develop the voyaging canoe, navigational systems, and the ability to sail long distances. Once they were able to make this crossing, the expansion of Polynesia was quick-Hawai'i to the north, Rapa Nui in the east, and Aotearoa in the southwest.

"We are taught in our history books today that the inhabitants of the Polynesian triangle were a people of common language, of common ancestry, of great achievements in exploring the earth. Consider the fact that there was no other culture in their time that was ocean-going ... deep sea ocean-going. In my opinion, these voyagers were the greatest explorers on the earth at the time. If you exclude the total land mass of Aotearoa, there is three hundred times more water than there is land ... ten million square miles of ocean. And that is what makes their achievements more amazing. This is geographically the largest 'nation' on earth. It's bigger than Russia.

"How did the Polynesians do it? How did they build canoes from limited resources on small islands? How did communities come together to combine resources, material, and manpower, to build and sail these voyaging canoes? How did they navigate? How did they guide themselves across ocean expanses of 2500 miles? And how did they transport all the food resources necessary for societies to flourish on uninhabited islands?"

3. See Ben Finney's *Hokule'a: The Way to Tahiti*, which describes the first voyage to Tahiti. For an account of Mau's navigation from Hawai'i to Tahiti, see David Lewis' *We, the Navigators: The Ancient Art of Landfinding in the Pacific*, 2nd Edition, pp. 313-336.

4. For Ben Finney's account of the blows on the canoe, see *Hokule'a: The*

Way to Tahiti, pp. 240-248. Some thought the crew was too inexperienced to deal with the hardships and discomforts of a long voyage on an open canoe. Crew member Billy Richards explains the incident this way: "The conflict stemmed from two very different views of the voyage: for some, the voyage was a scientific experiment to learn the techniques by which Polynesians had explored and settled the Pacific; but for some of the Hawaiian crew members, the voyage was a highly emotional journey toward cultural reawakening. The crew's frustrations in preparing for Hokule'a's first long voyage, and the hardships and inequities during that voyage aggravated the differences."

5. Will Kyselka recalls his first meeting at the planetarium with Nainoa: "what was surprising to him was that the moon rose several degrees south of where the sun had risen that morning. For this he was not prepared. It made no sense. He could not understand it.

"But in the darkness of the planetarium, he could see in a flash what might have taken years of observing the sky to comprehend. He had expected the sun and the Full Moon to rise at the same point on the horizon; but he found that was not necessarily so. Sun and Full Moon are 180 degrees apart; they take opposite positions in the sky. When the sun sets 4 degrees north of west (as it does in early April), the Full Moon rises 4 degrees south of east. Immediately he saw why the picture of the sun-moon relationship he had been carrying in his head did not fit the reality of the event he had witnessed on that most perplexing night at sea."

See Will Kyselka's "An Ocean in Mind," 3-104, for full account of Nainoa's training and preparation for his first voyage to Tahiti.



The Wayfinder The 1980 Voyage Home

Nainoa Thompson, with Will Kyselka

[This account of the 1980 return voyage from Hawai'i to Tahiti is a chapter from Will Kyselka's *Ocean in Mind*. Will explains the genesis of the writing: "The words are Nainoa's, the form is mine. The words come from tape recordings, talk-story times, and a paper he submitted in English 101 at the University of Hawai'i. Much of the original is reflective--Nainoa recalling, remembering, relating, piecing together thinking in retrospect what the experience must have been at the time. To preserve the immediacy of events, I've put it all into present tense." *Hokule'a* left Pape'ete, Tahiti on May 13, 1980 and sighted Mauna Kea on the Big Island of Hawai'i on June 4, 1980.]

It seems to me that the way I shivered at night in the cold aboard *Hokule'a* in the storm after we left Hilo was the same as when I was young and diving at night along the reef. The wind and the ocean supply the cold, and I understand nature through exposure to it. I cannot really convey the feeling within me of that wind any more than I can tell you what it is like being the navigator. Yet that is my task in this chapter.

May 13, 1980

Sunrise on the cliffs of Matavai Bay at Point Venus. Each morning for five days we've been watching for the wind. But, just as on our departure from Hawai'i, the wind has not yet been ready to grace the sails and allow *Hokule'a* to glide along sea roads traveled by explorers of old. We've been waiting for a straight wind, a wind to depart on. Today we have that wind. It's not an ideal wind but it is one that we'll depart on.

The canoe is ready for the sea. A new boom replaces the one we broke on the trip down. Stress had also caused the laminations on the crossbeams to begin separating. Metal plates were bolted to them to strengthen them for the return trip.

It's late afternoon when we depart Tahiti. A ceremony once again affirms the bond between Polynesian peoples and sends us on our way. The setting sun is casting its last rays on high clouds as we leave Tahiti behind in SW Na Leo. Soon the first stars appear and the heavens demand our attention. Thoughts of the hospitality of our Tahitian friends and family are put away and we are left with only ourselves and our memories.

The Southern Cross is now high in the sky behind us. Each night for the next three or four weeks we'll see it slightly lower, and by the time we reach Hawai'i it will be at the horizon. It will be ten days yet before we'll see the North Star. During the next few hours the tiny island of Teti'aroa will be moving along our star compass from 'Akau to Hema as we pass close to it.

The first dawning of light is the important time for the navigator. It is the time for judging the sea and swells relative to the positions of the stars, a time for the reading of the weather for the day. Light creates the day and the colors in the clouds and in the mists in the salt air. Mau has internalized countless sunrises, so he knows how to read the weather and when it is right to sail. For him this knowledge is the means of survival of his island's people. For us this canoe is our way of understanding the people of old.

Navigating without instruments is a personal act. You must know the principles but you cannot reduce wayfinding to a set of formal operations. I'm constantly discovering new things that are useful in getting the canoe there.

On this trip I've been getting glimpses of a greater world of navigation, far beyond what I prepared myself for. I learn through my culture, but that alone is not enough: it does not provide all the right answers. When I understand things without knowing how, that's when I know I've taken great steps.

Like knowing where the moon is: One night it was really cloudy. It was nearly a Full Moon but clouds were so thick you couldn't see it. Still I knew

where it was even though there was no reason for me to know. I could have figured it out analytically, but I already knew. Here's a separation between knowledge and understanding. At times like that I know, but I don't know how I know.

Sleep is not a problem. I thought it might be but it isn't. When you accept responsibility internally you don't need all that much sleep. In a way you've got no choice. You make the decision to be here, and once you're here you're accountable.

Mau says he never sleeps when he's navigating. He says his eyes are closed but inside he's not. Somehow he rests enough to take care of the fatigue and he maintains his orientation. It's fascinating, this man's abilities.

My job is getting the canoe there, not to find out what ancient people did. That understanding comes as a result of a task gladly accepted. This is a unique situation-being responsible for giving direction and getting the canoe there without ever having done it before. It's full of unknowns.

There's a world out here that I didn't know anything about until forced into it by my choices. Analytic thinking alone cannot bring understanding, and I'm glad of that. We aren't searching for understanding, but understanding is coming as a result of the search.

In a sense there were no choices once we got into certain situations. That won't be reflected in the transcripts because at the time it happens I cannot express how I know. I don't understand at the time, and I still cannot express it. The transcripts are pictures of the struggle I feel at a particular moment.

Finding the Land

June 1, 1980

Dawn. The first rays of dawn hurt my eyes after straining all night to maintain the sailing course. I have an uneasy feeling this morning, for I know that the thin sheet-like layer of cirrus cloud that moved in last night can mean a change in the weather-a change from the regular trades-and that can make navigating difficult. It was difficult last night, at times impossible, even to identify the stars that did show through the breaks. This morning the

cloud is too high and too thin to cause shadows, but it makes the sea look more gray than blue.

The soreness in my eyes at dawn comes from the strain and fatigue of keeping **Hokule'a** on course. Most of the night we steered by the moon. It is now two days past Full Moon phase, the night of the month that Hawaiians call **La'au Ku Kahi**. Fortunately for us it was a big moon, nearly opposite the sun, and its light was with us most of the night. When it is nearly round and close to the horizon we use it for steering.

The sun rose this morning in the house of 'Aina on the star compass. It is most reassuring (and a compliment to the crew) to find both the canoe and the rising sun in their correct positions. For myself and the crew who had the steering duty for the last four hours, relaxation is now in order as the sun comes up.

With the sun on the horizon we have a solid steering sign. It's in the house of 'Aina, so we can assume that we sailed a most accurate course during the starless night. I feel the urge to give in to my fatigue, but it is not yet time to sleep.

The steering swells in line with the sun are clearer and more defined than they were yesterday. Each day since we left the doldrums the swells have been getting more and more defined, sorting themselves out in the dominant trade winds.

Daylight hours. I cannot relax on this first day of June. Because of the persistent high cloudiness, we have not seen stars very much in the last ten days. We're going 6.5 knots, but I do not have the vital information needed on our position change. I cannot relax. That's the hardest part for me, both mentally and physically. The conflict in mind and body brings tenseness and fatigue at a time I most need to be alert.

I estimate that we have traveled 260 miles without positioning ourselves by the stars. That's an empty feeling as we approach the target of the Hawaiian Islands.

We steer most of the day off the wind. Since morning the wind has shifted to

east northeast, a change that brings a familiar coolness that reminds me of the normal trade winds of Hawai'i. I have pondered many times the familiarity of new experiences during the voyage, as if somehow I have had such experiences before. In understanding the blending of my ocean past as a youth with the discipline of sailing lies the most cherished parts of myself.

When the wind swings northeast as it did today, it confuses the swells that we steer by. They lag behind the changing wind direction. For myself, such unsorted swells and waves also leave me confused.

Today we're using the high cloudiness that blocked the stars the last two nights. It's a special circumstance that allows us to use the clouds-very high clouds, moving slowly, very far away. Under these conditions the apparent motion of the canoe will have little effect on the bearing of these nearly stationary clouds.

Sunset. The June sun sets in the house of 'Aina, two houses north of due west. High clouds in the west around the sun take on a deep red color. The evening is dark, for it is three days beyond Full Moon, and tonight it will rise about three hours after sunset. John Kruse is at the steering sweep, keeping the direction of Na Leo as we sail from day into night. The true wind is right on our beam, and the canoe is quite dry as we race away from the crests of ocean swells.

The air is getting cooler as we increase our distance from the equator. How important the yellow foul-weather gear is to me when I contemplate another night of exposure to wind and waves and rain through ten hours of darkness! So many the reasons to admire the first Polynesian voyagers who sailed without such gear. How natural to be proud of my heritage.

We search the sky this evening for those stars that target the land, but the ocean horizon is clouded over. I have a very unsettled feeling. When we're nearing land we need the stars most-but now they're not there. Instead of getting clues from my eyesight, I'm left to my imagination, and I think of drops of water 10 miles distant blocking the light that has been traveling for 40 years to reach us.

Our course made good all day is between Haka and Na Leo. I estimate that

we've traveled 72 miles and that we're 13.50 north of the equator, 7.5 hours west of the course line. I believe the islands of Hawai'i to be in the direction of Manu, 550 miles northwest. In the back of my mind, though, I'm bothered by our yesterday's sighting of the manu **ku** [white tern]. How can this land bird be so far from land? How can it have flown so far if I'm to believe that it is away from its home island only between dawn and dusk?

June 2, 1980

Dawn. Since sunset last night I estimate we sailed 60 to 70 miles north northwest. A few stars of the land showed in the middle of the night through gaps in the cloudy sky indicating that we are 140 north of the equator.

The eastern horizon is showing a lot of red as sunrise approaches. High cirrus clouds are still present, with cumulus clouds at low levels showing the surface trade winds. Bruce takes command of the steering sweep as we enter the most critical phase of the voyage- targeting the Hawaiian Islands. We have very little room for error.

The sun is replacing night with day. The bearings of the swells are somewhat confusing, apparently because of the changing direction of the wind.

Whether it is that way in the sea or just in my mind, I am not sure. I've had little sleep in the last few days. Concentrating is a chore. This is the first time on the voyage, either down or up, that I'm feeling a little sick-a chest cold. Maybe it is anxiety, wondering if we have been accurate with our course. Are the Hawaiian Islands in the direction of northwest 'Aina? Uncertainty occupies my mind. But when forced to make a decision, I know that I have only mind and memory-and faith in myself. Without that I'm lost.

We're doing 6 knots off the wind. Steering is difficult. **Hokule'a** is constantly trying to round itself to the windward in an attempt to parallel its hulls with the dominant swells. It takes skill and ability to anticipate the effect of the oncoming swells. Fully loaded, **Hokule'a** weighs nearly 10 tons, and that's a lot of weight to control. Once a steersman loses control to the swells there is very little that can be done. Experience is the steersman's greatest teacher.

Daylight. The high clouds disappear and leave the trade wind cumulus, a very good clue to steady trade winds. We have a light lunch, and the crew

spends most of the day steering and trimming the sails. Bruce, who is the primary fisherman on this voyage, is constantly tending to the fishing lines. This leg we have been running larger lures than we have run in the past. Even though we have not caught as many fish as we did on the other voyages, those we have hooked have been comparatively big ones. We picked up one nearly 100-pound marlin, a 50-pound sailfish, and a 30-pound mahimahi. We also lost at the gaff an 'ahi that I estimated to be 60 pounds. We had our slim share of small aku, kawakawa.

Our diet aboard **Hokule'a** is basically canned, packaged, and dried food. All our fresh provisions were eaten, or they were tossed overboard because of spoilage. Last to go were the citrus fruits. A frequent topic of conversation, as we get closer to land, is that of the first things we will eat when we arrive home.

Snake Ah Hee has become our official cook-unofficially. Right from the start of the trip he has taken over in the kitchen. I am certain at times I have seen him fighting over the right to the pots and pans in the galley. Good meals can at times be one of the few things to look forward to at sea, and cooking is not easy at sea on **Hokule'a**.

As the sun nears its setting place on the horizon the canoe is being cleaned. Some of the crew are washing themselves with a salt water bath. Others are putting on their foul-weather gear, preparing for another night at sea. Nathan Wong is steering. Nate sails in the dual role of crew member and physician. Medically we are all healthy and sound. We're grateful for that. We've had, our share of minor sunburns and rashes, along with Kainoa Lee's bad cold. It is comforting to have Nate on board in case of a serious problem.

No land birds today. Their absence stirs doubts in my mind. But if my estimate of where we are is correct, we must still be out of the flight range of land birds anyway. It's their absence that makes me uneasy.

Sunset. As the sun sets in the west northwest, I estimate the island of Hawai'i to be two houses to the right in the direction of northwest Manu, 360 miles away.

We've traveled, as I estimate it, 72 miles since sunrise in the direction of Na

Leo. Winds are 18 knots out of the east northeast as we're sailing 6 knots abeam to the true wind. The wind and swells are steady and straight. With the sky clear of high clouds, it appears we will have good weather at the time we need it most. I feel good about that.

Wedemeyer Au steers **Hokule'a** in the direction of the setting sun. In the fading glow of twilight he uses the light of the brighter, very distant stars to guide him as we sail ever toward Hawai'i, our homeland.

The Southern Cross is nearing the southern horizon. Our timing for landfall is critical in that certain groups of stars must be in the right position relative to the sun. The Southern Cross is the most important of the constellations for us now. It is getting toward the west and will be available in its useful position for only a week or ten days more.

As I watch the Southern Cross, so does Mau. He has kept himself uninvolved with the navigation and sailing of **Hokule'a**. Navigation takes constant memorization of our course made good. For the most part Mau has divorced himself from that effort; yet as the stars of Hawai'i begin to show in the twilight, anyone with that knowledge cannot help but be concerned about the accuracy of the course we have kept. Are we truly to the east and upwind of Hawai'i?

Steering is easy on this cloudless night, but in the early morning hours I tend to become tired. The more I force myself to stay awake, the more fatigued and less alert I become. I need rest to clear my mind.

We are nearing our destination. Mau scans his ocean heaven for important stars. It is as if I know what he is feeling. I know because of what I have gone through on this voyage. My thoughts are sad as I realize the wealth that he has given me, in sharing navigational secrets in the context of the tradition of his culture. My thoughts are sad that the voyage will soon end and with it his teachings, for he must go back home to Satawal. He is a man of priceless gifts. A man who took our hands, as if we were children, and walked us through it all upon the wake of our ancestors. As I watch him look at the land stars he knows so well, I cannot help but feel sad.

I begin this night full of anticipation, and at the same time I'm very tired.

Through this experience I'm beginning to understand the suffering of Mau in maintaining his heritage, a difficult task in a rapidly changing world. I don't know the depth of the hurt he feels in seeing more of his culture lost with each generation.

Night passes with only a partial cloud cover. Stars make their paths across the sky. We're able to use the land stars of the Southern Cross (Hawaiians also know it as Newa), Atria in the Southern Triangle, and the two brilliant stars, Alpha and Beta Centauri. **Hokupa'a**, the North Star, is gaining altitude each night, and from this array of stars I judge South Point to be 180 miles to the north and 220 miles west of us.

June 3, 1980

Sunrise. Early morning brings a freshening wind of 22 knots from east northeast. I'm cold after another full night of being on the open deck of **Hokule'a**. The two bright stars in Aries, Sharatan and Hamal, are rising. At this time of year their appearance on the horizon brings the first light of dawn—a good sign for Snake's watch, which has been on since two this morning. Since we have no time-pieces aboard, our simple routines are kept by the light of the stars and sun. The brilliant red and purple colors of these beautiful clouds of dawn, though, may be a sign of bad weather.

Kainoa Lee is steering as the sun breaks the ocean horizon, on this our 21st day at sea. The sun's orange rays are guiding him on his course, northwest **Na Leo**. With the increased wind speed we are traveling at 8 knots toward the Big Island in the direction of **Noio**. If we maintain our course and speed, the island should be in **'Aina** tonight, not much more than 210 miles away. I feel very uneasy about such estimates: what if we sail more than 200 miles from here and find no land?

Cloud cover is 40 percent, not a comforting thought now that we are so close to land.

I am awakened by loud conversation. I see the sun still near the eastern horizon, and I realize that I have slept only a short while. My mind and body agree. Off the left side of the canoe is a group of white birds. As far as I can tell they're mostly the white tropic bird, **koa'e kea**. But within the group is at

least one manu **ku**, the bird that indicates land. The ocean is filled with white caps, so white birds flying low are hard to see. We watch as long as we can see them. Apparently they're fishing, not flying to or from land.

Nevertheless, it puts me more at ease in my upcoming sleep to know that we're in the circle of manu **ku** and near Hawai'i.

It's clear to all of us that land is near. We set a watch to keep a sharp lookout for any sign of it. I still feel that we are south and somewhat east of our target, so we hold a course between northwest **Na Leo** and **Nalani**. We do not want to sail to the west of the Big Island, so we'll hold that course until we can get a good star clue tonight.

This day seems to pass slower than any other day. We're still straining to see the land. The optimism in seeing land birds in the morning is being tested by the length of the day. In the minds of us all lies the shape of the land.

I was sitting on the aft navigator's platform this afternoon and Steve was sleeping on the forward platform. Suddenly I saw a brown boobie floating on the water about 70 feet off the starboard bow. Just at the moment we were sailing past the resting bird, Steve woke up. He saw it, jumped up and shouted, "Ring-necked mallard! Ring-necked mallard!" I was astonished with his enthusiasm and with that misidentification. I looked at him as he seemed to turn to me to see if he had any reason to think he was correct.

Maybe it was fatigue or merely the absurdity of the situation; anyway I did not even feel the need to react. I just continued studying the ocean as **Hokule'a** sailed past the boobie. Steve straightened himself and collected his wits as if nothing had happened. Had he been right, this "ringed-necked mallard" definitely would have been off-course and in deep trouble. But I guess birds of the land occupy even the dreams of those who sail in search of new islands.

Sunset. We use the last moments of the day to look for birds and any other clues to land.

During the night high clouds move in from the southwest, and on the southern horizon we see the first signs of a build-up of rain squalls-both signs of changing weather. Today was the first day in six that we were able

to enjoy relatively clear skies, yet that clarity is now being threatened.

East-northeast winds have heightened to 18 knots. This morning I estimated our distance from land as 210 miles. But almost as if I need to cushion myself from the increasing doubt that is building up in me, just for no reason I changed the distance to the Big Island to 300 miles. Due to my inexperience or immaturity (or both), I changed my thinking to allow the Big Island to be that far away. A cushion allows for human error and gives us a reason not to panic if we do not see the islands by tomorrow morning.

Rain comes in the early evening twilight. Crew members, now used to the ways of the sea, already have on their foul-weather gear. The clouds are moving with extreme uniformity-distinct cloud streets with rows of cumulus nimbus clouds paralleling each other, equally spaced, and all of the same altitude. Soon the rows of clouds encompass the world of the canoe. As we sail abeam to the wind and rain, we pass from rows of rain to rows of clear sky and on into the night of our 21st day at sea.

Only the stars overhead are visible between the rows of rain. Stars for the land may not show themselves if the rain should stay all night. But let's not think of such things so early in the night with land so close.

As I search for the land in the direction of a particular group of stars, all I see are those rows of rain clouds that we just passed through. But to the east of south I see a break in the clouds, a gap traveling at a speed different from the prevailing trades. I watch and hope it will not change form or continuity, so not to allow the gap to give a clear vision of the stars I seek. As I watch I know the night is very early, and that such stars will be in their correct positions for the land I desire.

The gap in the clouds moves closer to the south. First to appear are the faint stars to the east of what I seek. Moments later, with anticipation, the land stars show themselves in the positions I need them to be. I stare till I'm sure. Now I know by our latitude and dead reckoning that we are close. I turn to my right to see Mau and Mike Tongg staring at the same thing. Nothing is said, for nature has told us all that we need to know.

Most of the night passes with rain. Not until early morning do I see the

North Star. The rain makes the sky more clear. Just before the rising moon is Maui's Fishhook (Scorpius) appearing through a break in the clouds. What a magnificent sight, the barb of the Fishhook in the direction of the center of the Milky Way! High above these clouds and at the top of Mauna Kea, astronomers may right now have telescopes aimed toward that galactic center. A few months ago I was up there in that cold, studying the stars. Thoughts of the old and new blend in my mind.

Anticipation plays tricks with my mind and senses. Not knowing if it's imaginary or real, I struggle with visions of towering mountains appearing above dark rain clouds, much like a child who believes clouds are what things are made of. Continuously I question whether I can feel unusual swell patterns that might be backwash off the Hamakua coast. Is that the sound of surf crashing on the cliffs? Rain and cloud are blocking our vision. Such thoughts running through my mind are not based on logic but rather imagination kindled by hope. However, it turns out to be a night only of images that leaves me exhausted. For my own sake I will need to relax. The land will show itself when it will. I must give up and give in to the notion that I can do nothing about it.

June 4, 1980

The first streaks of light on this morning reveal gray and black clouds at both low and high levels. During the night I saw the Southern Cross near the horizon and I know Hawai'i is near. My experience in seeing Crux from places in Kaua'i, Maui, Kona, and South Point tells me that the canoe is in the latitude of Hawai'i. The time for changing our course from a general northwest direction to a more westerly one is near.

Long rows of low clouds show straight winds coming from NE 'Aina. Hokule'a is heading NW Na Leo, crosswise to the wind. The rising sun breaks that long dark line into individual puffs of cloud, orange in color. High clouds are becoming more scattered now, showing as thin streaks of red against a background of light blue sky. Straight winds and clearing skies are a welcome sight after the last three days of rain.

A couple of hours before noon we see a thin, gray line beyond a bank of clouds almost dead ahead. With the sun high in the sky and somewhat

behind us yet, and with rain clouds lifting, the line seems stationary. It is not particularly distinct. What is it?

We have a meeting of the crew to work out a strategy. We will make two tacks, one at noon and another at sunset. We hope that by holding a course as close as possible downwind we will be able to see for sure if the line that we think we see is an island or not.

Our new tack puts us on a course of SW 'Aina; then I go to sleep for about two hours. When I awake in mid-afternoon, I find we're looking right into the glare of the sun reflecting on the water making the sighting of land in that direction impossible. It also makes it hard to judge the movement of clouds, an important clue in finding land. Clouds over the sea move, but those around the mountains are stationary.

Also steering SW 'Aina after three weeks in NW Na Leo makes the land move differently along the compass. Now the land is moving northward at a speed dependent upon our overall direction and speed during the time I was asleep.

With these two conditions I feel a lack of confidence as to where the line I thought I had seen in the morning really was. Maybe that line had been only in my imagination. We're at the right latitude for Mauna Kea, and now only one question remains: does it lie downwind or upwind, to the west or to the east?

We saw no birds this morning, no sign of manu ku. Seeing no birds at all makes the direction of land even more uncertain. Have I been too hasty in turning west to find the land? Could it still lie to the north and my memorizing system be inaccurate? Worst of all, could it be that we are too far to the west, downwind of our destination?

We try steering in the direction of that line we had seen by pointing the canoe almost straight downwind, SW 'Aina. We have a straight wind from NE 'Aina and a dominant Hikina swell. Even then, we cannot hold the course. Steering is just too difficult.

I keep straining to see something like images of mountains or clouds that

don't move. It's hard to see anything in the glare of this hot afternoon sun. Straining makes me sleepy. I know that. I also know that I'm likely only to be fooling myself. I must be patient and let the mountain show when it is ready.

The plan we had worked out in the morning was to change our tack after dinner so we would not get too far south. Instead, we begin tacking at about 5 P.M. Our new heading is NW 'Aina, close to the direction of the setting sun. We see no birds at all, making it all the more difficult to know where we are relative to the island of Hawai'i.

The sun is nearing the horizon and a peculiar image is forming. I don't know why. The cloud bank turns a dark gray, almost black, like rain. Around the cloud bank, though, is a consistent orange color. It's a strange sight.

Something is different about that setting sun. It's something we haven't seen before. So we alter our course slightly and head directly into the sun, NW 'Aina.

The crew is silent. I think they have a feeling, too, that land lies just below the sun. It is as if we're all standing on tip-toes waiting, and a feeling comes over me that this is the way things are supposed to be.

I remember a story I was told one time (how accurate I do not know) of the people of ancient Polynesia. They had their family guardians, **ku'ula**, that gave them prosperity. They were symbolized as figures shaped of carved stone. Fishing families had their **ku'ula** that attracted fish and gave them protection. The navigator of old, as the story goes, was not like other men. He was separated from them—a man of the sea, not of the land. So his **ku'ula** was not bound to the land but was the land itself—the highest mountain, a mountain of power.

I stand on the bow of **Hokule'a** watching the sun dropping toward that cloud bank and I question how much control, if any, I have in finding the land. This is the way things are supposed to be.

Closer and closer it comes to the cloud, and I have a different, almost strange feeling. The sun is right in the compass direction of 'Aina-land. It is pointing

out the land.

I walk to the bow of the canoe for I know the island is there. I don't know how I know. Steve Somsen also knows. Not that he really knows, but he's picked up on my knowing it's there.

Suddenly a particular cloud begins separating. It has the same quality as other clouds in terms of whiteness. But this one is not traveling. It's stationary, and it opens up to reveal a long, gentle slope with a slight bump-a cinder cone on the side of Mauna Kea!

The navigation at this moment seems to be out of my hands and beyond my control. I'm the one given the opportunity of feeling the emotion of the navigator not yet ready to have a complete understanding of what is happening. It is a moment of self-perspective, of one person in a vast ocean given an opportunity of looking through a window into my heritage.

I hear the crew cheering as the edge of the sun begins disappearing behind Mauna Kea. I feel their happiness, but a silence in me sets in. Venus follows the sun and touches the mountain an hour later.

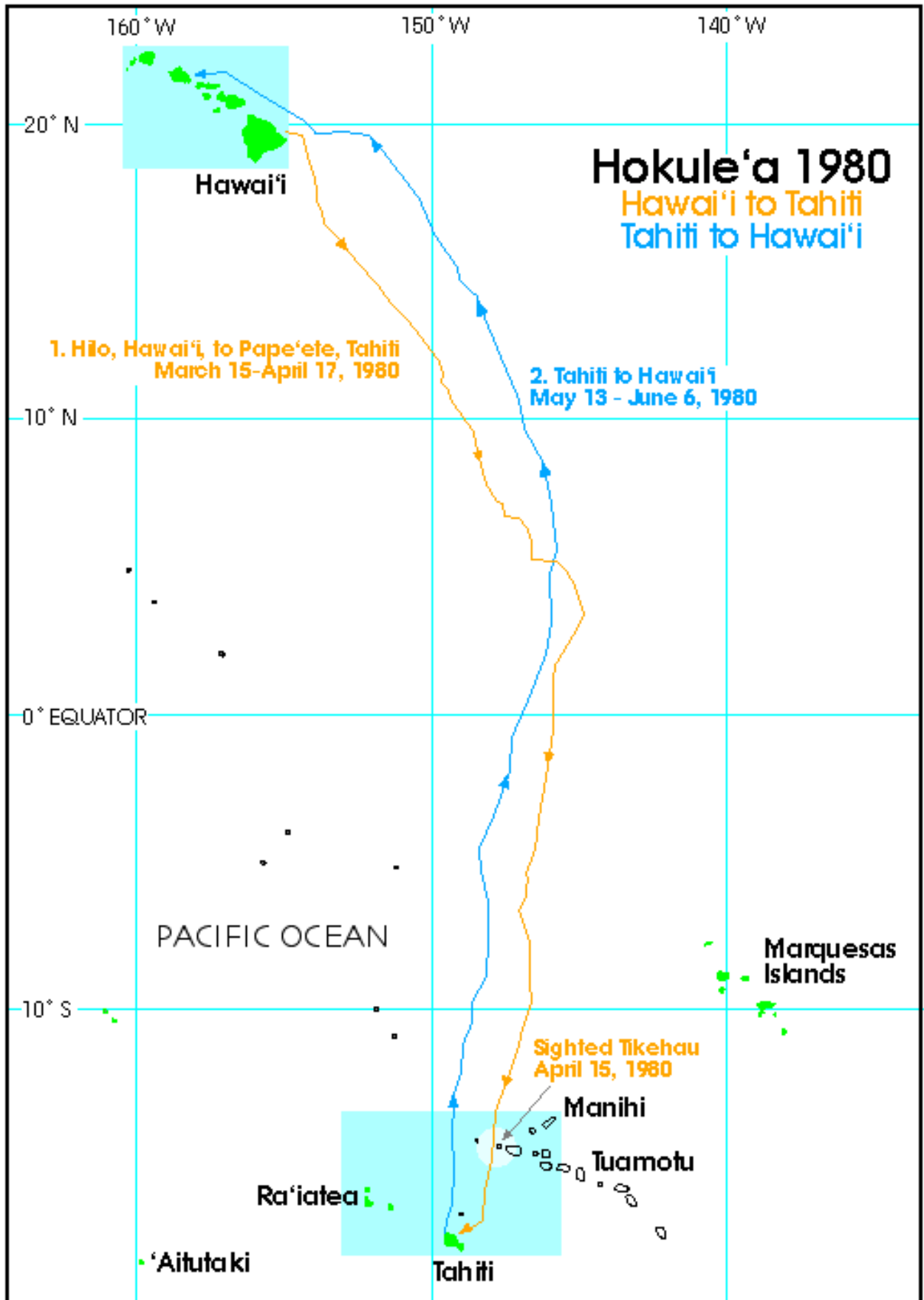
It is now time to sleep, for there is nothing else to do. The sun has led us to the land. Ahead of us is our ku'ula, and I'm filled with a feeling of emptiness and gratitude.

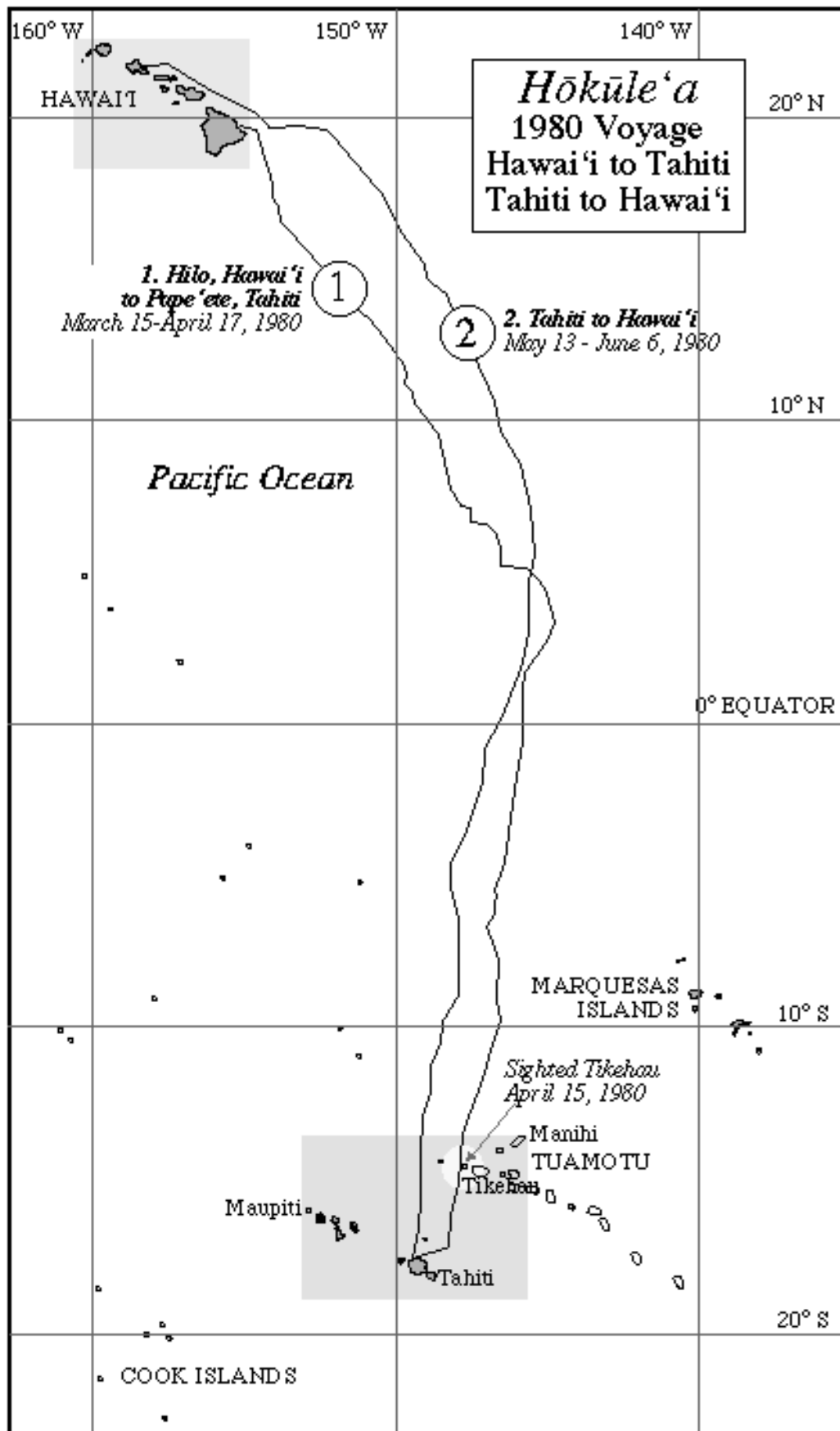
But before I sleep I check on Mau. He's already asleep--something unusual for him at this time of night.

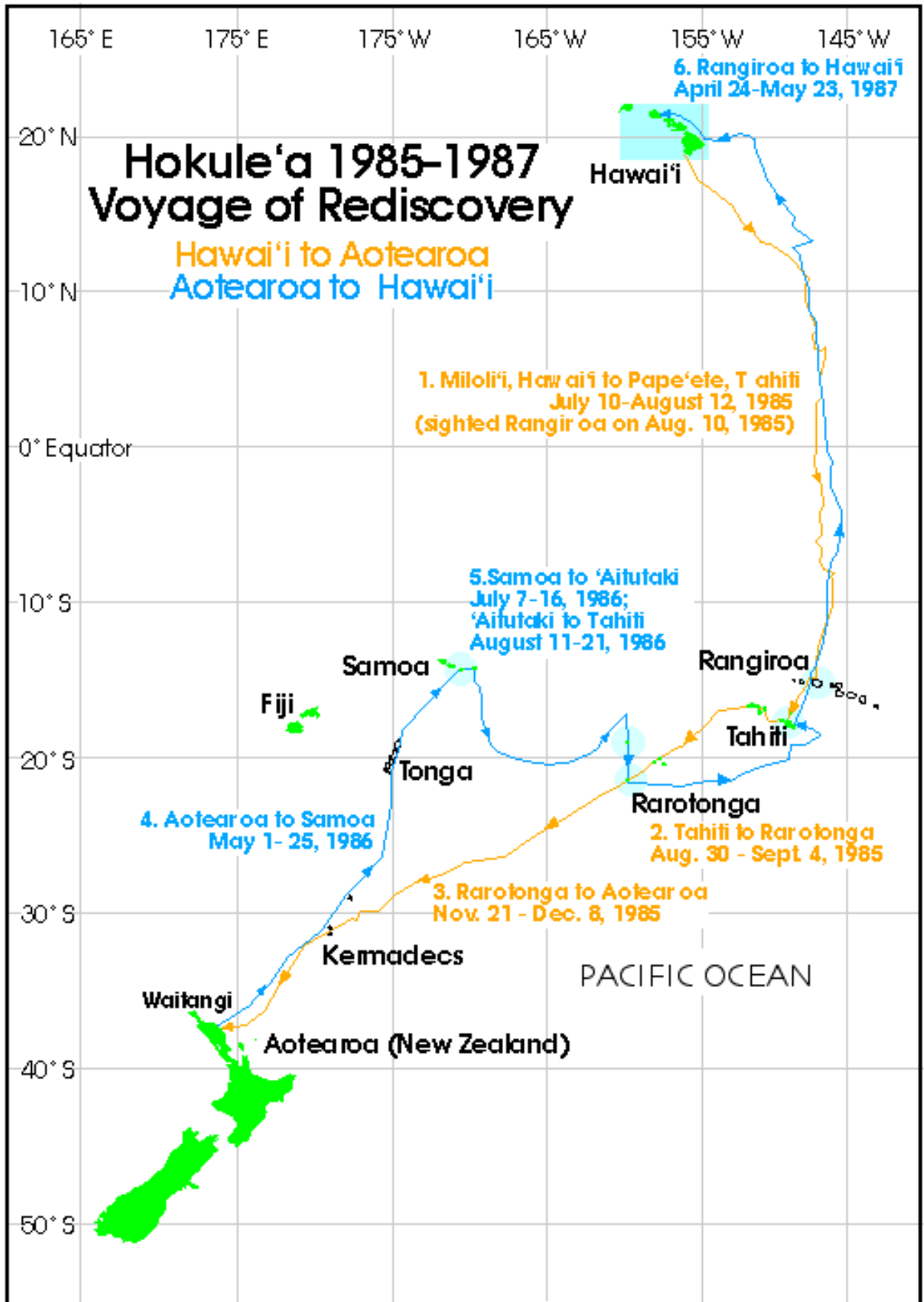
[Click here for [Nainoa's account of his learning to navigate without instruments and the 1980 voyage to Tahiti](#). Click here for his [recollections of the 1985-87 voyage to Aotearoa](#). Click here for his [recollections of the building of Hawai'iloa and the 1995 for Nukuhiva](#).]

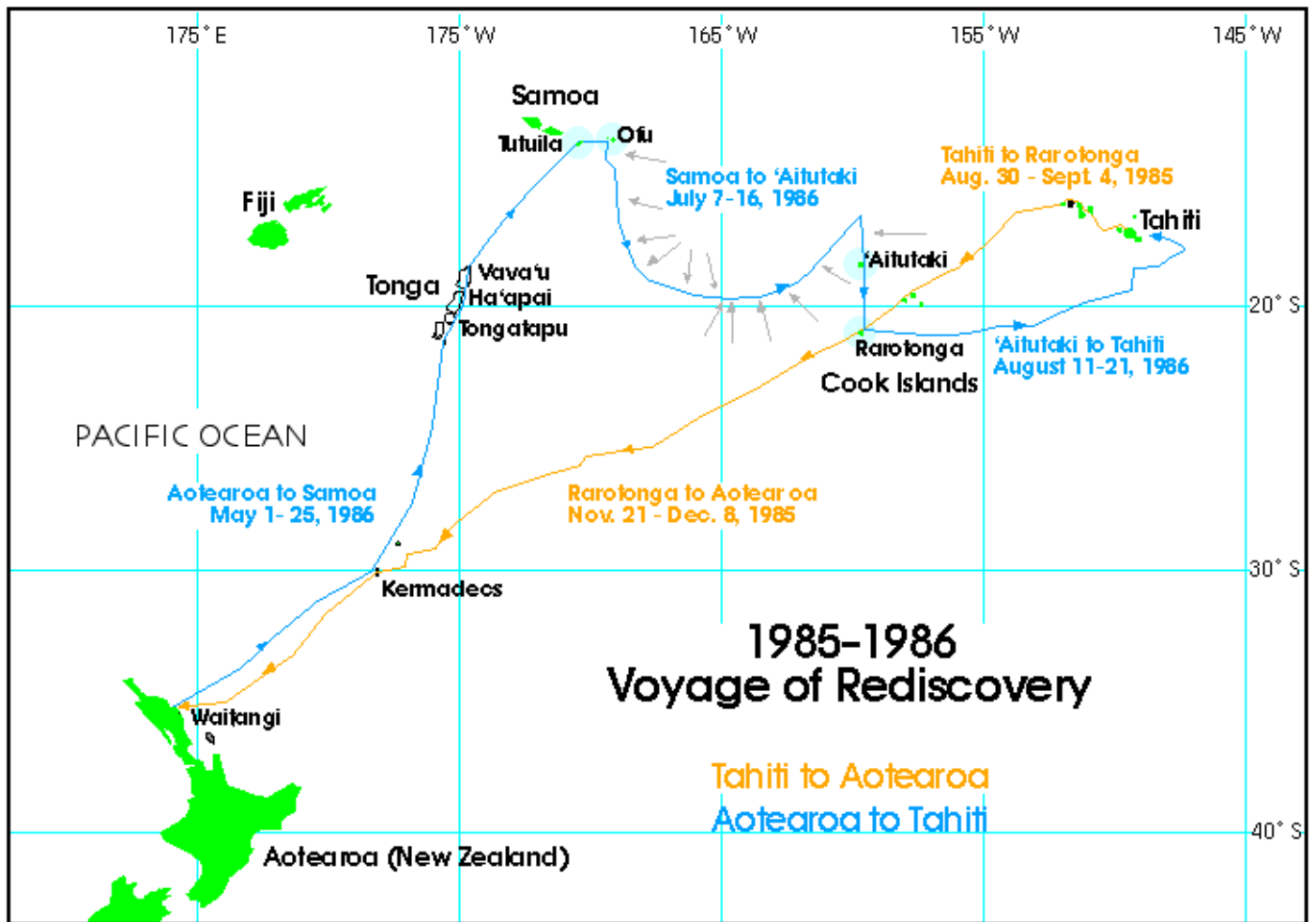
1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
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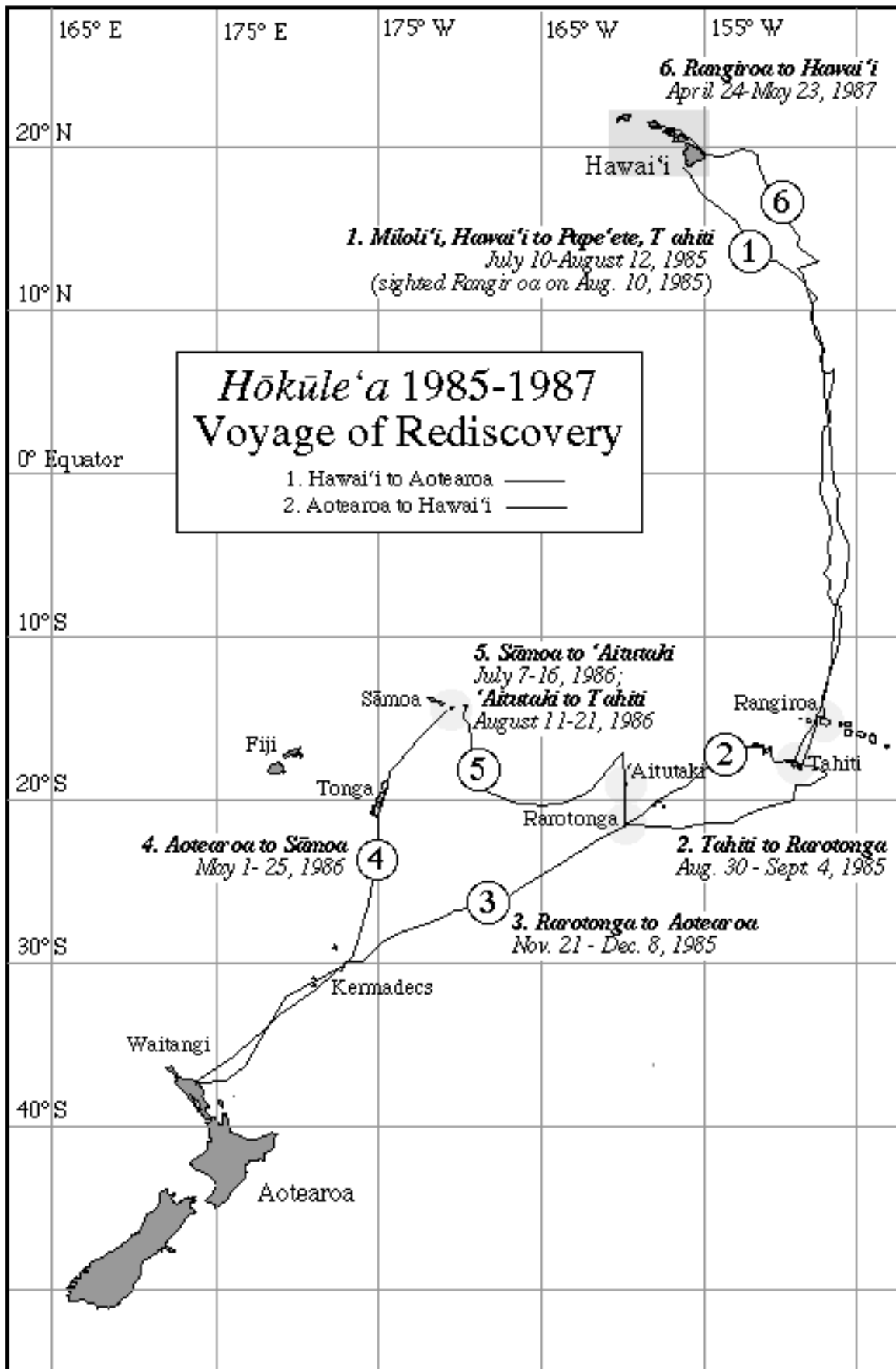
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The Voyage of Rediscovery: 1985-1987

Nainoa Thompson

Photo Below: Maori Elder Hector Busby (center, in Feather Cape) with the Hokule'a crew, 1985
(Behind Hector is Nainoa.)

In 1980, when we returned from the voyage to Tahiti, we took *Hokule'a* to He'eia Kea, to a little inlet in Kane'ohe Bay. The voyaging community was small and after the trip we were exhausted. We went back to our own lives. In He'eia Kea there is a lot of fresh water in the ocean and a lot of rain, and some of the wood on the canoe



began to rot. It was just total neglect by all of us. Finally, Wally Froiseth, a master woodworker who has contributed for years to the revival of canoe-building in Hawai'i, got up at a meeting and said, "We've got to take care of the canoe."

So we went to He'eia Kea and hauled the canoe out of the inlet. There was a lot of growth on her hulls, and the shrouds and stays were all slack. The canoe was an absolute mess. When we finally set sail, the mast snapped because it was rotted. We took *Hokule'a* into dry dock.

Hokule'a was really built to sail just once-in 1976-for the Bicentennial of America celebration. We went again in 1980, to see if we could navigate by

ourselves, to live our culture, and to honor Eddie 'Aikau. We received invitations from a lot of people in the South Pacific who heard about **Hokule'a** and wanted us to visit them, so we sat down and said, "Let's sail the migratory routes that our ancestors must have taken to colonize Polynesia." And so we started planning for the Voyage of Rediscovery ... rediscovering ourselves. We were not going to sail from Hawai'i to the Marquesas and for sure we were not going to sail to Rapa Nui. Those upwind routes were unrealistic. They were much too difficult at the time. We did not have the experience.

We mapped out a two-year voyage with seven major legs that reflected the other migratory and voyaging routes of ancient Polynesia-Hawai'i down to Tahiti; Tahiti to the Cook Islands; Rarotonga down to Aotearoa; Aotearoa up to Tonga and Samoa; then against the tradewinds from Samoa to the Cook Islands and back to Tahiti-the west-to-east migration route that Thor Heyerdahl said couldn't be done; Tahiti up to the Marquesas; and finally from the Marquesas back to Hawai'i. The entire voyage would cover 16,000 nautical miles.¹

Crossing 1,700 miles from Rarotonga to Aotearoa, even though it's shorter than the trip from Hawai'i to Tahiti, would take **Hokule'a** the tropics and into the subtropics for the first time. I thought this would be the most dangerous of all the legs on this voyage. We were going into much colder water and much more complicated weather systems. From the beginning of November to the end of March-the Southern Hemisphere summer-hurricanes spawn in the Coral Sea, come up hurricane alley, through Tonga and Samoa, and head to the southeast. They cut right across the planned path of the canoe. They are infrequent but they do visit the North Island of Aotearoa. But there were advantages to sailing in summer. High pressure systems settle in and that's what you want, you want to be north of the high pressure center where you find trade winds. From Rarotonga we would sail west-southwest, so we needed trades.

So, in the summer the winds are ideal, but you get hurricanes. You don't want to go in winter because westerly wind bands move north and you're sure to get a head wind-hammering and cold-spun off from subtropical low pressure systems. We wanted to leave before the summer hurricane season

and after the winter westerlies die off and the trades fill in, so we decided to sail in the springtime.

We took two years to plan. What would the strategy be? How were we going to navigate this route without instruments? Between Rarotonga and Aotearoa is a group of small islands called the Kermadecs. If we could find these islands along the way, we would know where we were. From there, instead of navigating 1700 of open ocean, we would have to navigate only 450 miles to Aotearoa.

Aotearoa is so much father south than Hawai'i, so the star patterns relative to the horizon are very different, and the navigational system we had been using doesn't work as well that far south. The farther you get from the equator, the less available for steering the stars around the north and south celestial poles become. When you go far to the south, the northern stars are below the horizon, the southern stars never rise and set, and the paths stars take in the sky get more and more horizontal. Steering by the rising and setting stars becomes much more difficult. The stars rise in their houses but then veer off sharply as they continue to cross the sky, so once they are up in the sky, it's hard to tell where they rose from and where they will set on the horizon.

I needed to go and study those star patterns. I knew from a scientific point of view that I had to train this way; but I also wanted to visit this land to get an instinctual feeling about it before trying to go there on the canoe. The only person I knew in Aotearoa was a man named John Rangihau, a man who possesses great mana-like one we would call a kahuna. I said to him in my kind of foolish innocence, "Mr. Rangihau, I need to go to Aotearoa, and I need to study the stars in the northern part of your island. I looked at a map, and I found a place called Te Reinga. It has a lighthouse. Can you pick me up and drop me off there? I'll live in the lighthouse; I'll take my own food. And when I'm pau, can you pick me up?" I had no idea what I was doing. I knew no one but him. And he said, "Okay, I'll do that."

So I flew to Aotearoa. I was 29 years old. I went through customs and no John Rangihau. All of a sudden I saw a very friendly lady with a banner with my name on it. She was waving it above her head, and I thought to myself, "Oh boy, things are not going the way I thought they would go." We went

outside in the parking lot, and she put me in the back of her car. She had a comforter and pillows there to make a bed. And this was just one of the many, many gestures of caring shown to me while I was there. I was thinking, "Okay, we're going to Te Reinga," but when I mentioned this place, she said, "Oh no, we're going to Mangonui."

We we got to Mangonui, there was no house-just some tents and two caravans (trailer homes). It was Hector Busby's land, but I didn't know that. There was a place being excavated; I learned later it was for the foundation of the house Hector was planning to build.

We got out of the car and met some people on the beach. They were very friendly and told me, "Here is your tent. You can stay in this tent."

My stay had been arranged. They knew I was coming. I kept hearing this name "Hector Busby," but he wasn't there. He was out fishing. One of the guys named Matey Baker, a school custodian, said, "Hey, we set a net in the stream back where that bridge was, let's go pull it."

While we were walking there, he said, "I hear you know about the stars." So I started telling him a little bit about navigation and **Hokule'a** and what we were trying to do. He wasn't **Maori** and was only mildly interested, but it made good conversation. We walked to the bridge. Matey went under the bridge and I was up on top pulling the fish out of the net when Hector drove in with a couple of friends, wondering who was poaching his mullet.

He had his boat on a trailer behind him. He screeched to a stop and got out the car. He didn't say a word to me. He just stood on the bridge with his hands on his hips.

Matey came up from under the bridge and Hector quickly figured out who I was-"That's the Hawaiian coming down here to look at the stars and spoil my vacation." At least that's what I thought he was thinking. It was New Year's Eve, and everyone was on holiday for two weeks.

Matey came up and introduced me to Hector. Hector wouldn't even shake my hand. He just told me, "Go sit in the boat." Everybody else was sitting in the car. So I got into the boat, and we went tearing down the road. I

wondered what was going on. He didn't say hello. Didn't shake my hand. Nothing. He didn't even acknowledge the introduction.

By the time we got to the beach, I was thinking, "I don't feel welcome here. This is not set up right. I don't know what John Rangihau was thinking. Here is a man with so much mana that he's considered a prophet. What in the world was he thinking by sending me here?"

All I wanted to do at that point was to go to the lighthouse to study stars, but I didn't have a ride there and the lighthouse was an hour and a half away. So we got out of the car and everybody was nice to me except Hector. Hector's wife was very angry about the way he was treating me. Then Matey said, "Oh, so we hear you're a navigator, so why don't you tell us where north is?"

Matey didn't mean anything, just being friendly; but Hector turned to me and I could see the glare in his eyes. Then he ran into his car and got a compass, but kept it hidden. He was looking at me through the windshield. Matey and everybody was politely waiting for my answer. They were not testing me, but Hector was. I could see him with that compass box.

Luckily it was late afternoon, and the sun was setting. I took my time. In front of us was a bay that goes out to a point. I said, "I think north is over here."

Hector waited a few minutes, checking his compass, then came running out of his car and said, "No, no you're fifteen degrees off."

By then people there were mad at Hector. And one of them, Joe Nara, who was a navigator in the Royal Air Force in New Zealand, said to Hector, "Which way?"

Hector said, "He's too far off to the left."

Joe said, "Yes, because your compass variation is off by thirteen degrees. He's only two degrees off."

Hector closed his box and walked away angrily.

After things calmed down a little, I was getting excited about studying stars,

so I couldn't wait for it to get dark. When it got dark, I excused myself from the family and walked away from the camp to get away from the lights. Matey's son was really attracted to the whole idea of studying the stars, so he came with me. We went up on a little grassy hill. I had my charts, my books, and a little flashlight. We studied the stars. Then about midnight I decided to go back to the camp to wish everyone a Happy New Year and to thank them for their kindness.

Hector was sitting by the campfire. Suddenly he got up and began to orate in **Maori**. I didn't know what he was saying, but I could see in the yellow light from the lanterns tears streaming down his face.

When he finished he said, "In this land, we still have our canoe buried. In this land, we still have our language and we trace our genealogies back to the canoes our ancestors arrived on. But we have lost our pride and the dignity of our traditions. If you are going to bring **Hokule'a** here, that will help bring it back. Whatever you need to do, I am with you all the way."

When he first met me, all Hector knew was that I was some Hawaiian who wanted to come down and study the stars, but he didn't know why. When I was up on the hill, I think Matey told him about **Hokule'a** and what we were trying to do. Somehow, John Rangihau knew that Hector would be the one to care for me.[1](#)

From that point on, all during his vacation, Hector drove me to places where I could study the stars. We drove a long distance to Te Reinga, the northern tip of the island. The beach there was ninety miles long. We went to the lighthouse, and from there, I could see the horizon to the east, west, and north. At night, I would study the stars and Hector would sleep in the car. At dawn, he would drive back while I would sleep in the car.

At the lighthouse, there was a cave where a pohutukawa tree grew-the same as our 'øhi'a lehua. In the myth of Kupe, the navigator who first discovered Aotearoa, the sailing direction to Aotearoa from Hawaiki-the homeland-was to steer to the left of the setting sun in the season when the pohutukawa blooms. That is late spring, early summer in the Southern Hemisphere, when our voyage was scheduled to depart. And like Kupe, we would leave from Rarotonga.[2](#)

Te Reinga is a sacred place. When a Maori dies, his spirit goes there to dive into the sea and return to Hawaiki, to the home land. All of these myths and Maori language and oration were new to me. The first time I ever participated in a Hawaiian ritual was when Hokule'a was launched in 1975. When I first got to Aotearoa, I didn't understand that these myths could provide valuable information for the voyage-I was there to study the stars.

When my studying at Te Reinga was over, Hector took me back to the Bay of Islands. He drove off in tears.

That's how my connection with Hector began. It went from Hector not shaking my hand to his staying with me all the way and my becoming a part of his family. I think for him the canoe made his history and the honor and dignity of his culture-which he knows so well-come alive. Hector is an advisor to the people in the Northern Museum about Maori history because he knows so many of the old stories. He's a living legend in his own world.

You see from this story that voyaging is not about one person. It requires many, many people. My relationship with Hector enriched my life in a way that I could never have imagined before I went to Aotearoa. I went back home renewed and studied harder. The purpose of sailing Hokule'a to Aotearoa went beyond applying science or reviving culture; it was also about connecting people and restoring pride.

In 1985, we sailed down to Rarotonga from where we would depart for Aotearoa.³ We went to Muri, where there are seven stones representing seven canoes that left for Aotearoa. The navigator Kupe also left from there on his voyage of discovery to Aotearoa. A pod of whales helped him find his way. So we waited at Muri for the right weather conditions to go. We hoped to leave around November 15.

As we waited, a tropical cyclone roared up hurricane alley, out of season, with sixty knots of wind. Only three more knots and it would be classified a hurricane. Once a cyclone cuts through the atmosphere it tends to create a path for others to follow. We were looking at the possibility of an early hurricane season which would not allow us to go. Along with the tropical cyclone near Rarotonga, New Zealand was experiencing a late winter, with subtropical lows-the two worst conditions for sailing to Aotearoa. I was

frankly afraid to go because there were so many people's lives at stake. I was in my early thirties, and I didn't have the confidence and the maturity to be handling that kind of pressure. I was panicking.

I talked to my dad: "What if we have to shut this thing down? What if the hurricane season starts early?"

He said, "Just make the best choice. Take in all the information and make your choice. Whatever choice you make, we will support it."

I went back and forth with the meteorologists, day after day. Now my father was beginning to get concerned because he saw how concerned I was. He began to step back and be more conservative with his recommendations. We started to lose our confidence. Then Hector arrived and heard about our uncertainty. The next morning he came into my room while I was trying to make a decision, and he said, "You must go. You have to go. And you will get there because your ancestors will be with you." He would not discuss the possibility of not going. He reminded me, "When we were studying the stars I told you that we would be with you all the way." He was powerfully adamant. That removed any question about not going. Hector changed the momentum from more and more doubt to a feeling that this was not a decision, it was fate. For him it was not an intellectual decision making process. He just said, "You must go." And so we did.

There was a break in the weather: another storm came through, but behind it there was no sign of another one so off we went. It took about six hours for Rarotonga to go below the horizon at our stern. It was an incredible voyage, with very special moments. We had an incredible crew, a crew of common people, from all walks of life, bonded by a single vision.

One special moment came while we were trying very hard to find the Kermadec Islands to give us that known point along the way. If we sailed too far south, we would run into westerly winds, and if we ended up east of New Zealand in westerlies, we would have to tack against them for days. But if we didn't sail far enough south and turned west too soon we ran the risk of sailing past the top of North Island and ending up in the Tasman Sea without knowing it.

One night we saw two stars, Alpha and Beta Centauri, right on the horizon and that gave me a lot of confidence that we were at the latitude of the Kermadecs, which I thought were to the west. So we headed west.⁴ The next day we were looking into the sun which made the water sparkle, and we didn't see a pod of sperm whales coming-about eighteen of them. We sailed right into the middle of the pod. I don't know why, but one of the whales-perhaps it was a mother who had become separated from her calf-turned from the north and swam toward our starboard side with such force that her whole head rose out of the water. She came right to the hull of the canoe, then at the last moment, dove down and turned her tail. Instead of ramming us, which would have permanently damaged the canoe, she just kind of nudged us to the south. From a scientific point of view this event had no value. We were just lucky we were still afloat. We continued heading west toward the setting sun, looking for the Kermadecs.

That afternoon, a squall came out of the north, not an ordinary squall, but one in which the cloud touches the water, and there was forked lightning. The winds dropped, and the clouds came upon us. And then I said, "Let's turn south. Forget the Kermadecs, this is too dangerous." Since the canoe was high on the water, it could have attracted a hit from the lightning. So we turned south and sailed into a mist.

We were just trying to sail away from the lightning. I gave up trying to find the Kermadecs. I didn't know if this was a good decision or not; I made it out of fear. We found ourselves sailing in a very thin mist. We sailed in that mist all night-just trying hard to keep the canoe on track, struggling to steer. I will always remember that night-we couldn't see the stars, but we could see Venus and Jupiter through the mist. We sailed on, lightening all around us.

When the first light of dawn came, I was exhausted. The first light of dawn is always a time when I feel a sense of relief because now we can see what we're doing. I collapsed, I was out. I slept through sunrise.

Then there was a commotion among the crew. I looked up and saw Maori crew member Stanley Conrad shaking Shorty Bertelmann awake; Stanley was so excited he couldn't talk, he was just pointing. The Kermadecs were right there. We had already passed one island and another one was ahead of

us.

It was like a gift. Sometimes navigation is far out of our own hands. First the whale nudged us to the south. Later we guessed the whale might have been a cow who we had separated from her calf. But there might be another explanation-it may have been a sign from our ancestors. Kupe had a similar experience on his voyage to Aotearoa. Later, we turned south because of the lighting, and we found the Kermadecs. These moments are what make voyaging special. After that, we knew where Aotearoa was. The rest of the voyage was relatively easy.

During this voyage, we wore survival gear, and, throughout the whole voyage, we talked about the incredible strength and endurance of the Maori people. Consider that they occupied islands below Aotearoa at 60 degrees South. That's equivalent to us sailing to Alaska, without foul weather gear. That's not something that we could do. I tried my hardest one night to experience the cold, and we were only halfway there, at 30 degrees south. We know of chants of legends and genealogies speaking of white floating islands and birds that fly through the water-icebergs and penguins. We were in awe of the strength of those ancestors.

We arrived in Aotearoa [on December 7, 1985, sixteen days after departure from Rarotonga]. It was a special moment for Stanley Conrad, the son of a fisherman from the North Land, chosen by his people to represent Aotearoa. Stanley was a young man, and his father was worried because he knew the dangers of such a voyage. But Stanley performed extremely well. He had crossed 1,700 miles of ocean to get home, and he had crossed it in a canoe, like his ancestors had. As we approached his homeland, he said nothing, I think because the experience was too powerful for him. It certainly was for us. The Maoris came out to greet us in Nga Toki Matawhaorua, with 88 paddlers. Hector's group had relaunched this canoe to help revive Maori ocean traditions. We heard them chanting before we saw them. And then we saw the canoe rise on the top of a crest and settle back down in a trough. It was awesome.

To me, it was such an important time for Stanley standing there in the rear, as it was for us. The joining of two canoes was the joining of two cultures. These two cultures have a common ancestry. This was not a meeting of

people, it was a reunion. These experiences are what have made the voyages so important. And there was Hector Busby fulfilling his promise that he'd be there all the way, hoping and praying for us like the others, like any parent would. I was very happy to see him that day, because we completed the dream he said that our ancestors would support.

After we landed, we were invited to a very special occasion at the marae at Waitangi. We were greeted in the traditional way. We learned that the marae houses wellness for the Maori people. We watched grandchildren and grandparents dance together and sing together. We understood that these marae housed not just people, but the genealogies by which they traced their ancestry back to the canoes that brought them to Aotearoa. I can see how connected the Maori are to their ancestry. And because they are connected to their past, I believe that it's much easier for them to see the kind of future they want to voyage to. This was another part of our own work toward renewal.

Sir James Henare, the most revered of the elders of Tai Tokerau, got up and said, "You've proven that it could be done. And you've also proven that our ancestors did it." On this very special occasion, he laughed and he cried. I recognized from him that we already come from a powerful heritage and ancestry. The canoe, on its voyages, is just one instrument to connect to that. Sir James Henare also made an incredible statement: "... because the five tribes of Tai Tokerau trace their ancestry from the names of the canoes they arrived in, and because you people from Hawai'i came by canoe, therefore by our traditions, you must be the sixth tribe of Tai Tokerau." We didn't know what to make of such a powerful statement. In a few sentences, Sir James Henare had connected us to his people. And he said that all the descendants from those who sailed the canoe are family in Tai Tokerau.[5](#)

When it was time to leave Aotearoa, we couldn't go on schedule because we had very bad weather conditions. We had to wait twenty-two days. Hilda, Hector Busby's wife, said, "When you're in my land, I am your mother and you are my children. So I will take care of you and stay with you all the way." Twenty-two days we were housed. Twenty-two days she fed us three times a day. Twenty-two days she washed our clothes. We were cared for like family. I saw that the quality of my life was determined by the kinds of

relationships I have with others. When I had this dream of sailing to Aotearoa, I went there alone to sleep in the lighthouse at Te Reinga; I never imagined how important it was to be connected with people.

[For more about the Voyage of Rediscovery, see Ben Finney's [Voyaging into Polynesia's Past](#). Other On-line Writings by Nainoa Thompson: [Finding a Way: 1974-80](#); [The Wayfinder--The 1980 Voyage Home](#); [Recollections of the Building of Hawai'iloa \(1990-1993\) and the 1995 voyage to Nukuhiva.](#)]

1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
Home	Search	Archives	Educational Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)	

Notes

1. For more on **Hokule'a's** voyage from Rarotonga to Aotearoa and the traditions of the **Maori** migrations to Aotearoa, see Ben Finney's *Voyage of Rediscovery: A Cultural Odyssey through Polynesia* (163-196). See Teuira Henry et al, *Voyaging Chiefs of Hawai'i* for one version of the story of Kupe's voyage to Aotearoa.

2. Under Hector Busby's leadership, "the **Maori** people of the far north of the North Island had formed the Tai Tokerau Cultural Association in 1973 to relaunch Nga Toki Matawhaorua, a giant **Maori** paddling canoe 136 feet long named, we were told, after a legendary canoe that had made a second voyage from Hawaiki to Aotearoa after having been re-carved or, as its name translates, having been "by adze hollowed out twice." The modern [replica] had been constructed for the 1940 centennial of the Treaty of

Waitangi between the British and Maori tribal chiefs. The idea behind the relaunching was to employ Nga Toki Matawhaorua as a focus for cultural revival among the Northland tribes, much as Hokule'a had been conceived as a vehicle for rekindling Hawaiian pride in their voyaging heritage" (Finney Voyage of Rediscovery 190-191). Hector's interest in canoe traditions was no doubt the reason why John Rangihau sent Nainoa to him.

3. Hokule'a left Miloli'i on the Big Island of Hawai'i on July 10, 1985 and arrived in Pape'ete, Tahiti, on Augst 11, 1985. On August 30, she left Pape'ete and arrived in Rarotonga on September 14.

4. Nainoa notes: "After I returned home Will Kyselka explained to me why I was off in estimating my latitude with Alpha and Beta Centauri-why I turned west for the Kermadecs too soon. When stars are close to the horizon, their light can be refracted by half a degree as it comes over the curve of the earth. So we were actually half a degree north of where we thought we were."

5. Ben Finney's Voyage of Rediscovery: A Cultural Odyssey through Polynesia (196-201) gives a detailed account of the welcoming ceremonies when Hokule'a arrived at the Bay of Islands.



Voyaging into Polynesia's Past--Part 4 Voyage of Rediscovery: 1985-87

Ben Finney

[The following account of the 1985-87 voyage to Aotearoa and back is by Ben Finney, crew member, scholar, and one of the founders of the Polynesian Voyaging Society. The account was originally published in "Voyaging into Polynesia's Past" in *From Sea to Space* (Palmerston North: Massey University, 1992. 5-65). Other parts of this article are on line: Part 1--[The Founding of the Polynesian Voyaging Society](#); Part 2--[Hawai'i to Tahiti and Return: 1976](#); Part 3--[Hawai'i to Tahiti and Return: 1980](#); Part 4--[Voyage of Rediscovery: 1985-87](#). Click here for Finney's account of the 1995 Voyage to Ra'iatea and Nukuhiva, [Sin at Awarua](#)].

At this point, having replicated the first voyage, having extended the experiment by navigating both ways without instruments, and having demonstrated that modern Hawaiians could re-learn ancestral nautical skills so well, Nainoa and the others who had sailed *Hokule'a* could have relaxed, and gone back to work or returned to their studies secure in the feeling that they had made their contribution. But, they found that they could not simply rest on their laurels. Like so many of their ancestors, they could not be content with voyaging over just one route. Sailing to Tahiti and had awakened their desire to sail to yet more centers of the dispersed Polynesian nation. They began talking of a third voyage, one that would take the canoe beyond Tahiti to Aotearoa, and then back again, calling on many islands and archipelagos on the way. Again the motivation was dual: they wanted to learn more about sailing and navigational problems throughout Polynesia, and at the same time extend their own sailing experience, and the cultural message of *Hokule'a*, beyond Hawai'i and Tahiti. Hence, this was to be a

"Voyage of Rediscovery" both in terms of research and cultural revival.

In July 1985 the canoe left Hawai'i for Tahiti, Ra'iatea and Borabora in the Society Islands. From there **Hokule'a** sailed to the Cook Islands, and then far to the southwest to Aotearoa. After spending the winter there, the canoe sailed north to Tonga and Samoa, then east back to the Cooks and Tahiti. After a long layover in Tahiti, **Hokule'a** crossed first to Rangiroa Atoll in the Tuamotus, then headed back to Hawai'i to complete the two-year, 12,000 mile voyage of scientific and cultural rediscovery.

In ranging over so much of Polynesia during this long voyage, **Hokule'a** sailed over many of the main seaways of migration and post-settlement voyaging celebrated in Polynesian legends, giving us the opportunity to learn much about a range of practical problems and issues such as how to use seasonal winds to sail against the prevailing wind direction, how traditional accounts may contain the key for timing difficult passages so as to be able to sail before favorable winds, and how it is possible to sail over thousands of miles through unexpected calms, wind shifts and other disturbances and still reach an island destination. These lessons can be illustrated by brief accounts of three of the most important segments of the voyage: the crossing from Samoa to Tahiti, that from Rarotonga to Aotearoa and the first and last legs of the voyage which together comprised the third round-trip we have made between Hawai'i and Tahiti.

Although the Samoa to Tahiti crossing was undertaken mid-way during the voyage, it merits attention first because it retraced the first step taken in the spread of the early Polynesians within the Polynesian triangle, that of moving eastwards from the Polynesian homeland at the western edge of the triangle to the archipelagos to the east.

Sailing From West to East Across Polynesia

The first two voyages of **Hokule'a** made between Hawai'i and Tahiti effectively demonstrated how false Sharp's arbitrary limits on intentional voyaging had been. But, they did not directly bear upon the thesis so central to Heyerdahl's theory of the American origin of the Polynesians. Heyerdahl

had claimed that the islands could not have been colonized from the west because the trade winds blowing from east to west across the ocean, and accompanying ocean currents, would have prevented canoe voyagers from sailing directly eastward into the Pacific from the western side of the ocean to spread across Polynesia. By sailing north and south between Hawai'i and Tahiti across the easterly trade wind and current flow we may have demolished Sharp's limitations on the range of intentional voyaging, but we had done nothing to demonstrate how it would be possible to sail a canoe eastward across the Pacific against the direction of the trade winds and accompanying currents.

After reaching Aotearoa, we headed north to Samoa in order to position the canoe to sail from there to the Southern Cooks and then on to Tahiti, a crossing which would replicate--in direction if not exact routing--a migrational voyage eastwards from West Polynesia to the center of East Polynesia. Tahiti lies more than 1,200 miles east-southeast of Samoa, upwind with reference to the trade winds which in this part of the Pacific generally blow from between east and southeast. We did not intend, however, to try and tack against the trades to reach Tahiti. Our experiments in sailing to windward had shown how difficult that would have been, and, besides, we knew from the literature that Polynesian seafarers had figured out a much easier way to sail to the east.

A double-canoe like **Hokule'a** can sail to windward, but not as efficiently as a sleek yacht equipped with a deep keel to resist leeway, and with highly efficient sails. Instrumented sailing trials, and the 1976 and 1980 windward crossing from Hawai'i to Tahiti, had shown us that a double-canoe moves most efficiently to windward when it is sailed "full and by," which means holding the canoe far enough off the wind to keep from making too much leeway and from losing the full drive of the sails. Translating this into a resultant course (i.e., after taking into account leeway) measured in relation to the direction of the true wind (not the apparent wind that sweeps across a moving vessel's deck), it can be said that a double-canoe can "make good" at least 75 degrees off the wind and still keep sailing at a fair rate.

This modest windward ability may be adequate for making long slants across and slightly into the trades, such as is required in sailing from Hawai'i

to Tahiti, but it means that progress directly to windward would be very slow as long and shallow tacks are made first to one side and then the other of a direct course. Where, for example, a racing yacht that can make short, acutely-angled tacks to windward only has to tack about 1.4 miles to make good one mile directly to windward, a double-canoe has to tack 3.9 miles to reach the same point. This means that a 1,000 mile voyage made tacking directly against the wind would require a canoe to sail almost 4,000 miles, a figure that can increase steeply if a canoe also has to fight a strong current flowing in the same direction as the wind. Clearly, making long passages by sailing directly to windward were to be avoided, particularly for fully loaded migrational canoes on which crew and passengers would be so exposed to the wind and head seas sweeping over the hulls and deck.

But the issue is not how well Polynesians could sail to windward. No sailor, not even one in a yacht with superlative windward characteristics, wants to beat against the trades and accompanying seas for long distances when he can go where he wants by sailing before the wind. Transoceanic sailors have always sought our favorable winds for crossing the seas. When, for example, Columbus left Spain to sail west across the Atlantic, he first headed southeast to the tropics in order to be able to catch the easterly trade winds for the westward passage. Then, when he wanted to return to Spain, he first worked his way north from the Caribbean to higher latitudes to the zone of mid-latitude westerlies, and then turned east to run before these favorable winds. It could be argued that Polynesian voyagers seeking to sail east might have tried to exploit these mid-latitude westerlies, although the often cold and stormy seas found there would have made survival problematic in their open canoes. But, they had no need to so expose themselves, for they could stay in the warm tropics and utilize westerly wind shifts that occur there periodically.

Heyerdahl not only had the direction of Polynesian settlement wrong, but he attributed a permanence to the trade winds of the South Pacific that does not exist. The error of assuming that trade winds blow constantly, or at least virtually all the time, is common. Globes and maps showing wind arrows curving from east to west across tropical seas give graphic expression to the apparent steadiness and regularity of these global winds. Yet, while the trades may be among the steadiest of global winds, they nonetheless wax

and wane, and in some regions of the South Pacific may die down for weeks and sometimes even months at a time.

While the trade winds in the South Pacific are generally steadiest at the eastern side of the ocean, those in the west are subject to a marked monsoonal alternation. Each summer westerly winds blow with some regularity across the western Pacific, and episodically extend into the eastern Pacific. Meteorologists attribute this monsoonal pattern to the summer heating of the Australian continent which in turn causes the formation of a trough of low pressure extending across northern Australia and eastwards over the ocean. While the winds continue to blow from the east-southeast, trade wind direction on the southerly side of this trough, the winds on the northerly side twist around so that they flow from the northwest into the trough. Figure 7 shows the South Pacific covered by rows of arrows which stand for the mean direction and velocity of surface winds throughout the year. Whereas this year-around summary of wind patterns shows no break from the flow of trade winds from east to west, Figure 8, which shows the pattern prevailing in the mid-summer month of January, clearly indicates how this monsoonal interruption of the trades results in a virtual corridor of westerly winds extending eastwards along the northern shore of New Guinea all the way to Fiji.[20](#)

Although this monsoonal alternation of easterlies and westerlies usually becomes greatly attenuated beyond Fiji, episodes of westerly winds lasting anywhere from a few days to a week or so periodically sweep across Polynesia during the Austral summer (Figure 9). Furthermore, as has only been recently discovered by oceanographers and meteorologists, more prolonged episodes of trans-Polynesia westerlies often occur during major El Nino events when the trade winds falter across the South Pacific and the regular westerly wind flow normally confined to the western Pacific extends into Polynesian waters for weeks at a time.[21](#)

The corridor of westerlies apparent in Figure 9 coincides closely with the Lapita migration from the Bismarck Archipelago into the mid-Pacific, suggesting that these monsoonal winds probably facilitated this rapid population movement across Melanesia to the edge of Polynesia. The more episodic westerlies characteristic of Polynesian waters are the winds which

Tupa'ia told Cook that he and his fellow navigators waited for when they wanted to sail to the east. Although we have no ethnohistorical evidence of the exploitation of more prolonged extensions of westerlies across Polynesia during major El Nino events, it seems likely that Polynesians seeking to sail eastward would have taken to the sea whenever these occurred.

There are problems, however, with using summer westerlies to sail eastward across Polynesia. These seasonal winds are often blustery and are frequently accompanied by heavy cloud cover and squalls. Furthermore, the summer period when the westerlies are most frequent is also the time when tropical disturbances are most likely to cross the route between Samoa and Tahiti, particularly during major El Nino events such as that of 1982-83 when four cyclonic storms did so. For these reasons, Nainoa Thompson decided that he did not want to risk attempting to sail from Samoa to Tahiti during the summer westerlies season, even though he knew that westerly winds were most likely to occur then.

Instead, he proposed to try a variant of the strategy of using westerly wind shifts to sail east. In studying meteorological charts of the region, and consulting with University of Hawai'i meteorologists, Nainoa discovered that even during the Austral winter, when the trade winds have a reputation for being at their steadiest, brief spells of westerly winds occasionally interrupt the trades when low pressure troughs extending from subtropical depressions reach into the tropics. Nainoa realized, however, that it would be a gamble to try to work the canoe all the way to Tahiti with these subtropical westerlies, for the meteorological data also showed that in some years the troughs failed to penetrate far enough north to significantly disrupt the trade wind flow. Nonetheless, Nainoa decided to chance it in the hope that on each of the two legs of the crossing--from Samoa to the Cook Islands, and then from there to Tahiti--the canoe would be able to get at least a few days of westerly winds brought on by a passing trough, and that by heading due east before these westerlies, and then sailing obliquely across the trades when the trough had passed and the winds once again were coming from the east-southeast, it would be possible to work the canoe first to the Cooks and then to Tahiti.

The year in question, 1986, turned out to be a lucky choice to try that

strategy, for that winter atmospheric conditions in the South Pacific shunted low pressure systems farther to the north than usual so that their troughs repeatedly reached into the trade wind zone where they combined with anomalous local conditions to give rise to frequent periods of northwesterly and westerly winds. This pattern became established early in the summer, as was apparent as one low pressure trough after another passed through the region, bringing spells of winds favorable for sailing to the east. In fact, so confident was Nainoa of being able to tap these westerlies, that he chose to set sail from Samoa when easterly winds became reestablished after the passage of a trough. Since the latitude of Rarotonga was 350 miles south of that of Samoa, Nainoa first wanted to use the easterly winds to head south in order to position the canoe for the passage of the next trough. He reckoned that if they could get far enough to the south when the next trough came through they could head due east and maybe make it all the way to Rarotonga, or at least get close enough so that when the trades returned the canoe could be tacked to Rarotonga or one of the islands of the Cook archipelago.

Hokule'a set sail from the island of Ofu in American Samoa on the afternoon of July 7, and headed south, sailing on the port tack against easterly trades (Figure 10). The canoe continued southward until July 10, when the wind began shifted to slightly north of east, heralding the approach of a low pressure trough and the counterclockwise shifting of the wind direction that a trough's passage brings. The wind continued to shift northward until by the 11th it was blowing directly from the north, allowing the canoe to be sailed due east. On the 12th, a line of dark clouds to the southwest announced the imminent arrival of the trough, which soon engulfed the canoe bringing overcast skies and rough seas. As the trough passed, the wind shifted first to the northwest, then to the west and finally to the southwest, all directions which allowed the canoe to keep heading due east (Figure 11). By the morning of the 13th, however, the winds had shifted to the south, and by that afternoon were blowing out of the south-southeast, indicating that the trade winds were becoming reestablished, and forcing the canoe onto a course somewhat to the north of east.

The wind became progressively more easterly until by the 14th it had forced the canoe onto a northeasterly course that was taking it away from

Rarotonga which then was some 175 miles to the southeast. Nainoa planned to continue heading northeast until another trough allowed him to head directly toward Rarotonga, or, if the trades continued, until the canoe had sailed far enough to the northeast to put it in a position where it could be easily tacked south to Rarotonga. On the evening of the 15th, however, the escort yacht following *Hokule'a* signaled that it was having trouble with its mainmast, and so the effort was interrupted as the two vessels headed south for the nearest port at the island of Aitutaki, 140 miles north of Rarotonga.

Despite this change of destination within the Cooks, the overall strategy had been successful. Aitutaki lies some 650 miles to the east-southeast of Ofu, and it had been possible to exploit a combination of westerlies and trade winds to make it there in a little over eight and a half days (Figure 12). Nainoa reckoned that after a rest on Aitutaki, the canoe could easily be sailed to Rarotonga, and then from there worked eastward to Tahiti. In fact, because Rarotonga lies four degrees (240 miles) south of the latitude of Tahiti, he thought that in starting out from there the canoe would be in a particularly good position to reach Tahiti through sailing east with westerly winds brought by the passage of a trough, then to the northeast or north-northeast whenever the trades reasserted themselves.

Nainoa was hoping for a spell of westerlies that would boost the canoe close enough to Tahiti so that, when the trades returned, they could reach the island in one long slant across the southeast trades. He got a much more prolonged spell of westerlies than he had bargained for, however. After sailing down from Aitutaki, the canoe left Rarotonga on August 12, sailing due east with northerly winds caused by a low pressure trough approaching from the west. But the trough did not pass by the canoe as expected. On the 13th a wall of solid rain engulfed the canoe, and the wind switched to the southwest, which appeared to indicate that the trough must be passing and that the wind would continue shifting counterclockwise until in a day or so it would be back to blowing from the trade wind direction. Instead, on the 14th the wind shifted back clockwise until it was blowing from the north-northwest once more. These winds continued blowing for the next several days, as *Hokule'a* appeared to be stuck in the trough which seemed to be moving no faster to the east than the canoe was sailing.

These north-northwesterly winds may have allowed the canoe to head due east, but the squally weather and rough seas accompanying them made for hard sailing. The sails had to be lowered. every time a squall with high winds threatened, and the crew was soaked repeatedly by the heavy rain showers and breaking seas. Furthermore, the almost continual cloud cover made it most difficult for Nainoa to keep his bearings accurately. Ironically, this was just the type of messy weather characteristic of the summer westerlies that he had wanted to avoid by sailing during the winter (Figure 13). Furthermore, as **Hokule'a** approached the meridian of Tahiti, yet was being kept well to the south of the island by the northerly angle of the wind, an entirely unforeseen problem loomed. After having worried so long about how to make enough easting to reach Tahiti, Nainoa was now faced the prospect of the canoe being driven to the east of Tahiti by these winds, maybe even so far as to be forced into the dangerous labyrinth of Tuamotus atolls!

On the 19th, just as the canoe was at the meridian of Tahiti, a wind shift to the east allowed **Hokule'a** to be tacked north directly toward the island, but only briefly as northwesterlies soon returned and drove the canoe past Tahiti, while keeping it well south of the island. Finally, on the 20th the trade winds started blowing, allowing the canoe to head back to the northwest toward Tahiti--or where Nainoa hoped the island was located, for the heavy cloud cover and rough conditions had not made him confident of his dead reckoning. Yet, a few hours later Nainoa's dead reckoning was confirmed when the clouds parted to reveal the peak of Mehetia, a tiny island lying just to the east of Tahiti. The canoe arrived off Tahiti the next day to complete, after almost nine days at sea, what had turned out to be one of the most difficult, yet most satisfying, passages yet made aboard **Hokule'a** (Figure 14).

If any experience could lay to rest the notion that a permanent trade wind barrier had kept canoe voyagers from ever sailing eastward across the tropical South Pacific it would be this crossing from Samoa to Tahiti. During the Austral winter, when the trade winds are supposed to be steadiest, it had proved possible to utilize wind shifts brought about by the passage of low pressure troughs through the trade wind field to work the canoe first to the Cook Islands, and then from there on to Tahiti. These subtropical westerlies

of the Austral winter do not occur as regularly as the monsoonal westerlies of the summer; meteorological records from Rarotonga suggest that only in about one year out of ten are they as frequent and prolonged as the ones experienced in 1986. Nonetheless, however irregular their appearance maybe, these subtropical westerlies need to be considered, along with the more regular monsoonal westerlies, as having provided earlier voyagers with innumerable occasions over the centuries to sail eastward against the trade wind direction.

Discussions of how a long lineage of seafarers were able to expand eastward into the Pacific have primarily centered on the development of seagoing canoes capable of crossing the gaps between islands which grow progressively wider the farther one sails across the ocean, and on the development of ways of navigating far out of sight of land. As this crossing has emphasized, it is clear that in addition to deep-sea canoes and navigation methods a third adaptation was required to enable these seafarers to spread so far across the Pacific. They had to learn how to exploit the seasonal westerlies, be they of the monsoonal or subtropical variety, to keep pressing against the direction from which the trade winds often but not always blow.[22](#)

Southwest to Aotearoa

Once the Cooks, Societies and the adjacent archipelagos of East Polynesia had been settled, only the distant islands that define the points of the Polynesian triangle--Hawai'i, Rapa Nui and Aotearoa--remained to be occupied in order to complete the colonization of the region. Although we have not yet tried to sail to Hawai'i from the Marquesas (which on linguistic grounds is thought to have supplied the first colonists to this northernmost archipelago of Polynesia), or to work the canoe far to the southeast to reach the lone island of Rapa Nui, we have sailed **Hokule'a** over the long route to the southwest thought to have been taken by the colonizers of Aotearoa.

Maori tribal traditions are filled with accounts of how their ancestors sailed from a land called Hawaiki to colonize Aotearoa. As a place name, Hawaiki occurs throughout Polynesia in that form and in various cognate forms such

as Savai'i (the largest island in the Samoan group), Hawai'i (the island which gives the name for the whole Hawaiian group) and Havai'i (the ancient name for Ra'iatea in the Societies). At the turn of the century, S. Percy Smith, the founder of the Polynesian Society of New Zealand and first editor of its journal, devoted himself to locating the Hawaiki from whence the Maori people came, and to chronicling their migration. He settled upon a greater Tahiti composed of Tahiti, Ra'iatea and the other Society Islands as the Hawaiki from whence the migratory canoes sailed southwest, stopped off in Rarotonga and then made the long crossing to Aotearoa. He then analyzed the various tribal migration traditions to develop an outline of Maori settlement: after the initial discovery of Aotearoa in 950 AD by Kupe, and a subsequent visit there in 1120, a "Great Fleet" of canoes left Hawaiki in 1350 to colonize this great land.[23](#)

Smith has been rightfully criticized by David Simmons and other contemporary scholars for having cut and pasted together diverse tribal traditions to come up with such an overly systematized and impossibly precise account of Maori colonization. But, a case can be made that they have taken their rejection of Smith's scholarship a step too far by denying that the Maori migration traditions ever had anything to do with colonization from overseas. Simmons, who has done the most thorough study of the sources used by Smith, has suggested that the Hawaiki of Maori tradition really refers to the first settlements in the north of the North island, and that tales of migrating from Hawaiki refer to colonization movements from the north to the south part of the island, and were composed and recited to justify claims to status and land. Margaret Orbell has taken this debunking even farther. To her, Hawaiki was never a geographical place, but rather to a mythical paradise that was the ultimate source of life. As for the migration traditions, to Orbell these simply are myths: "powerful religious narratives which shaped human lives and made the world meaningful," and which were "more important, not less so, because they took place inside people's heads."[24](#)

However flawed the scholarship of Smith and others of his day who attempted to trace the Maori migration through oral traditions, it does not necessarily follow that the traditions themselves should be labeled as myths that had nothing to do with actual voyages from an overseas homeland. In

the first place, comparative studies of language and cultural patterns, and analyses of archaeologically-recovered artifacts, indicate that people who colonized Aotearoa came from central East Polynesia. Although this evidence does not allow us to say definitively

from which island or islands they sailed, it points to the Society and Southern Cook Islands as the most likely candidates. For example, possible forerunners of distinctively-shaped Maori clubs and other Maori artifacts have been found in excavations in the leeward Societies, and the languages of Rarotonga and Aotearoa are close enough to be mutually intelligible.²⁵ In the second place, Maori traditions include sailing directions which specify not only a course southwest from Hawaiki but also that a canoe should sail at a time of the year when the winds are most favorable for making that crossing.

When Nainoa first read Elsdon Best's summary of these sailing directions, he did not find them to be very useful, however.²⁶ According to this summary, when Toi, Manaia and other legendary voyagers wanted to sail to Aotearoa they applied to the wise men of the time for sailing instructions that had been brought back by Kupe, the legendary discoverer of this huge land, and were told to sail during the lunar month which roughly corresponds with November, and to keep the prows of their canoes pointed toward the setting sun, or just to one side or another of it. Nainoa was not particularly impressed by such a roughly specified course, although he recognized that, because Aotearoa presents such a wide target for canoes sailing from Tahiti and Rarotonga, heading southwest in November more or less toward the direction of the setting sun would probably result in a landfall somewhere along the long coastline. What Nainoa did not immediately appreciate was how crucial was the specification that the canoes head for Aotearoa late in the Austral spring. This did not begin to become clear until he had made a thorough study of the data on meteorological conditions along the route, and was not fully obvious until the *Hokule'a* actually reached Aotearoa.

The Society and Cook Islands lie within the tropics where easterly trade winds dominate, whereas Aotearoa extends far into the temperate zone where the wind often blows strongly from the west. In trade wind weather, a

canoe can easily sail from Tahiti to Rarotonga on a broad reach across the trades. To continue on from Rarotonga to Aotearoa means, however, leaving the tropical trade wind zone, crossing a zone of light winds and variables, and then sailing into latitudes where long spells of blustery westerly winds generated by low pressure systems sweeping across the ocean from west to east would make it most difficult for a canoe to keep sailing to the southwest. Not only would it be difficult to tack a canoe against strong westerly headwinds, but those on board would suffer greatly from the cold, rain and high seas that often accompany these winds.

Upon analyzing piles of meteorological charts showing the day-by-day surface wind conditions over a period of several years, Nainoa found, however, that there are periods during the late spring and summer (roughly November through February) when high pressure systems dominate the approaches to Aotearoa rather than low pressure ones. Since the wind revolves counterclockwise around these high pressure systems, bringing warm, easterly winds along their northern, equator-facing flanks where **Hokule'a** would be sailing, this rime of year looked like a good time to sail to Aotearoa. More specifically, a November sailing looked best in order to avoid the tropical storms that sometimes cross the tropical portion of the route in the mid- and late-summer months.

Accordingly, after first sailing with the trades from Tahiti to Rarotonga, **Hokule'a** set sail from Rarotonga on November 21, 1985, leaving at the time indicated both by tradition and modern meteorological analysis. We had to cross some 1,650 miles of open ocean to reach the North Island, and hoped for easterly winds that would allow the canoe to sail easily on a reach toward the southwest. When we left, a light trade wind from the east-southeast was blowing, and the sky was clear except for a scattering of mid-level clouds. After sailing several days and leaving the tropic zone, the character of the sky changed although the wind kept blowing from the same quarter. Instead of puffy white trade wind clouds, high cirrus clouds dominated the sky, apparently indicating that we were on the northern edge of a high pressure system, and that the easterlies we were then enjoying were part of that system. Upon checking meteorological charts after the voyage, we found that at that time a large high was centered about 600 miles south of us at around 35° South Latitude, and was generating these favorable easterlies as

it moved slowly across the ocean from west to east (Figure 15).

By the 27th, however, six days after sailing, the winds had turned northerly and light, indicating that the high had passed well to the east of us. Fortunately, the low pressure system following the high hardly affected us as we soon came under the influence of yet another high pressure system moving in from the west, and bringing fresh easterly winds that enabled us to continue sailing to the southwest, averaging over a hundred miles a day for the next six days.

On December 4 light, variable winds and increasing cloudiness indicated that the high must have passed far to the east of us, and that we might be in for a bout of westerlies brought on by a low pressure system following that high (Figure 16). That evening we could see dark clouds and lightning far off to the north, and began to experience light northwesterly winds which, fortunately, were short-lived. Towards dawn, with the winds becoming more easterly, sharp-eyed Stanley Conrad, a Maori serving on our crew, spied the dark outline of an island ahead. It turned out to be Macauley Island, a small rock of an island in the Kermadecs, a volcanic chain located two-thirds of the way from Rarotonga to Aotearoa.

Although Nainoa had been trying to head directly for the Kermadecs and was sure that night that we were in the vicinity of the chain, he counted it as luck that we happened to make a landfall on Macauley. Nonetheless, he was elated with the landfall, for that gave him an exact fix on the canoe's position so that he could with confidence lay a course directly for the Bay of Islands, our destination in the far north of the North Island.

Hitting the coast at or close to the Bay of Islands was not just a matter of pride. Before we left Rarotonga, Tupi Puriri and Hector Busby, Maori elders who had flown to Rarotonga to see us off, had told us to, "be sure to get to Waitangi on a weekend." They were referring to their marae, the Waitangi Marae, where we were to land and be ceremonially greeted. They explained to us that because the people of their marae were busying working all over the North Island during the week, they would only be able to greet us properly on a weekend when they could come to Waitangi, prepare all the food and launch their huge ceremonial canoe to greet us in the bay. If, they warned us, we were to come on a Wednesday, or any other day during the

work week, we would be kept in the bay, anchored offshore one of the small islands there and forbidden to step ashore until we could be properly greeted at the marae on the weekend.

When the canoe cleared the Kermadecs at around 5:00 AM on what we had been thinking was Wednesday, we began calculating in earnest whether or not we could make it to Waitangi before Sunday evening. Only then did we realize that since we had just crossed the International Dateline it was not Wednesday, December the 4th, but already Thursday, December the 5th, giving us only three and a half days to make the 450 miles from the Kermadecs to the Bay of Islands. This meant that the canoe would have to sail a very straight course and average 130 miles a day, sailing at the rate of a little more than 8 knots. Provided there is enough wind, *Hokule'a* can easily sail in the 5 to 6 knot range, although on long crossings we have found that the inevitable periods of calm and light winds brings down the canoe's average speed down to around 4 knots or about 100 miles a day.

Brisk southeasterly winds that started blowing as we cleared the Kermadecs gave us hope that we might be able to beat the averages and make it to Waitangi Marae by Sunday evening. By the next day these had picked up to 25-30 knots, allowing *Hokule'a* to forge ahead at six and a half knots. Fortunately, except for a few periods of light winds, we enjoyed strong southeasterly winds almost all the way to the North Island as yet another high pressure system passed slowly to the south of us (Figure 17). Thanks to Nainoa's accurate navigation, and skilled steering by the crew, we made our landfall early Sunday morning only about 20 miles south of the entrance to the Bay of Islands (Figure 18). (Nainoa and the crew were not aware of the canoe's exact position at any time while at sea. After this and other crossings, the canoe's course was plotted at the University of Hawai'i from satellite-derived position fixes, and then compared with Nainoa's dead reckoning estimates which was also plotted at that time from verbal information he had supplied an on-board interviewer each sunrise and sunset.)

Although the winds had by then greatly lightened, by late that afternoon we entered the Bay of Islands to be met by the 136-foot long canoe, *Nga Toki Matawhaorua*, manned by some eighty paddlers from the Waitangi Marae.

Under their escort we slowly sailed deep into the bay to anchor off the marae as the sun was setting, just in time to be welcomed by the thousands of people assembled on shore.

In the many speeches on the Waitangi Marae that followed the vigorous haka by the men of the marae, speaker after speaker lauded out efforts to recreate the voyages by which their ancestors had sailed to Aotearoa. For example, Sir James Henare generously declared that:

You have shown that it can be done and it was done by our ancestors. To me, this is the most important occasion, and I smile and I laugh, and I shall smile again tomorrow at all the critics who said it was never done.

The elders at Waimirirangi Marae expressed similar sentiments several days later when we travelled to the far northern tip of the island to be welcomed by the people of Aupouri, the tribe of our Maori crewman, Stanley Conrad. To our Maori hosts, the crossing of **Hokule'a** from Rarotonga to the Bay of Islands in just sixteen and a half days had dramatically demonstrated how their ancestors had once sailed from distant Hawaiki to this land, and shown that those who had said such voyages could never have been undertaken on purpose did not know what they were talking about.

While we greatly appreciate such sentiments, and are proud of **Hokule'a**'s role in renewing pride in the sometimes maligned seafaring heritage of the Polynesians, we cannot claim that our voyage exactly replicated any earlier crossing from Hawaiki to Aotearoa. Nonetheless, we believe we have realistically demonstrated how to sail a double-canoe of Polynesian design from Rarotonga to Aotearoa during the late spring, and that our voyage lends credence to the hypothesis that at least some of the original Maori settlers could have exploited the easterlies common that time of the year to make their way to Aotearoa. That another reconstructed double-canoe, the **Hawaiki-Nui**, the product of a joint Maori-Tahitian project initiated by the Maori carver Metahi Whakataka (Greg Brightwell), successfully crossed from Tahiti to Rarotonga to Aotearoa just a few weeks after us, further supports this hypothesis.

Once onshore, we realized that this late spring window of opportunity for

sailing to Aotearoa is encoded in the tales of the arrival of such famous colonizing canoes as the Aotea, Arawa and Tainui. According to these traditions, as these canoes approached land the weary voyagers on board caught sight of the scarlet blossoms of the pohutukawa tree lining the shore. Thinking that they were seeing flocks of red-feathered birds perched in the trees, the voyagers threw into the sea their battered and salt-stained headdresses decorated with red feathers, sure that they could make new ones ashore and decorate them with fresh red feathers from the birds they saw in the trees. The joke was on them, however, when they realized that the trees were covered with red flowers, not red-feathered birds.

We carried on board the canoe English translations of these tales, which some of us read between watches. But, why this incident is repeated in story after story did not really make any sense to us until we too noticed the brilliant red flowers blooming on the pohutukawa trees around the Bay of Plenty, and remarked to our Maori hosts that they looked exactly like the flowers of the 'Ōhi'a tree of the uplands of Hawai'i. (In fact, the two trees are closely related species of *Myrsine* of the myrtle family.) Our interest in the pohutukawa flowers, which start blooming in that area of the North Island in the late spring just when the winds are most favorable for sailing to Aotearoa, led our Maori host Hector Busby to reminisce how, when he was a young boy, the elders used to tell him that "when those flowers bloom is the time our ancestors came here from Hawaiiki." [27](#)

Multiple Voyaging Between Hawai'i and Tahiti

The choice of the Hawai'i-Tahiti route for the first overseas voyage of *Hokule'a* was inspired by a series of Hawaiian legends linking these two Polynesian centers. Unlike the famous Maori traditions, these tales are not about initial discovery and colonization. Rather, they tell about voyages made between a far-off land called "Kahiki" and an already populated Hawai'i. Furthermore, these are not about one-way trips, but recount multiple voyages back and forth that linked Hawai'i and Kahiki sometime between the 12th and 14th centuries A.D, according to calculations based on the genealogies of those who claimed direct descent from these voyagers.

The most famous of these tales of multiple voyaging revolve around a chief named Mo'ikeha and around a priest named Pa'ao.

Mo'ikeha was said to have been the grandson of Maweke, a great chief from Kahiki who settled on O'ahu sometime between the 11th and 12th centuries A.D., and who founded the chiefly line that came to dominate the leeward islands of the Hawaiian archipelago. While some versions of the saga of Mo'ikeha and his sons begin in Kahiki, others start in Hawai'i, where Mo'ikeha was living with his brother Olopana and his wife Lu'ukia until a great flood devastated their valley and forced them to flee to Kahiki. Once in Kahiki, with Olopana's consent Mo'ikeha and Lu'ukia became lovers until they had a falling out, after which the disappointed Mo'ikeha set sail for Hawai'i where he eventually settled on Kaua'i, married the daughters of the ruling chief there, and in turn became the chief of the island.

As Mo'ikeha aged, he longed to see La'a, his son in Kahiki, and so sent Kila, his eldest son from Kaua'i, back to Kahiki to fetch La'a. After overcoming, with supernatural help, the perils of the sea, Kila reached Tahiti where after further adventures he finally located La'a and told the latter of their father's desire to see him. Then La'a (called in full, La'a-mai-Kahiki, or "La'a-from-Kahiki") set sail for Hawai'i to see his aged father. After their reunion on Kaua'i, La'a sailed for O'ahu, then to Maui, where he stayed for a while in the Kahiki-Nui ("Great Kahiki") district. From there, La'a crossed to the small offshore island of Kaho'olawe, and then sailed back to Kahiki passing through the channel between Kaho'olawe and the neighboring island of Lāna'i which ever since has been called Ke Ala i Kahiki, "The Way to Kahiki." Later, when he heard that his father had died, La'a made another round-trip to Hawai'i and return to bring his father's bones back to Kaua'i to be buried alongside those of his ancestors. Sometime later, Kaha'i, a grandson of Mo'ikeha, is said to have sailed to Kahiki, and then returned to Hawai'i bringing back with him the breadfruit tree.[28](#)

The other linked series of voyages involve a high priest named Pa'ao who is said to have originally been from Upolu, which, although that is the name of an island in the Samoan group, is generally identified with Taha'a, an island in the leeward Societies that was formerly known as Upolu. The story begins with a dispute between Pa'ao and his brother Lonopele, which led to the

death of both of their sons, and caused the distraught Pa'ao to set sail for Hawai'i. After battling heavy winds and high seas magically sent by Lonopele, Pa'ao landed in the district of Puna on the east coast of the island of Hawai'i. There he built the walled heiau, or temple, of Waha'ula which still stands today surrounded by the lava flows which devastated that part of Puna in 1989-1990. From there, Pa'ao continued around the island to Kohala in the northwest where he built the even more massively walled heiau of Mo'okini which also still survives.

During his sojourn on Hawai'i, Pa'ao found that the chiefs there had indiscriminately mixed with the commoners and were neglecting the rituals necessary for protecting chiefly power and the welfare of the people. To correct this situation, Pa'ao sailed back to Kahiki to fetch the high chief Lonoka'eho and bring him back to Hawai'i to introduce proper chiefly rule and ritual behavior. Lonoka'eho refused, however, recommending that another chief, Pili Ka'ai'ea go in his stead. Pa'ao and Pili then sailed back to the island of Hawai'i where Pili was installed as the ruling chief of the island, with Pa'ao as his high priest. It is said that from Pili the ruling chiefs of Hawai'i down to the time of Kamehameha counted their descent, and that the descendants of Pa'ao served those chiefs as high priests up until the abolition of the official religion after the death of Kamehameha 1.[29](#)

The identification of the legendary Kahiki with the island of Tahiti is an obvious hypothesis that springs from the fact that "Kahiki" is the Hawaiian way of pronouncing Tahiti, or, more exactly, the windward Hawai'i way of doing so. At the leeward end of the chain, the word was formerly pronounced in the Tahitian manner, and is still so uttered on the remote leeward island of Ni'ihau, where the windward way of speaking and the missionary orthography based upon it still have not fully penetrated. It is true, however, that at the time of European contact Hawaiians were using Kahiki in such a general way that it could refer to virtually any land overseas, even to sectors of the celestial dome, and that it had taken on a magical aura as a source of wondrous things. The explanation for this situation that came to be widely accepted by late 19th century scholars of Hawaiian traditions was that whereas Kahiki originally referred only to the island of Tahiti, in the centuries after voyaging between there and Hawai'i ceased the word Kahiki became generalized to refer to virtually anywhere

beyond the bounds of the Hawaiian archipelago and the encircling horizon.

After conducting archaeological excavations during the 1950s and 1960s in Hawai'i and on Tahiti and some of the other Society Islands, and comparing the artifacts found with those uncovered by other researchers working in the Marquesas, Kenneth Emory and Yoshihiko Sinoto concluded that after initial settlement of Hawai'i from the Marquesas there had been contact between Tahiti and Hawai'i sometime around the 12th to 14th century period of voyaging featured in the traditions. They based their claim not only on changes in Hawaiian artifacts that they attributed to Tahitian influence, but also on the presence in Hawaiian of Tahitian words and concepts, as well as on the apparent diffusion to Hawai'i of such distinctively Tahitian cultural traits as chiefly investiture with feather girdles. Although some archaeologists have rejected their formulation on the basis that the changes in Hawaiian artifacts that they attribute to Tahitian influence could have been internally generated, no less an authority on Polynesian prehistory than Patrick Kirch accepts that there is some element of historical reality in the Hawaiian traditions of multiple contact."[30](#)

Nonetheless, there has been considerable skepticism that there ever was a period when, as described in the legends, canoes freely sailed back and forth between Tahiti and Hawai'i. In part, this skepticism stems from the same ahistorical ways as have been applied in the Maori case of looking at voyaging traditions as myths composed and employed for functional or structural-symbolic purposes. For example, Ross Cordy suggests that the voyaging traditions refer to intra-archipelago conquests from a Kahiki located somewhere within the Hawaiian Islands, and that they were told by the descendants of the aggrandizing chiefs to establish their genealogical right to chiefly rule, while to Valerio Valeri Kahiki was not even a real island, but "an invisible place . . . out of which comes the gods, ancestors, regalia, edible plants and ritual institutions--the life of the Hawaiians and the means to reproduce it."[31](#)

Refusal to believe that it would have ever been possible for voyagers to sail back and forth at will between such distantly separated islands as Hawai'i and Tahiti also lies behind this skepticism that the voyaging legends have any basis in actual events. Here is where having made not one but three

round-trip voyages between the islands speaks directly to the issue, particularly since on the third voyage the canoe made it back and forth between Hawai'i and Tahiti despite contrary winds, unexpected calms and other unwelcome conditions.

Whereas by a long stretch of the imagination the success of our first two voyages from Hawai'i to Tahiti and back might be attributed to the beginner's luck of enjoying relatively benign conditions en route, that could not be said about our third one composed of the first and last legs of the Voyage of Rediscovery. The 1976 and 1980 voyages had proceeded just about as anticipated, with **Hokule'a** sailing first one way and then the other through fairly regular trade wind conditions, and with the navigators skillfully guiding the canoe almost directly to the desired landfalls. On the 1985 crossing from Hawai'i to Tahiti, and the return from Tahiti to Hawai'i in 1981, our confidence about the routine nature of sailing over this route was shaken by doldrum calms alternating with sharp squalls where steady trades were expected, by winds that blew from the "wrong" quarter, and by the sighting of scores of landfinding birds that clashed with dead reckoning calculations indicating that the canoe was still hundreds of miles from land. Yet, as will be seen in the brief summaries of these crossings that follow, despite these problems it proved possible to once more sail **Hokule'a** between these Polynesian centers, and to do so without recourse to instruments or other navigational aids.

In 1976 and 1980 **Hokule'a** had set sail in the spring (in the months of May and March, respectively), primarily because we had wanted to be back in Hawai'i well before the late summer when tropical storms generated in the eastern Pacific often cross the return route just south of Hawai'i. Although in 1985 we planned to leave by early summer, because of delays in getting the canoe and the escort vessel ready for the two-year voyage, **Hokule'a** did not set sail until July 10 when she left her anchorage off the fishing village of Miloli'i on the southwestern coast of the island of Hawai'i and headed south. Although not anticipated at the time, this late departure was to have repercussions that lasted until land was finally sighted a month later.

Soon after clearing the southern tip of Hawai'i trade wind skies gave way to a heavy cloud cover, the wind became irregular and the occasional squall

swept over the canoe. Then, on the 14th, the fourth day out, the canoe ran into a tropical disturbance, something we had not experienced on the first two crossings because these disturbances do not generally start forming until mid-summer. Sharp squalls with strong, variable winds and heavy downpours interspersed with periods of absolute calm beset the canoe for a couple of days, after which trade wind conditions returned--but only briefly, for on the following day, the 17th, the canoe entered that dreaded zone called the doldrums where calms and light variable winds often mark the transition between the northeast and southeast trade wind belts. For the next six days Nainoa and the crew worked the canoe slowly southward under leaden skies until on the 23rd the weather finally cleared, and steady winds returned, this time blowing from the south-southeast, indicating that the canoe had entered the southeast trade wind zone.

The canoe had encountered the doldrums between about 11 degrees North and 7 degrees 30' North (between 660 miles and 450 miles north of the equator), some four degrees (240 miles) north of where they had been encountered on the 1976 and 1980 crossings. Although a study of meteorological data after the voyage indicated that such a northerly shifting of the doldrum belt is not unusual during the mid- and late summer, at the time it was confusing to run into the doldrums so far north of the equator. Particularly after the wildly shifting conditions of the first few days at sea and then the unwanted encounter with a tropical disturbance, these northerly displaced doldrums and their debilitating calms, squalls and overcast skies were particularly hard on the navigator. Constantly working to catch whatever wind there was while making sure that sudden squalls did not overwhelm the canoe, and then trying to read vague clues from the swell pattern to keep the canoe heading toward the southeast while at the same time keeping a running picture of the actual course of the canoe, was utterly exhausting for Nainoa, leading him to voice this concern in a tape recorded interview:

The thing that has been so hard about these days is that I can't go to sleep because if I go to sleep we'll have no idea of where we're going. That's what is so tough about this kind of adverse weather--especially when you are steering [i.e. not trimming the canoe to sail automatically to windward as is possible in steady

trades--you can't rest. It is showing that when I am fatigued my thinking is not clear. I know I'm making mental errors. I'm in the position where I need rest to keep my head clear, but I can't because of the situation.

How these conditions affected Nainoa's dead reckoning can be seen in Figures 19 and 20, which show the actual course of the canoe and its position on July 17 (just before the doldrums) and on July 25 (two days after exiting the doldrums) compared with where Nainoa thought the canoe was at these times. Whereas on July 17 his dead reckoning was about 70 miles off, by the 25th that gap had tripled as Nainoa thought the canoe was some 210 miles southwest of where it really was. Failure to factor in a period of sailing due east with a southerly wind, and the unperceived effect of the Equatorial Countercurrent that sometimes flows strongly eastward between the trade wind zones, may have been crucial in making Nainoa think the canoe's track was bending to the west of south when in fact the canoe had made a little easting in the doldrums and immediately upon exiting them.

Whatever may have been the exact cause or causes of this gap between actual and read reckoning positions, Nainoa continued to picture the canoe having been driven west of the desired course to Tahiti as they sailed crossed the equator and slowly approached the latitude of the Society Islands. Repeated sightings south of the equator of fairy terns, usually one of the most reliable species for indicating proximity to land, had the effect of reinforcing this mental picture. Although Nainoa realized that juvenile fairy terns and other young landfinding birds may sometimes fly far from their island homes, he had to consider that these sightings indicated that the canoe might in fact have been driven so far off course that it was passing near the few scattered atolls of the Southern Line Islands, which are located well to the west of the meridian of Tahiti. Accordingly, he prepared himself for a landfall at the leeward end of the Society chain, a couple hundred miles to the west of Tahiti.

When, therefore, landfall was finally made at dawn on August 10th on an atoll, Nainoa at first thought it was tiny Tupai north of Borabora at the western end of the Society chain (Figure 21). But, as the sun rose and revealed the great length of the atoll, he realized that because of its size it

could not be Tupai or any other of the comparatively small atolls of the Society group, and that they must have reached one of the large atolls of the Tuamotus. Nainoa even guessed the right one: Rangiroa, which extends 44 miles in an east-west direction.

Despite the difficult sailing and navigational conditions and the westward skewing of Nainoa's mental picture of the track of the canoe, **Hokule'a** had made landfall in the northwest Tuamotus very close to where the canoe had intercepted these islands on the previous two crossings. As in 1976 and 1980, the canoe was easily sailed from there to Tahiti, arriving there in August the 12th, 31 days after leaving Hawai'i. Figure 22 shows that all three of these voyages had in fact followed more or less the same curving track to Tahiti, although that of 1985 is more irregular than the previous two. Even given the far from ideal conditions encountered on this third crossing, it is clear that a double-canoe is capable of sailing over the long seaway from Hawai'i to Tahiti.

In terms of non-instrument navigation, reaching Tahiti would also appear to be repeatedly attainable--primarily because Tahiti is not a lone island lost in the vastness of the Pacific, but is one of many islands that form a wide arc extending from the atolls at the western end of the Societies for over a thousand miles eastward to the atolls on the eastern fringe of the Tuamotus. It is difficult to imagine that a competently-crewed canoe approaching this arc of islands from the north passing through without someone on board spotting an island, or signs of one such as the sight of landfinding birds fishing out at sea, or of changes in swell patterns caused by the interference of an island over the horizon. Once any island in the arc was sighted and identified, a canoe could then make its way upwind or downwind to Tahiti.

Had Nainoa's worst cast scenario of a landfall at the western end of the Societies came true, **Hokule'a** could have been sailed to Tahiti, either by waiting for favorable wind shifts or by slowly tacking it along the chain. There was, of course, no need to implement either strategy, for just as it had on the previous two voyages the canoe arrived off the western Tuamotus, the ideal place along the long Society-Tuamotu arc to make landfall on the way to Tahiti. While Nainoa's navigational reckoning may have been somewhat off, steadfast application of the strategy of sailing hard into the trades

succeeded once more in bringing **Hokule'a** to Tahiti.

Whereas in 1976 and 1980 the canoe sailed swiftly back to Hawai'i, reaching across strong and steady trade winds, the return crossing from Tahiti to Hawai'i in 1987 turned out to be one of the longest and most difficult voyages made by **Hokule'a**. In retrospect, it got off to a bad start with the decision to leave in late March so as to be able to call upon the Marquesas on the way and still get back to Hawai'i by May 23rd in time for a scheduled welcoming ceremony that was to be a key part of the State's "Year of the Hawaiian" celebration. Even in ordinary years it would have been better to wait several months until the unsettled conditions of the Austral summer had fully given way to the steadier trade wind conditions of the Austral winter. Unfortunately, 1987 turned out to be a particularly poor year to leave early, for an El Nino event developed then bringing unsettled weather and a northerly wind flow that delayed the departure from Tahiti and then kept the canoe anchored in the Rangiroa Lagoon as Nainoa and the crew waited for a break in the weather to head for the Marquesas (Figure 23).

Finally, on April 24th, 20 days after arriving at Rangiroa, a tropical cyclone forming near Samoa broke up the northerly wind flow and allowed easterly winds to be reestablished. Since only a month remained before the scheduled welcome in Hawai'i, the plan of returning via the Marquesas was abandoned, and **Hokule'a** headed directly for Hawai'i, reaching across easterly trades. Hopes for a swift passage home were soon dashed, however, as the trades failed, and a series of squalls came through. During the following weeks the crew had to endure long spells of light and variable winds, several stretches with heavy cloud cover and rain, and periods when heavy squalls repeatedly struck the canoe, each time forcing the crew to lower the sails and drift.

As had been the case during the 1985 crossing to Tahiti, these unwelcome conditions made it difficult for Nainoa to keep a running mental picture of all the twists and turns of the canoe, and thus to have any great confidence in his dead reckoning calculations. For example, in an interview tape recorded on May the 14th, when the canoe was about 400 miles southeast of the island of Hawai'i, Nainoa exclaimed that:

By far this is the strangest trip in terms of being so against the average
To me, it is the biggest challenge I have ever faced, for a

number of reasons. One is the length of the trip; it is the longest voyage so far. Two is the weather: the weather has been so unpredictable that you can't stay on a regular sail plan. Three is that we have had to sail perpendicular to our course line so many times. So, given all that... [it] is going to be real interesting to see exactly where we end up.

Although Nainoa maintained a fairly accurate idea of the north-ward progress of the canoe, during the last stretch of the voyage his dead reckoning positions began to skew to the west of the actual track, and for a while he even worried that the canoe might be headed on a course that would pass to the west of the Island of Hawai'i, instead of drawing abeam its eastern, leeward coast. Although by the time the canoe reached the latitude of Hawai'i Nainoa had realized that they were on the eastern, windward side of the island, his reckoning was still too far to the west. For example, on May the 16th Nainoa pictured the canoe as being about 50 miles east of Hawai'i when in fact it was about 200 miles east of the island (Figure 24). After turning down-wind to intercept Hawai'i and discovering that it was not close at hand, Nainoa of course recognized that he had overestimated the westward trend of the course. So, he and the crew bided their time until, after slowing moving westwards in the extremely light winds, the lights of the port of Hilo were finally seen on the night of the 21st.

Counting from the departure from Tahiti on April the 3rd, to the arrival at Kualoa on May the 23rd, this return to Hawai'i took longer than any other segment of the entire Voyage of Rediscovery. Even the sail from Rangiroa to Hilo took a comparatively long time: 28 days in comparison to the 22 days it took in 1976, and the 24 days it took in 1980, to sail the longer distance from Tahiti to the latitude of Hilo. Nonetheless, despite the difficult conditions that so lengthened this crossing and so impacted Nainoa's dead reckoning, the fact remains that the canoe made it back to Hawai'i, arriving, as planned, abeam the windward side of the island of Hawai'i so that it could be turned downwind to make landfall on that island and then be sailed from there to Kualoa for the welcome home (Figure 25).

This third round-trip voyage of **Hokule'a** between Hawai'i and Tahiti demonstrates how even under adverse conditions it is possible for a

voyaging canoe, navigated without instruments, to sail back and forth over this route. To be sure, our voyages do not prove that the tales of Mo'ikeha, Pa'ao and other legendary voyagers are literal records of actual events. But the success of this and the two previous round-trips between Hawai'i and Tahiti does show how well adapted the double canoe and non-instrument navigation methods are for making such long crossings, and suggests that we must take seriously the possibility suggested by the voyaging traditions that during the early centuries of this millennium canoe voyagers repeatedly sailed back and forth between these widely-separated Polynesian centers.

Experimental Voyaging and Cultural Revival

When **Hokule'a**'s twin prows touched the sands of Kualoa to complete the Voyage of Rediscovery the canoe and her crew were welcomed home by a huge throng, greeted with chants and dances and then honored with speeches from Hawaiian leaders who stressed how this voyage had made all Hawaiians and other Polynesians proud of their voyaging heritage, giving them extra strength needed to face the challenges of today's world.

This transformation of **Hokule'a** into a symbol of resurgent Polynesian pride, and the way this and previous voyages have galvanized Hawaiians and other Polynesians, demonstrate how well the cultural goals of the project have been fulfilled. As such, this effort to revive voyaging represents an oceanic example of a common process whereby various peoples around the world, ranging from embattled ethnic minorities to whole nations, have consciously sought to recreate and elaborate ancestral ways for contemporary purposes. Examples from Great Britain in which symbols and rituals inspired by precedents from the past have been consciously elaborated to elevate ethnic or national pride range from the Scottish adoption of the kilt woven in distinctive clan tartans as well as the bagpipe as emblems of resurgent Scottish nationality to the late Victorian efflorescence of royal ceremonies celebrating Britain's imperial glory. Distinguishing our effort from these and other such movements is the direct linkage of cultural revival with an experimental voyaging plan to solve issues in Polynesian prehistory, based on the hope that the cultural and research approaches would reinforce one

another for mutual benefit.[32](#)

At first these approaches coexisted uneasily, and at times clashed. But, as the project has matured, partisans of each approach have learned to respect each other's concerns. Where at first many crewmembers rejected research as an alien, non-Hawaiian activity, now they have not only come to accept the experimental procedures, but even to vie for the opportunity to collect data on canoe performance and navigation because of how much these can tell them about their ancestral technology. At the same time, researchers have realized how much rituals and beliefs concerning **Hokule'a** and its voyages that have been developed by participants, but do not exactly duplicate ancient precedents, make the project more meaningful to the Polynesian communities involved. These cultural elaborations have included the development of rituals to mark the departure and arrival of the canoe in Hawai'i and at various islands along the way, the building by Tahitians of a neo-traditional marae in honor of the canoe and her crew, and the declaration by our Maori hosts that, following their model of counting tribal descent from the those who had arrived together on an original migrating canoe, those who sailed **Hokule'a** to Aotearoa now constitute the "Sixth Tribe" of the Tai Tokerau region.

That this joining of research and cultural revival has ended up working together synergistically for mutual benefit has been most gratifying. Just as the initiative to solve an anthropological dispute through experimental voyaging has led Hawaiians and other Polynesians to gain a new appreciation for the nautical achievements of their ancestors, so has the skill and enthusiasm with which Hawaiians, Marquesans, Tahitians, Rarotongans, Maori, Tongans and Sa-moans have sailed **Hokule'a** over their ancestral seaways enabled the project to more than fulfill its original experimental goals. In particular, the insistence of those Hawaiians who have led the project over the last decade that the canoe continue to sail around Polynesia, and their enthusiasm in working with oceanographers, meteorologists and astronomers as well as anthropologists has enabled the project to extend the scientific work far beyond the original conception of a single voyage between Hawai'i and Tahiti to settle a controversy about the intentional sailing range of Polynesian voyagers. Had, for example, there been no drive to undertake the Voyage of Rediscovery, we would never have had the

chance to validate experimentally how it is possible to use westerly winds shifts to sail from west to east across Polynesia.

This culturally-motivated insistence to keep sailing **Hokule'a** has also led us to recreate legendary voyaging patterns much more closely than we had ever planned. For example, whereas multiple voyages made back and forth between Kahiki and Hawai'i stand out as a distinctive features of the Hawaiian voyaging legends, when we conceived the project we planned to make only one round-trip voyage as a virtual "crucial test" of the feasibility of long-distance voyaging and navigation. Although completion of that voyage essentially fulfilled this experimental objective, those Hawaiians who had learned to sail **Hokule'a** were not content with this single sailing venture. Once having tasted blue water sailing and the thrill of making landfalls on distant shores, they wanted to continue and extend those experiences, and did so by organizing and leading the second voyage to Tahiti and return in 1980, and then the Voyage of Rediscovery between 1985 and 1987. Thanks to their initiative, not only has a more complete picture of Polynesian voyaging and navigation emerged, but in making three round-trips between Hawai'i and Tahiti, we have ended up reproducing the legendary pattern of multiple voyaging.

Furthermore, the 1986 voyage to Aotearoa followed the timing and manner of sailing there contained in Maori traditions, even though that had not been originally planned. Nainoa Thompson spent most of his time preparing for that voyage by studying meteorological records and orienting his navigational thinking to the star patterns and elevations of unfamiliar southern skies, rather than by pouring over traditional texts. Yet, his researches led to a sailing plan that largely conformed to that contained in the legends. **Hokule'a** left Rarotonga just at the time of year specified in Maoritrade as being most favorable for sailing to Aotearoa, followed the indicated course toward the setting sun, and arrived just when the fabled blossoms of the pohutukawa were in full flower.

This unanticipated reproduction of multiple voyaging between Hawai'i and Tahiti, and of the best time to sail to Aotearoa, not only brings us closer to the manner of voyaging portrayed in the legends, but also evokes a Polynesian way of thinking about and employing oral traditions that escapes

us if we think of these traditions as either being orally-transmitted history, or mythical compositions. As the Danish scholar of religion, J. Pritz Johansen, recognized, "the Maori himself did not make any nice distinction proper between myth and history," for to him myth was history, but a history with contemporary reality. Johansen's examples include the "kinship I" wherein the Maori employed the first person to talk of their legendary ancestors and tribal adventures, as well as the proverbs and rituals by which Maori understood present actions in terms of legendary events of the past.

When, for example, the Maori wanted to say no without directly saying so, they would rhetorically answer a request with "Should Kupe return?," recalling how Kupe himself first uttered these words in Hawaiki to reject a plea that he undertake a second expedition to Aotearoa. Similarly, each year Maori farmers would ritually re-enact the tale of how voyagers fetched the kumara, the sweet potato, from Hawaiki and thereby made life fruitful in this new land where the first food plants introduced grew poorly or not at all.[33](#)

Seen from this cultural perspective, the Hawaiians' renewed enthusiasm for the sea that has led them relive the legendary voyaging exploits of their ancestors and those of kindred Polynesians begins to look much more Polynesian than had ever been originally imagined. What began as an effort to settle a scholarly controversy with a single voyage has through the leadership of the people whose seafaring heritage was being investigated evolved into a cultural celebration of Polynesian voyaging which not only has produced a wealth of new insights into Polynesian prehistory, but also brings us closer to the original role and meaning of the voyaging legends that inspired the effort in the first place.

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Other parts of this article are on line: Part 1--[The Founding of the Polynesian Voyaging Society](#); Part 2--[Hawai'i to Tahiti and Return: 1976](#); Part 3--[Hawai'i to Tahiti and Return: 1980](#); Part 4--**Voyage of Rediscovery: 1985-87**. Click here for Finney's account of the 1995 Voyage to Ra'iatea and Nukuhiva, [Sin at Awarua](#).

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1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
Home	Search	Archives	Educational Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)	



Aotearoa to Samoa: 1986

One Memorable Stormy Night with Mau and a Song

Carlos Andrade

[Carlos Andrade is a native of Kaua'i, a surfer, canoe-builder, and grandfather, as well as an accomplished musician and composer. He was a crew member of the 1986 voyage from Aotearoa to Tonga and Samoa and the 1992 voyage from Rarotonga to Hawai'i.]

Our navigator has told us that we should see land sometime this morning. No compass, sextant or any other kind of instrument has been used on this thousand-mile passage from Aotearoa, the land of the long white cloud, to the only surviving independent Polynesian kingdom, Tonga. The first four and a half days have been crisp, cold and clear. Well defined swell trains born in Antarctic waters have accompanied us, along with pelagic albatross and shearwater.

We left Waitangi to follow the ocean highways of our Polynesian ancestors and reestablish contact with our far-flung cousins. The stars, wind and swells speak to our navigators, who are the eyes of the wa'a. We, the crew, are the hands and sinews that move the wings to catch the lift and skim on the skin of the sea. On this, our ninth day, we have been through four and a half days of roiling clouds, whistling wind and mountainous seas that have charged at us from two quarters, drenching the steersmen, navigator and everyone else on deck. Below the flimsy canvas shelter the rest of the crew try to rest, but as our Tongan crewman says, "Inside same wet as outside!"

Two days into this storm, during the midnight-to-four a.m. watch, as the wa'a sizzled through dark rain under storm sails, lines of squalls began

buffeting us. Suddenly, Mau Piailug emerged from his sleeping place under the tarp. Mau is a master navigator from Satawal in the Caroline Islands of Micronesia, who learned navigation from his grandfather. During this voyage, he has acted as mentor to Nainoa, our young Hawaiian navigator, but has stayed in the background, never saying much, allowing Nainoa to practice his newly acquired skills. However, on this occasion, he quickly ordered the crew on watch to take down all of the sails immediately.

The crew members obeyed without question, but they wondered what had prompted Mau to take command of the situation. For most of the voyage, he had only emerged for meals and to look at the sunrises and sunsets to gauge the weather; nothing seemed out of the ordinary at this time. The crew were looking at each other questioningly when suddenly, gusts of wind in the 40-to-60 mph range blasted the wa'a. The wind lasted for about twenty minutes. If the sails had been up, much damage would have been done, and we might even have capsized. Mau told them to put the sails up and went back to bed.

Some say that Mau's many nights at sea have given him senses so acute that he can feel the wind coming. Mau says that, on his island, the consummate navigator knows the ways of the sea and is a father to his crew, and also that he possesses magic.

Now, we strain to see in the little light left by stars that intermittently show themselves through the storm clouds. Orion died long hours ago in the west. The three stars in the handle of the Dipper stand vertically, beckoning like a bird's wing above the northern horizon. The Southern Cross sinks into the south as we plunge through the predawn. Nainoa tells us to look for land. There! Sione, our Tongan crew member, sees what he says is land. Forty-five minutes later, the rest of us finally see something. A darker shadow solidifies on the horizon right where he has been pointing, as the sun climbs up the back of the easterly winds. Low, ringed by coral fingers that reach out miles into the surrounding ocean, Tongatapu, sacred Tonga, spouts white with blow holes carved into her flanks by the ceaseless pummeling of the sea. At first we mistake the fountains of white for whales, then we laugh with relief knowing that dry beds and hot meals await us when we land. The navigator can rest now. Like Maui with his mighty hook, he has fished the

land from the sea. He has raised the island.

Hokule'a Hula (Song)

Outbound for Tongatapu, Aotearoa goodbye;
Leaving on the Southwest wind,
Hokule'a spread your wings and fly,
Ancient Polynesian pathway, carry us home again,
Sail on, and on, and on, till the journey's end.

Chorus:

Follow the stars at night, high in the Southern skies,
Ke Ali'i o Kona i ka Lewa into the night while Orion dies.
Southern Cross is spinning slowly,
Aloha nui, goodbye. Aue Hokule'a, te vahine o ke kai.
Aue, aue, hi. Aue Hokule'a, te vahine o ke kai.

Sail at night for Ha'apai, Nuku'alofa goodbye,
Through the reefs, the shoals, the islands,
Fangatua lead us with your eyes,
Await the wind, Pangai, Lifuka, into Vava'u at night,
Sail on, and on, and on, till the morning light.

Matangi Tonga to Samoa, Neiafu goodbye,
The winds blowing, there's no stars showing,
Nainoa's navigating, hold on tight,
Raise the island Tutuila, Pago Pago's in sight,
Sail on, and on, and on, like a bird in flight.

Ha'ina mai ka puana, so the story is told,
Hokule'a sails the ocean highway with a family
Both young and old,
Aotearoa, Tongatapu, and now Samoa have past
Sail on, and on, and on, to Hawaii at last.

Notes

This song, recorded on the Tape and CD Pacific Tunings by Na Pali, recounts the voyage of Hokule'a from Aotearoa to Samoa, May 1-25, 1986. The voyage was a rough one, with gale force winds gusting 40-50 knots. Sione Taupeamuhu, a Tongan sea captain and navigator, joined the crew to pilot the canoe through the maze of "reefs, shoals, and islands" that make up the Tongan Archipelago.

Tongatapu: southernmost of three main groups of islands that make up the Kingdom of Tonga.

Aotearoa: New Zealand.

Ke Ali'i o Kona i ka Lewa: Canopus, "The Southern Sky Chief," the brightest star in the southern sky.

Nuku'alofa: main port and principal town in the Tonga Islands; located on Tongatapu.

Pangai: town on Lifuka, the principal island of the Ha'apai Group.

Neiafu: port on the island of Vava'u.

Matangi Tonga: "Makani Kona"--South Wind.

Pago Pago: capital of American Samoa, on the island of Tutuila.

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Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
Home	Search	Archives	Educational Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)	



The Seekers

A Story of Hokule'a's 1985 Visit to Taputapuātea

Herb Kawainui Kane (All Rights Reserved.)

[This is a true story. The names of some participants have been changed to protect their privacy.]

"By the way," my old friend Henry asked as he stirred his coffee, "have you heard anything from two Hawaiian grandmothers who recently visited me in Mo'orea?"

"No." I could sense a story coming. "Should I have?"

In the fall of 1982, Henry Rittmeister had come to Hawai'i on some business, and taken the opportunity to visit friends. While in Kona, he called me, and we met for a long lunch. We had not seen each other since his retirement to the South Pacific two years earlier, so it was a good excuse not to do any work that day. He and Ahu'ura, his Tahitian wife, had moved from Kona to the little island of Mo'orea, near Tahiti, and a life of voluntary simplicity. A chat with Henry was always entertaining, enriched by many years of experience as a hotel manager in the Pacific.

"These ladies-they had a message for the Polynesian Voyaging Society, something about the sailing canoe, Hokule'a. They felt it was important. The message is from some people they met on Ra'iatea and Mo'orea. Knowing of your involvement with the Society, I gave them your phone number. Are there any plans to sail the canoe to Tahiti again?"

"None whatsoever. But what's the message?" I asked.

"I don't know, exactly, but I'll tell you what I can. I happened to be at the Mo'orea air strip one morning, when the station manager asked me to speak with two ladies from Hawai'i who knew neither French nor Tahitian and apparently were in some difficulty. He led me to two Hawaiian ladies, standing in the hot sunlight, clutching their bags, and looking as wilted as the flower leis upon their lauhala hats.

"There was nothing exceptional about them, just two Hawaiian grandmothers. You see them everywhere in Honolulu. One was plump, the other more slender, but they were obviously sisters. Both seemed very confused, as if they had just stepped out of a Honolulu supermarket to find themselves on a strange island thousands of miles away. I got them out of the sun and gave them my attention.

"They said that they had flown to Tahiti on the previous afternoon, and must now find an old man on some island 'to the sunset' from Tahiti, as they put it-a 'tutu man' who would resemble their own dead grandfather. They had both seen him in dreams. He seemed to be without arms or legs. And he seemed to be calling to them.

"They were also searching for something they called 'the heart of the drum,' and there was also something about a mountain and a rainbow, but they had no idea what any of it meant.

"The plump one, Nalani, showed me a drawing she had made. One afternoon, still sleepy after a nap, she put some water on the stove for tea and sat down at her kitchen table. Crayons and paper had been left on the table by a grandchild, and she began doodling. The crayon seemed to move by itself, drawing a vertical rectangle which resembled an ancient temple drum which she had seen at Bishop Museum. Then it drew a figure of a man, a simplified "stick" figure similar to the petroglyphs carved on the rocks here in Kona. The figure seemed to be leaping upwards, away from the drum. Then she drew the concentric arches of a rainbow, and what appeared to be a mountain.

"On another day, after a nap, the same thing happened. She picked up a pencil and it wrote 'Kahiki,' Hawaiian for 'Tahiti,' and 'kaulana a ka la,' 'the resting place of the sun.' The sisters discussed all these signs-they speak very

little Hawaiian, by the way-but could make nothing of them. They took their questions to someone who suggested that the answers to everything might be found somewhere 'to the sunset from Tahiti.' Neither had ever been away from Hawai'i, but a travel agent told them how to get passports, and sold them tickets.

"When they landed in Tahiti, they saw Mo'orea in the sunset. Not knowing where to find a hotel, they sat all night in the airport and took the morning plane to Mo'orea, paying far too much to a sharp agent because they didn't know how to change their money to francs. Now they were on Mo'orea, with no hotel reservations. The rates would have been beyond their means in any case, so I invited them home.

"Our home became their base of operations for twenty-eight days."

"Your little house, Henry? With no electricity, no television, no refrigerator?"

"Primitive by Honolulu standards, to be sure. They kept looking for light switches, that sort of thing. But they rather enjoyed it-said that it was just like 'the olden days' back in their 'small kid time.' They were amused by little things, like discovering an occasional morning egg in one of their shoes out on the porch-my chickens do that, you know."

"Ahu'ura must have taken a dim view of the situation," I remarked. Henry's Tahitian wife was a hospitable and gracious lady, but I knew she must have limits.

"Aside from reminding me that I'm no longer a hotel manager, she did not complain; and, as luck would have it, they were away much of the time. But she was skeptical about their story. You know how it is with some Hawaiians and Tahitians who have little knowledge of their own history and traditions, yet love to romanticize the past and invent all sorts of nonsense. My wife has no patience with the self-styled kahunas and their monkeyshines.

"She suggested that if the ladies wanted to investigate Mo'orea or the leeward islands farther west, I might introduce them to those who were most

familiar with these islands-the cultural society known as the Pu'u Ario'i. These people are dedicated to preserving their culture. They have splendid programs in the native arts. They produce beautifully costumed performances of traditional dances involving many children; and they do this not for tourists, but for themselves. On Mo'orea they have a place for meetings and craftwork-thatch-roofed pavilions, open on the sides for the breeze, in a pleasant park-like setting shaded by trees and palms.

"I arranged to take the sisters there for an evening meeting. Therese, wife of your friend Tom Cummings on Ra'iatea, happened to be visiting us, and she served as a translator. I helped a little." Henry's native tongue is German; but as a youth, after literally walking out of Hitler's Germany in disgust; he had become articulate in French, Tahitian, and English.

"It was a lovely night, illuminated by the moon and several kerosene lamps; but the meeting turned into something of an inquisition. The people were openly skeptical of the sisters' story, and some of their questions were not exactly friendly. In the lamplight the stern face of the chief interrogator presented a devilish appearance as he probed for contradictions in their statements. Though the sisters were soon moved to tears, they were steadfast.

"Nalani's drawing of the drum brought a response from two brothers from Easter Island, now living on Mo'orea. Both are fine wood carvers. They said that for some time, they had been talking about making a great drum. Then some of the local men, who had been listening silently in the darkness, remarked that they had also been discussing the idea of making a tall temple drum, one that might have a great voice. There were questions about Hawaiian temple drums which the sisters could not answer. The talk about drums became a subject of conversational interest, and the people became more friendly.

"The sisters were emphatic about finding their 'tutu man' who might tell them what their trip was all about. Tehani, a young woman who spoke some English, offered to take them around the island the next day. Someone else offered the use of a truck. There was some good-natured laughter when another asked-in Tahitian that would not be translated-if the quest of two elderly Hawaiian ladies throughout the Tahitian islands for an old man might

indicate early impotence among Hawaiian men. Several in the group decided to ride along in the truck just to see what might happen.

"They didn't find their 'tutu man,' but, as they passed one of the river valleys, Nalani glanced inland and saw a mountain shaped much like the one in her drawing. They turned inland, and followed a road that led through the valley and up the slope of the mountain. At the end of the road, they followed a footpath that led to a marae, the rock platform of an ancient temple. Lured by a mist of rain and a beckoning rainbow farther up the slope, the sisters decided that they must climb higher, even though there was no trail.

"Can you picture it? City-dwelling Hawaiian grandmothers, for whom a trip to a shopping mall is major exercise, scrambling up a mountain, followed by gasping Mo'oreans. The slender one, Kawena, plowed ahead through long grass and brush. Then it happened.

"Kawena seized a bush to help herself up the steep slope. As she pulled the branches down, a broad rock face was revealed. On the rock was what appeared to be a petroglyph-an outline of a tall drum, and the figure of a man leaping upwards away from it.

"Having seen Nalani's drawing, the Mo'oreans now gave the sisters their full attention. All agreed that the search for the old man must continue. Tehani would guide them, taking them to the islands farther to the west-first to Ra'iatea because of the legendary Hawaiian connection to that island. As you know, Ra'iatea-anciently named Havai'i-was the homeland of adventurers who sailed to Hawaii many centuries ago and founded the dynasty of ruling chiefs of the Hawaiian Islands. Tehani accepted donations for her airfare, and the three flew to Ra'iatea.

"They hired a car and drove to the great rock platform of the marae of Taputapuatea , the seat of power from whence-according to your Hawaiian legends-the conquering priest Pa'ao had sailed north to the new Hawai'i. Tehani explained to the Hawaiian ladies that this had been the Vatican of their remote ancestors. Other Hawaiians had made a pilgrimage to this place-those who came on Hokule'a in 1976.

They arrived at the marae in a light rain, a misting rain that moved ahead of

them on the path. High above, coconut fronds were shaken by a wind they did not feel. At the marae they met some local people who had heard of their arrival and wanted a word with them.

"Which is why I must tell you this story, Herb, because of your past involvement with the voyaging canoe replica, **Hokule'a**. The sisters meant to call you when they returned to Hawaii. They said that the people at Taputapuātea, as well as the Pu'u Ario'i on Mo'orea, gave them a message to pass on to, as they put it, 'the **Hokule'a** guys.'

"I'll await their call," I said.

"Of course. Well, after they had searched in vain for their 'tutu man' on Ra'iātea, they went on to nearby Huahine. Lovely little island, and steeped in antiquity—so many ancient marae. Tehani wanted to visit a great uncle on Huahine. He had been ill, and she hadn't seen him in years. He could tell them about the old men of his island.

"They landed at the little airport and caught a ride to the old man's house. He was sitting in the shade of his porch. The sisters couldn't see him clearly until they reached the steps. Then they both stopped and began to weep. One said, 'You look just like our own tutu!'

"The old man said a few words in Tahitian. 'What did he say?' the sisters asked, and Tehani answered, 'He said, "So here you are."'

"'But we saw you in dreams with no arms or legs,' they wept. The old man replied that he had recently suffered some paralysis from a stroke, but was recovering the use of his limbs.

"Then came the other questions. What did it all mean—the heart of the drum? Is there really a drum? Where is it? Why were they searching for it? He beckoned them up the steps.

"He told them about a great drum that had been made by the ancestors long ago. But, as Tehani translated, it all came out in the present tense, as if he had been there. Perhaps he spoke in the same manner that he had heard the story from his grandfather, and his grandfather had heard it earlier, and so on back through the generations.

"You know how the past merges with the present in the telling of some Polynesian legends. Whether something happened a thousand years ago or yesterday makes no difference; the Polynesian is merely the living edge of that great body of ancestral spirits-all the countless lives that have been lived before. The events of their lives are part of his life; he feels that he has participated. So it was with the drum.

"The drum, it seems to me, symbolizes the collective power of the People, power that has been lost. As you know, the old Polynesians believed that temple drums were invested with great power; when struck, their voices could summon powerful spirits.

"According to the old man, a thief from under another sky-a metaphor for foreigners, I believe-stole the heart from it, then leaped away. The drum could no longer be sounded. People drifted apart, lost contact with each other, became powerless, aimless. It was said that the drum was hidden away in a mountain.

"When the sisters asked why they were searching, the old man replied that a people who do not search for what they have lost will become a lost people. There will be many other searchers, he predicted. Polynesians are moving about as never before. In just the last few years he has seen people from New Zealand and the Cook Islands, from Easter Island, from the Marquesas, from Tonga and Samoa. The Hawaiians came in **Hokule'a**, and now many Hawaiians are visiting the South Pacific, and growing numbers of South Pacific Polynesians are visiting Hawai'i. And a canoe is being built in Tahiti that will be sailed to New Zealand. All are searching.

"Only when a great many people are searching will the heart of the drum be found. There will be a great expectation, and people will be listening-not deafened as they have been. And there will be a great turmoil in the heavens, and a heaping of clouds, and blazing lightning. And lightning will strike the mountain, and the drum will sound.

"And when the drum sounds, everyone who is of Polynesian ancestry, wherever they may be in the world, will hear it, and become one people again."

A few days later, just before his return to Tahiti, Henry phoned me from Honolulu to say goodbye and to inquire once more if I had heard anything from the two sisters. I had not.

"They may not wish to disturb you," he said, " but they said they had something important to tell 'the Hokule'a guys,' before another voyage is made."

"Henry, Hokule'a has already made two voyages to Tahiti, as you know. There are no plans for another."

"So be it. I neglected to get their addresses before they returned to Honolulu, but I remember the slender one, Kawena, saying that she works as a waitress at the Tiki Tops restaurant in Kaneohe. If you do hear from them, you might remind them to write to Ahu'ura to thank her for her hospitality. They said they would write, but you know how Polynesians are about writing letters."

"Thanks, Henry, but I'll let it rest. I don't know quite what to make of it-their story."

"Bothers you?"

"Bothers me."

Several months later I found myself driving through Kane'ohe. I had flown to O'ahu that morning to keep a business appointment on the North Shore, and was returning to Honolulu along the windward side of O'ahu . Waiting at a stop light, I noticed the Tiki Tops sign across the intersection. "What the hell," I thought. I turned into the parking lot.

It was a busy place and several waitresses were scurrying about. One had Hawaiian features, and the cashier confirmed that her name was Kawena. I ordered coffee at the counter, and, when she had a free moment, the cashier directed her to me.

"Oh, you're Mister Kane," she said. "I saw your picture somewhere. My

sister and I want to talk to you. I'm almost pau with my shift, and I'll call her to come over."

She showed me to a booth. I looked at a newspaper while I waited, and in about twenty minutes her sister arrived. The restaurant was now almost deserted.

I went over their entire story with them, and heard it as Henry had told it to me.

"He wrote down your phone number in Kona, but when we got back we couldn't find the paper," Kawena said. "When Tehani took us to Taputapuatea , the big marae, the people there asked us to talk to the Hokule'a guys. They said that in the olden days, when the last canoe left, the chief of the canoe-Maui was his name -turned back and put a kapu on the place. Tapu, they call it.

"Only one thing can lift the kapu. A canoe must come from Hawai'i, and it must come into the lagoon through the narrow pass in the reef right outside the temple-Teavamoa, they call the pass. When Hokule'a came to Ra'iatea before, in 1976, it was brought through the main ship passage outside the town of Uturoa. Wrong place. The people were unhappy, but nobody had told the Hokule'a guys any different; and the guy who took them through, he was from Tahiti, and he didn't know how important it was to come in through Teavamoa Pass.

"When we returned to Mo'orea, we met again with the Pu'u Ario'i folks. They have this old kupuna man they look up to, and he said the same as the folks at Taputapuatea . When Hokule'a comes again, it should sail right in at Taputapuatea and lift the kapu. He said that the kapu is a curse for Mo'orea. All canoes that tried to sail from Mo'orea to Taputapuatea have failed. It has been this way for hundreds of years; and not until a canoe from Hawai'i sails in through the pass at Taputapuatea can the curse be lifted.

"So will you tell the Hokule'a guys, please? When Hokule'a comes again?"

"I'll pass it on," I replied, "but there's no plan to sail Hokule'a to Tahiti again. She's already made two trips, one in '76 and one in '80."

"We'll have to go to Tahiti again," Nalani said. "We don't know when, or what this all means, but the old man on Huahine said we would make another trip, maybe more. And the old kupuna man at Mo'orea was sure that **Hokule'a** would come again, in just a couple years, but he said he would be dead by then. When **Hokule'a** comes, he will die."

Two years later, I was agreeably surprised when Nainoa Thompson called to tell me that another voyage with **Hokule'a** was being planned. I had withdrawn from active participation in the Polynesian Voyaging Society after moving from Honolulu to Kona, because of the difficulty and expense of attending board meetings in Honolulu; but I regularly received minutes of meetings, and occasionally enjoyed a phone conversation with those who now were caring for the voyaging canoe. This new voyage would be the most ambitious of all—a campaign covering approximately 16,000 miles. The double-canoe would call at the Tuamotus, the Tahitian group, the Cook Islands, New Zealand, Tonga, and Samoa; returning through the Cook Islands and Tahiti to Hawai'i. It would be navigated entirely without instruments.

I sent a memo to Myron Thompson, the Society's president, informing him of the request from the Pu'u Ario'i of Ra'iatea and Mo'orea.

Before the canoe departed from South Kona in 1985, I drove to the little fishing village of Miloli'i, where it was moored, to have a look at it and chat with some of the crew. **Hokule'a** was anchored in a sunny little cove, its bows facing the sea. Bobbing restlessly on the gentle, sparkling swell, it seemed to be taut, alive, impatient, eager to get going. I silently wished it bon voyage.

A month later, **Hokule'a** arrived in Tahiti, once again navigated entirely without instruments by Nainoa. Any remaining skepticism about the adequacy of Polynesian navigation was now thoroughly silenced.

While at Tahiti, Nainoa and the captain, Gordon Pi'ianai'a, were visited by a delegation from the Pu'u Ario'i with an invitation to bring the canoe to Mo'orea. A feast and ceremonies were planned. Mo'orea was not on the itinerary, but to decline the invitation would appear ungracious; moreover,

cultural exchange was a purpose of the voyage. Gordon accepted the invitation.

He had met some of the Pu'u Ario'i on Mo'orea five years earlier, during the previous voyage of **Hokule'a**. Their senior kupuna, the leading elder, had honored Gordon with a Tahitian name, Tamatoa, and had predicted that both Gordon and **Hokule'a** would someday return—a prediction which, at the time, seemed highly unlikely.

Hokule'a was welcomed to Mo'orea with a formal oration that lasted perhaps thirty minutes. Historian Abraham Pi'ianai'a, Gordon's father, having joined the crew at Tahiti, was able to respond with correct protocol, modifying his impeccable Hawaiian slightly so that it could be understood by Tahitian ears. His response drew a tremendous ovation.

Gordon noticed that the old man he had met five years earlier was not among the Pu'u Ario'i.

The Hawaiians were overwhelmed with hospitality; and a special request was formally presented to them: when they reached Ra'iatea, would they please sail into the lagoon through the pass outside of Taputapuātea? This had been the wish of their senior elder, that a canoe from Hawai'i land at Taputapuātea and lift the curse which Mo'orea canoe navigators had suffered for centuries. Unfortunately, that elder could not make the plea himself. True to his own prediction, he had died on the day that **Hokule'a** had landed at Tahiti.

The day after leaving Mo'orea, the canoe reached Huahine, 140 miles to the west.

On the following morning, a departure from Huahine was made for Ra'iatea. Writer Bob Krauss of the Honolulu Advertiser was aboard, and he noted something unusual. Other departures had been made in fine sunny weather, but this one was made on a dark morning, with heavy clouds hanging low over the peaks of Huahine. Bob took special notice of a great rainbow that seemed to move directly ahead of the canoe.

Navigator Nainoa Thompson was concerned about the approach of cirrus,

which often precedes bad weather, and a dark squall moving rapidly out of the east; but, knowing that Ra'iatea was only a few hours away, he decided to continue onward. The squall passed by to starboard without striking the canoe. Ra'iatea could not be seen, the horizon being completely obscured by low clouds and a light screen of rain which moved ahead of the canoe.

The sun, rising dead astern, projected a huge double rainbow on the screen of rain ahead. Nainoa saw that his course lay directly toward the center of the rainbow.

The steersman, feeling no pressure on the steering paddle, lifted it out of the water. With its two sails set in balanced trim, Hokule'a will steer itself in light winds, and this seemed to be one of those moments. He kept an eye on the heading, expecting to drop the steering paddle back into the water the moment the canoe veered off course. But the canoe did not change course. It was steering itself, holding the correct course to Ra'iatea, following the rainbow.

To Nainoa, everything in nature seemed to be moving in a majestic westward procession—the wind, the squall, the clouds and rain ahead, the rising sun, the gigantic rainbow, and the canoe.

The steering paddle was lashed down on deck. All aboard were curious to see how long the canoe would hold its bearing without human intervention. Obscured by rain, Ra'iatea remained invisible; still the canoe continued to hold its correct bearing, sailing itself directly toward the center of the rainbow.

Soon it was observed that the canoe was not just sailing in the general direction of Ra'iatea, but directly toward the estimated location of Taputapuātea on the island's southeast coast. That, said crewman John Kruse later, was when everyone started getting "chicken skin." To Gordon Pi'ianai'a, dutifully attentive to the canoe as its captain, Hokule'a seemed to pick up speed as it neared its destination, but with no increase in wind velocity.

When the dark, blurred shape of Ra'iatea began to materialize, there was some discussion about a course change based on the sighting of a certain

motu, one of the tiny palm-tufted coral islets which stand upon fringing reefs and are often used as landmarks in locating a passage through a reef into a lagoon. But it was decided that the correct course was still dead ahead-into the center of the rainbow.

And so **Hokule'a** sailed itself to within only a few hundred yards from Teavamoa, the opening in the reef outside of Taputapuātea . Human control was required only for the approach into the narrow pass.

"That entire day seemed beyond our control," Gordon recalls. "As far as I know, we did not tell anyone when we would leave Huahine, yet upon our arrival at Teavamoa Pass and the Taputapuātea Marae we were greeted by members of Te Pu'u Ario'i and people of Ra'iatea."

My friends, Tom and Therese Cummings, were then residing on Ra'iatea. In a letter, he wrote: "When we heard that people were gathering in expectation of the canoe's arrival, we took an outboard through the lagoon and waited just inside the pass. Therese was the first to see the blurred shape of the canoe approaching through a curtain of light rain. Then suddenly it was through the pass, and into the calm water of the lagoon. "

The anchors were set. Ashore, descendants of ancient adventurers who had left Ra'iatea centuries ago were greeted with song by descendants of those who had remained.

When I heard the news, I thought that the sisters would be pleased to know about it. I found Nalani's phone number and placed a call. The voice of a young woman answered.

"Aunty Nalani not here," she said.

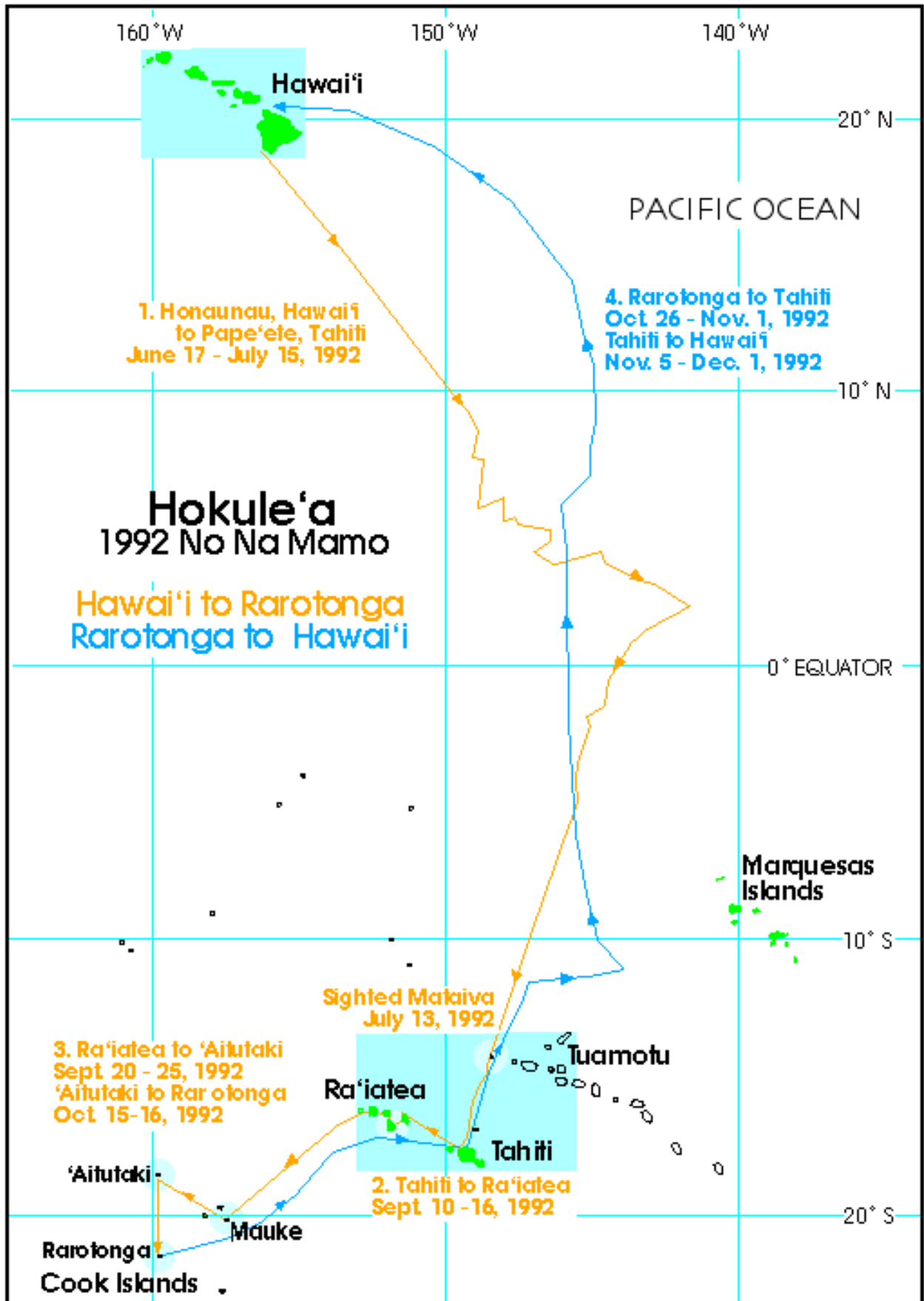
When I asked about Kawena, the voice said "She gone, too. They both went South Pacific, someplace."

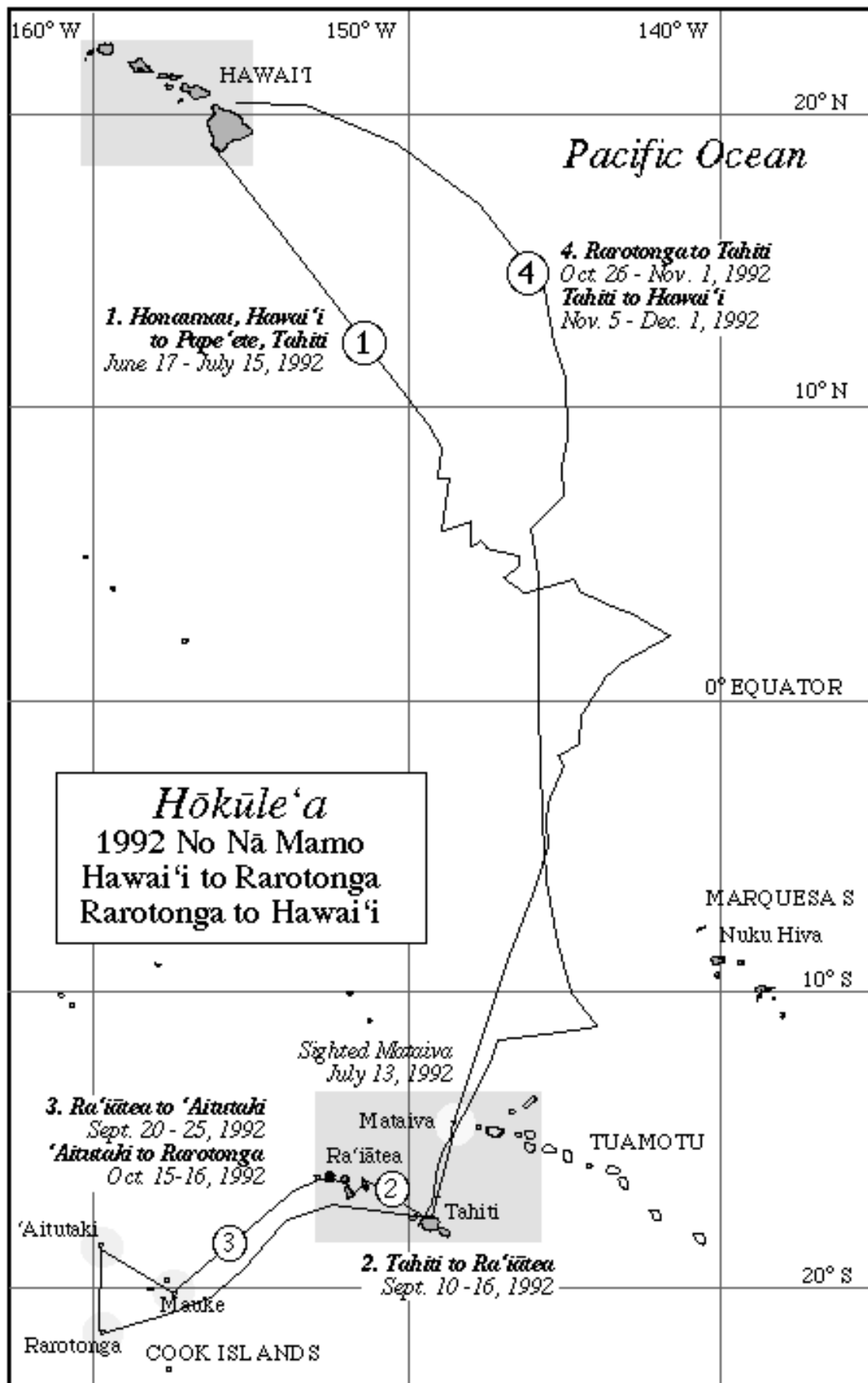
Other On-line Writings by Herb Kawainui Kane--[In Search of the Ancient Polynesian Voyaging Canoe](#); [Evolution of the Hawaiian Canoe](#).

<u>1976: Tahiti</u>	<u>1980: Tahiti</u>	<u>1985-87: Aotearoa (New Zealand)</u>	<u>1992: Rarotonga</u>	<u>1995: Marquesas</u>	<u>1995: West Coast, British Columbia, & Alaska</u>	<u>1999-2000: Rapanui</u>
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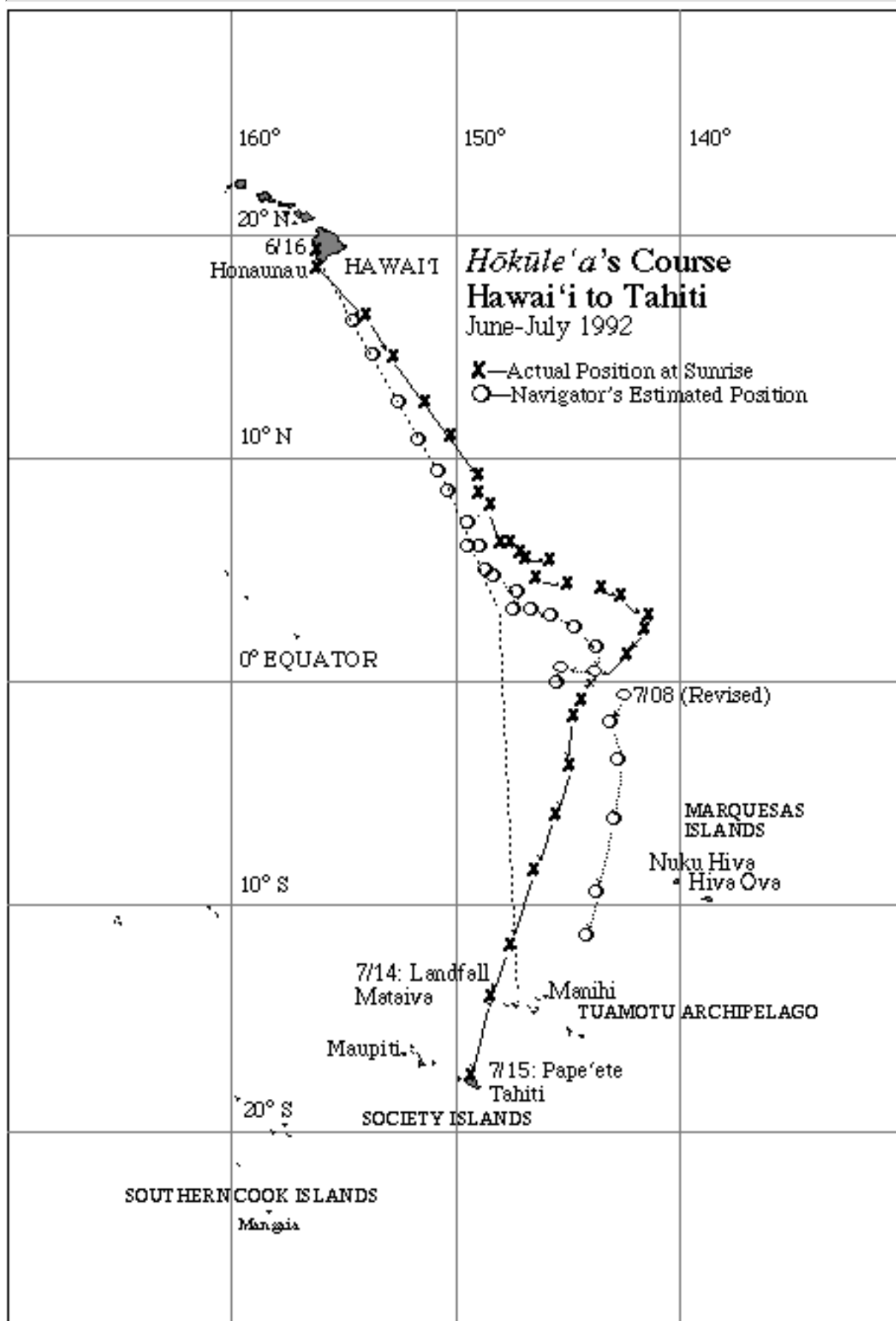
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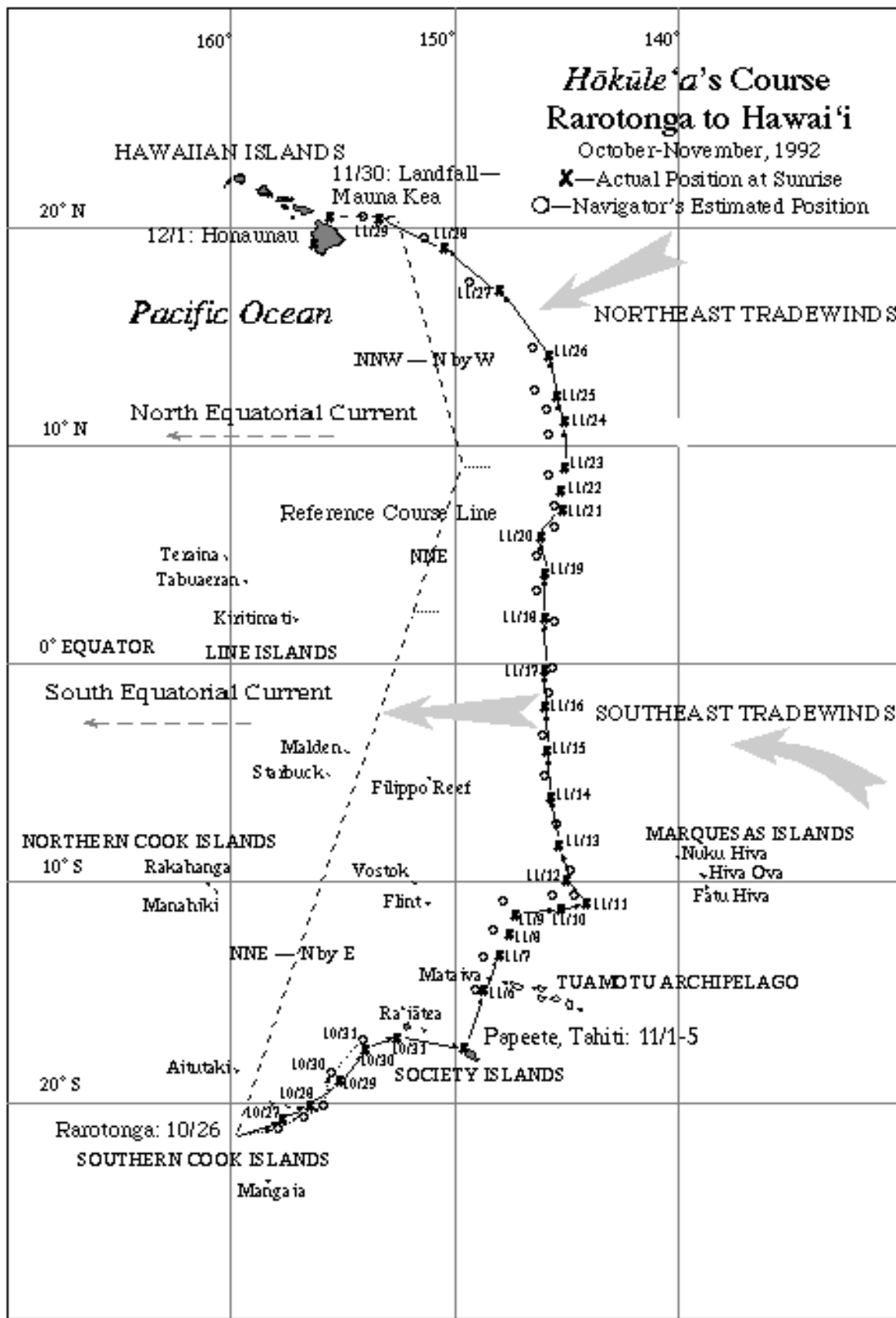


Hawai'i to Tahiti 1992

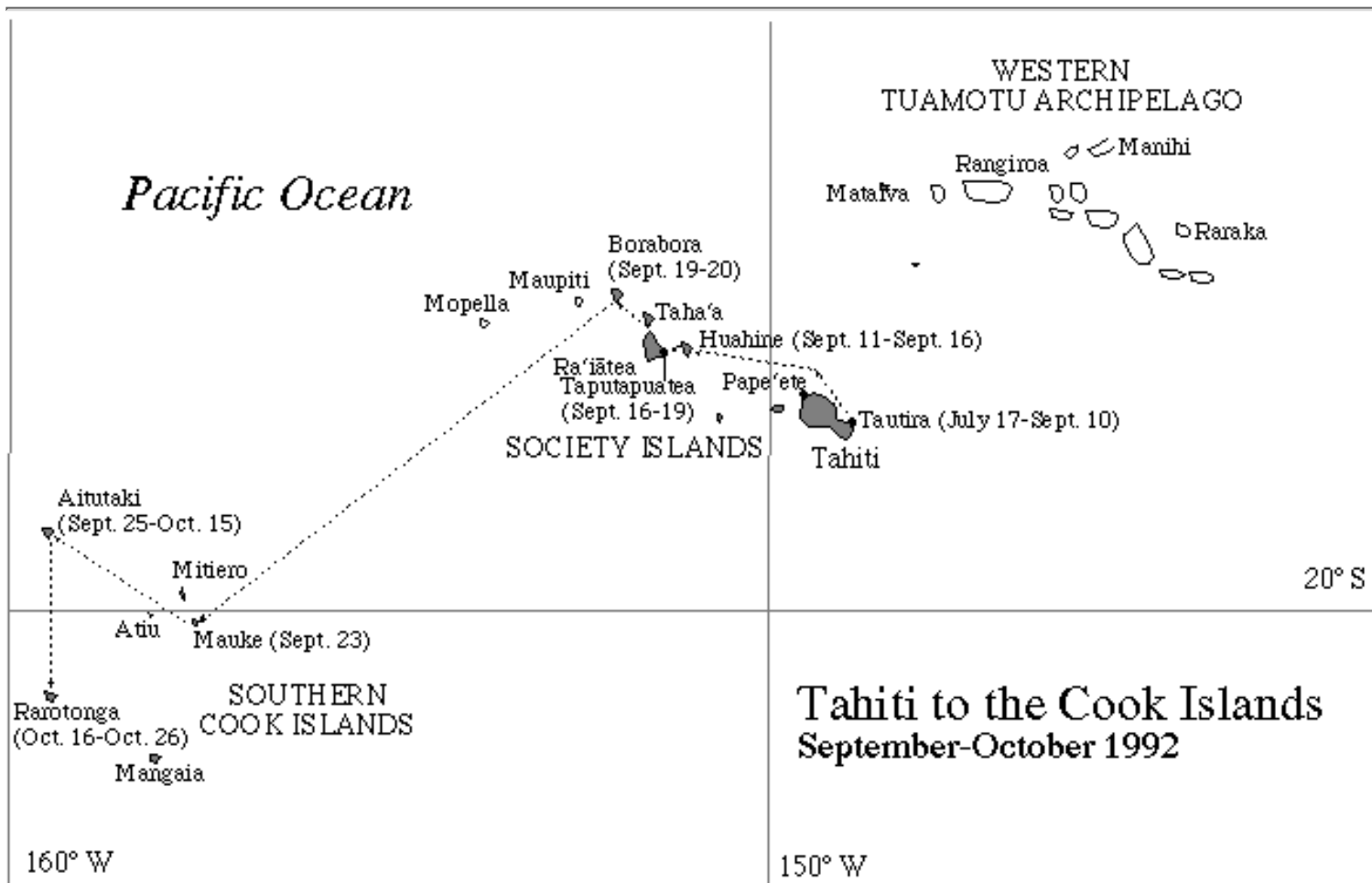




Rarotonga to Hawai'i 1992



1992 Tahiti to Rarotonga



1992 Voyage: Hawai`i to Tahiti

Dennis Chun

Photo Below: Author Dennis Chun at the Steering Sweep

My thoughts kept returning to those haunting lyrics of Mehameha and the stirring chant of Ia Va`a, I gazed out over the blackness of the sea. Yes, it is lonely and silent. A feeling of solitude pervades in spite of the closeness of twelve other crew members. The wind and the sea rush past this wa a kaulua, the double-hulled sailing canoe called



Hokule`a, as we head toward the rising constellation Ka Makau Nui o Maui also known as Scorpio. The star we learned as Humu, labelled Altair by astronomers, is kept off the port hull. Yet, the excitement of finally leaving land on this voyage of No Na Mamo sobers me to bear on the tasks at hand. No Na Mamo, a Hawaiian phrase which means "for the children"-a poetic reference to generations to come-sums up the reasons for our venture into the open ocean. Here we are, seven experienced sailors of Hokule`a and six "new" crew members on their first long voyage to Tahiti. To bring this performance-accurate replica of a Polynesian voyaging canoe safely across 2,800 miles of open ocean will be no balmy cruise in the South Pacific. Perhaps this exercise will show how the ancients populated this vast expanse of the Pacific.

The objectives of this particular voyage were to perpetuate the knowledge and traditions of Polynesian voyaging. We were attempting to discover for ourselves how the ancients had so successfully populated the widely dispersed islands of the Pacific Ocean. This feat was done without the modern instruments and conveniences that are known today. Though I had made this trip before, there is always the apprehension of once again facing the elements over which you have no control. The Polynesian gods who gave birth to the Polynesians can also take the life of modern man if they are

not acknowledged. I found comfort in remembering the solemn Awa ceremony in which we participated before our departure. The words of Sam Ka`ai conjured images of ancient times when "man became a part of the sea and its elements" as he stepped out onto the ocean "highways." Orations of past voyage~ from those that had preceded us rang in my ears as we sat on the lauhala mats beneath the coconut trees at Honaunau on the Kona coast.

The setting at Honaunau was idyllic. The warm morning breeze brushed my face as I gazed at Hokule`a riding at anchor in the bay. She seemed so peaceful and at ease flowing with the swells that rocked her. What a sight to see, indeed, as a flow of onlookers constantly moved along the shoreline wanting to get a closer look at this "spaceship" of the past. We the crew carried on the task of provisioning this wa`a kaulua as well-wishers, family members, and curious spectators crowded the black lava at the water's edge. With the Awa ceremony ended and the escort vessel ready, we were on standby, waiting for the order to depart. I felt a curious tightening within me while gazing at the activity around me. Stepping away from the surrounding bustle, I headed for the sacred grounds of the nearby Pu`u Honua, a sanctuary for those seeking assistance and guidance.

Within these walls built by the ancient Hawaiians, I sought solace and the strength to carry on the responsibilities entrusted to me. I had only wanted to sail and be part of the crew and cherish the joys of sailing. But the day I arrived in Kona, Clay Bertelmann, the Kapena on this leg of the voyage, informed me that I was to be one of his watch captains, which meant I was responsible for the operation of the canoe during my "watch." I was to be in charge of keeping the canoe on course and ensuring that the canoe was sailing at peak efficiency for the given conditions. It would also be my responsibility to guard crew members and the canoe from any danger. Any command was mine alone and the resulting consequences were mine to bear. "I am still too inexperienced," and "there are others that are more qualified," were my first reactions. Feelings of failure before even leaving land tried to rear their doubting heads as I consented to taking on the challenge ahead. Perhaps this is what was meant by last year's Hawaiian Leadership Conference's theme of "Koho `Ia." The concept of being "chosen" brings with it gifts and the burdens of these gifts. Was I being too presumptuous in accepting such a challenge? I already had accepted responsibility for

recording the voyage in the traditional form of a mele which was making me anxious. By taking on another challenge would I become less effective and not fulfill my responsibilities? The solitude within these ancient walls focused my thoughts on the trust and respect that others had in me. From the kupuna that surrounded me in this place of sanctuary, I found the strength to face the challenges ahead.

"Man, isn't there a dry spot on this canoe!" It has been three days since we left the peaceful bay of Honaunau and I've been wet ever since. But an excited yell goes out from Chad Baybayan, one of the experienced crew members, "You gotta LOVE it!!!!" So we must, because here I am again facing the discomforts of life at sea with no modern navigational instruments or conveniences. My watch crew consists of Ka'onohi Paison, Maulili Dickson, and Liloa Long, each of them for the first time facing the challenge of reaching landfall in the Tuamotu Island group some 2,300 miles south and perhaps thirty days distant. Clay Bertelmann and his brother Shorty Bertelmann, on whom rests the non-instrumental navigational duties, alerts us to our duties as we climb out of what might be called "bunks." Our quarters are really nothing more than canvas stretched over the gunwales (mo`o) of the canoe attached to the tops of the safety railings. Beneath this shelter from the sun, rain, and ocean spray are plywood planks that serve as beds. Whatever personal gear we possess is stowed in a cooler beneath this plywood. That we share this space with other crew members just reinforces the cramped feeling aboard the canoe. We are a community unto ourselves.

We are a community which is dependent upon each other and more importantly responsible for each other. As we slice through the waves that cause us to reach for any solid part of the canoe for balance, our duty continues to check each of the seven watertight holds of each hull. Moving forward becomes a combination of ballet, bull-riding, and surfing all rolled into one continuous motion. As we check these watertight compartments near the bow of both hulls, we are constantly subjected to the splash of the waves as the bows slice through and then drop into the following trough. There you have a choice of duties-to either endure the wet, cold spray topside or challenge the stale, stuffy confines below. These confining watertight spaces are the only things that keep us from joining our departed ancestors of the deep. Inside them, we are tossed about in the darkness as the

hulls rise and fall in response to the continuous motion of the swells. But we need to press on for the sake of the canoe and crew. Relentlessly, we check each hold, pump out water, if any, and secure each compartment as we begin our four hour watch.

Though this doesn't seem long, in another eight hours we'll be back on deck to stand watch for another four hours.



Eight days out from Hawai`i, we find ourselves at the mercy of the Intertropical Convergence Zone (ITCZ), more commonly known as the "doldrums." Whatever it is called, we find ourselves becalmed. As the sun beats down relentlessly we search for signs of wind amidst the clouds that float lazily across a background of blue. It's only

midmorning and already those off watch scramble for patches of shade on deck as the canvas-covered bunks prove unbearably hot. Watching those clouds drifting so effortlessly makes our minds wander to TCBY frozen yogurt cones, frosty Coke float, and thick prime ribs. Suddenly an anguished moan turns our attention to Maulili. "Heh, you guys, cut those comments about food. I'm trying to concentrate on keeping on course and listening to you guys is making me hungry already." We all laugh; he's the ship's cook and it's tough trying to make gourmet food from canned and dehydrated materials. The occasional respite from these food is when fish are caught by the fishing lines trailing from the rear of the canoe. Maulili says it all in a broadcast to KCCN radio on our daily progress report.

"Imagine cooking on your knees in the shower with the cold water on you at the same time" he commented in response to the question "What's it like cooking on Hokule`a?" In spite of this, we eat quite well on fresh fish (when caught), rice, canned meats and vegetables, poi, taro, dried bananas, and coconuts.

The doldrum conditions of little or no wind and hot, humid days are replaced by four days of rain and 100% cloud cover. This area of the ocean between

ten degrees north and three degrees north latitude is the meeting place of two dominant weather patterns in the Pacific Ocean. We are caught in the throes of a conflict between the Northeastern and Southeastern tradewind belts. Adding to this clash is the intense heat generated near the equator. The results are towering thunderclouds and drenching downpours of rain. It seems as if the whole cycle of water on the face of the earth begins and ends right here. This becomes the most difficult part of the trip for Shorty in his navigational calculations. He needs to know the canoe's direction constantly. With no visual clues from the sky available, he is dependent upon determining direction from the ocean swells. At night, the envelope of darkness is all-encompassing; the blackness embraces us and I become disoriented. With no horizon visible, I feel a sense of weightlessness. Soon, the familiar rhythm of the swells brings me back to reality. I struggle to concentrate on these rhythms as I steer Shorty's course. He points out the motions of the canoe as she encounters the various swells. Throughout my watch we strive to hold this line in the blackness. We strain into the darkness watching for any break in the cloudcover or for squalls that may bring gusting winds and drenching rains. Relief will mean climbing down into the stale, stuffy, but somewhat dry hold to escape the wetness on deck and lapse into halfsleep. My thoughts turn to Shorty, Clay, and Nainoa who remain on deck constantly watching and guiding the other watches as they report for duty. None have slept or escaped the elements for the past four days. Their kupuna and `aumakua must be with them, for none have complained or shown any signs of discouragement as we encounter these hardships.

Shorty Bertelmann must be thinking back to his first experience of long distance voyaging. Shorty, along with his older brother Clay, come from the rugged, cool uplands of Waimea, Hawai`i. They are Hawaiians whom have been raised among the hardships and work ethic of the paniolo. Being exposed to the natural elements for most of their lives has prepared them for the current conditions. I admire these brothers Bertelmann along with Nainoa Thompson. Shorty was one of the original crew which in 1976 made that first historic voyage on Hokule`a to Tahiti. He has now become one of a handful of Hawaiians who have learned and assimilated the art of wayfinding. Clay, as both captain and crewmember, has always put the canoe and its crews first in his life. At times this has created conflicts in his personal life, but as he says, "The canoe is a part of me and my `ohana." Nainoa took on the task of relearning the traditional art of wayfinding and is training others to carry on this tradition. Without the commitment, experience, and steadfastness of these Hawaiians, I seriously doubt that this voyaging project would have come this far.



Watching the sunset, I think back to our leaving the ITCZ area of the Pacific Ocean. For three days we assumed the guise of a commando unit as we attempted to outwit the encircling thunderstorms. "All hands on deck!" The order beckoned everyone to stand by their stations to tack as we dodged squalls and maneuvered out of ominous clouds that seemed to anticipate our every move toward tunnels of clear sky. On one hand the crew enjoyed the active role of being on the attack in exploring ways to overcome these weather conditions. On the other, these maneuvers have placed an extreme hardship on Shorty and his navigational calculations. He must memorize all these course changes and then calculate these in reference to his ideal course line. It is truly amazing how the ancient Polynesians had navigated the expanse of the Pacific Ocean utilizing their own powers of observation and an acute sensitivity to the environment around them. The concept of non-instrument navigation, or wayfinding, is simple in theory: you need to know where you are, where you want to go, what direction you're heading, how long and how fast you're heading in a particular direction, and how far

have you traveled toward your intended destination. But wayfinding is very difficult in practice. Perhaps the most difficult part is being mentally and physically awake for the entire journey. In spite of the hardships, we find out upon our return to Hawai`i that Shorty has been remarkably accurate in his position estimates throughout the entire voyage.

Shorty estimates our position to be approximately two degrees south of the equator. This puts us clearly out of the ITCZ area and we should be encountering the Southeast tradewinds. But these winds are nowhere to be seen. Instead we are faced with winds coming from the house we call Hema or south. Because we are a sailing vessel, our heading takes us in the direction of Noio or east of southeast and even `Aina or one house further east. This causes some frustration for everyone as we all had hoped for an early arrival in Tahiti. We have made a lot of easting already and had hoped to be able to head due south to reach the Tuamotus. Gazing at the changing colors of the sky as night becomes day, I search the dark blues that gradually change to lighter shades of pinks, reds, and oranges for signs of the coming weather. We are again at the mercy of nature. Today seems no different from the past three days. Hokule`a is riding eight to ten foot swells generated from a wind system to the south that undulate beneath us. This system, it seems, has kept the Southeast tradewinds from their normal course. We hope for a shift back to the normal wind patterns soon. The further east we travel, the longer our anticipated landfall in Tahiti. But this is not the topic of discussion today. Today Shorty, Nainoa, Clay, Chad, and Tava develop an alternative to Tahiti. If the Southerly winds hold for another day or so, when the southeast tradewinds reappear we may then be able to make the Marquesas Islands as our first landfall. Tava Taupu is genuinely excited about this possibility. He hasn't been home for the past ten years. However our hopes of visiting the Marquesas, believed to be the home of the first settlers of Hawai i, vanish as the next day brings the anticipated Southeast tradewinds.

With the wind blowing steadily from the southeast, we speed through the onrushing waves. The days seem to blend together as we head for an anticipated sighting of land in the Tuamotu archipelago. On the twenty-fourth day since our departure from Honaunau, we encounter signs of land. We see land birds, Sooty Terns or Noio, in the early morning hours and

again in the evening, and limu floating in the water that are normally found on reef formations. The ride on Hokule`a suddenly becomes choppy as we are buffeted by waves coming from three to four directions at once. It seems that the wavelengths are also shorter causing many wavetops to crash over the hulls onto the deck. We suffer the wetness of these splashings as we strain our eyes to the horizon in search of islands. Around midday on the twenty-sixth day, the swell from the southeast disappears. With one less swell buffeting the canoe, the ride becomes smoother. The dry deck once again becomes a comfortable place for "Club Hokule`a." Our evening tradition, weather and conditions permitting, featured improvised a capella music from the 50's and 60's to contemporary and traditional Hawaiian music with full guitar, ukulele, and washtub bass accompaniment. This has been a highlight for everyone on this voyage. Lead by Ka`onohi with support from the Bertelmans, Keli`i Paikai, Kainoa Lee, Maulili Dickson, Na ilima Ahuna, and myself, we generated many beautiful harmonic renditions to an endless array of musical compositions. Nainoa even wanted to produce an album of the music from this trip. However, it would have been difficult to recapture the warmth of the moment. We know that land is near as we begin our evening of music. In fact, Shorty and Nainoa predict sighting land tomorrow.



Standing at the steering paddle, I stare at the streaking reflection of the morning sun off the water. By keeping this line on specific points on the canoe, I am able to use the sun as a reference point without looking at it directly. We are expecting to sight land today and emotions are running high. Each of my crewmates anxiously stares at the horizon in hopes of being the

first to sight the telltale shadow of land. Suddenly an excited yell awakens everyone on board. "There it is, over there! There's the island!" cries Nainoa. We all clamber to the port side straining to catch a glimpse. In the shadowy distance, just off the port manu, a low, dark shadow resembling a pencil mark etched where the sea and sky meet stands Mataiva. Mataiva is actually an atoll, more commonly called a "low island." Because there are no hills or mountains, the tallest visible objects are the tops of the coconut trees, which

we see as we approach the island. Still six miles away, we catch a glimpse of a phenomena that I have previously only heard of. The greenish-blue color of the atoll's lagoon is reflected off the underside of passing clouds. We know that Tahiti is a day's sail almost due south of Mataiva; for most of us our journey is about to end. Suddenly the elation of making our landfall and the successful passage is replaced by a sense of loss. We have become close as a crew, as friends, and as family. Our experiences are a once in a lifetime event never to be duplicated. In the silent evening of the passage to Tahiti, we vow to carry on the traditions of the ancient Hawaiians and their long distance voyages "for the children"- E OLA MAU KA HA HAWAI'I.

Kapena Clay Bertelmann

On the 1992 voyage to Tahiti, Hokule`a's kapena, or captain, was forty- seven year old Clay Bertelmann of Waimea, Hawai`i.

Bertelmann first sailed with Hokule`a from Hawai`i to Tahiti in 1985; in 1986, he voyaged from Samoa to the Cook Islands, and in 1987, from Tahiti to Rangiroa. 1992 was his first voyage as kapena.



Bertelmann got involved with Hokule`a in 1978, the year the Tahiti-bound canoe was swamped in high seas and capsized. The canoe lost crew member Eddie Aikau, who left on a surfboard to get help and was never seen again. The loss of life made Bertelmann aware of the awesome responsibility of a kapena, and for 14 years, he was reluctant to accept a leadership role on the canoe. In 1992, however, Bertelmann accepted the responsibility for his family, especially his five children. The cultural recovery and strengthening that were the goals of the voyaging project were important to him. "We have an opportunity to learn what our ancestors did and how they did it," he explained, "and also an opportunity to share this with the younger generations."

Shortly before the 1992 voyage, his uncle Sonny took Bertelmann to a heiau in North Kohala and pointed out stones aligned in the directions of different destinations in the Pacific. Although Bertelmann had used this heiau as a landmark for crossings of the `Alenuihaha Channel, this was the first time he was told of its navigational significance. For Bertelmann, this knowledge

was part of the cultural recovery that was occurring, and also an acknowledgement that the time was right for him to take on the responsibility of kapena. Once he accepted the responsibility, he felt the burden of concern for bringing back safely each of his crew members to their families. The burden did not leave him until he landed in Honolulu on a flight from Tahiti in July with the last of his returning crew.

Navigator Chad Baybayan

On Hokule`a's fourth voyage to Tahiti, Chad Baybayan shared navigation duties with Shorty Bertelmann. The thirty-five year old Baybayan first sailed with the canoe from Hawai`i to Tahiti and back in 1980. During the 1985-87 Voyage of Rediscovery, he sailed from Tahiti to Aotearoa and back, and from Tahiti to Hawai`i.



Baybayan was inspired to learn the art of wayfinding on the 1980 voyage to Tahiti while observing Nainoa Thompson practice the art. While Baybayan navigated on some short interisland trips in the South Pacific in 1986, 1992 was his first chance to navigate on a long voyage.

Before the voyage began, he felt the pressure of the challenge. However, he and Bertelmann did a superb job of guiding the canoe. The estimated positions reported each morning on KCCN Hawaiian Radio closely paralleled the canoe's actual course. While the navigators were about 170 miles farther west than they thought they were toward the end of the trip, they were well within the margin of error of their 400-mile-wide target screen in the Tuamotu and the Society Islands. The canoe hit the target screen dead center at the island of Mataiva.

Baybayan says that the most difficult part of the voyage was the doldrums, where shifting winds and heavy cloud cover made sailing and wayfinding difficult. The canoe, he says, had to tack five times in one day as the wind direction kept shifting. The shifting winds confused the swell pattern. "When you become confused by the swells," he explained, "you have to confirm your judgment by the movement of clouds on the horizon and the feel of the wind on your body." He estimates he slept only three hours a day on the

29-day voyage.

Baybayan says the voyage was a matter of personal, family, and ancestral pride: "The statement we wanted to make was that we are the descendants of some very courageous and intelligent people."

Navigator Shorty Bertelmann

Before Hokule`a left on its fourth voyage to Tahiti, 44-year old Shorty Bertelmann, like his co-navigator Chad Baybayan, wondered if he was fully prepared for the challenges of wayfinding on a long ocean voyage.

Preparation involved not just memorizing nautical charts and star patterns, but watching the weather daily and thinking about the kinds of sailing decisions his teachers Mau Piailug and Nainoa Thompson would make at sea in response to the weather.



Bertelmann, the brother of kapena Clay Bertelmann, first saw Hokule`a in 1975 when it sailed into Kawaihae Harbor while he was helping to rebuild the walls of Pu`u Kohola heiau. Soon after that he met Mau and Nainoa. Bertelmann sailed from Hawai`i to Tahiti in 1976, 1980 and 1985, when he was captain. He continued on the Voyage of Rediscovery from the Cook Islands to Aotearoa in 1985, from Samoa to the Cook Islands in 1986, and from Rangiroa to Hawai`i in 1987, serving as captain on each of these legs.

Bertelmann says the greatest challenge of the 1992 voyage was remaining continuously awake to keep track of the course of the canoe and watch the every-changing weather. By the time the canoe reached Tahiti, he had gotten the knack of catnapping in 3-4 minutes snatches, so he could regain his concentration-a technique he learned by observing Nainoa.

The highlight of the trip for Bertelmann was sighting a school of dolphins. On the voyage to Tahiti in 1985 Mau had sailed with Bertelmann, and they sighted a school of dolphins at about 10 degrees north latitude. Before the 1992 voyage, Mau, who was not going, told Bertelmann to look for the dolphins because they lived in that area of the ocean and would visit the canoe again. At about 10 degrees north, Bertelmann spotted the dolphins. It confirmed his faith and trust in Mau and the ancient tradition of navigation

Mau represented. When he saw Mau again in Hawai`i, Mau asked him "Did the dolphins come visit you?" and Bertelmann answered, "Yeah."

CREW MEMBERS: HAWAII - TAHITI, 1992: Nainoa Thompson, Sailsmaster; Chad Baybayan, Co-navigator; Shorty Bertelmann, Co-navigator; Clay Bertelmann, Captain; Nailima Ahuna, Fisherman; Dennis Chun, Historian; Maulili Dixon, Cook; Kainoa Lee; Liloa Long; Jay Paikai; Chad Paison; Ben Tamura, M.D.; Tava Taupu

1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
Home	Search	Archives	Educational Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)	

1992 Voyage: Sail to Ra`iatea

Dennis Kawaharada

Photo below: Sol Kahoohalahala videotaping the Bay and Valley of Tautira, Tahiti

Two days after landing in Pape`ete, Tahiti, on July 15, Hokule`a sailed to the village of Tautira, where the canoe would be tied up at a small harbor for two months, awaiting the continuation of the voyage for education in mid-September.



Tautira is a small town at the end of the paved road on the northeastern end of the island of Tahiti. Its location and character reminds one of Hana, Maui; like Hana, it's far from the island's urban and tourist development and retains a rural and fishing life-style.

The Polynesian Voyaging Society and Hokule`a have a special relationship with Tautira. The canoe first stopped there for festivities in 1976 during a trip around the island Tahiti. Before the 1980 voyage to Tahiti, Puaniho Tauotaha, a canoe-carver from Tautira, made several canoes in Hawai`i and demonstrated the ancient art of canoe carving to interested members of the Voyaging Society. The Maire-nui Canoe Club of Tautira, once the champion of Tahiti, has raced in Hawai`i, and some clubs in Hawai`i have adopted their training and racing techniques. And before sailing back to Hawai`i in 1987, the Hokule`a crew stayed in Tautira waiting for the right winds. The friendships established have lasted over the years. (For more on Tautira, see Sam Low's ["Tautira: Hokule'a's Home in Tahiti"](#) and ["The Old Men of Tautira"](#)).

On September 19, 1992, a new crew under Kapena Billy Richards arrived in

Tautira to continue the Voyage of Education. The crew was divided into three groups, and each group was hosted by a family-Puaniho and Mahine Tauotaha; Terevaura and Octaze Tihoni; and Robert and Mary Wahler. Tautira mayor Sonny Matehau and his family provided breakfast and dinner for the crew each day.

After a week-and-a-half of preparation, minor repairs, and provisioning, Hokule`a departed from Tautira for the island of Huahine on the morning of September 10. A few days earlier a stone statue had been placed on the shore of Tautira Bay to commemorate a marae named Taputapuatea that once existed nearby, an offshoot of the marae in Ra`iatea, where Hokule`a would head after Huahine. Town people and schoolchildren gathered around the stone god to bid farewell to the canoe with songs and dances. After last hugs and exchanges of gifts, Hokule`a set sail with a light southeast tradewind at its stern. Huahine lay about 150 miles to the northwest.



On this sail, the canoe was guided for the first time by apprentice navigator Keahi Omai (left, on board the canoe Eala). He backsighted on the peak of Maire-nui in Tautira for most of the day, keeping it dead astern. As evening fell the stars Hokule`a (Arcturus) and Hikianalia (Spica), setting ahead of the canoe, provided clues to direction. Later, Ka-maile-mua and Ka-maile-hope (Alpha and Beta Centauri) setting on the port beam were guides. Because the night sky was often cloudy, the steersmen also used the ocean swells to orient the canoe, two swells from the northeast and one from the southeast rolling under the canoe from stern to bow. For confirmation of the canoe's heading, `Omai waited for the appearance of the constellation Iwakeli`i, or Cassiopeia, which he expected to rise off the starboard beam before midnight. The appearance of this constellation confirmed his course. After midnight, a whole set of navigation stars called Ke Ka o Makali`i ("The Canoe Bailer of Makali`i") rose in the east behind the canoe. While these stars were rising, `Omai sighted Huahine faintly lit by moonlight in the direction pointed out by sailmaster Nainoa Thompson. Before sunrise, he also sighted in the light

refracted over the eastern horizon the outline of the island of Tahiti, which had already disappeared from view.

In the morning, the green hills of Huahine appeared dead ahead of the canoe. (The excitement of landfall was tempered by a radio report that Hurricane Iniki was heading for Kaua`i.)

As the canoe approached the harbor of Fare, it was greeted by four six-man racing canoes and a motorized double-hulled canoe. The canoe anchored off the Bali Hai Hotel, near the site where, in 1979, Bishop Museum Archaeologist Yoshihiko Sinoto found the remains of an ancient voyaging canoe—two 23-foot planks from the hull, a 12-foot steering paddle with a six-foot blade, and a 36-foot mast. These remains were embedded and preserved in the swampy land overgrown with hau trees and rushes near the hotel. The canoe parts were dated between 850-1000 A.D.

Dr. Sinoto and his staff are currently working on Huahine to restore the Mata`ire`a Hill Complex at Maeva on the north end of the island, an area where the chiefs of Huahine lived along the fish-rich lagoon and in the fertile uplands. Unlike on most islands in Polynesia, where the chiefs lived in separate valleys or districts, the chiefs of Huahine lived together



in one area after the island was unified under one ali`i family. At Maeva are concentrated dozens of closely situated marae, house foundations, burial platforms, and agricultural terraces. The mile-long trail through the complex begins at a wall where the people of Huahine resisted the French marines who landed on the island in 1846. The trail goes past the Marae Mata`ire`a-rahi, an ancient community marae shaded by a huge sacred banyan tree. The trail culminates at the Marae Paepae Ofata, built on a dry, fern-covered hillside with a spectacular view of the lagoon and its fish runs, the coconut-tree lined shore and offshore island, and in the distance, Huahine-iti, the southern half of the island.

Hokule`a left Huahine



before dawn on September 16. Its next stop was the marae of Taputapuatea in the district of Opoa on the southeastern end of the island of Ra`iatea. Ra`iatea is eighteen miles east of Huahine, easily seen across a channel, with the downwind islands of Taha`a and Borabora beyond

Ra`iatea to the northwest.

Ra`iatea, anciently called Havai`i, is considered the homeland of central Polynesian ali`i culture and a major center of Polynesian religion and learning. On this island in the district of Opoa, Peter Buck tells us, "The priests" gathered the warp of myth and the weft of history together and wove them into the textile of theology." The general pattern of Polynesian religion was developed there, with a Sky father (Atea or Wakea) and an Earth mother (Papa) giving birth to children who had special functions: Tane, or Kane, forestry and craftsmanship; Tu or Ku, war; Ro`o, or Lono, peace and agriculture; Ta`aroa, or Kanaloa, marine affairs and fishing; and Ra`a, or La`a, wind and weather. In the district of Opoa, houses of learning were established, where scholars could study religion, genealogies, heraldry, and oratory, as well as astronomy, geography, and navigation.

From this island in central Polynesia, the pattern of ali`i culture was carried abroad on voyaging canoes by adventurers, conquerors, and colonizers- west to the Cook Islands and Aotearoa; south to the Austral Islands and Rapa; east to the Tuamotus, the Marquesas, and Rapanui, or Easter Island; and north to Hawai`i. Laniakea on O`ahu's north shore is the Hawaiian form of Ra`iatea; at Laniakea was a heiau named Kapukapuatea, which was a navigation heiau, like the marae of Taputapuatea in Ra`iatea; at Poka`i Bay in Wai`anae is Ku`iliioa heiau, also associated with navigation and built by the same priest who built Kapukapuatea. Perhaps Kapukapuatea in Laniakea was founded with a stone taken from the marae of Taputapuatea in Ra`iatea, as was the custom. Since Kapukapuatea no longer exists, a stone from

Ku`iliioa in Wai`anae was carried on board Hokule`a in 1992, as a gift for the return home.

The district of Opoa in Ra`iatea eventually became the center for the worship of the war god `Oro. `Oro, son of Ta`aroa, or Kanaloa, is said to have been born in Opoa. The marae of Taputapuatea became dedicated to him. Human sacrifices, first made to Ta`aroa to free the island from a severe drought, increased when the more demanding god `Oro began to be worshiped.

The cult of `Oro spread to other islands of the region, sometimes through peaceful persuasion, but more often through conquest. An international alliance eventually formed in the region, and its meeting place for religious observances and political deliberations was Taputapuatea. From the eastern and southern islands, called Te Ao-uri, or



"Blue-green lands," came canoes from Huahine, Tahiti, Mai`ao, and the Austral islands; from the western islands, called Te Ao-tea, the "White lands," came canoes from Rotuma, Taha`a, Porapora, Rarotonga in the Cook Islands and Aotearoa, or New Zealand. On an appointed day, the canoes entered the sacred pass of Te Ava Moa in double file, the canoes of the blue-green lands from the south and the canoes of the white lands from the north.

One of the meanings of "Tapu-tapu-atea" is "Sacrifices from abroad." On the deck of each canoe were offerings to `Oro, including human sacrifices, laid out alternately with ulua, shark, and turtle. The canoes were brought ashore using human corpses as rollers. On shore, the human sacrifices were drilled through the head and hung by sennit from the trees while the gods of each of the islands were brought into the inner sanctum, where an image of `Oro was kept—a figure woven of sennit covered with red and yellow feathers and wearing a girdle of red feathers; then the most sacred of all the rites took place, the pai-atua, or assembly of the gods. During these sacred rites, kapu

were enforced.

According to oral traditions, the people who settled the other Society islands, and who migrated to other islands like Hawai`i, had fled Ra`iatea because of the oppressive, tyrannous rule of the priests of `Oro. One story recounts a tragedy brought about by this tyrannous rule. Kapu were imposed on the the district of Opoa in preparation for a ceremony for `Oro worship: no cock could crow, no dog bark; no person or pig could leave its dwellings. The wind died off and the sea grew calm. However, a young girl named Tere-he went bathing in a river. The gods drowned her for breaking the kapu. A giant eel swallowed her and was possessed by her soul. The angry eel tore up the land between the two islands and swam off. This gigantic fish swam to the east and became the windward island of Tahiti; its back fin formed the mountain of Orohena, which dominates the western end of Tahiti. Another fin fell off and became the island of Mo`orea. Other bits of the fish became the islands of Meti`a, Te Tiaroa, and Mai`ao-iti. According to Peter Buck, each of these bits of fish in the story represents a group of people fleeing the oppression of `Oro.

Eventually, the international alliance centering on `Oro worship at Taputapuatea fell apart in bloodshed. The priest of the white lands to the west was slain by a high chief of the blue-green lands to the south and east. The priest of the blue-green lands was struck down in retaliation, and the two sides parted, never again to reconvene their meetings at the marae.

According to the traditions of the cultural group Pupu Arioi, the last canoe to leave Taputapuatea was Hotu Te Nui. It sailed to Hawai`i and left behind a kapu on the sacred pass. Since that time-centuries ago-all the canoes from Mo`orea which had tried to sail to the marae had failed to reach their destination. The Pupu Arioi believed that only when a canoe from Hawai`i returned to the marae through the sacred pass could the kapu be lifted. The group conveyed this message to the Polynesian Voyaging Society.

When Hokule`a first visited Tahiti in 1976, the crew took the canoe to Taputapuatea to pay homage to the voyagers who had set forth from there during the great migrations of the 12th to 14th century. However, Hokule`a came to the marae through the shipping channel near the port town of Uturoa rather than through Te Ava Moa, "The Sacred Pass," through which the

ancient canoes traditionally came to the marae.

In 1985, on the Voyage of Rediscovery, Hokule`a lifted the kapu which prevented the Mo`orea canoes from reaching Taputapuatea. After a fire-walking ceremony for purification and other ceremonies on the island of Mo`orea, Hokule`a sailed under Navigator Nainoa Thompson and Captain Gordon Pi`ianai`a to Ra`iatea. A rainbow appeared ahead of the canoe, and the canoe glided toward the center of the rainbow, as if guiding itself, as it sometimes does when the wind is on its beam. The steering paddle was taken out of the water and tied down. Eventually Ra`iatea appeared beneath the rainbow. Crew member John Kruse reported everyone got "chicken skin." When the crew landed, the people of Ra`iatea greeted the returning descendants with song.



In the early morning on September 16, 1992, Hokule`a left Huahine for Ra`iatea to participate in a ceremony planned at Taputapuatea. Because the winds were light, the canoe was towed across the channel by its escort boat Kamahale. As the canoe approached Ra`iatea, which was misted in rain and under layers of dark grey rainclouds, a rainbow arched above

the sacred pass. From offshore, the crew sighted an `iwa, or frigate bird, the shadow of `Oro, soaring above the marae. Na`ia (dolphins), honu (turtles), and mano (sharks) were also sighted as the canoe approached land. All of these were signs of a reconciliation to take place. On board Hokule`a were Hawaiians and Tahitians, descendants of some of the Ra`iateans who had fled the oppression of `Oro 500 years earlier; also on board were Cook Islanders and Maoris, descendants of the people whose priest had been slain at Taputapuatea. Hokule`a was paddled through Te Ava Moa. The crew landed and was challenged, then greeted by the Ra`iateans after the good will of the visitors was established. As the crew marched toward the marae past the nine-foot high stone of chiefly investiture, a heavy downpour began. One observer pointed out a stone called the queen, and another one known as the bird. "The queen," she said, "has not spoken since the ancient navigators deserted Taputapuatea. Today she is weeping tears of joy because they have

returned. Her tears are washing away the kapu that have kept us from the marae. Now the bird is flying out through the sacred pass to spread the word to all the people of Polynesia."

For some of the visitors and hosts, a prophecy was fulfilled: according to oral tradition, the kapu imposed when the last canoe of people fled the marae 500 year ago could only be lifted when the descendants of those who had fled returned in search of knowledge and for peaceful and spiritual purposes. Now that the descendants were returning, the people of Ra'iatea who had been silenced by the kapu and who were spiritually asleep were reawakened. The heavy downpour seemed to signify that the ancient period of human sacrifice, which had begun with the attempt to persuade the god Ta'aroa to end a severe drought, was coming to a final closure.

Hokule'a's Kapena in the Society Islands was Billy Richards (right, photo by Anne Kapulani Landgraf), a crew member on the canoe's first voyage to Tahiti in 1976. During that historic voyage he and other Hawaiians came into conflict with the haole crew members. The conflict stemmed from two very different views of the voyage: for the haole, the voyage was a scientific experiment to learn the techniques by which Polynesians had explored and settled the Pacific; for the Hawaiians, the voyage was an highly emotional journey toward cultural reawakening. The crew's frustrations in preparing for Hokule'a's first long voyage, and the hardships and inequities during that voyage aggravated their differences. After landfall, both sides vented their frustration and anger, which eventually erupted in physical hostilities on board the canoe. Richards was portrayed as one of the instigators of the clash, so although he had been chosen as the Kahu of the canoe prior to its departure from Hawai'i, he was not allowed to sail on Hokule'a when it first visited Taputapuata in the summer of 1976. Instead, Richards was brought to the marae by a man from Huahine who had been hanai to his family. Richards participated in the ceremony at



Taputapuatea first by making sure that everything was pono with the spirit of the marae, and then by reciting the names of his fellow crew members, for he was also there to represent them.

Kapena Richards saw the sail from Tautira to Taputapuatea in 1992 as the closing of a circle-the completion of his 1976 voyage. The anger was gone. In 1985, he had sailed as a watch captain on Hokule`a from Rarotonga to Aotearoa with Dr. Ben Finney, one of the targets of his anger in 1976. Although some were concerned he still felt hostility toward Finney, Richards assured them that he had already made things right through self ho`oponopono.

As the rain poured down on the marae of Taputapuatea, Kapena Richards saw a cleansing occurring; the rain was washing into the purifying sea the centuries-old blood of past human sacrifice, like the cleansing that had already taken place within himself.

The crew of Hokule`a arriving at Taputapuatea in 1992 brought the gift of a drum, fashioned by Keone Nunes of Wai`anae from a coconut trunk, the drumhead lashed on in the traditional style. The drum, called "Poki`i," "younger brother or sister," was a descendant of the drum introduced to Hawai`i centuries ago by La`a-mai-kahiki, son (or foster son) of Mo`ikeha, who was from Ra`iatea (or from the northwest region of Tahiti ruled by the `Oropa`a or `Olopana clan).

The Kamehemeha Schools dancers who performed at Taputapuatea under the direction of Randie Fong and Kalena Silva performed hula to the pahu drum as a tribute to the Tahitians who had introduced the drum and hula to Hawai`i. The performance was another connection in the cycle of the return of the descendants to the ancestral homeland. In Tahiti, the drumbeat represents the heartbeat of the land and the people of Tahiti.

In 1929, during a Bishop Museum expedition, Anthropologist Peter Buck visited the marae of Taputapuatea. There among the ruins he lamented the loss of the Polynesian spirit: "I had made my pilgrimage to Taputapu-atea, but the dead could not speak to me. It was sad to the verge of tears. I felt a profound regret, a regret for-I know not what. Was it for the beating of the temple drum or the shouting of the populace as the king was raised on high?"

Was it for the human sacrifices of olden times? It was for none of these individually but for something at the back of them all, some living spirit and divine courage that existed in ancient times and of which Taputapu-atea was a mute symbol. It was something that we Polynesians have lost and cannot find, something that we yearn for and cannot recreate. The background in which that spirit was engendered has changed beyond recovery. The bleak wind of oblivion had swept over Opoa."

On the morning of September 17, 1992, over sixty years after Buck's visit, a meeting of navigators, the first in over 500 years, took place in the cafeteria of the community center at Opoa, where the crew was housed.

Four navigators from Hawai`i, seven from the Cook Islands, and one from New Zealand discussed their sail plans and course strategies for voyages they were about to make, or had already made. It was a final class in navigation and a rite of initiation for those embarking on their first voyages. The meeting was presided over by navigator Nainoa Thompson; also in attendance was his teacher Mau Piailug, the master navigator from Satawal in Micronesia. The meeting was a way of showing Piailug that his knowledge of wayfinding was being passed on to others, that this knowledge, once planted by his teaching, had taken root, branched, leafed, flowered, and was now bearing fruit. Taputapuatea, which could mean "sacredness radiating outward," had once again become a place of learning. After spending 17 years recovering the ancient knowledge of voyaging and navigating, Thompson had begun to recreate what the anthropologist Buck had lamented was lost forever-the "living spirit and divine courage that existed in ancient times."

CREW MEMBERS (As of August, 1992): TAUTIRA - HUAHINE 1992

Nainoa Thompson, Sailmaster; Chad Baybayan, Navigator; Keahi Omai, Navigator; Billy Richards, Captain; Gilbert Ane; John Eddy, Film Documentation; Tiger Espera; Brickwood Galuteria, Communications; Harry Ho; Sol Kahooalahala; Dennis Kawaharada, Communications; Reggie Keaunui; Keone Nunes, Oral Historian; Eric Martinson; Nalani Minton, Traditional Medicine; Esther Mookini, Hawaiian Language; Mel Paoa; Cliff Watson, Film Documentation; Nathan Wong, M.D.

<u>1976: Tahiti</u>	<u>1980: Tahiti</u>	<u>1985-87: Aotearoa (New Zealand)</u>	<u>1992: Rarotonga</u>	<u>1995: Marquesas</u>	<u>1995: West Coast, British Columbia, & Alaska</u>	<u>1999-2000: Rapanui</u>
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<u>Voyages</u>	<u>Canoe-Building</u>	<u>Wayfinding</u>	<u>Life on a Canoe</u>	<u>Polynesian Migrations</u>	<u>Proverbs and Traditions</u>
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<u>Home</u>	<u>Search</u>	<u>Archives</u>	<u>Educational Programs and Materials</u>	<u>On-Line Visuals</u>	<u>Bibliographies (Books and Films)</u>
-----------------------------	-------------------------------	---------------------------------	---	--	---

1992 Voyage: Sail to Rarotonga

Dennis Kawaharada

Photo Below by Moana Doi: Stones brought in commemoration of the gathering of canoes gather at Vaka Village, Rarotonga, 1992

Landing at Mauke: After being towed from Ra`iatea to Borabora, Hokule`a sailed from Borabora for the southern Cook Islands on September 20, under the command of Kapena Gordon Pi`iana`ia, navigator Chad Baybayan, and sailmaster Nainoa Thompson.

The first island stop was Mauke, the home of Pe`ia Tua`ati, one of the seven Cook Island navigators who had joined the Hokule`a crew in Ra`iatea.

About 400 miles southwest of Borabora, Mauke is the closest of the Cook Islands to the Society Islands. It took the canoe three days in light winds to reach the island, recreating the voyage of settlement to the island sometime in the 13th century by an ancestor named Uke, who arrived at Mauke from the homeland of `Avaiki, or Ra`iatea, in a canoe named Apaipai-moana.

Maile, the fragrant leafy vine from which leis are made, grows abundantly in the rich red volcanic soil of this small, low, wooded island. The island is the source of the favored Cook Islands maile sold in Hawai`i.



There is no harbor or anchorage on Mauke. In order to land, Hokule`a's crew had to be brought to shore five members at a time in an aluminum motor



boat. The boat had to ride a surging wave through the narrow opening of a sandy-bottomed, key-hole-shaped break in

the fringing reef, then power across the swirling, churning basin, and up onto the reef, where the passengers scrambled off and waded to shore as the wave receded (Photo by Moana Doi). In order to get back out to the canoe, the boat had to be launched on the backwash of a wave and ride the surge across the basin and out through the narrow opening.

The welcome ceremony and feast on Mauke took place in two shifts. Half of the crew landed in the morning while the other half sailed the canoe back and forth outside the reef. The two crews switched places in the afternoon. On shore, the crew was taken to a narrow freshwater pool in an underground coral cave, where they swam and washed the salt from their sun-baked bodies.

After spending September 23 off Mauke, Hokule`a headed for Aitutaki, 160 miles northwest of Mauke. On the two-day voyage, it passed the island homes of two other Cook Islander navigators who had joined the Hokule`a crew in Ra`iatea: Mitiaro, home of Nga Pou`a`o; and Atiu, home of Tura Koronui. Aitutaki, the northernmost of the Southern Cook Islands, is the home of two other Cook Islander navigators-Clive Baxter and Dorn Marsters. For these two Hokule`a crew members, the voyage from Ra`iatea to Aitutaki was a recreation of the original voyage of discovery and settlement of their island.

According to tradition, Aitutaki was settled from `Avaiki, or Ra`iatea, by the chief Ru`enua. Seeing that his district in Ra`iatea was becoming overpopulated, Ru gathered his family and announced that he had selected a star under which he was sure he could find a new home for them. With his family and twenty young women who would become the mothers of the new island, Ru launched his canoe toward the undiscovered island. The canoe was paddled. On this voyage Ru's canoe encountered some of the dangers traditionally associated with voyaging in the Pacific: a whirlpool, a waterspout, a submerged rock, and a three-day storm at sea that hid his

guiding star from him. Ru prayed for help to Tangaroa, the Lord of the Ocean:

O Tangaroa in the immensity of space,
Clear away the clouds by day,
Clear away the clouds by night,
That Ru may see the stars of heaven
To guide him to his desired home.

The sky cleared and his star appeared. He made landfall on Aitutaki. The name of his canoe was Te Puariki. In honor of that canoe, the Aitutaki canoe, completed in 1992, was named Ngapuariki.



After docking at a newly built marina on Aitutaki (photo by Moana Doi) on September 25, the Hokule`a's crew settled into the Mission House at Arutanga village in Aitutaki . They had a wait of three weeks before the canoe would sail to the island of Rarotonga to participate in the 6th Pacific Festival Arts.

Rarotonga was once an island which floated about on the Sea of Rank Odors, which is to say, its location was uncertain. The god Tonga`iti and his wife Ari discovered it; Tonga`iti trod upon it to make it firm, and Ari dove beneath it to fix its foundation. Later, after they were tricked out of their claim of discovery, Tonga`iti turned into a mo`o, or lizard, and Ari into a he`e, or octopus.

Tangiia, one of the human ancestors of the Rarotongans, was a famed voyager. Tangiia is said to have come from Tahiti during the thirteenth century. In Tahiti he and his half-brother Tutapu quarreled over the harvest of breadfruit and other rights belonging to their father. After being defeated in battle, Tangiia fled Tahiti, pursued by his brother, who earned the name Tutapu-the-relentless-pursuer. During his flight, Tangiia was said to have sailed to Indonesia in the west and back to Rapanui, or Easter Island, in the

east, an ocean expanse of over 10,000 miles.

Tutapu finally caught up with Tangiia in Rarotonga. Tangiia slew him. Tangiia settled in Rarotonga which had already been settled by Marquesans and Tongans. Karika, a Samoan, settled in Rarotonga about the same time as Tangiia, but the Tahitian culture seems to have predominated, and temples, including a Taputapuatea, were established on the island.

Tangiia is the founder of the Pa-ariki line of chiefs ruling the district of Takitumu on Rarotonga. A canoe left from Takitumu in the 14th century to settle in Aotearoa. The Rarotongan sailing canoe, built under the leadership of former prime minister Sir Tom Davis for the 1992 Festival of Pacific Arts, was given the name Takitumu.

Sails to Rarotonga: To celebrate the revival of voyaging in the Pacific, Hokule`a and fifteen other Pacific Island canoes converged on Rarotonga to participate in an historic vaka, or canoe, pageant. This pageant, held on October 21, was the culminating event of the sixth Festival of Pacific Arts, which celebrated the seafaring heritage of the Pacific Islanders.



On October 15, with easterly winds of 10 knots, Hokule`a left Aitutaki, along with *Ngapuariki*, the Aitutaki canoe (photo left, by Moana Doi), navigated by Clive Baxter and Dorn Marsters; Te Kotaa-nui, a two-man sailing canoe; and Waan Aelon Kein, a six-man, 50-foot Marshallese walap canoe. Rarotonga was 140 miles to the south. Hokule`a was navigated by Rarotongan Tua

Pittman, who had sailed with the canoe during the 1985-87 Voyage of Rediscovery and who was host to Hokule`a's crew on his home island of Rarotonga in 1992. Then,

From the island of Atiu came the canoe Enuamanu, navigated by Tura Koronui.

From the island of Mitiaro came the canoe Te Roto Nui, navigated by Nga Pou`a`o.

From the island of Mauke came the canoe Maire-nui, navigated by Pe`ia Tua`ati.

These three canoes sailed together from Atiu, 116 miles to the northeast of Rarotonga.

From the island of Mangaia, 110 miles to the southwest of Rarotonga, came the canoe Rangi-Ma-Toru, navigated by Ma`ara Tearaua.

From Aotearoa came the Maori canoe Te Aurere. It crossed 1500 miles of cold, stormy seas, with gale force winds. On board was an eleven-man crew led by Stanley Conrad, along with Mau Piailug, the Satawalese navigator, and Hawaiian Clay Bertelmann, Hokule`a's kapena from Hawai`i to Tahiti.

The canoe arrived in Rarotonga a day after the vaka pageant, on October 22, over three weeks after departing from Taipa Beach north of Auckland.

Despite broken masts and booms, one capsizing, and one search and rescue operation, all the canoes and crews made it safely to Rarotonga-a tribute to the courage and skill of the people involved on the canoes and escort boats, and their determination to revive the arts of canoe-building and voyaging in the Pacific.



The Vaka Pageant: On October 21, sixteen Pacific Island vaka, or canoes, entered one by one into Avana Harbor in Muri Lagoon, on the southeast coast of the island of Rarotonga. As the visiting canoes entered the lagoon, they were met by two Rarotongan canoes, the sailing canoe Takitumu and the war canoe Uri Taua. Along with Hokule`a were six Cook Islands canoes, a

Marshallese canoe (photo left, by Moana Doi), a New Caledonian canoe, a Papua-New Guinean canoe, a Maori war canoe (photo left below, by Moana Doi), two Tahitian sailing canoes, and Te Rauroa o Hiva, a six-man Tahitian canoe which had been paddled over 600 miles of open ocean in 10 days, from Ra`iatea to Rarotonga, with a stop on Mauke. Tahitian Pito Clement and his five paddlers had made the journey to recreate the ancient voyage of Tangiia, one of the founders of Rarotonga.



The arrival of each canoe was announced by the beating of drums and the blowing of pu, or conch shells, Hokule`a arrived last. On shore, protocol officer Keone Nunes responded to the traditional challenge with a chant announcing the canoe's peaceful purpose: "We`ve come to re-contact families

we have not seen for many generations," he told the Rarotongans. The crew was then welcomed with shouts of "turou" ("honor to you") and "oro mai" ("come forward").

Each canoe arrived with a stone from its home island; the stones were set on a circular mound to commemorate the coming of the canoes in 1992.

Hokule`a's stone came from Niu valley, the home of sailmaster Nainoa Thompson and his father Myron Thompson, the President of the Polynesian Voyaging Society. Nainoa spoke movingly about the significance of the pageant: "The Vaka Pageant is a bridge between the past and the future," he said. "One end of the bridge stands at Muri Lagoon, from which the ancestors of the New Zealand Maori sailed to their present home 600 years ago. We stand in the middle of the bridge, with the other end in the 21st century. We come from the greatest explorers on the face of the earth. The same principles of exploration our ancestors followed in the past must carry Pacific people forward, exploring, discovering, and taking on the challenges of time."



Kapena Gordon Pi`ianai`a: Hokule`a's Kapena for the sail from Huahine to Rarotonga in 1992 was Gordon Pi`ianai`a, director of the Hawaiian Studies Institute at Kamehameha Schools. Kapena Pi`ianai`a first sailed on Hokule`a in 1976 as first mate on the return voyage to Hawai`i. His charge from the Polynesian Voyaging Society Board was to bring Hokule`a home from Tahiti safely.

In 1977, Pi`ianai`a planned a sail to recreate the traditional Hawaiian departure to Tahiti-not northeast from the islands to gain easting, the route taken in 1976, but southeast, across the Kealaikahiki Channel between Lana`i and Kaho`olawe and past Kealaikahiki Point on west end of Kaho`olawe. Kealaikahiki means "The Way to Tahiti." On an eerie morning, with light winds, Hokule`a left Manele Bay on Lana`i. Once it passed Kealaikahiki Point and entered the `Alenuihaha Channel it caught the tradewinds and headed south for two days, then returned to Hawai`i. On subsequent voyages to Tahiti, Hokule`a would depart on the traditional southeastly course.

Pi`ianai`a first served as Kapena of Hokule`a in 1977 during educational interisland voyages, which brought the canoe to Hawai`i's schoolchildren for the first time. He served again as Kapena on the 1980 voyage to Tahiti and back. During the 1985-87 Voyage of Rediscovery, when Hokule`a sailed for the first time from east to west through Polynesia, Pi`ianai`a served as Kapena from Tahiti to the Cook Islands. It was during this voyage that the revival of ancient sailing traditions spread to the Cook Islands and Aotearoa.

For Kapena Pi`ianai`a, one of the highlights of the 1992 Voyage of Education was witnessing the fruits of this Hokule`a-inspired revival: as each canoe arrived at Rarotonga, it was greeted by a crowd of home islanders, who chanted and sang greetings and praises. Another highlight for the Kapena was the performance of his crew, both Hawaiians and Cook Islanders, who displayed knowledge, skill, and character in caring for and sailing Hokule`a.

CREW MEMBERS (As of August, 1992): BORABORA - COOK ISLANDS, 1992: Nainoa Thompson, Sailmaster; Chad Baybayan,

Navigator; Gordon Pi`ianai`a, Captain; Moana Doi, Photo-documentator; John Eddy, Film Documentation; Ben Finney, Scholar; Wally Froseith, Watch Captain; Brickwood Galuteria, Communications; Harry Ho; Ka`au McKenney; Keahi Omai; Keone Nunes, Oral Historian; Billy Richards, Watch Captain; Cliff Watson, Film Documentation; **Cook Islands Crew Members:** Clive Baxter (Aitutaki); Tura Koronui (Atiu); Dorn Marsters (Aitutaki); Tua Pittman (Rarotonga); Nga Pou`a`o (Mitiaro); Ma`ara Tearaua (Mangaia); Pe`ia Tua`ati (Mauke)

1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
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Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions
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Home	Search	Archives	Educational Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)
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1992: The Voyage Home

Dennis Kawaharada

Photo Below: Sailing into Kane'ohe Bay, O'ahu, Hawai'i

East to Tahiti: After the Vaka Pageant in Rarotonga, Hokule`a planned to sail directly to Hawai`i from the Cook Islands. This would have been its most difficult voyage home because the canoe would have to sail 600 miles against the southeast tradewinds to gain enough easterly distance to arrive on the windward side of the Big Island.



However, good fortune was with the crew. As the canoe prepared to leave Rarotonga, a low pressure area to the west disrupted the southeast tradewinds and brought southerly winds which allowed the canoe to head directly east. Five days out of Rarotonga, the crew sighted the island of Ra`iatea. One day later the canoe landed in Papeete, Tahiti. In six days, the canoe had gone 600 miles east, the distance that it had planned to make gradually over 20 days sailing against the normal southeast tradewinds. Favorably positioned in Papeete for the sail back to Hawai`i, Hokule`a could now sail an easier, more northerly course toward Hawai`i. The canoe was on a familiar route since it had made the sail from Tahiti to Hawai`i three times before. It would also be passing through the Tuamotus. If an island were sighted, it would give the navigators a final seamark before the long open ocean voyage home.

The sail from Rarotonga to Tahiti proved once again what some Western scholars had doubted-that the ancient Polynesians could sail from west to east in their canoes, against the prevailing tradewinds, on voyages of

exploration and settlement of the Pacific.

Hokule`a waited in Papeete for four days for the right winds. When the southeast trade winds returned on November 5, the canoe departed for Hawai`i. The canoe was being navigated for the first time by Bruce Blankenfeld and Kimo Lyman, who was originally going to be the captain. This allowed Mike Tongg, originally a watch captain, to start training as a captain. Also on board was Sailmaster Nainoa Thompson and a crew of nine.

Communication with NASA's Space Shuttle: On October 28, two days after leaving Rarotonga, Hokule`a participated in historic, three-way satellite communication link with the space shuttle Columbia orbiting the earth and a panel of schoolchildren in a TV studio at the University of Hawai`i at Manoa. The students posed questions alternately to the crew of the canoe and the crew of the shuttle. The communication link was part of an effort to allow schoolchildren in Hawai`i to participate in the voyage as it was happening. Hokule`a was equipped with a long-range radio which drew power from two 12-volt marine batteries, which were recharged daily by six solar energy panels mounted at the back of the canoe, so it could communicate daily with Hawai`i via KCCN Hawaiian Radio, giving information about the canoe's position, weather conditions encountered and sailing strategy, navigational techniques, and life on board the canoe. Over this communication link, Sailmaster Nainoa Thompson was able to pose questions about voyaging to Hawai`i's schoolchildren. The educational program also involved interactive links with a state-wide educational television program and with students at Peace-sat communication station at the the University of Hawai`i at Manoa.

During the historic three-way conversation between Hokule`a, the space shuttle Columbia, and the panel of schoolchildren, one student asked, "What are the similarities and differences between canoe and space travel?" Orbiting astronaut Charles Lacy Veach, who grew up in Honolulu, answered "Both are voyages of exploration. Hokule`a is in the past, Columbia is in the future. Sailmaster Nainoa Thompson added from the canoe: "We feel both are trying to make a contribution to mankind. Theirs is in science and technology. Ours is in culture and history. Columbia is the highest achievement of modern technology today, just as the voyaging canoe was

the highest achievement of technology in its day."



Kapena Mike Tongg: The 1992 voyage home was the first ever in November-spring south of the equator and fall in the north. For veteran sailor Mike Tongg, the voyage was also a kind of first. Although he sailed this route twice before, in 1980 and 1987, in 1992 he began training for a new role as a Hokule`a Kapena. Before departure, the Kapena is

responsible for provisioning the canoe and preparing the crew for the voyage; during the voyage the Kapena is responsible for distributing provisions, maintaining the work schedule and discipline, making sure everyone is working together for the common goal. Tongg says he learned a lot about being a Kapena from sailing with veteran Kapena Gordon Pi`ianai`a.

Tongg remembers the 1992 voyage as one of unexpected winds and weather. Two days out of Papeete, a storm brought northerly winds which prevented the canoe from heading directly toward Hawai`i, so it tacked east toward the Marquesas for three days. After the southeast trades returned, the canoe turned north again. After Hokupa`a, or the North Star, was sighted low on the horizon, indicating that the canoe was north of the equator, the canoe encountered stormy weather, with huge clouds, gale force winds of 40-45 mile per hour, and rain flying horizontally and stinging the skin. Tongg called the experience "humbling," noting that while Hokule`a crew members had modern foul weather gear and canvas-covered sleeping compartments, the ancient voyagers had to make do with ti-leaf rain capes and lauhala mats for protection.

Three things stand out in Tongg's mind about the voyage home. First, the compliment paid to the crew by the astronauts who sailed on the canoe after it returned to Hawai`i: they noted the way the crew almost instinctively worked well with each other, with little talking. Secondly, Tongg noted, "No matter how we prepare and think we know before we depart, there is always more to learn." And finally, he remembers the masterful way in which

sailmaster Nainoa Thompson played the changes in winds and weather in bringing the canoe home.

Landfall Hawai`i: When Hokule`a sailed into the northeast tradewinds, it began to fly, making 7-10 knots and 150-200 miles per day. On November 28, Sailmaster Nainoa Thompson reported that he was confident the navigators had executed his sail plan and that the canoe was 200-300 miles east of the Big Island. That night, the navigators hoped to sight the star Holopuni, or Kochab, about four degrees above the horizon to confirm that the canoe was at 20° N latitude, the mid-latitude of Hawai`i. The night sky was too cloudy to spot Holopuni, but the navigators used their hands to measure the height of Hokupa`a, or Polaris, in the northern sky and the star Achernar [ay-ker-nar; accent on first syllable] in the southern sky to determine that the canoe was at the right latitude. The canoe turned west to look for Hawai`i.

The summit of Mauna Kea, almost 3 miles high, can be seen from over 100 miles away on a clear day. On November 29, as the canoe sailed west in daylight, clouds hid the Big Island, but a high pile of clouds indicated that an island lay somewhere in its midst. An egret, a land bird that sometimes migrates between islands, was sighted.

At sunset, the crew hoped to see the Big Island silhouetted against the western sky, but heavy clouds continued to hide the island. After nightfall the crew looked for the glow of Kilauea volcano in the clouds, but a curtain of rain hung across the east side of Hawai`i from Kohala to Puna. Then, in the middle of the night, crew members spotted a loom of lights and a beacon from a lighthouse under the clouds. Navigator Blankenfeld guessed correctly that the lights were Hilo town and the beacon was from the lighthouse at Cape Kumukahi. Before dawn on November 30, the summit of Mauna Kea appeared, faintly lit by rays of sunlight coming over the horizon; and at dawn, the green coast of Hamakua was off the port beam. After six months and 8,000 miles, Hokule`a had found its way home.



Navigator Bruce Blankenfeld: Bruce Blankenfeld, one of the two first-time navigators on the 1992 voyage home to Hawai`i, is a veteran of this route, having



sailed on the canoe from Tahiti to Hawai`i in 1980 and 1987. He also sailed from the Cook Islands to New Zealand in 1985 and from the Cook Islands to Tahiti in 1986.

Before the voyage home in 1992, Blankenfeld felt comfortable with his knowledge of the positions and paths of the sun and stars, having studied them for over a decade with his friend and mentor Nainoa Thompson. The voyage was a great learning opportunity in wayfinding for Blankenfeld-in keeping track of the canoe's position, remembering the positions of islands along the route, steering by the ocean swells, predicting the wind and weather, anticipating the position of the moon, which changed each night, and measuring latitude stars with his hand. During the voyage Blankenfeld became more intimate with the ocean and sky, the constantly changing clouds, winds, and swells. Observing the environment so closely to learn from it and to anticipate its changes made Blankenfeld appreciate the beauty of all its elements, including overcast skies and violent squalls.

During the voyage, Blankenfeld's orientation began to change from that of a sailor to that of a wayfinder. Once, while asleep for an hour, his mind continued to follow the movements of the sky, so that when he awoke and looked up, he had a feeling of deja vu-the sky was as it was in his dream. By the second week of the voyage, when he looked past the bow of the canoe, he no longer saw a trackless expanse of ocean, but a pathway or road that would lead the canoe home to Hawai`i. Even when the wind would not allow the canoe to sail on that road, Blankenfeld knew it was there. He began to understand the confidence the ancient voyagers must have felt in sailing the long sea distances of the Pacific.



Navigator Kimo Lyman: Bruce Blankenfeld's co-navigator on Hokule`a's 1992 return voyage to Hawai`i from Rarotonga was Kimo Lyman. In 1976, Lyman, an experienced yachtman, was chosen to navigate Hokule`a back to Hawai`i using instruments after non-instrument navigator Mau Piailug left the project because of conflicts among crew members



during the voyage to Tahiti. After the 1976 voyage, Lyman continued to sail with Hokule`a- from Tahiti to Hawai`i in 1980 and from New Zealand to American Samoa in 1986.

Navigating without instruments on the voyage to Hawai`i in 1992 was a new challenge for Lyman. He says the biggest difference between instrument and non-instrument navigation is a psychological one. The instrument navigator can depend on his compass, sextant, clock, almanac, tables, and charts to give him his direction and his position. Even when the sun or stars aren't visible at the right times and he has to estimate his miles travelled per day, he knows that after the weather clears, he will be able to find out exactly where he is.

Without instruments, on the other hand, the navigator must continually keep track of the progress of his vessel; and he can never be totally certain of where he is until he sights and identifies an island. He depends on his memory and his intuitions based on years of experience at sea. He becomes more observant of nature and more in tune with the spiritual elements of the sea.

Before each voyage Kahu Ed Keanahale prays the spirit of a whale into each of the two hulls of Hokule`a to guide and protect the canoe as `aumakua. Lyman, who belongs to Keanahale's church, says that the moment when he became spiritually connected to the 1992 voyage was when he sighted some pilot whales four days out of Tahiti. Whales appeared again after the canoe reached Hawaiian waters during the sail from Honaunau to Moloka`i. Three weeks after the voyage was over, Lyman accompanied Keanahale to Pu`u Kohola heiau on the Big Island to release the whale spirits from the double-hulled canoe. The `aumakua had once again brought Hokule`a home safely.

Honaunau: After sighting the coast of Hamakua on November 30, Hokule`a swung around `Upolu Point and headed for Honaunau, where the voyage began six months earlier. It arrived at Honaunau at 9 p.m. on December 1. The next day Sam Ka`ai and Hale Makua conducted an `awa ceremony for the returning crew at the same site where they had conducted an `awa ceremony for the crew before departure. Two days later, the canoe sailed to Kaunakakai, Moloka`i, where students were invited aboard on tours and two

astronauts joined the crew for the final sail to Kualoa, O`ahu, where the canoe had been launched in 1975. On the morning of December 5, a crowd of about 1,000 welcomed Hokule`a home from its journey of 8,000 miles.

As the crew came ashore, they were ritually challenged; after the challenge was satisfied, the crew was fed `ai kapu, or sacred food, to signify they were accepted by the people on shore. The `ai kapu ceremony was conducted by Bert Barber, with the assistance of Keli`i Tau`a and Keone Nunes. The food restored to the crew the mana that had been depleted during the voyage. When the food was consumed, the kapu that had been placed on the crew when it landed was lifted, and the crew was free to reunite with their families and enjoy presentations, music, and dance.

Hokule`a is now back in Honolulu, at its berth at the Hawai`i Maritime Center at Pier 7, where it will await a voyage to the Marquesas Islands scheduled for 1995. On the return voyage from the Marquesas, Hokule`a plans to sail with the 55-foot Hawaiioloa, a new Hawaiian canoe being built under the supervision of Wright Bowman, Jr., and Gil Ane and funded by the Native Hawaiian Culture and Arts Project. The two canoes plan to recreate the original voyage of settlement from the Marquesas to Hawai`i, which took place over 1500 years ago.

CREW MEMBERS (As of August, 1992): COOK ISLANDS - HAWAI`I, 1992: Nainoa Thompson, Sailmaster; Bruce Blankenfeld, Co-navigator; Kimo Lyman, Co-navigator; Snake Ah Hee, Watch Captain / Cook; Pat Aiu, M.D.; Carlos Andrade, Historian; Terry Hee, Fisherman; Archie Kalepa; Suzette Smith; Scott Sullivan, Communications; Mike Tongg, Watch Captain; Wallace Wong; Aaron Young, Watch Captain; Gary Yuen

1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	

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[Archives](#)

[Educational
Programs and
Materials](#)

[On-Line
Visuals](#)

[Bibliographies
\(Books and
Films\)](#)

Journal of Wallace Wong: Rarotonga to Hawai'i

(October 17-31, 1992)

Oct. 17--Did my good-byes and last minute errands. The long awaited trip has come down to a few more minutes before Bruce Blankenfeld [Hokule'a's navigator] comes up the drive way. Every car that passes by sounds like Bruce's truck and makes my heart skip a beat.

It's a familiar drive to the airport: concrete, traffic, mountains and sea. We almost missed our flight because of the Cook Islands regulations of having a round trip ticket before leaving Honolulu. A few calls and Dutchie bright helped save the day. We are on our way and everyone is packed and ready to go. Malia is on her way home from San Francisco and was to meet me as I was to board on my flight to Rarotonga, but we couldn't wait any longer.

It was a great flight as I noticed just how much water we were flying over and thought about that same amount of water we'd have to cross to get back. It was night when we landed in Rarotonga and we were greeted by a lone musician playing a ukulele with a collection of island classics and many smiling brown faces. Tua Pittman [navigator from the Cooks Islands] was one of those welcomed faces who greeted us and made us truly feel at home. This is surely paradise.

After loading and unloading our gear at Tua's home we drove to the ending of the Pacific Island Art Festival opening ceremonies. I really felt at home with the many different island groups being represented. This event was very special and different from anything in Hawai'i. Everyone here was here for a special purpose; and a joyous one at that.

Oct. 18--woke up early and went aboard the Hokule'a and did some minor inventory and cleaning. It felt good to be aboard again and she looks terrific.

Rarotonga looks beautiful by day. It's so peaceful and simple and the people are friendly and eager to share a smile. Some people in Hawai'i say why

travel to the South Pacific islands when you can find the same thing in Hawai'i, but it's really not the same - the people here seem more sincere.

We attended a cocktail party this afternoon with invited guest, dignitaries and the rest of the Hawai'i delegation. We had a blast. For lunch we were served a Hawaiian luncheon complete with kalua pig, laulau and poi. We got to meet a lot of beautiful people and as I sat and enjoyed the party I couldn't help but think about our journey and how vast the Pacific really is.

This was the first of many special days to come.

Oct. 19--Had an early breakfast at the local school; canned spaghetti, bread and cereal with coffee and juice. It wasn't a four star meal but it was enough. We then headed for the canoe for more inventory and cleaning. We removed all the food containers and began preparations for our supplies. It seems like an endless task but all necessary for a successful voyage.

Spent the second part of the day shopping and enjoying the Pacific arts festival held throughout the town. There are people everywhere and it seems like a large Polynesian Cultural Center. I bought some post cards and sent them off. I also got a few t-shirts and other tourist items for home.

It was raining for part of the morning but everything seems to have cleared. Nainoa posted a crew watch because of the shifting winds. My watch was from midnight to sunrise. It was a beautiful night and the wind had calmed down by morning. The stars were out in full force and Orion was up in the early morning. I was fortunate to be on this watch because I was able to catch the performing arts show last night. My only regrets was that I was only able to catch the first half of the Kamehameha performance. What I did see of their performance was great but it seemed kind of practiced and not really natural.

Oct. 20--The morning turned out great. Our watch was rough for awhile and it was my first experience feeling the wind do a full 360 degree shift while we sat near the canoe. We spent all day loading the canoe with food and water. It took awhile because we needed to divide all our food supplies into daily rations and our water was being loaded at a local water filtering company. It was a very hot day and whatever spare time that we had we

visited the shops. After we were done, Mike Tongg drove us to Vaka village where we were to have our canoe parade ceremony. It was a beautiful lagoon type area with a nice sandy beach and a pretty good surfing spot at the point. I tried to get Mike to take us around the island but we didn't have enough time.

We had dinner with the Kamehameha Schools delegation at their hotel. It was chili, rice and macaroni salad. I stuffed myself. Their hotel is located next to the Vaka village so after dinner we ended up driving around the other half of Rarotonga. It only took us about 25 minutes but it was a beautiful drive. This is a really beautiful area and I am glad to be a part of this experience.

Oct. 21--We awoke before sunrise and headed for the Hokule'a. We are to sail from the harbor to Vaka village for the ceremonies. We were towed out of the harbor and we raised our sails and the canoe began to move. There were a lot of hands on deck so I went below to catch up on some sleep. I forgot to bring my camera on one of the best days for photo opportunities. As we lowered the sails there was a giant double hulled paddling canoe at the entrance to the bay. It was an awesome sight to see that canoe as well as the rest of the canoe contingent from around the South Pacific. The beach was filled with people as we marched to the stone altar to place our ki'i from Niu Valley. It took us awhile to get there because we first had to secure the Hokule'a. There was a brief ceremony then we were led off to lunch at the local marae. Lunch consisted of kalua pig, chicken and taro and coconut. It was a delicious meal and very filling. The entertainment that followed was great and complimented the meal. The Cook Islands dances and costumes are similar to Tahitians to the untrained eye.

We later moved all of our gear out of the tents at Tua's house to the luxurious Pacific resort. We should have moved here first.

Oct. 22--We may sail on Saturday depending on the weather. Nainoa wants a favorable wind to help us with the whole trip.

We did more loading on the canoe then we had some free time. It was another scorching hot day and it felt good to take a swim.

I caught a ride into town with Steve and Ka'au. Ka'au just finished a foot race carrying two bunches of banana's around a sizeable field. It was a Tahitian sport and Ka'au finished sixth. When I got to town I borrowed some money from Kathy Kam-Ho for a pair of badly needed sandals and more souvenir shirts. I called Malia and it was good to hear her voice and her funny sense of humor. I can't wait to begin our voyage and get back home. The phone company is right down the street from Tua's house and I walked over and caught a ride back to vaka village to watch the maori canoe welcoming. The Maori canoe, Teaurere, was supposed to have sailed in with us but they were delayed by storms and escort engine trouble. The beach was equally crowded and I was envious of the Maoris as they were doing their haka or ceremonious welcoming chants to each other. Canoe to beach crowd and beach crowd to canoe, combined with the Cook Islands welcoming contingent of chanters and dancers as well as the Hawaiian contingent welcoming Clay Bertelmann home. It made proud to be standing on the beach today and gave me a good feeling for my voyage back to Hawai'i where my family is.

Oct. 23--Everyday there is a little more work to be done on the Hokule'a to prepare it for its journey home. Everything is checked and rechecked to ensure a safe journey as I slowly get acquainted with this beautiful sailing vessel.

Nainoa checked the weather forecast and says we may leave on Sunday or Monday and he's hoping for good sailing winds to get us up to the equator and out of the southern hemisphere where we should be cleared of the southern typhoon season. We are all ready to go, but the safety of the crew and canoe as well as the success of this voyage is the main concern for now.

With our free time today, Carlos, Archie and I rode bikes around the island. Carlos took us through the back roads where there was less traffic and more island life to explore. Carlos is a wealth of knowledge and I was glad he was with us. He taught about Cook Islands customs and helped us a little with the language. He told us that the Cook Islands people as well as other people of the South Pacific are easy to talk to and approach because they are into people and not much material things. It was a great ride with beautiful scenery as well as people. It took us awhile but it was worth the ride. We

met a lot of people along the way as we stopped to shop and enjoyed the arts and craft programs.

After a swim and a delicious spaghetti dinner we headed for the night performance at the park. Western Samoa, Cook Islands, Maoris, Hawaiians and Tahitians performed till the cold early morning hours. It was an excellent show which was a great cultural and uplifting experience.

Oct. 24--We made final preparations on the canoe then we all went to town for a luncheon in honor of all the participants of the arts festival. The people of Rarotonga put in a lot of work to make a feast for everyone. I hope this festival doesn't put a dent in the economy of Rarotonga. These are a very giving people. If this festival was in Hawai'i you'd be on your own and spending a bundle.

I didn't feel too well today. Had a slight fever and a touch of diarrhea. Went to see doctor Sharman and he gave me some medication. I later went to dinner and had a t-bone steak. It was the first time in a few years that I've eaten any meat, but I needed the protein. I called Malia later and talked to her about our trip. I miss her and we haven't even started yet. After the call I stopped at the fashion show and caught a few of the latest Pacific Island fashions. The best that I saw was a tapa made dress fashioned in the Cook Islands. Mr. Hoe and his family was there and I caught a ride home with them.

Oct. 25--I felt a little better this morning and I was glad we didn't sail today so that I could recover completely.

We all attended church today and though I couldn't understand most of the mass the universal language of music was present. Mass seemed to have made us all more relaxed and prepared to leave.

The people of Rarotonga are by far the sincerest people that I've met so far. Coming here has really left a positive impression on me about life in general. Just sitting on the beach and talking to a local named Tautira was very enlightening. He told us about the people, their attitude and their way of life which was beginning to change like everything else in the world.

Oct. 26--We got the word from Nainoa to leave today. Spirits are up and

everyone is ready to go. We had missed the fronts passing late last night so we'll try to catch up on its tail end.

The beach was filled with well wishers. There were speeches and prayers and the Kamehameha Schools students sang some beautiful songs for our departure. It was sad leaving Rarotonga and its beautiful people but we are all looking forward to the trip and returning home to our loved ones in Hawai'i.

The canoe is moving well and the conditions are excellent for our first day at sea. We caught our first fish; a 25 pound mahimahi; it was beautiful as well as delicious.

Oct. 27--On our morning watch the wind was blowing strong out of the southeast. It began to weaken when we came on for our evening watch. The highlight for today was catching two mahimahi at the same time. I'm glad we caught those two because it was my turn to cook and I didn't have a clue of what would be on the menu. I didn't want to start on our dinner supplies yet.

For dinner I fried some mahi and Terry made mahi soup. We served it with rice and a tossed salad. I didn't eat much. Can't seem to hold anything down right now.

I took a shower up front in the net and it felt good to wash my hair. It's so cloudy tonight that you can't see any stars to steer by. Steering is done with the feel of the wind.

Oct. 28--Today Nainoa spoke to the space shuttle astronauts. Everyone was excited and it took awhile to get everything coordinated.

The wind has been pretty mild at times and the sun is hotter than ever but I'd rather have these conditions than stormy conditions. We didn't catch any fish today so we settled for our food boxes. On the menu for today was stew and rice, corned beef and cabbage with a nice tossed and fruit salad.

There wasn't many stars in the sky due to all the cloud cover so we just sailed with the wind.

Oct. 29--The winds were pretty mild for most of the day as we slowly inched our way across the Pacific. Carlos is helping us with our Hawaiian language as well as teaching me a few chords on the ukulele. The group practices its song that Carlos picked up in Aitutaki and hopefully we'll sing it when we get into port.

Things were moving pretty slow until the ono hit one of our lines then the cooking/feeding frenzy began on board. Everyone was moving and cleaning and cooking and cutting that it was amazing we had enough room on deck. We ended up with ono sashimi, ono so up, rice and tossed and fruit salad. It was ono!

The beginning of our shift was cloudy but the wind began to pick up which cleared a path in the sky for the stargazers.

Oct. 30--The wind seems to be out of the east and our direction is more of a northerly one. I thought we would start heading for Hawai'i until Nainoa changed the tack and started heading in more of a southerly easting direction to gain more eastward progress. The change in tack made me quiet because I didn't feel well and needed to get readjusted to the motion of the ocean. We ran into a few squalls during the night but the only major thing was pulling down the jib.

Earlier, during the day we pulled in two more ono which we served up for lunch and dinner. The left overs may even carry into breakfast.

We kept a watch out for birds and debris which would indicate signs of land because Nainoa says we are near the northern Cook Islands and we wouldn't want to run into them at night.

Oct. 31--We woke to find ourselves in the Society Islands. Ra'iatea to the north with all the other islands around. The winds are mild and the word from Nainoa is that we may end up at Papeete if the winds keep coming out of the northeast.

A hot commodity on deck during the day is shade but you need to be careful when sleeping on deck during the day. I fell asleep in the shade and woke up in the scorching sun with my speedos on.

My legs were totally burnt and if Malia finds out she is going to lecture me about the uses of sunscreen and dangers of skin cancer.

We had tuna and cabbage with rice for dinner and it was delicious. Scott came out as the great pumpkin for Halloween and passed out candy to all of us. It was a warm night and the stars were out. It's amazing to be out here.

Wallace Wong's Journal, Oct. 17-21	Wallace Wong's Journal, Nov. 1-15	Wallace Wong's Journal, Nov. 1-15	Wallace Wong's Journal, Dec. 1-6			
1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
Home	Search	Archives	Past Education Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)	

Journal of Wallace Wong: Rarotonga to Hawai'i

(November 1-15, 1992)

Nov. 01--Woke up early to find the wind had died and we were being towed into Pape'ete harbor. It was a beautiful sight and a wonderful feeling to think that in a few hours we would be setting foot in Tahiti. Pape'ete was bustling with its rush hour morning traffic and the curious locals coming to see the unannounced canoe in their harbor. The sun is really beating down on us as we give Hokule'a a thorough cleaning. It felt great to rinse down with fresh water. My skin feels like its drying out and I can't forget to use some kind of moisturizer and sun screen.

After the canoe was done I walked around the town in search of a pay phone to call home. Most of the phones were credit cards or you needed cash which I didn't have neither. Luckily I stopped in at the Royal Pape'ete where Kareem's mother worked and she let me use the hotel phone. I called Malia to let her know where we were and that everything was fine. I miss her and sorry that I left her home alone. I'm just glad that I was able to participate in this voyage.

Tonight Kareem made dinner for us at his home which consisted of barbecue chicken over a coconut husk fire which I'm going to try when I get back.

Nov. 02--Pape'ete, Tahiti; what a wonderful place. Terry said that this is a bonus stop for us and I fully agree. This is one of the places I've always wanted to visit and I finally got here. I want to get to the Gauguin museum before I leave here just to see his famous artwork.

We spent most of the day walking around the shops and not having any money was pretty hard. So I spent another part of the day trying to find a way to get some money sent over here just to get a snack or a little gift. Everything is so expensive here but beautiful.

We began giving tours of the Hokule'a to students in Tahiti to help promote

the education program that we have going on throughout the Pacific . We later moved the Hokule'a to a better spot down the harbor where we had front row seats to the morning and a fternoon rush hour traffic.

We had a wonderful dinner at the Mai's home and I thoroughly stuffed myself. Later we continued our dinner celebration on the Hokule'a with our ukuleles, guitars and hinano's.

Nov. 03--Woke up to all the Pape'ete rush hour traffic. Our canoe is right on the main drive and about a mile from the Royal Pape'ete Hotel and all that means is a long walk to the bathroom.

Mike let me borrow 10,000 francs and I bought a few shirts and snacks with it. Money goes quickly here and its better to try to bargain for a lower price.

I sent post cards home today as we waited for our ride to Tautira. Tautira is at the south eastern end of the island and its where Puaniho lives. He's one of the local paddlers / canoe builders that also helps build canoes in Hawai'i. It was a long drive, but we made a few stops to enjoy some of the scenery. We collected water at a spring alongside the road and we also went swimming in a freshwater cave which was invigorating.

Tautira is a beautiful and tranquil area which really helped us to relax. We were able to borrow a canoe and paddle around the bay. Everyone seemed to really be enjoying themselves as we watched the sun set. We had a wonderful dinner and we spent the nigh t in Tautira. The news for us today was that Bill Clinton was going to president and that the winds were beginning to look more favorable.

Nov. 04--After a great breakfast in Tautira, we rushed back to Pape'ete to prepare for leaving. Everyone was rushing around and tying up loose ends, while Nainoa and Mike were making a final decision to leave or not to leave. Nainoa needed to make calls to different weather agencies as well as drive out to Venus point to visually see the wind patterns. They both decided to put off until tomorrow. Everyone was able to relax a little and slow the pace down on the final preparations. I was helping mik e run errands to the canoe and to immigrations to get the official part of our voyage done. The canoe seems to be ready and all we have to do is wait for a favorable wind.

We spent the rest of the afternoon at Puaniho's friends house at the top of a hill overlooking the airport and the northern island of Mo'orea. Bruce and Puaniho got their hair trimmed as we enjoyed a lazy afternoon.

We had dinner at a Chinese restaurant and invited all the different families that helped us with our stay here to thank them for their hospitality.

Nov. 05--I spent the night in the hotel because I was going to be on the canoe for a month.

We departed Tahiti about 8:00 am and Kareem and his family, the Mais and Puaniho were there to send us off. It was sad to say good-bye but we are all looking forward to getting home. Once we were in the wind line, the canoe picked up and shot out of there like a jet. There was also a jet that took off and I swear it flew between the sails. The wind was full and the seas were moving. Our night watch had squalls after squalls but nothing major. Everything went well the first night out and Gary cooked curry chicken for dinner which reminded me of Malia's specialty.

Nov. 06--Throughout the day and night we were in and out of squalls. During the day I'd let the squall rinse me off but during the night I kept my foul weather gear on. The wind at one point went calm on us right outside of a small atoll. It began to pick up later as we slowly began to pull away from that atoll. That was one of the last atolls we'd see. The first one was right out of Tahiti. It was Marlon Brando's island.

I've learned a lot about the weather and wind patterns here out at sea. Out here you can feel the cool rush of a down draft before a squall is about to hit you. The down draft is the reason squalls can be so dangerous when sailing. You can also see squall s building up on the horizon and moving around.

Some stars came peeking out tonight, but not enough to steer by so we just used the wind on our shift.

Nov. 07--After a squally night it was hood to wake up to a beautiful morning. We had a terrific breakfast and we settled in for a long hot day. It's interesting to watch the clouds from off on the horizon and way up in the stratosphere. A keen eye like Nainoa's can tune into wind and weather

changes. Today the wind is pretty mild, but it keeps us moving and that's all that matters. Everyone is looking forward to a record crossing so we can get home to our families and loved ones.

The sky opened up this evening on our watch and you could see the constellations rising. The moon was full and I hope Malia sees it too.

Nov. 08--The rain came down hard this morning and I dreaded to wake up. I had left my foul weather gear on deck and I didn't feel like getting into wet gear. Luckily the rain cleared a bit so I could dry it out.

Today we are changing our tack and it seems we're heading right into a big dark cloud. The wind just doesn't want to cooperate as it keeps moving around on us. I guess it's better that no wind. There were groups of birds feeding around us and we were able to bring in a mahimahi which was served up sautéed with rice. Last night there were two sea birds trying to land on the canoe. One made it to the boom for awhile but couldn't hold its balance. We changed the back sail to smaller size. I hope we can get into better sailing weather.

Nov. 09--It was a beautiful morning with the sun shining right in back of a dark squall on the horizon that was far off and of no threat. The wind is coming at us right out of the north which is giving us a north easterly route. Nainoa says we may even end up in Nukuhiwa in the Marquesas islands. As long as everything keeps moving around smoothly it's no problem. They pulled in a 200 pound marlin this morning and the lines came in after that because that was more than enough fish. We even sent some to the Kamahale [the escort boat], but the rest we cooked up for dinner. Whatever was left we began drying.

Pilot whales swam around the canoe today and we were having just as much fun watching them as they had watching us. Hopefully the winds will become more favorable and get us up north. Though I am enjoying myself I miss my family and Malia.

The evening sky looks promising and it should be clear sailing tonight. Terry and Gary are doing a great job cooking things up for the crew.

Nov. 10--The winds are not at our favor. Its coming straight out of the north which means that we're making more mileage on our tacks to the east and west and only a few miles to the north. A major concern is the time it will take to get us back to Kualoa. The goal is the students and their interest in the program as well as the crews best interest. We need to be back by December 5 to accomplish all goals. We may consider towing if the winds don't change. I'm getting tired of tacking and going nowh ere. I can't wait to get back to Hawai'i and I hope the wind starts to change.

Nov. 11--The wind is strong out of the northeast and we seem to be making good ground. Lots of bird activity around us and we can chalk up another ono and an aku. Both went fast; one for lunch and one for dinner. During the day the sun was out and in full force but the night was awesome. The moon came out full, but a little later so we were able to check out all the evening stars. What a sight. It's nights like this that make up for all the squally nights. During mid shift there was a flash of ligh t. We couldn't determine if it was lighting (with no clouds), a flare flash or an exploding meteorite entering the atmosphere.

Nov. 12--It's amazing that there is so much to see out at sea. Not only is there miles of ocean, but different cloud formations, bird life, sea life as well as modern trash. The ocean varies with its wave patterns produced by prevalent winds or sto rms. Clouds vary from cirrus to cumulus to the ever present squall cloud which is dark and has a burst of wind before the rain falls. The birds are everywhere searching for food. Most of the birds we see now are pelagic and live at sea for months before m ating. Today we brought in an ono and a aku: the aku was caught on a bone hook made by Scott. I was pretty skeptical about that hook until it caught that aku.

Just before sunset a pod of porpoises converged and played around the canoe for awhile until they got bored with us and left for more amusing things to do.

Trash needs to be a concern for us because of the types of foods that we have provisioned. All non biodegradable items need to be stored and dumped on land and not at sea.

Nov. 13--Friday the thirteenth has really been a great day. The wind is

strong and pulling us along. We had two marlin strikes but lost them both. I was glad we lost them because I was getting tired of eating fish. During the day it gets pretty unbearable with the sun beating down on you. Trying to sleep on the shaded side can get a bit chilly, so you really can't win. The best part of the whole trip is at night. Night is what I had envisioned Hokule'a to be all about. A blanket of stars to steer by; a good wind to fill our sails and a friendly ocean to ride on. All the seminars and all those nights gazing at stars falls into perspective when you're out here at sea.

A special event happened tonight while we were on watch. A meteorite broke up right near us. We first noticed a flash of light then watched the meteor move across the sky until it was out of sight over the horizon.

Nov. 14--Today was Naia's birthday and there was a party at Bruce's house. Bruce called to wish him well and everyone was there including Malia. I wish I was there too. (nah)

Everyday I scuttle for shade. The heat and having to take a bath are about the two things I really haven't gotten used to yet. The sun is so hot and it's hard to get wet when you're wet most of the time.

We've made a lot of progress north and I hope it's a short stay in the doldrums. Nainoa has been teaching us a lot on the canoe compass and the stars to help us become better steers persons to help the navigators feel more confident on their decision to turn.

I'm still waiting for my turn to talk on the radio. I keep practicing on the things that I would like to say.

We caught a nice size tuna today.

Nov. 15--The winds and seas were strong this morning, but it began to mellow down in the afternoon. I spent most of the day lying in one spot trying not to get fried by the sun. I should go below but I can't stand the smell. I also am losing my appetite. I don't really feel like eating fish or anything fried. I like soup, saimin, crackers or fruit. The bottled water tastes funny so I either force myself to drink it or try to drink a lot of tea.

We caught a sailfish today and as usual it will be devoured up by all aboard.

The hole where I sleep and store my clothes has a leak. Its a leak where a wave hits the side of the canoe and splashes between the canvas on my clothes. My sleeping bag has been catching most of the water until I moved it. Now my clothes are wet. I'll dr y it and store it in my cooler from now on.

I don't know what my purpose is on this canoe. Since I'm really not cooking I do the most that I can as a crew member. Maybe I'll be able to help the program on shore.

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Home	Search	Archives	Past Education Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)	

Journal of Wallace Wong: Rarotonga to Hawai'i

(November 16-30, 1992)

Nov. 16--Today went by pretty smooth. We went over the man overboard drill and scraped the deck because it was getting too slippery. Right now we're about one degree south and moving at a good pace north. Gary made spaghetti for lunch and it was delicious. Gary should make a Hokule'a cook book after this voyage is over. I think it could sell.

I finally took a bath today after using the bathroom. It has been a few days but I just didn't have the urge. It's probably that I haven't really been eating much anyway.

We had a few strikes today but came up losing two lures and not catching any fish. They were saying its a big fish or a shark. Everyone seems to be making little trinkets out of coconut or bone. I can't handle that right now.

Nov. 17--Well we've finally crossed the equator and we're about halfway home. If the wind keeps up and we don't get stuck in the doldrums we'll be home in about two weeks. We spent a couple hours doing a mast repair and sail adjustment. At the same time the Kamahale, our escort boat, dropped off some ice, chicken and cookies. We had shoyu chicken and cold soft drinks for dinner in celebration of our equator crossing. It was a real treat.

I may be getting used to this pace as long as the seas are calm. I enjoy steering at night under a star covered sky. It is the ultimate Hokule'a experience.

I finally spoke with Brickwood on the radio today. He asked me how to spell "Madagascar" because I worked for the phone company and that's one of their commercials. I spelt dictionary instead because that's what my English teacher used to tell me when I asked her how to spell a certain word. We talked about steering and what we used and how much concentration it took to ensure a confident decision by the navigator on when to make the final

tack to Hawai'i. I also wished my family, Keau and Malia well.

Nov. 18--The winds slowing down and coming out more from the southwest. Nainoa's not sure what's causing the southern winds, but may fear the beginning of the doldrums may be near and that means it may be bigger than what we want.

Our early morning watch was another scorcher with a mild wind added it made the whole day even longer. After that shift I went below for protection from the sun. We are beginning to tack to catch the best wind to keep us moving north. Its slow right now b ut at least its pushing us north.

Hokupa'a, or Polaris, the North Star was visible for the first time and it was very comforting to see it high in the sky. It means that we truly are past the equator.

Porpoises played around the canoe tonight and we had fresh mahi for dinner.

Nov. 19--It was another hectic morning with the wind coming mildly out of the south and the sun baking us just to within boiling point. After our watch I tried to find a cool spot on deck but there was none. So I spent the day below. It was an over cast day which

Eventually led into the night. This may be the beginning of the doldrums. It seems to be getting calmer. The only bright point is a larger northeast swell which keeps coming pretty steady. This means that there's wind up ahead that's pushing this swell. T onight there are no stars to guide us so we use the wind and keep the sails from jibing. We also use the running lights of the Kamahale just so we don't lose sight of them and get off course.

Entering into the doldrums at this point could mean that it may be wide or it could be that the doldrums are starting early and ending early.

Nov. 20--Another hot day aboard the Hokule'a and the winds are mildly pushing us north. Its been overcast for most of the day but its still hot. I spent my off hours in my hole and came out about 3:00 pm. On our night watch the sky cleared a little and we could see a few stars. At the end of our shift we saw an asteroid or large meteorite streak across the sky. It was huge and moved long and slow across the horizon and it seemed to break up into

two sections. It's amazing to see all this space debris streaking across our atmosphere. I wonder how many cross the sky during the day.

Nov. 21--Woke up to a windless morning. I'm afraid this may be the doldrums. The third watch is busy getting ready to collect rain water for cooking. I jump on the sweep to keep the canoe on the northeast swell. The rain feels good so I take a quick shower. I should do my laundry but I'm lazy. After breakfast we have a meeting and Nainoa says that this may be the doldrums and we may be stuck in it for awhile. He is also upset that we haven't been concentrating enough on our steering. He's feeling the pressure of trying to get the canoe back by December 5th and he wants so badly to help Bruce and Kimo do a good job. We later pick up a light wind and five small aku. Nainoa feels a whole lot better especially when the clouds begin to break and we see Cassiopeia. We are headed in the right direction. I have faith that somehow we will make it back before the 5th. We just all need to have faith.

Nov. 22--Woke up to a wet and wild morning ride. The seas are about 6 to 12 feet and the wind is howling. We asked for wind and we sure got it. We are using just the main sail. The mizzen is down. We later raise the storm sails and jibe when the winds begin to mellow out. I hope this weather doesn't last too long, but I hope the wind stays steady to get us home. Everyone's spirit is up and there's a lot more hope now. We are all wet but at least we're moving. Hopefully we are out of the doldrums and on our way. There are a lot of cloud cover in front of us but it seems to be breaking up. Nainoa thinks that maybe when it cools down during the evening the clouds may dissipate.

Nov. 23--Last night was one of the coldest and wettest nights of this voyage. It made me wish I was home with Malia. Let's hope that was the only night like that on this trip. This morning was wet for a couple of hours then it cleared up. I'll never complain of how hot it is now. When the sun did come out I soaked it up as much as I could. We pulled in a small aku which they'll probably make raw and soup out of. The winds are still pretty mild and shifting from northeast to east to south. The main thing is that we are moving north and out of the doldrums area. On the canoe we have four white storm sail up and it looks like spaghetti, but we are making ground. We had

chili for lunch and it tasted good. I feel like throwing up and I can't imagine why. I hope we get home by Sunday.

Nov. 24--Today was a pretty slow day. Winds are mild out of the south. Twice a large squall appeared behind us, slowly moved up and covered us, drenched us with rain and pushed us with wind then left us back in the mild winds again. Everyone was taking a fresh water bath except me. The wind made it too cold. I took a bath later when it was warmer and I had a fresh water bucket to rinse myself.

I finally brought out my Patagonia underwear in preparation for a wet and cold night-shift. It turned out to be a wonderful night with the stars out in full force and the clouds scattered. There was a squall cloud out in the east with a little lighting and hope it doesn't hit us tomorrow. The night sky is so clear, too bad I didn't bring my binoculars. We lost an ahi and let go a little shark.

Nov. 25--The winds are behind us now and moving us north at a good pace.

The pressure seems to be off now and spirits are high. Our morning watch was hot but I wasn't complaining anymore. Whatever weather we get will be greatly appreciated. You learn that when you're out at sea you take what you get because every day is different. Just be thankful that you're safe and healthy and headed in the right direction. Everyday the north star is getting higher and we're hoping to sight land by Sunday. Carlos was teaching Nainoa, Bruce and snake the easy way to guitar playing. Our night shift was full of stars and the wind was blowing us at full speed. We were lucky to get off when we did because I could see a squall line on the horizon.

Nov. 26--Happy thanksgiving! It was a beautiful day, one to be thankful for. The wind was pushing us along up until the end of my night shift watch. We were hitting speeds of 10 plus knots.

Today I thought about being at home with Malia and Keau having turkey at home with stuffing and salad. Just stuffing myself in front of the t.V. All day. Gary made us ham and sardines with onions, mash potato's and a fruit cake made with pancake mix and fruit cocktail. It was great. The Kamahale dropped off some hamburger and cookies so Gary made stew for dinner. Just

before sunset we hooked up to a marlin.

They say we may turn for the islands by tomorrow.

Nov. 27--Today all I was thinking about was getting to land. We are so close that I'm getting frustrated that I can't see any land yet. The sky is overcast and gray with a few light squalls. I need to just think about taking one day at a time and not to think about getting to land yet. Nainoa and Bruce estimate that we should be nearing Hawai'i by tomorrow or Sunday. It all depends on the wind and if they can get a good star sighting to confirm their estimates. Our night shift didn't yield too many clues. The stars were covered by the overcast. It smells pretty bad down below and I dread going to bed.

Nov. 28--Still no land in sight and according to Bruce we're still a couple of hundred miles away but I still keep straining my eyes in case their calculations may be a bit exaggerated. I swear I keep seeing the silhouette of an island on the horizon. The wind is behind us and it's still gray and overcast. I want to get in so bad because I can't stand the smell of the sleeping area. It's very nauseating. Nainoa says we will go to Honaunau and finish there with a ceremony. I hope Malia can make it.

Life on deck is terrific. All I need to do is concentrate on my steering and time passes easily. Everyone's spirit is high and we are all looking forward to home.

Nov. 29--Well today is the day that I thought we might be in. We are close and there were possible sightings but nothing confirmed yet. On the sunrise there was haze on the horizon and a cattle egret way out at sea. It was trying to land on the canoe but never did. Again it's a gray day as I scan the horizon for a glimpse of land. I keep mentioning things to myself like subway, pizza, mustard, ice water and poi. Things that I'm looking forward to getting when I reach shore. Steering helps to keep my mind occupied. It's been a long trip and a very valuable experience that I'll always treasure. I spoke on the radio today and asked them to turn up the volcano so we could sight land. We caught 3 large ahi today and we'll devour them soon.

Nov. 30--Before getting off shift last night we noticed a glow of light on the night horizon and everyone's spirit soared. At dawn I awoke to the majestic

Mauna Kea which I thought was Hualalai but we were still on the Hamakua coast. It was still a beautiful sight. Land! Hawai'i! Our shift was on so I jumped on the sweep and steered until Mahukona then we towed to Honaunau. We cleaned the canoe and just anticipated the homecoming.

Malia, Keau, my mom and the Nobrigas as well as other friends and well wishers were at the end. It was an awesome feeling to be there as well as being surrounded by all the other Hokule'a members.

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Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
Home	Search	Archives	Past Education Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)	

Journal of Wallace Wong: Rarotonga to Hawai'i

(December 1-6, 1992)

Dec. 01--It feels great to be back on land. It feels great to be back with Malia, Keau, my mom and the Nobrigas and friends. It feels good to be back in Hawai'i. We spent the later part of the day at Honaunau where we were fed lunch by the hale Ho' opono pono students. After lunch we took some students for a short sail. It felt good to be able to transfer what I learned and my experience to eager ears. That night we had an 'awa ceremony at Pu'u honua o Honaunau. It consisted of drinking the 'awa follo wed by na olelo of the sail master, navigators, captains and other leaders. I was mostly impressed by Billy Richards speech as well as Carlos Andrade who spoke in Hawaiian. One of my goals is to speak in Hawaiian. We later had dinner at the rainbow ranch.

Dec. 02--Spent the day at Honaunau scraping barnacles and moss off of the canoe. I took Wally, Ku'u and her boys on to the canoe and showed them around and we were later met by Malia. They were all a big help in cleaning the junk off of the bottom of the canoe. Later, students from a school in Pahoa came aboard and snake and Gary took them around. After everything was done, Bruce and the gang paddled the canoe around and I raised the flag and blew the conch shell. I was glad that Wally and Ku'u came aboard. Too bad we couldn't sail.. Everyone that I talk to and everything that I read is so positive about the Hokule'a that it really makes me excited that I'm a part of this whole experience. I would like it to last and I would like to help other people who really want this experience.

Dec. 03--Went running with Edwin in the morning. We caught one 80 pound boar but the dogs got to it before we did. We also found a maile vine and Ed made me a lei for my trip. There is no way that I could ever repay them for their kind generosity and hospitality. I will forever be in their debt.

We rushed down to Honaunau for departure. It took awhile because there was one boat transferring people. We towed from Honaunau to the

Alenuihaha channel where we raised our sail and sailed to Kaunakakai, Moloka'i. The ride was wet and wild and I slept on deck and watched the stars. It is such an awesome feeling to be a part of this voyage.

Dec. 04--We pulled into Kaunakakai harbor to a pier full of eagerly waiting students. They all came aboard one group at a time for the whole day and we showed them around. It was a warm feeling to see such enthusiasm and excitement. I met Mahealani and went to her house for a warm shower before dinner. She gave me her address for mom to come visit her. We later had dinner at the hale wa'a (canoe shed). We were joined by Shepard, Lacey and Steve who are shuttle astronauts. We also took aboard Bill, Clay, Gordon, Harry, Chad, Tava and Mau for our final leg back to Kualoa. While leaving Moloka'i, the people sang us farewell songs.

Dec. 05--Woke up to the lights of Waimanalo, Kailua and Kane'ohe. What a beautiful sight. The Makapu'u light house, the Pali Highway and the airport beacon of the marine base. My watch was short and sweet. We sailed past Mokapu and stopped. It was only 6:30 am and we weren't due into Kualoa until 9:00 am. This was the hardest part of the trip. Sitting outside from shore in a rocking canoe. I didn't feel too well so I just put my head down to rest. Soon Nainoa said it was time. Everyone rushed around cleaning the deck and themselves. We began raising the sails and taking our positions. I was on the main sail with Clay, Billy and Harry. The astronauts were on the sweeps, Nainoa guided us into Kualoa with cool precise commands as swells and boats and helicopters followed and cheered us in. I remember Nainoa on the deck in the 1987 return giving those same commands as Hokule'a guided safely into Kualoa after its rediscovery voyage. The beach was lined with well wishers as we triced up the sails. A sudden gust of wind pushed us in as if Hokule'a wanted to kiss the shore as much as we did. Crew members from the shore rushed to greet Hokule'a and steady her embrace with the shore. We were led to a roped off area where we went through a traditional ceremony to lift the kapu as well as announce our arrival. We were then led off to the stage area where we were able to embrace our family and friends. It was also the beginning of the festivities. It consisted of songs and dances of the school children as well as local groups. Kawailiula performed their Kaho'olawe chant and dedicated it to me. It was beautiful. It was good to see everyone especially my family, Malia and Keau. It was a beautiful day. The

little drizzle didn't bother anyone a bit and we all enjoyed everyone's company. I will miss my crew-members and I'll never forget them in fact I'm going to keep in touch with them and I hope to sail with them soon.

Dec. 06--It's hard to imagine that I sailed all that way. It seems like yesterday that we left Tahiti and those storms and hot days that we endured is now just a memory. I enjoyed this experience on the ocean, sailing the Hokule'a with a sky covered with stars. I will never forget it and look forward to the next voyage. I am happy to be home and glad that the Hokule'a is safe and at home. I will miss those twelve courageous crew-members that I spent over a month with. From Rarotonga to Tahiti to Honaunau, Moloka'i and on to Kualoa I got to know and respect each and everyone of them and I'll never forget them. Since the beginning of Hokule'a in 1976 I've always wanted to be a part of it and I finally was able to experience the feeling of what our ancestors experienced. The adventure and agony of sailing as well as the happiness of sighting Hawai'i after such a long voyage from the south Pacific. The camaraderie of the crew, your friends; your family at sea; people you look to for strength and courage and help when in need.

I am looking forward to sharing my experience with everyone as well as keeping that experience and using it in everyday life. I feel a part of something great and I don't ever want that chain to break. It's my duty to keep it going and keep it strong.

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Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	

[Home](#)

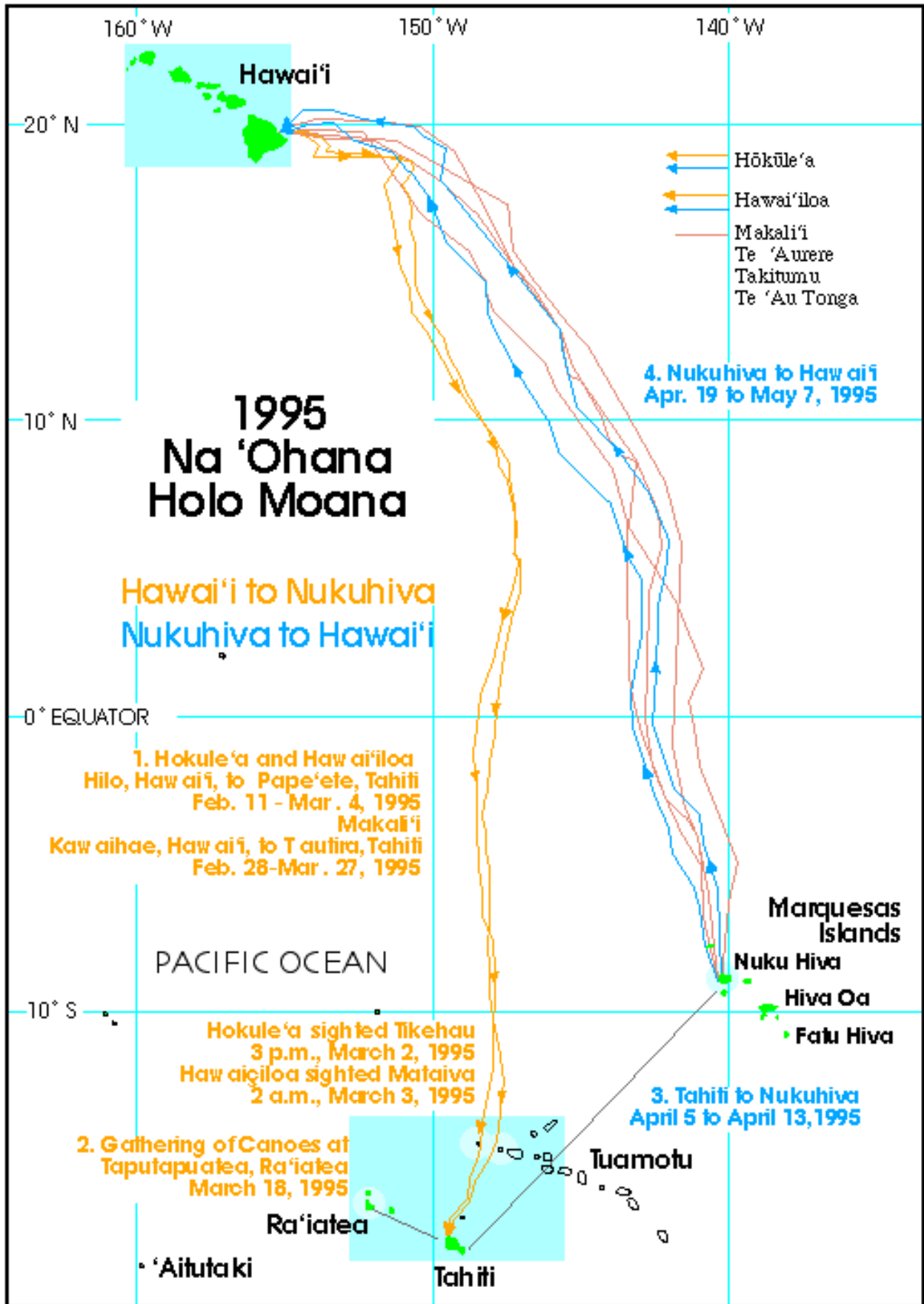
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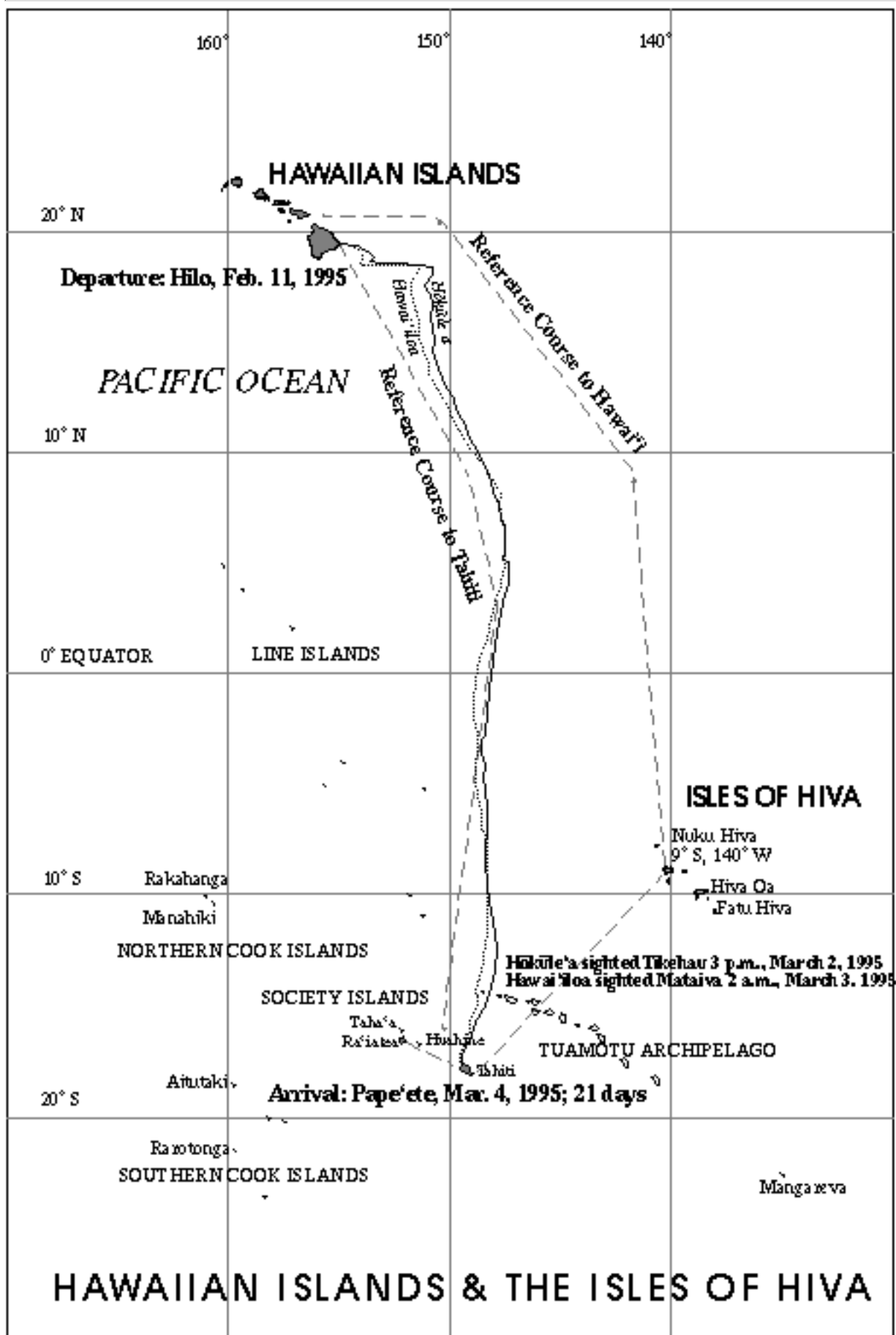
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Programs and
Materials](#)

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Visuals](#)

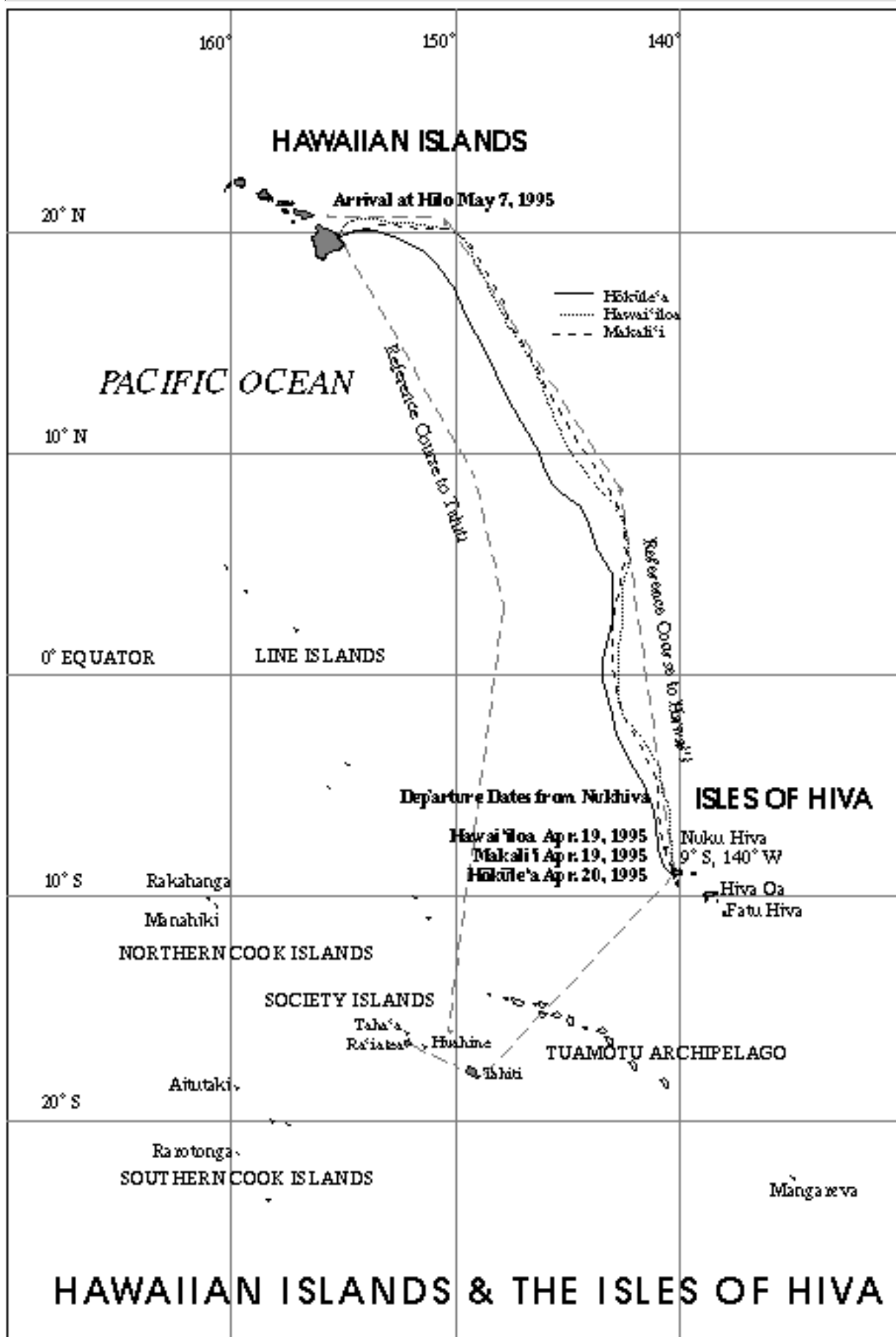
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\(Books and
Films\)](#)



1995 Voyage from Hawai'i to Tahiti



1995 Voyage from Nukuhiva to Hawaii





Hawai'i'loa, 1990-1995

Nainoa Thompson

Photo Below: The Maori Voyaging Canoe "Te Aurere" Sailing off Honolulu Harbor, 1995

Hokule'a was built quickly, of modern materials mostly, and then we went right into sailing. It was an ocean project; the emphasis was on sailing her, not on building her. But when our ancestors built and sailed voyaging canoes, it required the labor and arts of the entire community, everyone working together--some



collecting the materials in the forest, others weaving the sails, carving the hulls, lashing, preparing food for the voyage, or performing rituals to protect the crew at sea. So we thought that building a canoe of traditional materials would bring our entire community together, not just the sailors, but the crafts people, artists, chanters, dancers and carvers. The Native Hawaiian Culture and Arts Program was set up to build not just a canoe--but a sense of community--by recreating Hawaiian culture.

We started in our koa forests and ended up finding that in the last eighty to a hundred years, ninety percent of our koa trees have been cut down. The ecosystem that once supported this healthy forest is in trouble. We could not find a single koa tree that was big enough and healthy enough to build one hull of a canoe.

On our last weekend of the search, in the Kilauea Forest Reserve on the island of Hawai'i, we searched with a large team and found nothing. Everyone went back to work on Monday, but Tava Taupu and I stayed up in the forest. We decided that Tuesday, March 18, was our last day. At that point I was very project oriented--we have a job, we've got to build a canoe--but inside I was sad and depressed by the difference between what I imagined our native forests to look like and what they actually looked like. All around us were alien species and ferns uprooted by feral pigs introduced to Hawai'i in the 19th century. I saw a layer of banana poka vines twisting in the canopy from one tree to another, choking the trees.

"There's a fence-line up ahead about a half mile," I told Tava. "I'll go up slope and we'll work toward it together to cover more ground. We'll meet at the fence. If we don't find anything, that will be it."

Tava nodded and began moving forward. We knew that we were not going to find any trees, that the search was going to fail, but it was our last chance. When I saw Tava and he saw me, from that moment, we never spoke. We each knew the other had not found a tree. We did not even walk on the same side of the road. Tava walked behind me, as if we were repelled by each other. We were very depressed. We had not achieved what we so much wanted to achieve. But beyond that, I think the loss of the forest was eroding something inside of us.

There was another source of trees for Hawaiian canoes. We knew trees from the Pacific Northwest drifted to Hawai'i, and our ancestors cherished them and built canoes from them. Herb Kane and I had talked about our project earlier with his old friend, Tlingit elder Judson Brown, who was chairman of the board of Sealaska, a native Alaskan timber corporation. Judson fully understood what we were trying to do. It was about reviving our culture, and he knew the trees were the tools for doing that. Without hesitation, he said, "We will give you trees for your canoe if you need them."

After we ended our search for koa trees, we called on Judson and Sealaska and gave them the specifications for the two trees we needed. They said they would search, and they did for six weeks in the remotest parts of their forests in Alaska. Then they called us up and said, "We have the trees of your specifications. But we're not going to cut them down unless you come up

here and tell us it's okay. Because we believe that our people are connected to the natural environment, that the trees and the forests are family to our people. And we're not going to take the life of a family member unless we know this is what you want."

I was in charge of building a canoe. That was my narrow focus. But around this project were so many layers of values that I did not clearly see. I understood them, I felt them, but I did not see them as part of my responsibilities. I was thinking of deadlines and logistics. Judson gave me a new perspective based on the values of his elders; it's the kind of wisdom that we always seek from the older generation.

So we flew up to Alaska. We got a helicopter in Ketchikan and went west 80 miles to a remote forest on Shelikof Island. Our guide was Ernie Hillman, a forest manager for Sealaska. He had done his job. The trees were exactly what we asked for. But when he asked me, "Shall we cut these trees down?" I couldn't answer him. I didn't want to cut the trees down. They were too beautiful, too full of life. I began to weigh the value of our project against the value of the life of the trees. I was just too troubled. Everybody got real quiet. I couldn't explain myself. The trees were breath-taking--I had never seen trees like that before, giant evergreens. I began to sense Alaska's power. There was something so very different about it, something alluring. It was very spiritual, and that made me quiet and humble. The place was so wild, so clean and still, so natural. I began to face up to the reckless changes taking place in Hawai'i, especially on O'ahu. When I was a kid I felt very lucky to be from here--and I still do--but the reefs in Maunalua Bay were still alive back then, and now they are dead. We got back on the helicopter, and no one talked. We flew back to Honolulu. The trees remained in the forest.

Something was wrong. I didn't know what it was. I talked to Auntie Agnes Cope and John Dominis Holt, our elders who were on the Board of the Native Hawaiian Culture and Arts Program which was supporting this project to build a canoe called Hawai'i Iloa. Why didn't I ask for the trees to be cut down? It was because by taking the trees out of Alaska, we were walking away from the pain and the destruction of our native Hawaiian forests. We could not take the life of a tree from another place unless we dealt with the environmental abuse in our own homeland. The answer was

clear. Our elders told me, "You know what the answers are. To deal with the abuse here, you need to do something to renew our forests. Before you cut down somebody else's trees, you need to plant your own." So we started a program at Kamehameha Schools to plant koa trees; and we've planted over 11,000 koa seedlings, in hopes that in 100 years, we might have forests of trees for voyaging canoes.

At the planting, I remember grandchildren with grandparents, a big circle of people participating in healing the forest. It was a diverse group. There was a growing sense of community. What started as a project of artisans and people within the Hawaiian voyaging community now extended out as far away as Alaska.

This event brought closure to the search for koa trees by recognizing that we had a real problem in our land. Even though the planting was symbolic, we were contributing in a way that was sending the right kind of message to our communities about replacing abuse with renewal. This became a fundamental value which began to permeate all our decisions. It was the groundwork for what guides us today--**Malama Hawai'i**, taking care of Hawai'i, our special island home.

Judson Brown was there at the tree-planting ceremony. He was the spiritual link between his people and ours. At the koa forest he said, "When you sail, don't be afraid, because when you take your voyage we will be with you. When the north wind blows, take a moment to recognize that the wind is our people sailing with you." He was clear that the voyage wasn't about navigation. It wasn't about building a canoe. It wasn't about the stars. It was about bringing people together. He always saw Hawai'i Iloa as a celebration of a connection between native cultures.

So we went back to Alaska, and we thanked the spirits of the forest for the gift of the trees. Wright Bowman, Jr., who would build the canoe was there. Keli'i Tau'a chanted in Hawaiian and Paul Marks chanted in Tlingit. Sylvester Peele from Hydaburg offered a Haida blessing. Before they cut the trees down, the Alaskans told us, "You take these trees. They are gifts to you. Don't ask us how much they cost. And don't ever bring them back because if you do, they're not gifts." Then they cut the trees down, took them out of the forest, and shipped them to Hawai'i. Each tree was over 200 feet

tall, 400 years old, and weighed over 25 tons.

Now what do we do? We had a focus, a vision of building a voyaging canoe that people would feel was special enough to bring all their resources together. We knew to build a voyaging canoe as our ancestors did would take the effort of a healthy community.

We brought in the best--Wright Bowman, Jr., whom I consider the best canoe builder in Hawai'i. His job was to carve a 4,000-pound hull out of a 100,000-pound tree. We also needed ten lauhala sails. We asked native weavers to help us make our sails, and they said, "No, we're not going to do that because the job is too big, and if we make a mistake, maybe you'll die." They didn't want to be responsible at first. We asked them to please try. And after about a month of coaxing, two weavers, Mrs. Nunes and Mrs. Akana, said, "Yes, we'll try." They made the first sail in 600 years big enough for a voyaging canoe. The thing that impressed me most was that it took them 13 months. We estimate about 280,000 weaves for the sail. When you put the panels up against the light, you could barely see a pinhole through them. These two ladies had reached what we felt we were searching for the most--that is pursuit of excellence in our people, in our traditions, in our heritage. And it's because of the great concern they had for our well-being that they put so much care into weaving those sails.

The building of Hawai'i Iloa brought together people---we estimate half-a-million man hours were spent building the canoe. No metal parts, three miles of lashing. In the end it was a journey of people coming together because they shared a common vision and values. They worked together for something they believed was special, not just to themselves but to their whole community.

We then trained for two years on the canoe. We sailed 2,000 miles in Hawai'i before we left. Our first day out, we almost got run over by a container ship outside of Waikiki because we couldn't turn the canoe around. We recognized we made some big mistakes in our computer design and took the canoe back out of the water. The hull shape and the sails were not in balance. The only way to balance them was to turn the hulls around. We took all three miles of lashings off, turned the hulls around, relashed the canoe, and then sailed it. It sailed perfectly.

The Voyage to the Marquesas-1995

The voyage to the Marquesas in 1995 was not just about **Hokule'a**, but also the children of **Hokule'a**--**Hawai'i'iloa** and a third canoe from **Hawai'i** called **Makali'i**; two canoes from **Rarotonga**--**Te 'Au Tonga** and **Takitumu**; and **Te 'Aurere**, **Hector Busby's** canoe from **Aotearoa**.¹ We all met to Tahitian canoes--**Tahiti Nui** and **'A'a Kahiki Nui**--at a place called **Taputapuatea**, on the island of **Ra'iatea**--a place of great teaching in navigation, the most appropriate place to start this voyage that would take these canoes to the **Marquesas Islands**.² Some believe these islands are the homeland of the first people to come to **Hawai'i**.

We trained the navigators for the canoes for five years, recognizing that for our voyaging traditions to remain strong, we had to build strength in numbers. Six canoes made the voyage from the **Marquesas** to **Hawai'i**, over 2,200 miles of open ocean. Five of them were guided by navigators from their own islands, trained to sail in the ancient way. We used transponders to track the positions of the canoes for documentation and safety. We staggered the departures from the **Marquesas**, so that each canoe was by itself. If we were all together, one canoe would be leading, and everybody else would be following. So everybody sailed on their own. All the canoes made it to **Hawai'i**. The tracks of the canoes were similar--the navigational system works. But what's more interesting, to me, is that the process of education can work to accelerate learning when you combine tradition and science, and when you have people who are motivated--compassionate enough to work hard and commit themselves to as difficult a task as this voyage was.

Voyaging canoes from the **South Pacific** sailing in **Hawaiian** waters beneath **Diamond Head**--to me this represents the fulfillment of dreams. Not just dreams, but powerful beliefs that what you're doing is important, it's worth the commitment--even though you're risking lives. I think of **Hector Busby**--his vision and his commitment to his people. I've seen the struggles. This was not an easy thing to do.

To the West Coast and Alaska-1995

After the 1995 voyage to the Marquesas, we took two of our voyaging canoes--**Hokule'a** and **Hawai'iloa**--and shipped them to Seattle. There are more Hawaiians living away from Hawai'i than live here--the majority of them on the West Coast of North America. They've made this choice for many different reasons, but if you talk to these people, many of them say that their hearts and their spirits are still in Hawai'i, their home is in Hawai'i. We couldn't bring the 185,000 people back home, but we could take our canoes there. **Hokule'a** sailed down the West Coast to connect with them, to build better relationships, to share ideas and educate.

Hawai'iloa went to Seattle and then north to Alaska. We visited 20 different native villages between Vancouver and Juneau. We took **Hawai'iloa** on this 1,000-mile journey up the coast to thank the native Alaskans for their gift of logs, and, more importantly, to let them know that we did not abuse the gift they gave us when they cut down those trees. The only way we could thank them was to take the canoe to them. We weren't giving it back. We were showing them what was already theirs. It was an incredible voyage of cultural exchange and connecting people.

Alaska is rich in resources. It has 500 times more land than we have in Hawai'i, and only half the population. The people are very healthy because they can still sustain themselves with the resources of the place they live in. Because of my ignorance, I thought the people would be very different from us. They come from a different place and speak a different language. I was wrong.

When **Hawai'iloa** was leaving Hilo for the Marquesas along with **Hokule'a** in 1995, Judson Brown was a special guest. He was there, we thought, so that we could thank him. But he told the crowd who had gathered to see the canoes off: "I am very grateful that the Hawaiian people would thank us for what the Alaskan people have given them. But in truth, all we did was give you wood; you have given my people a dream."

Everyone was absolutely silent. Judson understood that we were building a bridge between native peoples. His role was critical, not just in getting the trees, but in the celebration of culture. Even though Hawaiians and Alaskans are different people--defined by their different environments, languages and cultures--in the end, the native Alaskans share the same kinds of concerns

and hopes and aspirations as we do. They believe that it is very important for the health of their people to rebuild their culture, to rebuild their traditions.

When we went to visit Judson's home in Haines, Alaska, we were taken into a small building by a river, a simple and humble place with a wooden floor. We sat on the floor and the people gave us a potlatch. They heaped gifts before us. I was embarrassed. I saw an elderly lady sitting against the wall in the back of the room. There was a young boy with her, her grandson. Toward the end of the gift-giving, I saw her hand to him a small package. She seemed embarrassed about the gift, almost ashamed. The young boy walked quietly up to the front of the room and put the package on the pile of gifts. I saw that the package was full of hundred dollar bills. I was shocked. I turned to Judson and said, "I don't know how to respond to this kindness."

"Our idea of wealth," he told me, "is not about accumulating possessions but giving them away. We have survived for centuries by caring for our natural environment and by sharing with each other."

Judson Brown passed away in 1998 and was buried in his native village of Kluckwan. He is still with us because the bridge that he built between the people of Hawaii and the people of Alaska is still strong. After Judson's death, his people carved two totem poles. They brought one to Hawai'i, with a delegation of fifty people to celebrate this connection in the Bishop Museum's Hall of Discovery. At the ceremony there was an elder, Alan Williams, who said: "We are doing this as our contribution to keeping the relationship between the Hawaiians and the Native Alaskans alive." The other totem pole is in Juneau, Alaska, and that is the other end of the bridge that will always connect the people of Hawai'i and the people of Alaska.

[Other Writings by Nainoa Thompson: (1) [Finding a Way: 1975-1980](#); (2) [The Wayfinder: the 1980 Voyage Home](#); (3) [The Voyage of Rediscovery: 1985-87](#). For more on the building of Hawai'i Iloa, see Sam Low's ["Sacred Forests."](#)

Notes

1. Makali'i was built by Na Kalaiwa'a Moku o Hawai'i under the leadership

of Clay and Shorty Bertelmann. It was launched in 1995 and sailed down to Tahiti to meet the other canoes on their way to the Marquesas.

2. For an account of this gathering of canoes at Taputapuatea, see Ben Finney's "[Sin at Avarua](#)" in this anthology.

1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
Home	Search	Archives	Educational Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)	

Sacred Forests Chapter 1 - The Search

Sam Low

In 1990, the Polynesian Voyaging Society decided to create a new canoe, to be called Hawai'iloa after a famous Tahitian navigator. Hawai'iloa would be built of traditional materials - lauhala for the sails, olana for the lashings, koa for the hulls, ohia for crossbeams to connect the hulls, and hau for stanchions, decks and steering paddles.

"Hokule'a was built quickly, of modern materials mostly," Nainoa Thompson recalls, "and then we went right into sailing - it was an ocean project - the emphasis was on sailing her, not building her. But when our ancestors built and sailed voyaging canoes, it required the labor and arts of the entire community, everyone working together - some collecting the materials in the forest, others weaving the sails, carving the hulls, lashing, preparing food for the voyage, practicing rituals to protect the crew at sea. So we thought that building a canoe of traditional materials would bring our entire community together, not just the sailors, but the craftspeople, artists, chanters, dancers and carvers. The Native Hawaiian Culture and Arts Program was set up to build not just a canoe - but a sense of community - by recreating Hawaiian culture."

Nainoa hoped they could find traditional materials to build the canoe in Hawaii. He was particularly concerned about finding two large koa logs for the hulls. For nine months, almost every weekend, teams of Koa hunters fanned out through Hawaii's forests. They walked over hundreds of square miles on Molokai, Maui, Kauai and Hawaii. They followed tips from foresters, naturalists, game wardens and hunters. Once they discovered an extremely large and promising tree but it was rotten. It had probably died fifty earlier. As the days passed without success, Nainoa worried. If they did not find the trees the dream of building Hawai'iloa of native Hawaiian wood, after years of planning and soaring hopes, would certainly fail. Time was running out.

On a weekend in the middle of March, 1991, Nainoa and Tava Taupu searched the remains of a once dense Koa forest on the flanks of Kilauea volcano on the Big Island. They scanned the trees around them, measuring the trunks visually, looking for one large enough to carve into the 60 foot hull of a voyaging canoe.

"We searched that weekend with a large team and found nothing," Nainoa says.

"Everyone had to go back to work on Monday but Tava and I stayed up in the forest and we decided that Tuesday, March 18th, was our last chance. At that point I was very sad and depressed by the difference between what I imagined the forest to look like and what it actually looked like."

"All around us were alien species and ferns uprooted by feral pigs. I saw a layer of vines twisted in the canopy from one tree to another, choking the trees. The fence line between the Kilauea forest and Keahou ranch created a stark contrast. How small the reserve seemed when compared to the ranch. How much had been cut down."

"'There's a fenceline up ahead about a half mile,' I told Tava, 'I'll go up slope and we'll work towards it together to cover more ground. We'll meet at the fence. If we don't find anything, that will be it.' We knew that it was probably a futile attempt, but it was our last chance."

It was getting cold as the two men neared the fenceline. Mist sifted through the trees and collected on Nainoa's fleece jacket. He raised the collar and hunkered into its warmth. Reaching the fence, he joined Tava and they continued together downslope toward the sea. They came to a place where prairie grass lapped at their legs with a swishing sound like the ocean on a sheltered beach. The view opened out to wide expanses of ranch land with cattle in the far distance. They headed toward a four wheel drive truck parked in grass up to its hubcaps.

"I saw Tava and he saw me but we didn't say anything. We each knew that the other had not found a tree. There was nothing to say, because there was nothing good to say. We did not even walk on the same side of the road and Tava walked behind me, as if we were repelled by each other. We were very depressed. We did not achieve what we so much wanted to achieve. But beyond that, I think the erosion of the forest was eroding something inside of us. We didn't want to mess with each other. I walked ahead. He walked behind."

A single alternative remained. Nainoa did not want to accept it but he knew that it was the only way that Hawai'ioloa could be built.

Chapter 1: The Search	Chapter 2: A Friend to the Rescue	Chapter 3: A Flight to Alaska	Chapter 4: Byron Mallott	Chapter 5: Advice from a Kupuna	Chapter 6: Understanding the Dream	Chapter 7: Healing our Souls	Chapter 8: The Soul of the Forest	Chapter 9: The True Wealth
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<u>1976: Tahiti</u>	<u>1980: Tahiti</u>	<u>1985-87: Aotearoa (New Zealand)</u>	<u>1992: Rarotonga</u>	<u>1995: Marquesas</u>	<u>1995: West Coast, British Columbia, & Alaska</u>	<u>1999-2000: Rapanui</u>
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<u>Voyages</u>	<u>Canoe-Building</u>	<u>Wayfinding</u>	<u>Life on a Canoe</u>	<u>Polynesian Migrations</u>	<u>Proverbs and Traditions</u>
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<u>Home</u>	<u>Search</u>	<u>Archives</u>	<u>Past Ed Programs and Materials</u>	<u>On-Line Visuals</u>	<u>Bibliographies (Books and Films)</u>
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Sin at Awarua

Ben Finney

[Photo Below: Matahira Point, Ra'iatea, Tahiti Nui, the site of the marae of Taputapuatea]

During the quiet hours before dawn, twin-hulled voyaging canoes from all around Polynesia began to gather off the coral reef fringing the southwestern end of Ra'iatea, a high, volcanic island a day and a half's sail from Tahiti. Hawai'iloa and Hokule'a had just crossed the equator, sailing all the way from



Hawai'i, the northernmost outpost of the dispersed Polynesian nation. The elaborately carved Tahiti Nui, the largest canoe of the fleet, had made its way from neighboring Tahiti. The smallest, lively Takitumu, had come from Rarotonga, a week's sail away to the southwest. The aptly named Te Aurere (the Flying Spray) represented Aotearoa, that massive land located still farther to the southwest beyond the warm seas and trade winds of the tropics. Two more voyaging canoes-Makali'i from Hawai'i and Te Au o Tonga from Rarotonga-were too far out at sea to arrive in time.

The sailors aboard the assembled canoes waited expectantly, maneuvering their vessels in the darkness, taking great care to keep clear of the reef outlined intermittently by white flashes of surf. Gradually the eastern horizon began to brighten, washing out the stars and bringing into focus the mountainous silhouette of Ra'iatea. Then, when the sun rose above the island's green peaks and flooded over the almost windless sea turning it from black to a deep translucent blue, the crews stirred. Taking up their paddles, they stroked toward the break in the reef known far and wide as Te Avamo'a

(literally, the Sacred Pass), into the lagoon that leads directly to Taputapuotea, a great stone temple built just beyond the shore.

Leading the procession was Te Aurere, the canoe from Aotearoa. As its twin hulls passed between the coral heads at the opening of the pass, Te Ao Pehi Kara, a Maori elder, began to chant these somber words:

Tiwha tiwha te Po, Tiwha tiwha te Ao
He whare i mahue kau e He Whare i mahue kau e
Ka whatinga ake te kura o te marama
Ka pahuka mai te moana i nga tai e ngunguru nei
Tenei ko te toka kia tatou
kua hinga ratou kua hinga
kua takoto i te ringa kaha o Aitua

Dark is the night, gloomy the day
The house is left desolate and abandoned
A fragment of the moon is torn away
The sea froths as the waves rush ashore
This is our rock, the rock is left to us
For they have passed on
Laid low by the strong hand of death¹

Those who had been laid low were his tribal ancestors, cruelly murdered centuries earlier at the temple, or marae to use the Tahitian term, of Taputapuatea. But in his next utterance the elder signaled that his message was really about life, not death:

Tihei Mauri Ora!
Let there now be life!

As he continued chanting, Te Ao Pehi Kara developed this theme, declaring that the disastrous breach between his people and those of Ra'iatea, Tahiti, and the other allied islands, and the centuries of desolate solitude that had followed the cessation of voyaging caused by the heinous crime, were now at an end. The tapu² that following the murderous assault had prohibited canoes from Aotearoa and other distant islands from sailing to Ra'iatea had at last been lifted. Long-range voyaging could begin again, bringing the

scattered Polynesian peoples together once more:

Tenei te nihinihi tenei te nana
Tenei te wa hikitia nga tapu
o runga i tnei kokoru ki runga
i o tatou matua Tupuna
E tangi ake nei te ngakau
Turuturu o whiti whakamau kia tina
Tina! hui e, taki e.

This is the neap tide and the raging tide,
It is time to remove the tapu
from this bay onto our ancestors.
The heart is moved.
So let it be for all time!
We are united!

Waiting on board a paddling canoe in the Sacred Pass was a bearded Tahitian wearing a long cloak made of bleached bark cloth set off by a short cape of the darkly iridescent feathers of the jungle fowl and a tall headdress topped with more of these plumes. After Te Ao Pehi Kara finished his chant, the costumed Tahitian stood up and declared in his own language that the tapu had been lifted, after which he greeted each successive canoe transiting the pass, intoning words of praise and invoking the gods.

As Te Aurere glided through the pass and entered the broad lagoon a Raiatean orator standing in the shallow water just offshore shouted out in Tahitian: "Come hither! Come hither o great canoe of Aotearoa!" A woman on shore, similarly bedecked with garlands made from the long shiny leaves of the ti plant (*Cordyline* sp), followed with a chorus of welcoming "come hithers": "Haere mai, haere mai, haere mai." Then a masculine voice from the crowd commanded in Rarotongan that the conches be sounded: "Tangi te pu!" The assembly of trumpeters from Rarotonga then lifted spiraled conch shells to their lips, and blew with all their strength to make a buzzing, throbbing roar that overlaid the welcoming "come hithers" and spread over the crowd massed along the shore to welcome Te Aurere and the other canoes from overseas.

After the crew members of Te Aurere anchored their craft in the lagoon, they transferred to a smaller double canoe fitted with an especially wide platform between the hulls to accommodate passengers. As this canoe approached the narrow beach where the Tahitian dignitaries were assembled, the Maori sailors from Aotearoa were greeted by more "come hithers," blasts from the conch-shell chorus, and then declarations that they had at last returned to Taputapuātea, the marae pu (the central temple) of Polynesia. After the crew waded ashore to be embraced by their hosts, who draped them with garlands made from scented leaves, they formed ranks and acted out a vigorous haka, the ritual challenge by which Maori warriors display with threatening words and defiant gestures their strength and resolve to groups they visit or are visited by.

The sailors were then led by their Raiatean escorts from the landing beach to an adjacent structure, a large, rectangular enclosure bounded by low stone walls. This was Hauviri, a temple of the Tamatoa dynasty, the line of chiefs that had ruled Ra'iatea for centuries. After being welcomed by the Tamatoa descendants, they were taken past the towering investiture stone, a basalt monolith in front of which each new ruler was girdled with the maro 'ura, a broad belt emblazoned with bright red feathers that symbolized chiefly office.

Then to the accompaniment of blasts from conch shells and the beating of drums, the crew was escorted inland over the "Road of a Thousand Flowers" to Taputapuātea itself. This grand temple is an open structure without walls. From a broad platform paved with volcanic stones rises a massive ahu or altar, a narrow rectangle over 140 feet long and in places twice human height, made from huge slabs of rough coral sandstone set on end and filled with coral rubble.

Against this imposing backdrop, the Maori voyagers mounted the platform and waited as each successive crew came ashore to be welcomed and then escorted to Taputapuātea. As the last of the sailors were taking their places, a spare Tahitian man in his early seventies, dressed in a wraparound pareu, with a short, feathered cloak over his thin shoulders, welcomed the voyagers onto the marae with more "come hithers," pronounced three times in Tahitian, then in Tuamotuan, and finally in Hawaiian. Then he told the

assembled crews how "our mother," by which he meant Taputapuātea, was throbbing with maternal joy because "you, the children, the descendants" of those who centuries before had set sail from here to find new lands, had this day returned on your canoes from the "four sides of the dark, dark sea of Hiva," sailing through the Sacred Pass to at last remove the tapu that had isolated Ra'iātea and their own islands for so long.

These events unfolded not hundreds of years ago, but in early in 1995. They were the opening scene of a grand drama enacted primarily for indigenous benefit by chiefs, priests, orators, and dancers as well as by the captains, navigators, and crew members of the canoes, who, along with their supporters, had traveled to Ra'iātea from around Polynesia to celebrate the revival of canoe voyaging that had been developing over the previous two decades.

I was there to document this celebration and the multi-canoe voyage of which it was part, but not at all as a detached observer. I had long been involved in reconstructing and sailing voyaging canoes. (See ["Voyaging into Polynesia's Past."](#)) Then in 1995, thanks to a grant from the Bishop Museum's Native Hawaiian Culture and the Arts Program, I was able to take leave from my teaching duties again so that I could join the assembled canoes at Ra'iātea, witness the ceremonies there, and then sail with the fleet back to Hawai'i.

As I watched the events that day at Taputapuātea, it occurred to me that analyzing them might be of some use in encouraging scholarly thinking about the wave of cultural revival that has recently swept across the Pacific to become more attuned to the thoughts and actions of those actually engaged in the process. In the early 1980s historians, anthropologists, and other scholars began to pay attention to self-conscious efforts of cultural revival among peoples from around the world, focusing particularly on how "traditional" rituals and practices often seemed to have been deliberately created or heavily adapted for political purposes. One of the most influential works published at this time was a collection of essays edited by historians

Eric Hobsbawm and Terence Ranger and entitled *The Invention of Tradition* (1983). To them, invented traditions were those that claim or appear to be ancient but had, in comparatively recent times, been "invented, constructed and formally instituted," or had "emerged in a less easily traceable manner." Their examples included the creation in the late nineteenth and early twentieth centuries of royal rituals and pageantry to increase respect for the British monarchy, and the earlier construction by Highland Scots of an identity designed to distinguish themselves from their British overlords, which featured carefully tailored kilts, distinctive clan tartans, and other elements the editors considered to be of "dubious authenticity."

In the Pacific, a flood of journal articles and special issues that began appearing at this time similarly explored how people from the multitudinous cultures of the region were actively engaged in "inventing" or "socially constructing" their cultural values, traditions, and customs.⁴ Although most of these publications were probably not read by those whose efforts and beliefs were being analyzed, a few such works caught the eye of indigenous critics. Prominent among these were Jocelyn Linnekin's (1983) essay on how contemporary Hawaiian nationalists were formulating traditions for political ends, Allan Hanson's (1989) analysis of how contemporary Maori had invented key features of the culture they now present as traditional, and in so doing even borrowed constructs (including accounts of their ancestral migration to Aotearoa!) from late nineteenth and early twentieth century New Zealand scholars, and Roger Keesing's (1989) exploration of how Pacific peoples are "creating pasts, myths of ancestral ways of life" that have little or no relation to the actual past as "documented historically, recorded ethnographically, and reconstructed archaeologically."

That the subjects of such analyses might take exception to the rhetoric employed is not surprising. In particular, the use of such terms as "invention" and "social construction" can appear condescendingly insulting to those whose beliefs and actions are being scrutinized—particularly when there is a postcolonial power relationship involved. Outraged Maori critics, for example, denounced Hanson's analysis of their traditions as shallow and uninformed (Grainger 1990; Nissen 1990; Noble 1990), while Professor Haunani-Kay Trask (1991), the Native Hawaiian director of the University of Hawai'i's Center for Hawaiian Studies, castigated Keesing, Linnekin, and

other foreign academics for setting themselves up as authorities on Pacific Island cultures while ignoring that indigenous people do base their cultural constructs on a deep knowledge and study of traditional ways.

The response made in the name of culture theory that authenticity is a nonissue since in all cultures traditions are invented anyway can be taken as compounding the original insult. As Marshall Sahlins (1993, 4) and James West Turner (1997) have pointed out, arguing that traditions are neither genuine nor spurious but simply socially constructed in effect denies the possibility of expressing a valid cultural identity based on a remembered past. My own experience living and working in Tahiti and Hawai'i over the last four decades has impressed on me how strongly the Tahitians and Hawaiians value links to their past-to the point of going beyond Santayana's dictum about the perils of ignoring history by actively looking backward for inspiration in coping with present and future problems. For example, in an essay on cultural renaissance and identity in French Polynesia, Wilfred Lucas (1989) explained that his fellow Tahitians were "using the past to confront the future," gaining insights and strength from prior accomplishments to help them cope with the Nuclear Age into which they had been thrust. In her treatise on Hawaiian history, Lilikala Kame'eleihiwa (1992, 22), wrote, "It is as if the Hawaiian stands firmly in the present, with his back to the future, and his eyes fixed upon the past, seeking historical answers for present day dilemmas." Such a stance makes sense to those engaged in reconstructing ancient voyaging canoes and sailing them around the Pacific, or in taking part in the rituals of canoe launching, departure, and arrival. They feel that by reviving elements from their seafaring past they are gaining strength and inspiration for their voyage into the uncharted seas of the future. Yet, as I shall show in the case of the ceremony at Taputapuātea, they are selective about what customs to recall and revive, and what ones to ignore.

Selecting ideas and practices from the past, and then adapting them for present purposes, is hardly limited to today's Pacific. Consider that rediscovery of classical civilization which western Europeans call their Renaissance. Forgotten texts from ancient Greece and Rome were retrieved

from old monasteries and Arab libraries to become the basis for learning once more. Long-neglected ruins from antiquity were sketched and studied, and soon facades of new churches began to resemble those of the temples dedicated to banished pagan gods. Yet the architects of Europe's rebirth were not set on recreating all facets of ancient life. They looked for inspiration only to those elements of classical wisdom, design, and practice that were in line with the thinking and needs of this new era, not those they considered anachronistic. To cite a more recent example of such selective inspiration, consider the founding of the Olympic Games late in the nineteenth century. When their founder, Pierre de Coubertin, was seeking a classical model to bring athletes of the world together he chose the pan-Hellenic competitions held periodically at Olympia, not the gladiatorial combat so bloodily celebrated in Rome's Colosseum. Furthermore, he did not seek to impose on the athletes of the reborn Olympic Games the ancient practice of competing in the nude (MacAloon 1981).

Today ethnic groups, nations, and would-be nations from around the world are engaged in selectively recalling their respective cultural heritages, bringing them forward, however altered, into the present. This is as much an age of cultural revival as it is of globalization, particularly in those regions, such as the Pacific Islands, where indigenous peoples are still under foreign rule or have only recently escaped from it to find that the outside world and its influences are still pressing on them. Reviving declining languages and other cultural elements has become a way to demonstrate cultural identity and worth in relation to both the old colonial structure and increasingly impinging globalizing pressures. From this perspective, it is no accident that the voyaging revival first took hold in Hawai'i, Aotearoa, the Cook Islands, and Tahiti and its neighbors, for their people have suffered greatly from initial contact with the outside world and continue to bear the brunt of foreign impact. They therefore have much to reclaim, and a strong motivation for asserting their identity vis-à-vis their former or actual colonial overlords, and others who have settled in their islands or who now visit them in mass as tourists.

To begin with, continental diseases previously unknown in these islands ravaged their inhabitants, killing them outright and psychologically debilitating the few survivors. For example, by the 1890s the number of

Hawaiians had fallen to around 40,000, a catastrophic drop even using conservative estimates of from 250,000 to 400,000 Hawaiians living in 1778 when Captain Cook opened the islands to the outside world-and an even more horrific tragedy if revisionist estimates that there may have been upward of a million Hawaiians are accepted. The survivors of this biological onslaught were then economically overwhelmed by colonizing Americans and Europeans who eventually developed a sugar industry in the islands, after which the Hawaiians were demographically swamped by laborers brought in primarily from Asia to work the plantations. In the end, despite the Hawaiians' valiant efforts to join the world community of nations as the sovereign Kingdom of Hawai'i, foreign businessmen and sugar planters staged a revolution in 1893 with the help of marines landed from an American warship, declared a republic, and five years later convinced the United States to annex the islands. This left the Hawaiians as a largely dispossessed minority in their own islands, which became a territory and then later a state of the United States.

The Maori experienced a similar depopulation and occupation by foreign settlers, in this case predominantly from Britain. Although the Treaty of Waitangi signed by Maori chiefs and British representatives in 1840 supposedly guaranteed most of the land to the Maori, after the wars of the 1860s, the British took over vast tracts of native lands, opening the country for wholesale colonial settlement. This relegated the Maori to the marginal position of a deprived minority in an overseas territory of a European power that has since evolved into the predominantly white country of New Zealand. Those Tahitians, and their cousins in the neighboring Marquesas, Tuamotu, Gambier, and Austral archipelagoes who survived the biological onslaught of imported diseases, saw their islands taken over piecemeal by France between 1842 and 1888 to form a colony now called French Polynesia. Yet they were not so overwhelmed by foreign settlers and laborers as were the Hawaiians and the Maori, and remained a majority in their own islands, keeping control of much of the land. Nonetheless, being ruled by a proud European power has had its costs, the most recent of which has been the obligation to host France's nuclear-testing program. Even the Cook Islanders, now sovereign in their own islands, have not escaped unscathed from their brief period of colonial rule by and continued dependency on New Zealand.

When the **Hokule'a** project began in the early 1970s the ways by which Hawaiians had tried to accommodate to the annexation and Americanization of the islands were beginning to unravel. Hawaiians were starting to demand the return of their lands and sovereignty, and were seeking to go back to their cultural roots. Learning to speak Hawaiian, tracing family genealogies, performing ancient dances and songs, and other explorations into the ancestral culture began to attract more and more young men and women. For them the launching of **Hokule'a** opened up a new window into their past, and with the success of the 1976 voyage to Tahiti and back the canoe emerged as a cultural icon, a rallying symbol of an emergent Hawaiian Renaissance. **Hokule'a** empowered young Hawaiians to explore the technology and skills by which their islands had been first discovered and settled. By sailing over the long sea routes of legend they could demonstrate how superbly adapted were their ancestral canoes and ways of navigating to the exploration and settlement of their island world, and also prove themselves worthy heirs of a great seafaring tradition. Even those who did not have the opportunity to sail on the canoe could with pride vicariously experience the first voyage to Tahiti, and the other expeditions to the South Pacific that followed.

After completion of the long voyage to Aotearoa and return in 1987, a new canoe, **Hawai'iloa**, was conceived to further the voyaging revival in Hawai'i. Whereas **Hokule'a** had been built mostly with modern materials, the hulls, crossbeams, and other components of **Hawai'iloa** were to be carved from local trees, lashed together with lines braided from the fibers of coconut husks and other indigenous plants, and powered by sails woven from lauhala, the leaves of the pandanus tree. The new canoe's first mission was to sail over a route never traveled by **Hokule'a** : from Te Fenua 'Enata, the archipelago almost two thousand miles southeast of Hawai'i and known to the outside world as the Marquesas Islands, to the Hawaiian chain. This voyage was planned to commemorate the original discovery of Hawai'i, for on linguistic grounds it is thought that the first Hawaiians came from Te Fenua 'Enata.[5](#)

While **Hawai'iloa** was still under construction, several other voyaging canoes were being built in the South Pacific, a sure indication that the voyaging revival had by then spread beyond Hawai'i. When in 1992 **Hokule'a** sailed to Rarotonga to take part in a gathering of these new canoes being held there

during the Pacific Arts Festival, Nainoa Thompson, **Hokule'a**'s navigator who was in charge of the Hawai'iloa project as well, invited all the new voyaging canoes, including any that might be built in the near future, to join in the commemorative voyage from Te Fenua 'Enata to Hawai'i. One thing led to another, and the initial rendezvous of all the voyaging canoes, and accompanying ceremony, was set for Taputapuātea.

The textual inspiration for celebrating the voyaging revival by gathering all the canoes at Taputapuātea came from a tale told around 1830 to a British missionary by Tu'au, a Raiatean ari'i vahine (female chief) who had learned it from her grandfather, Tai-noa, said to be one of the last Raiatean sages fully conversant with the old learning. It was not printed until almost a century later, when it appeared in English translation in *Ancient Tahiti*, a volume of Tahitian traditions compiled by the missionary's granddaughter, Teuira Henry (1928, 119-128).⁵ The story begins with the marriage of Poiriri, a "prince" from the distant island of Rotuma located on the far western edge of Polynesia, and Te'ura, a "princess" from Porapora, the island immediately to the northwest of Ra'iātea that is often spelled Borabora. Their union led to the inauguration of the Fa'atau Aroha (Friendly Alliance) of islands from across Polynesia, centered on the Opoa district of Ra'iātea where Taputapuātea is located.

The islands in this alliance were organized into two sides called Te-ao-uri and Te-ao-tea, terms that Teuira Henry translated as "The-dark-land" and "The-light-land," respectively. In one of the few sections of her account given in Tahitian as well as English, she quoted a song commemorating the formation of the alliance, which begins with these lines:

Na ni'a Te-ao-uri. / Above (east) is dark-land,
na raro te-ao-tea, / Below (west) is light-land,
E to roa te manu **e**. / All encompassed by birds.

Actually, **Na** ni'a and **na** raro mean "above" and "below" in the sense of "to windward" and "to leeward" of Ra'iātea with respect to the easterly trade winds. Tahiti and the other islands immediately to windward of Ra'iātea

belonged to The-dark-land, as did the islands of the Austral group which, although they lie south of Ra'iatea are to windward of that island with respect to the trade winds blowing from the southeast. The-light-land was composed of the islands to the leeward of Ra'iatea, starting with neighboring Taha'a, Porapora and its outliers, continuing on to Rarotonga and the other islands of the Cook group, and then jumping from there all the way to Aotearoa and Rotuma.[7](#)

According to the text in Ancient Tahiti, for many generations, "priests, scholars and warriors" from the two sides periodically set sail from their respective islands to meet at Taputapuatea and celebrate "great religious observances and international deliberations"-until a murder shattered the alliance. At the last of these reunions ever to be held a quarrel arose between Paoa-tea, a high priest of The-light-land, and a "responsible high chief" of The-dark-land who in his anger slew the priest. When the victim's fellow delegates learned of his murder they in turn struck down the killer. Leaving him for dead (unbeknown to them he was later revived), they took to their canoes to flee back to their islands in the west. But they did not sail directly out to sea through Te Avamo'a (the Sacred Pass) through which they had recently entered. Instead the aggrieved delegates slipped through the deep waters of Ra'iatea's broad lagoon to Te Avarua (the Double Pass), so called because an islet in the middle divides the channel, and then struck out for the open ocean. "Thus ended the friendly alliance which long had united many kindred islands." The great canoes from the distant islands of The-light-land never again sailed together to Ra'iatea.

Teuira Henry also cited oral traditions from Aotearoa and Rarotonga that corroborated this Raiatean account of the ancient crime and its consequences (1928, 127-128). These had been brought to her attention by S Percy Smith, the New Zealand scholar who founded the Journal of the Polynesian Society and who devoted much of his life to tracing Maori origins. In 1897, while traveling around Polynesia in quest of traditions that might indicate whence the ancestral Maori had set sail, he had visited Henry in Honolulu where she was preparing Ancient Tahiti for publication while teaching at the Kamehameha Schools, an institution founded by the will of the late Princess Bernice Pauahi Bishop. Smith (1898, 47) was particularly excited to learn about the Raiatean tradition of the murder of the high priest of

The-light-land and the subsequent flight of his delegation, for in it he saw the key to the meaning of lines of an old Maori song that hitherto had been opaque to him:

Tenei ano nga whakatauki o mua-
Toia e Rongorongo "Aotea,"
ka tere ki te moana.
Ko te hara ki Awarua i whiti mai ai i Hawaiki.

These are the sayings of ancient times-
Twas Rongorongo launched "Aotea,"
when she floated on the sea.

Because of the sin at Awarua they crossed over from Hawaiki.[7](#)

He reasoned that the Hawaiki whence the Aotea canoe "crossed over" the sea must have been Ra'iatea, since that island's ancient name was Havai'i, the Tahitian way of pronouncing Hawaiki. (The /w/ in Maori and the /v/ in Tahitian are equivalent, as are the Maori /k/ and the Tahitian glottal stop /ʔ/.) Although the Maori tradition refers to multiple victims where only a single victim is featured in the Raiatean and Rarotongan accounts, this equivalence of Hawaiki and Havai'i, plus that of Awarua and Avarua, led Smith to conclude that the "sin" in question must refer to the same murderous assault and flight through the Double Pass as that memorialized in the Raiatean tradition. Teuira Henry noted other obvious links: Aotea, the name of the Maori canoe, appears also in Te-ao-tea, the Tahitian name for leeward half of the Friendly Alliance, as well as the place name Aotearoa.

The Rarotongan account of these events appeared in A Narrative of Missionary Enterprises in the South Seas, a best-seller among pious British and American readers of the nineteenth century written by the missionary John Williams (1838). In his book Williams recounted how after the people of Tahiti, Ra'iatea, and neighboring islands had been converted, he and his fellow missionaries of the London Missionary Society sought to search out still more islands to gain additional converts. He was particularly anxious to find Rarotonga, an important island that Raiateans told him lay well to the southwest, but he failed to locate it in his first attempt. On his second try, thanks to precise sailing directions provided by the inhabitants of Atiu, a tiny

island a day and a half's sail to windward of Rarotonga, Williams finally located the sought-for island, and he and his Raiatean assistants went ashore. When the Rarotongans learned that the group were from Ra'iatea, they demanded to know why their ancestors had killed the Rarotongan high priest Paoa-tea, using the same name given in the Raiatean account. They also wanted to know what had happened to the great drum their priests had transported to Taputapuātea to present to the god 'Oro, calling it Tangimoana (Sounding-at-sea), which but for a sound change is identical to ta'imoana, the name employed in the Raiatean account for all the big drums carried aboard the canoes making the pilgrimage to Taputapuātea. To Williams, this tale and other indications of previous relations between Raiateans and Rarotongans meant that "it is certain that at some former period more frequent communication must have existed between the islanders" (1838, 56, 104).

The idea that a formal tapu on voyaging had been laid down came neither from the Raiatean text, nor from the Maori and Rarotongan versions, but from an inspired orator who spoke at Taputapuātea when Hokule'a made its first visit there in 1976, right after reaching Tahiti. Well before then, Hokule'a designer Herb Kane and I had pored over Ancient Tahiti and other writings that stressed the centrality of Ra'iatea in Eastern Polynesia, and we concluded that Hokule'a had to make a pilgrimage to Taputapuātea to make the voyage more culturally meaningful. We knew that with the coming of Christianity early in the nineteenth century the temple had been abandoned as a formal religious center, and that although some rites may well have continued to be secretly practiced there for decades after conversion Taputapuātea no longer played a formal role in Raiatean life. When I had visited Ra'iatea in 1962 the stone structure lay deserted and crumbling, surrounded by rows of carefully laid out coconut palms. The once-sacred precincts around the marae had been turned into a plantation for the production of copra, the dried meat of the coconut sent to industrial countries for the manufacture of soap, margarine, and other products for the world market. Therefore, in the back of our minds was the hope that sailing Hokule'a there might serve to awaken Raiatean interest in their ancient center.

The scene that greeted the canoe as it anchored offshore of the marae in 1976 made it clear that our coming had generated more than a little excitement. On hearing of the impending visit, the Raiateans had cleared the temple's broad stone pavement, cleaned the grounds around it, and repaired some of the worst damages to the long altar. Then, when the canoe finally arrived from Tahiti, the great mass of Raiateans assembled there to greet their cousins from across the equator demonstrated that **Hokule'a** had indeed roused Taputapuātea from a long slumber. As the Hawaiians came ashore, they were welcomed with chants and then escorted to the temple proper where they were honored by songs, prayers, and speeches. Their Raiatean hosts expressed admiration for the long canoe voyage and their joy at the coming of their kin from Hawai'i, whose ancestors, they said, had long ago sailed from Ra'iatea, which, they emphasized, had then been called Havai'i, their way of pronouncing Hawai'i (Finney 1979, 278-286).

Then an unscheduled orator, a short, balding man, began to spin a tale that offered a somewhat different perspective on the cessation of voyaging to and from Taputapuātea from that recorded a century and a third earlier. The orator—who we learned later was known by everyone as Parau Rahi (Big Talk)—began by telling how hearing that **Hokule'a** was coming made him recall a prophesy told to him by his elders when he was a small boy. Long ago, they said, a migratory canoe called Hotu te Niu had set sail from Ra'iatea carrying a selection of the most skilled people from Ra'iatea and neighboring islands—the best sailors, farmers, healers, and the like, as well as fertile women skilled in domestic crafts, who had all been chosen for what they could contribute toward sailing the canoe to an uninhabited island and implanting a colony there. No family groups departed together, just these specially selected individuals. Parents who had to give up a son or daughter, as well as the husbands or wives of those who had been chosen, had been forced to accept that they would never see their loved ones again. As the years passed with no word of the success or failure of this expedition, a great sadness descended over Ra'iatea and the neighboring islands, leading the aggrieved parents, spouses, children, and other kin to declare a tapu on any further overseas voyaging that would be lifted only when a canoe bearing the descendants of those long-lost migrants returned to Taputapuātea.

Parau Rahi then told the enthralled crowd that when he had heard that a canoe from Hawai'i had reached Tahiti and that it was scheduled to sail to Taputapuātea, he thought that the canoe must be carrying the descendants of those who had left so long ago-particularly given the identity of the name Hawai'i with Havai'i, the ancient name of Ra'iatea. This, he told the crowd, filled him with joy, for he knew that the coming of Hokule'a would therefore lift the voyaging tapu. Then, after a pause, Parau Rahi's expression changed totally. Glowering at the crew, he shouted out: "But, you have ruined everything! You made a terrible mistake! You did not sail in through the Sacred Pass!"

We had not at all been focused on exactly recreating the way canoes had once sailed to the marae. Instead of closely studying Teuira Henry's text and consulting Raiatean elders knowledgeable about how visiting canoes should approach Taputapuātea, we had followed the directives of Tahitian port authorities to sail directly to Ra'iatea's official port of entry, Uturoa, and register there before proceeding to the temple. This meant that instead of entering the lagoon through the ritually prescribed pass of Te Avamo'a, Hokule'a had sailed through Te Avarua, the pass that leads directly to the port of entry and through which the survivors of that fateful attack of centuries ago had fled. From Uturoa the canoe reached Taputapuātea through the lagoon instead of sailing back out to sea and then reentering through the Sacred Pass, which we gladly would have done had we known the importance of so doing. By the time we realized our error, it was of course too late to do anything about it. Even sailing Hokule'a smartly out the Sacred Pass on leaving that evening for Tahiti did not set things right for Parau Rahi and those who had been impressed by his speech.

Despite Parau Rahi's criticism, and the outrage expressed by some local Protestant pastors about the "pagan" ceremonies conducted at Taputapuātea, Hokule'a's coming stimulated Raiatean leaders to think more seriously than they ever had before about the importance of Taputapuātea in their history and what role the marae might play in contemporary life. A key person in this rethinking has been Pierre Sham Koua, a school administrator and sometimes vice-mayor of Uturoa, Ra'iatea's port town and

administrative center, whose name reflects his Polynesian, Chinese, and European ancestry. Before the voyaging revival started, Pierre had long been interested in Taputapuātea and its ancient role as a politico-religious center, but he did not fully realize how important voyaging was to that history until Hokule'a first came there and he served as the orator welcoming the Hawaiians ashore. Soon thereafter he discovered that the voyaging connection could directly serve the cause of historic preservation. By citing the cultural importance of the site as manifest by our pilgrimage made all the way from Hawai'i, Pierre was able to shelve a government plan to bulldoze Taputapuātea and turn the grounds into a soccer field.

Pierre's vision of the role Taputapuātea could play in contemporary Ra'iātea evolved further as he again welcomed Hokule'a back to the marae in 1985 at the beginning of its two-year-long voyage to Aotearoa and return, and then once more in 1992, when it called there on the way to the Pacific Arts Festival in Rarotonga. He came to envisage Taputapuātea as more than just an ancient temple where "folkloric" ceremonies could occasionally be reenacted. He wanted it to become a vital cultural center that would bring together people from all the islands and archipelagoes of Polynesia for cultural exchanges, workshops, and scholarly meetings. As a former Catholic seminarian, as well as an ardent student of ancient Tahitian culture, Pierre was also well aware of the value symbolic action could have in promoting that vision. Hence, when he heard that in 1995 all the voyaging canoes would rendezvous at Tahiti before sailing together for the Marquesas and Hawai'i, he worked hard to get them to call at Taputapuātea before heading north, and to take part in a grand ceremony at the marae to mark the opening of this new era of Polynesian voyaging.

At the same time, the indigenously controlled government of French Polynesia, which exercises autonomy over internal affairs, saw an opportunity to finance the preservation of Taputapuātea as a cultural monument that would serve as both a pan-Polynesian meeting center and a tourist attraction to help lure overseas visitors. Funds were therefore allocated to repair Taputapuātea and associated structures, and to clear the surrounding grounds in order to open the complex to public view. For this inaugural event, the government's Ministry of Culture and the Museum of Tahiti and the Islands also produced a handsome brochure, entitled A Fano

Ra, a poetic expression that may be translated as "Sail On." It featured a chart showing the canoes and the routes each would take to Raiatea, and then collectively on to Te Fenua 'Enata and to Hawai'i.

In developing the scenario for the ceremonies to welcome the canoes to Taputapuātea, the organizers drew from both the tradition of how the murder of a priestly delegate from The-light-land led to the breakup of the Friendly Alliance and the cessation of voyaging, and Parau Rahi's idea that a formal tapu on voyaging needed to be lifted. (They conveniently forgot that Hokule'a had supposedly already lifted the tapu by sailing to Taputapuātea through the Sacred Pass, first in 1985 at the request of the followers of Parau Rahi, who had died earlier that year, and then again in 1992 while on the way to Rarotonga.) Despite differences in detail between the Raiatean, Rarotongan, and Maori accounts of the assault on the delegates from the The-light-land, they followed Teira Henry in concluding that these must refer to one and the same event. The organizers then took S Percy Smith's reasoning that Maori voyagers had been the victims a step farther by proposing that if the tribal descendants of those who had suffered would forgive the assault on their ancestors then the tapu on voyaging that had been laid down following this ancient crime could at last be lifted. That would be an ideal way, they thought, to symbolize that the revival of Polynesian voyaging was fully launched, as well as to reestablish Taputapuātea as the sacred center of a reconstituted Friendly Alliance of Polynesian peoples.

So at a planning meeting held in Rarotonga the organizers approached Heke Nukumaingaiwi Puhipa, the builder and captain of Te Aurere canoe who is more commonly known by his English name of Hector Busby. Hector, a large rough-hewn man in his early sixties who had retired from his bridge-building business in order to construct Te Aurere, told them that he had never heard anything about the "sin at Awarua," but nonetheless agreed to try and find a knowledgeable Maori elder who could compose and then chant the words needed to lift the voyaging tapu as Te Aurere was entering the pass. Hector's search led him to Te Ao Pehi Kara, a scholarly, retired headmaster who was also a leader in Aotearoa's Kohanga Reo movement to reverse the decline of the Maori language by means of special preschools taught entirely in Maori. Yes, the elder told Hector, he had heard a tradition about the murderous assault at Hawaiki on crew members of the Aotea

canoe, and would be honored to do his part in lifting the tapu.

Once the crews were assembled before the long altar of Taputapuatea, each was joined by delegates-government officials, elders, orators, dancers, chanters, and others-representing the islands whence the canoes originated. In addition, a cultural association composed of men and women from the 'Ua Pou, one of the ten islands of Te Fenua 'Enata, joined the other delegations on the marae, as did a small group of men representing Rapa Nui, the lone island two thousand miles to the southeast of Tahiti known to the outside world as Easter Island. Neither group had a voyaging canoe, but both wanted their respective islands to be part of this celebration. The 'Ua Pou delegates had come to express their solidarity with the voyaging revival and to request that when the canoes sailed to Te Fenua 'Enata they pay a call on 'Ua Pou as well as the main island of Nukuhiva. The Rapa Nui delegates, who were actually from an immigrant community long established on Tahiti, had come as would-be voyagers. They had learned about this happening far too late to even think about building a voyaging canoe, but did manage to hastily put together an outrigger canoe covered with reeds to recall the reed vessels their ancestors had been forced to make after centuries of human occupation had stripped Rapa Nui of trees. After shipping their canoe to Ra'iatea the night before the ceremony, they relaunched it and made their way to Taputapuatea just in time to earn a place on the marae.

Each island delegation was given the opportunity to express their sentiments and thoughts, which they enthusiastically did through traditional chants, songs of the himene type (an astonishing combination of missionary-introduced hymn singing with the indigenous chanting style), and dances, as well as by speeches and in one jarring instance a Christian prayer asking Jehovah not to be angry about this assembly on an ancient center of the old religion. Central to these presentations were recollections in prose, dance, and chant of the exploits of the voyaging heroes and migratory canoes of the respective islands. Many speakers also stressed how the history of their own islands was bound up with that of Taputapuatea. For example, Larry Kimura, a professor of the Hawaiian language at the University of

Hawai'i's Hilo branch, spoke for the Hawai'i delegation in his native tongue, stating how his people were tied to Taputapuātea through ancient kinship and because their ancestral blood had flowed on the marae.

No laila makou e huli hele nei ho'i i ke alahula i alahula ho'i ia makou i o ko makou mau kupuna i o kikilo a hiki maila ho'i makou i o 'oukou i keia 'aina, ko makou 'aina ia 'o ko 'oukou 'aina ho'i ia. 'O ko makou 'aina kupuna e moe maila ho'i ko makou 'iewe i kanu 'ia i loko o ka honua o keia mau paemokupuni. I hiki maila ho'i makou no ka ho'ōia 'ana ho'i i ko makou koko 'o ko 'oukou koko he ho'okahi no ia. 'Aohe no mea e ho'okanalua ai. Ua 'ike 'ia ho'i ua kahe ho'i ke koko o kupuna o kakou i ola ho'i ke kapu o kia marae nei a kakou e ku nei.

This is our return in search of the well-traveled pathways that have become so familiar to us because of our ancestors of antiquity. And now we have arrived before you at this place which is ours as well as yours. These are our ancestral lands where our afterbirth remains still, where it has been buried in the earth of these island archipelagoes. We have come to affirm our blood ties with yours as one. There can be no question about this. It is recognized that the blood of our ancestors has flowed to bring life and sanctity to this marae we now stand on.[8](#)

With each island delegation delivering speeches, chants, and songs, the ceremony went on and on. By late morning the participants were suffering visibly from standing in the blazing sun on the unsheltered stone platform, which in turn caused a breakdown of the strict protocol that called for their isolation from the crowd surrounding the marae (photo 2). Green drinking coconuts, plastic bottles of water, and cans of soft drinks were being passed from the crowd onto the marae to provide fluid for the thirsty, heat-struck participants.

Except for these minor infractions, the presentations proceeded as planned until toward noon, when Gaston Flosse, the part-European president of French Polynesia, stepped onto the marae to join the Tahitian delegation. Early that morning when Pierre Sham Koua and I drove to Taputapuātea we had been met at the entrance to the grounds by earnest young Tahitians

wearing headbands and draped in green ti leaves. They were members of the youth brigade of the pro- independence political party, Tavini Huira'atira (Servant of the People). They politely but insistently passed out their own brochure bearing a message in Tahitian, English, and French addressed to all their "cousins in the Pacific" and denouncing the collaboration of local politicians in continued French rule, and in particular France's nuclear-bomb-testing program in the nearby Tuamotu Islands. After that they stayed in the background-until President Flosse joined the Tahitian delegation on the marae.

Then members of the youth brigade gathered at the inland end of the platform unfurled long banners condemning Flosse for selling the motherland to the French and their bombs. This display caused a stir among the crowd of spectators, but the canoe crews and delegates on the marae did not overtly react-not even the Cook Islanders, the closest neighbors downwind of the testing sites at the Tuamotu atolls of Moruroa and Fangataufa located well to the southeast of Ra'iatea. So strongly did the Cook Islanders feel about the tests that later that year when French President Jacques Chirac broke the post-Cold War testing moratorium and announced a new series of nuclear explosions, they sent one of their canoes, Te Au o Tonga, to the testing area to protest the resumption of the deadly explosions there. Yet on this sacred occasion the Cook Islanders, and the other canoe crews and delegates on the marae, were totally focused on completing this ritual confirmation of the opening of a new era of voyaging. Flosse himself, an experienced politician who as a strong supporter of France's right to use Moruroa for testing their deadly weapons was the main target of the demonstration, also paid no heed to the commotion and calmly went ahead with his speech.

With the additional backdrop of protesting banners, the ceremony continued without further incident to the concluding rituals, all meant to seal the reestablishment of the Friendly Alliance of voyaging nations: the drinking of kava by selected crew members of each canoe, the placing on the marae of a heavy stone from each of the represented islands, and the bundling together of lengths of sennit line from each canoe to assure a safe voyage on to Te Fenua 'Enata and Hawai'i.

Protests against nuclear testing. Plastic water bottles as well as bright red cans of Coca-Cola on the sacred marae. Dozens of professional and amateur photographers and also several film teams clustered around the platform and fighting for clear shots. Electronically amplified chants and speeches, and even the utterance of a Christian prayer. However impressive the ceremonial process that unfolded that morning may have been, it was obviously not a slavish reconstruction of the way, as portrayed in the text from Ancient Tahiti, delegates from the islands entered the Sacred Pass and then were welcomed ashore.

Among other things, there were no human sacrifices. Taputapuātea was dedicated to the war god 'Oro who demanded human offerings. Indeed, Teuira Henry translated the name of the marae as "sacrifices" (taputapu) "from abroad" (atea) (1928, 123). According to the text, at the gatherings of the Friendly Alliance these "sacrifices from abroad" were delivered through the Sacred Pass by the canoes coming from islands belonging to the alliance (Henry 1928, 123-126). The narrative of that delivery starts out with a wide-angle view of "the long canoes in the wind" (te va'a roa o te mata'i) heading for the Sacred Pass, streaming behind them long pennants colored dark or light depending on which half of the alliance they represented:

Upon approaching the sacred passage of Te-ava-moa, just at daybreak, the canoes united in procession, and out from the horizon, as if by magic, they came in double file, each representing a separate kingdom. To the north were those of Te-ao-tea, to the south those of Te-ao-uri, approaching side by side, the measured strokes of the paddles harmonizing with the sound of the drum and occasional blasts of the trumpet.

Then, the focus shifts to a close-up of the canoes and the gruesome cargo carried on their decks:

Across the bows connecting each double canoe was a floor, covering the chambers containing idols, drums, trumpet shells, and other treasures for the gods and people of Raiatea; and upon the floor were placed in a row sacrifices from abroad, which consisted of human victims brought for that purpose and just slain, and great

fishes newly caught from fishing grounds of neighboring islands. There were placed upon the floor, parallel with the canoe, alternately a man and a cavalli fish, a man and a shark, a man and a turtle, and finally a man closed in the line.

Once "this terribly earnest procession" reached shore, the voyagers were greeted by the chiefs, priests, and other dignitaries of the place. Then they silently set to work to suspend the sacrificial victims in the trees, stringing them up with long ropes run through their lifeless skulls. Still more bodies were then employed as rollers over which to draw the canoes onto the land. Though well aware of this ancient protocol, the organizers of this gathering of reconstructed voyaging canoes obviously had no intention of recreating such a grisly spectacle. Instead, they focused on the idea of symbolically renewing interisland ties by ceremonially lifting the voyaging tapu that they believed had been imposed when the Friendly Alliance broke up after the assault on delegates from The-light-land. The organizers and the visiting canoe crews and delegates had gathered at Taputapuātea to celebrate their rediscovery of voyaging, not to recreate past practices in their entirety. To do so, they drew on historical precedents, but selectively, choosing what they wanted in order to commemorate their revival of ancestral technology and skills.

This is not to say that the preparations for, as well as execution of, this event necessarily went smoothly. Indeed the whole process of reviving voyaging has been rich with controversy over such issues as which canoe design best represents an ancient vessel and what ceremonial protocols to follow at the launchings of the reconstructed canoes. In this problematic area of indigenous cultural authority and authenticity, consider the comments of Hokule'a designer Herb Kane about a controversy among Hawaiian cultural authorities over the 'awa drinking ceremonies that have come to be a regular feature of canoe launchings and departures.

An article in the August 1993 issue of Ka Wai Ola O Oha, the monthly newspaper of the quasi-governmental Office of Hawaiian Affairs, juxtaposed the views of Parley Kanaka'ole and Sam Ka'ai, both of whom were then well known around Hawai'i for presiding over ceremonies in which the soporific infusion of the pounded root of the 'awa plant (known

elsewhere in the Pacific as kava, 'ava, yagona, etc) is ladled out, formally presented to participants, and then solemnly drunk, and those of their critic, Kamaki Kanahale, a trustee of the Office of Hawaiian Affairs (Clark 1993). Kanahale asserted that there was no such thing as a formal 'awa ceremony in traditional Hawaiian culture, and that the principals in today's ceremonies appeared almost to be making up their ceremonies as they went along. In response, both Kanaka'ole and Ka'ai affirmed that they had not made up their ceremonies on the spot, and that they in fact were following distinctive procedures for the ritual consumption of 'awa that they had learned from their elders on their respective home islands of Hawai'i and Maui.

In a subsequent issue of the newspaper, Herb Kane (1993) strongly supported the thesis that before the missionary era Hawaiians did have formal 'awa ceremonies, and argued for the legitimacy of the particular practices followed by both Kanaka'ole and Ka'ai. But he did admit that knowledge of the specific chants and other details of the pre-missionary ceremonies have been lost with the virtual disappearance of 'awa drinking among Hawaiians, and that contemporary Hawaiian 'awa ceremonies have been heavily influenced by practices from Western Polynesia, where the drink has continued to be consumed without any hiatus caused by missionary or other foreign pressures. Kane traced this Western Polynesian influence to an 'awa ceremony over which he presided that took place at the launching of **Hokule'a** in 1975:

This ceremony was offered to us as a gift from a **hanai** [adopted] member of the royal family of Tonga, including the use of the largest **tanoa** (kanoa, or bowl) in existence, and there was no pretense about it being Hawaiian. We felt honored by the offer. To decline would have appeared ungracious. Moreover the idea appealed to the cultural purpose of **Hokule'a** as an instrument that might help bring all Polynesians closer together-an active symbol of a shared ancestry.

That subsequent 'awa ceremonies celebrated by Hawaiians might combine remembered Hawaiian practices with those of their cousins from Western Polynesia did not bother Kane:

We may also be experiencing the dawn of a new (or simply

rediscovered) "Pan Polynesian" cultural development as a result of the increasing frequency of cultural exchanges among all Polynesians. When meetings occur between Hawaiians, Tahitians, Maori, or Western Polynesians, much enjoyment is derived from exploring the astonishing similarities within the basics of their respective languages, customs and traditions. From such similarities, bridges of communication and bonds of friendship are being created; out of these will grow cultural traditions that will be understood by all Polynesians. The Hawaiian 'awa ceremony as interpreted by Ka'ai and Kanaka'ole, because they express the fundamentals universal to the Polynesian concept of good manners, may be counted among these traditions.

One of my longtime Tahitian friends who specializes in oral traditions at the Museum of Tahiti and the Islands avoided the Taputapuatea ceremony, even though she conducted some of the research for it. Instead, she stayed at her family home on adjacent Taha'a, where she helped to organize a low-key, community-oriented reception for the canoes when they called there a few days later. Like a number of other thoughtful students of Tahitian culture, she is disturbed by the practice of staging for tourists "folkloric" reenactments of supposedly ancient ceremonies—such as the elaborately costumed and choreographed ceremonies of chiefly investiture held annually at Tahiti's Arahurahu marae. She would probably agree with Greg Dening's comment about these and other similar ceremonies that such "re-enactments tend to hallucinate a past as merely the present in funny dress" (1992, 4-5, 203-205). The gathering at Taputapuatea might be similarly dismissed as so much folkloric play acting, but for a fundamental difference between it and such tourism-oriented events as the Arahurahu ceremonies. Those who had sailed to Taputapuatea from the "four sides of the dark, dark sea of Hiva," were performing for themselves, and were profoundly affected by their pilgrimage.

Compare, for example, the experience of the crew of the Maori canoe Te Aurere with that of a famous Maori scholar who had visited the marae in 1929, the year after Teuira Henry's *Ancient Tahiti* had been published. The scholar in question, Te Rangi Hiroa, was a physician who had already won fame for anthropological research among his own people of Aotearoa as well

as those of the Cook Islands and Samoa, and who later was to be appointed Director of Hawai'i's Bishop Museum, Professor of Anthropology at Yale University, and then knighted, using his European name, as Sir Peter Buck.

For years this distinguished scholar had cherished the wish to make a pilgrimage to Taputapuātea. From his tribal traditions he knew that some of his ancestors had come from Ra'iatea, and he felt that much of Maori theology had emanated from the island's famous temple. In 1929 he had his chance. While he was conducting fieldwork on the atoll of Tongareva in the Northern Cooks, a passing British warship bound for Ra'iatea offered him passage. After landing at the port town of Uturoa, with great expectations he took a small boat through the lagoon to Opoa, the region where the temple is located. When, however, he at last saw Taputapuātea, Te Rangi Hiroa was utterly devastated by the deserted marae, and brusquely left after a cursory inspection. Later he explained his disappointment:

I had made my pilgrimage to Taputapu-atea, but the dead could not speak to me. It was sad to the verge of tears. I felt a profound regret, a regret for-I knew not what. Was it for the beating of the temple drums or the shouting of the populace as the king was raised on high? Was it for the human sacrifices of olden times? It was for none of these individually but for something at the back of them all, some living spirit and divine courage that existed in ancient times of which Taputapu-atea was a mute symbol. It was something that we Polynesians have lost and cannot find, something that we yearn for and cannot recreate. The background in which that spirit was engendered has changed beyond recovery. The bleak wind of oblivion had swept over Opoa. Foreign weeds grew over the untended courtyard, and stones had fallen from the sacred altar of Taputapu-atea. The gods had long ago departed.
(Buck 1938, 81-82)

Sixty-six years later the crew of Te Aurere experienced Taputapuātea in an utterly different way. Instead of the desolate, crumbling marae that had so disappointed their distinguished kinsman, they found a restored temple alive with expectant people. Sailing through the Sacred Pass to remove the voyaging tapu, seeing the huge crowd waiting on shore, and then stepping on

land and going through the long series of greetings and rituals to confirm the marae as a new center for pan-Polynesian gatherings totally uplifted these contemporary representatives of The-light-land of old.

Hector Busby, Te Aurere's skipper, was particularly affected by this transcendental experience. When first asked to play a role in lifting the tapu, he had been somewhat hesitant because he had never heard about the "sin at Awarua." But when he found that his friend Te Ao Pehi Kara knew a tribal tradition about this event and would compose a chant of reconciliation, Hector became excited about the task. He told me right after the ceremonies that when Te Aurere entered the pass and Te Ao Pehi Kara began chanting he fell into a trance-like state and personally felt the pain of the assault on his ancestors that day long ago. Then, when the chanting ceased and the tapu was declared to have been lifted, Hector came to, feeling exhilarated at having left the ancient tragedy behind to sail into a new age.

[I WISH TO THANK the Native Hawaiian Culture and Arts Program of the Bernice Pauahi Bishop Museum for their support in enabling me to document the 1995 voyage, Pierre Sham Koua for his hospitality on Ra'iatea and the many insights he has given me, as well as Te Ao Pehi Kara, Papa Matarau (Ivanhoe a Teanotuaitau), Larry Kimura, and countless other participants who helped me better understand what was happening that day at Taputapuatea. In refining my analysis, most helpful were the comments of Geoff White, David Hanlon, Vilsoni Hereniko, and the anonymous reviewers of an earlier draft of this paper.]

[For more on the voyaging kapu at Taputapuatea, see Herb Kawanui Kane's ["The Seekers"](#). Other Writings of Ben Finney on Line: "Voyaging into Polynesia's Past" in *From Sea to Space* (Palmerston North: Massey University, 1992. 5-65): Part 1--[The Founding of the Polynesian Voyaging Society](#); Part 2--[Hawai'i to Tahiti and Return: 1976](#); Part 3--[Hawai'i to Tahiti and Return: 1980](#); Part 4--[Voyage of Rediscovery: 1985-87](#). Also, ["Voyaging and Isolation in Rapa Nui Prehistory."](#)

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Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
Home	Search	Archives	Educational Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)	

[Sin at Awarua / References](#)

Notes

1. Te Ao Pehi Kara graciously provided me with both his Maori text, and his free English translation, of which only portions are quoted here.
2. Along with marae (temple), tapu was introduced into late eighteenth century English through publication in the journals of Captain Cook, and they both can be found today in the Oxford English Dictionary and some other large dictionaries. According to the OED entry, tapu first appeared in print as "taboo" in the 1785 edition of Captain James Cook's journal of his third voyage into the Pacific. Although Cook's spelling is still used in English, tapu, the phonetically more accurate spelling, has long been employed in writing most Polynesian languages, including Tahitian and Tongan (from which Cook took the term), and is an alternate spelling in the OED. (Hawaiians spell the term kapu, reflecting their use of the /k/ sound instead of the /t/.) Although Cook wrote "morai," the phonetically more accurate marae is now employed in writing Tahitian as well as in the OED.
3. Keesing and Tonkinson 1982, Linnekin 1983, and Handler and Linnekin 1984 were early leaders, followed by, among many others, Babadzan 1988; Chapman and Dupon 1989; Stevenson 1990, 1992; Linnekin 1991; Friedman 1992; Jolly 1992; Jolly and Thomas 1992; Sissons 1993; Norton 1993;

White and Lindstrom 1993; Tobin 1994; Feinberg and Zimmer-Tamakoshi 1995; Lindstrom and White 1995; Turner 1997. In an essay on the synergism generated by our dual experimental and cultural approach to voyaging, I used the term "re-invention of Polynesian voyaging," but in the sense that because direct continuity with ancient voyagers had been broken we had been forced to employ information from oral traditions, early historical accounts, and the surviving navigational system of the Caroline Islands of Micronesia to literally "re-invent" Polynesian voyaging (Finney 1991).

4. Te Fenua 'Enata is often translated into English as "The Land of Men." However, since 'Enata is a gender-neutral term, the name can be more accurately, if inelegantly, translated as "The Land of Human Beings" (Le Cléac'h 1997, 27-28), but with the understanding that the 'enata (compare Maori tangata, Tahitian ta'ata, Hawaiian kanaka) are indigenous to the archipelago.

5. The missionary John Orsmond arrived at Mo'orea in 1817, soon after most of the Tahitians had converted, nominally at least, to Christianity. It is said that he proved so adept at Tahitian, which he had begun learning from Tahitian shipmates on the long voyage out from England, and had developed such good rapport with Tahitian sages, that King Pomare directed him to interview and record these keepers of oral tradition (Driessen 1982, 5).

6. As roa generally means "long," Henry initially translated Aotearoa as the "Long-light-land." Yet noting that since roa can also mean "distant," she also suggested that Aotearoa might have the meaning of "Distant-light-land," so called to distinguish it from the other islands nearer to Ra'iatea (Henry 1928, 123). However, pointing out that ao can also mean "day," Maori linguist Bruce Biggs translated Aotearoa as "Long Daylight," explaining that the first voyagers to reach this temperate land called it by that name because they were struck by how much longer the summer days were there in comparison with those of their tropical homeland (1990, 7).

7. Teuira Henry (1928, 128) suggested that the second line rendered into Tahitian would be Tohia e roro'o Aotea (Launched for prayer chanting was Aotea), and that this might have been its original meaning.

8. This is the central section of the text and translation that Larry Kimura

kindly made available to me.



Hawai'iloa Sailing Off Honolulu

Voyage to Nukuhiva in the Marquesas Islands

Scholars believe that early voyages of settlement to Hawai'i, over 1600 years ago, came from the Marquesas Islands. The argument for a Marquesan origin of some of the early settlers is based in part on linguistic and biological evidence. Archaeologist Patrick Kirch writes, "Indeed, the close relationship between the Hawaiian and Marquesan languages as well as between the physical populations constitutes strong and mutually corroborative evidence that the early Hawaiians came from the Marquesas" (*Feather Gods and Fishhooks* 64).

Adzes, fishhooks, and pendants found at an early settlement site at Ka Lae on the Big Island of Hawai'i resemble those found in the Marquesas. Also, the Marquesas Islands are the best departure point for sailing to Hawai'i from the South Pacific because they are closer and farther east (upwind) than the Society Islands or the Cook Islands, two other possible sources of early migrants.


From 1990-1995, the Native Hawaiian Culture and Arts Program funded [the construction of a double-hulled canoe named Hawai'iloa](#) and a voyage to retrace in spring 1995 the migration route from the Marquesas Islands to Hawai'i. The purpose of the project was to recover and relearn knowledge, skills, and traditions about building voyaging canoes and Hawai'i's voyaging heritage.


[▲ HOME PAGE](#)


[◀ BACK ONE](#)

Na 'Ohana Holo Moana / The Voyaging Families of the Vast Ocean


Photo right: The Rarotongan Canoe *Te Au Tonga* Sailing off Honolulu

 **Feb. 3-11**: Hokule'a and Hawai'iloa Depart from Hilo, Hawai'i

 **Feb. 13-18**: South to 13 degrees N Latitude


 **Feb. 19-25**: South to the Equator

 **Feb. 26-Mar. 5**: Hokule'a and Hawai'iloa Arrive in Tahiti; Makali'i Departs from Hilo

 **Mar. 7-Mar. 29**: Makali'i sails South; Ceremonies at Taputapuatea; Makali'i arrives in Tahiti; A fleet of six canoes is provisioned in Tautira, Tahiti, for the voyage to Nukuhiva.

 **April 5-18**: The fleet departs for Nukuhiva; Events in Nukuhiva

 **April 20-May 2**: The fleet sails north to Hawai'i

 **May 3-May 14**: Nono flies discovered on three canoes; Fumigation at Sea; Homecoming at Kualoa, O'ahu, and Ke'ehi Lagoon



<u>1976:</u> <u>Tahiti</u>	<u>1980:</u> <u>Tahiti</u>	<u>1985-87:</u> <u>Aotearoa</u> <u>(New Zealand)</u>	<u>1992:</u> <u>Rarotonga</u>	<u>1995:</u> <u>Marquesas</u>	<u>1995: West Coast, British Columbia, & Alaska</u>	<u>1999-2000:</u> <u>Rapanui</u>
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<u>Voyages</u>	<u>Canoe-Building</u>	<u>Wayfinding</u>	<u>Life on a Canoe</u>	<u>Polynesian Migrations</u>	<u>Proverbs and Traditions</u>
<u>Home</u>	<u>Search</u>	<u>Archives</u>	<u>Past Education Programs and Materials</u>	<u>On-Line Visuals</u>	<u>Bibliographies (Books and Films)</u>



Isles of Hiva (Marquesas Islands)

Dennis Kawaharada

Photo Below: Marquesan Motif-Lizard

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- [Geography](#)
 - [Isles of Hiva Today](#)
 - [Language](#)
 - [Settlement](#)
 - [Prehistory and Archaeology](#)
 - [Life of the Land](#)
 - [Religion](#)
 - [Social Structure at Contact](#)
 - [Warfare](#)
 - [Canoes](#)
 - [Voyaging Traditions](#)
 - [Western Contacts and Colonization](#)



● [Bibliography--Isles of Hiva](#)

<u>1976: Tahiti</u>	<u>1980: Tahiti</u>	<u>1985-87: Aotearoa (New Zealand)</u>	<u>1992: Rarotonga</u>	<u>1995: Marquesas</u>	<u>1995: West Coast, British Columbia, & Alaska</u>	<u>1999-2000: Rapanui</u>
<u>Voyages</u>	<u>Canoe-Building</u>	<u>Wayfinding</u>	<u>Life on a Canoe</u>	<u>Polynesian Migrations</u>	<u>Proverbs and Traditions</u>	
<u>Home</u>	<u>Search</u>	<u>Archives</u>	<u>Past Education Programs and Materials</u>	<u>On-Line Visuals</u>	<u>Bibliographies (Books and Films)</u>	



The Northwest and West Coast Tours

Photo Below: Totem Poles in the Twilight: Klawock, Prince of Wales Island, Alaska

On May 15, Hawai'iloa and Hokule'a left Hawai'i on board a Matson container ship bound for Seattle. Hawai'iloa planned to visit Ketchikan and Juneau to thank the Tlingit, Haida and Tshimshian tribes of Sealaska for donating the two Sitka spruce logs for the canoe's hulls and to engage in cultural and educational exchanges with the First Nations of



British Columbia and the Hawaiian community and natives of Southeast Alaska. Hokule'a planned to head south to share its rich history with Hawaiians, native Americans, and others along the West Coast. From Seattle to Vancouver, Hawai'iloa was captained by Chad Baybayan; Hokule'a by Gordon Pi'ianai'a.

On May 27-28 the two canoes were welcomed at a festival at Golden Gardens Park, Shilshole Marina, Washington. From May 28-June 1, Hokule'a visited Tacoma as guests of the Puyallup tribe while Hawai'iloa was on display at the Center for Wooden Boats. From June 1 - 6, both crews visited the Suquamish Reservation on Bainbridge Island; the Lummi Reservation near Bellingham; the Swinomish Reservation Long House. On June 7, the two canoes went to Vancouver, British Columbia, and docked at the Maritime Museum. From June 8-11, they were welcomed by the Musqueam tribe of Vancouver and the Hawaiian community of British Columbia. The two canoes then parted ways, Hawai'iloa going north and

Hokule'a going south.

Hawai'iloa's Northwest Journey: Hawai'iloa, under Captain Bruce Blankenfeld, traveled to Vancouver Island, stopping at Campbell River, Alert Bay, and Port Hardy, where the crew was hosted by the Kwagiutl Nation. The escort boat was Mark Alan, a 58- foot seine net boat owned by Hutch Hunt of Fort Rupert. The canoe continued on through the Inland Passage stopping at Bella Bella (Heiltsuk Nation), Bishop Cove (hot springs), Lowe's Inlet (Dungeness crab spot!), Prince Rupert (Tshim-shian, Haida, and Nis ga'a Nations), and Port Simpson (Tshimshian).

On June 25, the canoe crossed the Dixon Entrance into Alaska, guided by Ernie Hillman, a forest manager for Sealaska. It arrived in Ketchikan, where a huge gathering of Tlingits, Tshimshians, and Haidas greeted the crew at a potlatch at the village of Sax man. Hawai'iloa Project Director Nainoa Thomspson formally thanked Sealaska, Tlingit elder Judson Brown, former Sealaska CEO Byron Mallot, and Ernie Hillman for their roles in securing the logs.

The canoe then continued on under Captain Wally Froiseth to Hollis, Wrangell, Petersburg, Kake, Angoon, Sitka, Hoonah, Haines / Klukwan, and Juneau, where events culminated in a dinner and a seminar on a sustainable future. High school students from Hawai 'i joined the crew in Haines. The crew was hosted throughout Alaska by native village corporations and the Alaska Native Brotherhood and Sisterhood, native dance groups, as well as Sealaska, the regional native corporation for SE Alaska. The two-month long journey was highly successful in bringing together the indigenous groups of B.C. and Alaska, and the Hawaiians.

Hawai'iloa was barged from Juneau to Seattle by Alaska Marine Lines and to Honolulu by Aloha Cargo Transport; both companies donated their services. The Voyaging Society also received generous financial support from the Cooke and Atherton Foundations, Grace Pacific, Bank of America, the Skaggs Foundation, native councils and corporations of British Columbia and Southeast Alaska, and private individuals.

Hokule'a's West Coast Journey: While Hawai'iloa made its way to Juneau, Hokule'a went south, with stops in Portland, San Francisco, Santa Barbara,

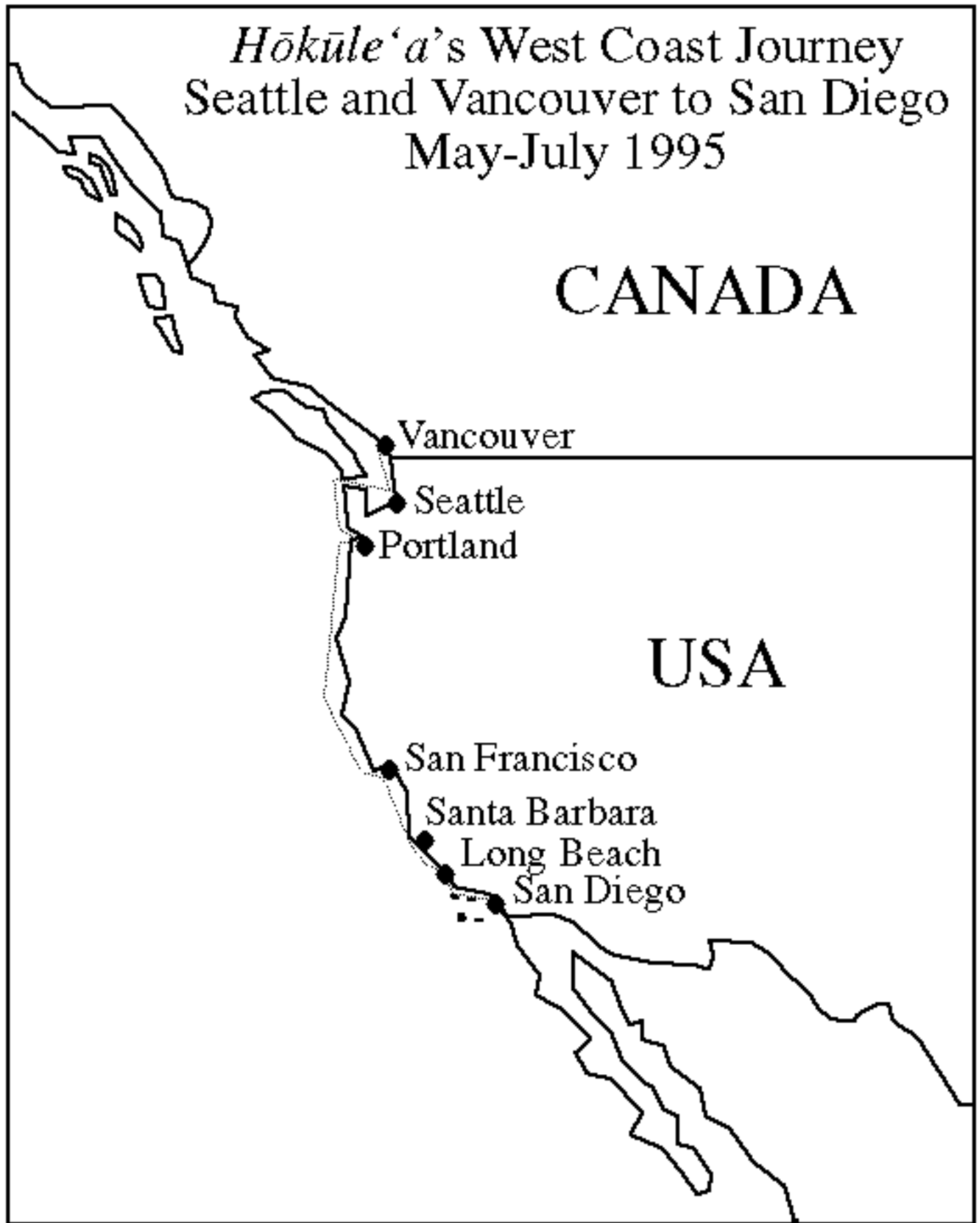
Long Beach, and San Diego. The canoe was escorted by the 72-foot Coast Pilot, under Tony Carter. In San Francisco, Hokule'a was greeted by 32 paddling canoes and showered with orchids from the Golden Gate Bridge. A crowd estimated in the thousands gathered to greet the canoe.

For Captain Gordon Pi'ianai'a, the most meaningful part of the trip were the connections made with transplanted Hawaiians, some of whom had never been to Hawai'i. He also said that he learned a lot about native Americans on the West Coast. "The farther south we went, the fewer cultural and financial resources they had," he pointed out. Crew member Moana Doi reported that excitement and interest was great at each of the stops, with long lines of visitors to the canoe. She said at one stop, the crew was invited to a sweat lodge to participate in a native American purification ceremony.

Kimo Lyman, Mike Tongg, and Chad Baybayan served as captains of the canoe. Hokule'a's West Coast Tour was sponsored by the Bishop Museum and the Hawaii Maritime Center. Alexander and Baldwin Foundation / Matson donated the shipping of Hokule'a to the West coast and back; and the shipping of Hawai'iloa to the West Coast. Hawaiian Airlines donated fares for the crews of West Coast Tour; it discounted fares for the crews of the Northwest Tour.

1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
Home	Search	Archives	Past Education Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)	

Hōkūle'a's West Coast Journey
Seattle and Vancouver to San Diego
May-July 1995





Hawai'iloa's Northwest Journey / May-July 1995

Photo Below: *Hawai'iloa* Sailing in the Icy Strait, Alaska

In May-July 1995, [the voyaging canoe Hawai'iloa](#) journeyed from Seattle, Washington to Juneau, Alaska. It participated in cultural and educational exchanges in Seattle, Vancouver, B.C., and Juneau, as well as numerous native American and Canadian towns and villages along the way. The canoe stopped at Hollis on Prince of Wales Island, west of Ketchikan, Alaska, where the two Sitka spruce trees used for its hulls originally came from. The logs were donated by Sealaska, a native corporation owned by the Tlingit, Haida, and Tshimshian tribes, to the people of Hawai'i for building the canoe.



The mission of the voyage was to express appreciation to Sealaska and its member tribes for their generous gift. We hope to bring pride and honor to the peoples of Alaska by showing them that their Sitka spruce logs have a new life in assisting us to recover our voyaging traditions.

On this journey, the Polynesian Voyaging Society planned to:

--Participate in cultural exchanges with native peoples, particularly with those who depended on ocean and forest resources and canoes for survival. Events will include the traditional welcoming of the canoe at each village;

potlatches; and singing and dancing performances.

--Share information and educational materials on the values, practices, and arts (including canoe building) that enabled the first peoples of the Pacific and the Pacific Northwest to survive successfully in their environments for centuries and to insure the health and productivity of their lands and seas for future generations. Slide shows and canoe tours will be conducted by crew members.

--Document the journey to educate students and the public in Hawai'i and nationwide about how native peoples in different part of the world are facing similar cultural and environmental challenges and what steps they are taking to meet these challenges.

The Voyaging Canoe "Hawai'iloa"

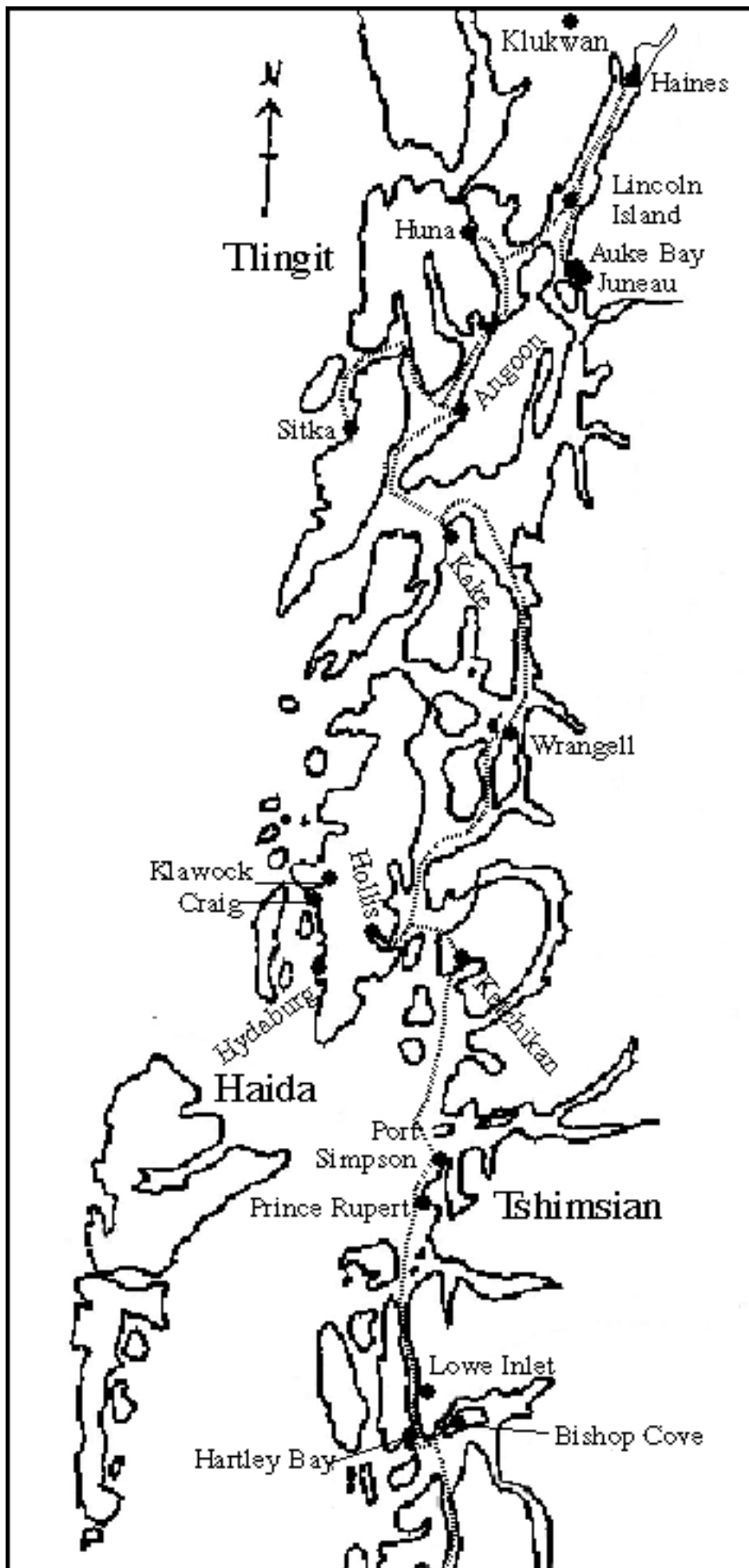
On July 24, 1993, a beautiful new Hawaiian voyaging canoe was launched at Pier 36 in Honolulu Harbor. The canoe, named Hawai'iloa, took two years to build. At first, the plan had been to build the canoe out of indigenous materials of Hawai'i in an effort to recover ancient canoe building arts; the hulls were to be carved from koa logs. However, after a nine-month search in 1989-90, it was discovered that the forests of Hawai'i no longer had koa trees large enough for the hulls of a voyaging canoe. Over the years, the forests had been cut down for lumber and to clear land for cattle ranching.

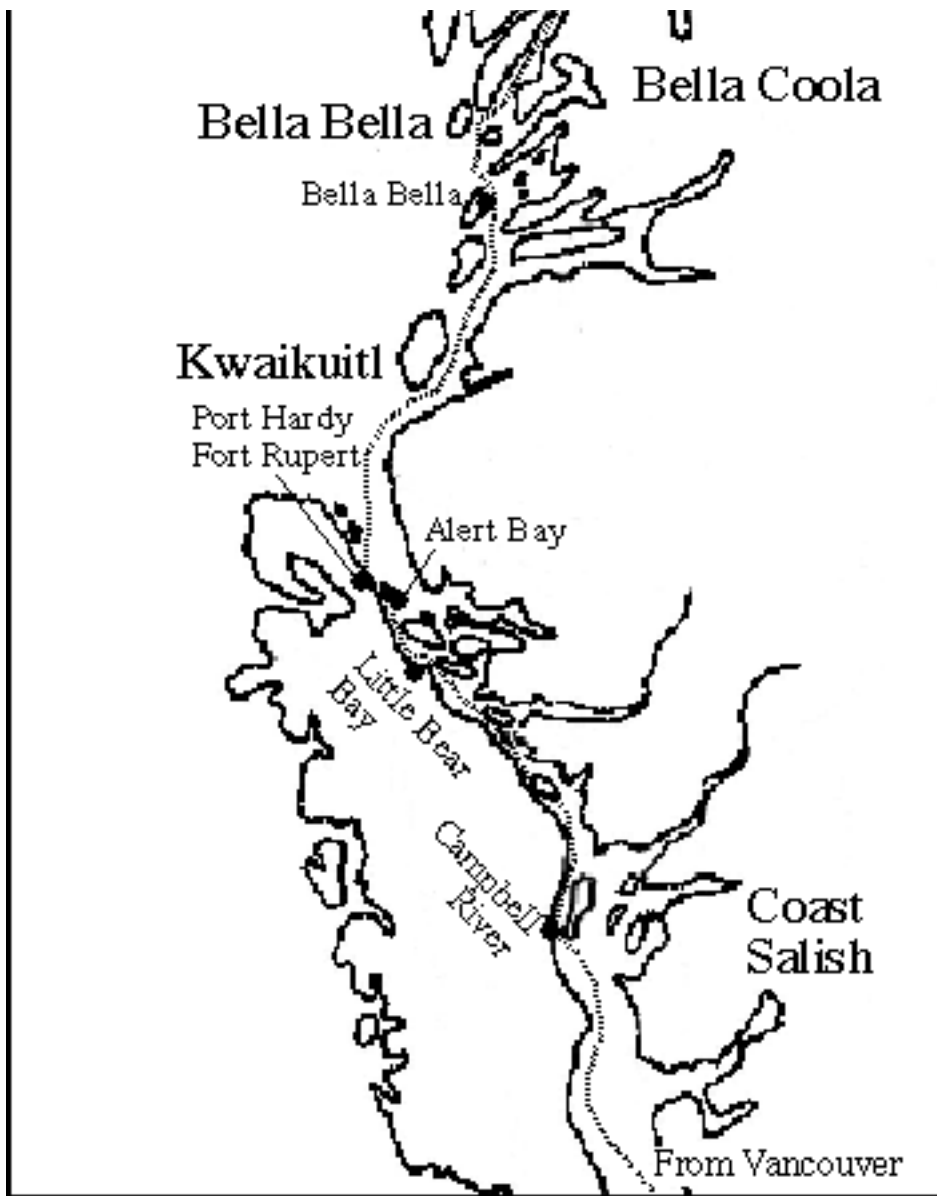
When the Sealaska Corporation, owned by the Haida, Tlingit, and Tsimshian tribes of Southeast Alaska, heard of Hawai'i's need for logs to build a traditional voyaging canoe, they donated two Sitka spruce trees. The 200-foot tall trees, seven feet in diameter, were found on Shelikof Island in Soda Bay, Prince of Wales Island, west of Ketchikan, Alaska. The two trees were over 400 years old.

Traditionally, Hawaiians used drift logs from the Pacific Northwest to make canoes. Menzies, a surgeon and naturalist accompanying Captain George Vancouver to Hawai'i, reported in 1793: "the largest single canoe we had seen amongst these islands [was] about sixty feet long and made of one piece of the trunk of a pine tree which had drifted on shore on the east end of the island of Kaua'i a few years back" The Hawaiians considered these logs

gifts from their gods. The two 66-foot, 25 ton spruce logs for Hawai'iloa came by ship rather than on the ocean currents. The gift highlighted the possibility and the need for native peoples to work together in their efforts to maintain their cultural traditions in the modern world.

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Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
Home	Search	Archives	Past Education Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)	





Port Hardy, British Columbia / June 17, 1995

Photo Below: Crew Member Aaron Young Watches a Kwaguitl Canoe Approach *Hawai'iloa*

The voyaging canoe "Hawai'iloa" arrived in Port Hardy, Vancouver Island, British Columbia on Friday, June 16, for a three-day stay. The canoe will be heading north to Bella Bella on Sunday, June 18, then continue on its 1,200 mile journey up the Northwest Coast to Juneau, Alaska, with a dozen stops in between.



The crew of the canoe is heading to Juneau to thank Sealaska, a corporation owned by the Tlingit, Haida, and Tsimshian tribes, for the gift of spruce logs from which the twin hulls of "Hawai'iloa" are carved. Protocol requires that the canoe stop at communities of native peoples whose traditional territorial waters the canoe enters.

A cedar-bark canoe met "Hawai'iloa" off Fort Rupert, a Kwaguitl community about 10 miles from the town of Port Hardy. A delegation of the crew, led by captain and navigator Bruce Blankenfeld, went ashore for a formal greeting ceremony. That evening the crew returned to the Big House at Fort Rupert for a potlatch--a traditional ceremony that includes eating, drumming, singing, dancing, and gift-giving.

Inside the Big House a cedar fire blazed for the presentation of dances, a cycle called Hamatsa, in which a young man who has gone wild after seeking a vision for his life in the forest is brought back to the tribe and made tame again through the chanting of the women. The dance cycle features large wooden masks, elaborately carved and painted, which transform some of the dancers into the supernatural beings that the initiate encounters in the spiritual realms.

"Hawai'iloa" has been slowly making its way north from Seattle, where it arrived on May 19, along with Hokule'a. While travelling from Seattle to Vancouver, the two double-hulled canoes were greeted and hosted by native tribes (the Coast SalishÑLummi, Suquamish, and Musqueam), dignitaries, and Hawaiians living in the Northwest. The canoes separated in Vancouver on June 12, with "Hawai'iloa" heading to Alaska, and Hokule'a south to Oregon and California.

"Hawai'iloa" is being escorted and towed by "Marc Alan," a 58-foot seine boat owned by Hutch Hunt, a Kwaguitl fisherman who lives in Fort Rupert. Hunt, who

has been a visitor to Hawai'i for the past 25 years, knows the dangerous straits and narrow passages between the dozens of forested islands along the coast. The art of navigating in these waters is based on knowledge of tidal shifts of 15-20 feet, 15 knot currents, and swiftly changing weather. Drifting logs, hidden rocks, and heavy boat traffic are other hazards.

Although the summer solstice is approaching, the weather has been chilly, down to the 40's, particularly on the water. The northwest wind can make it even colder, forcing crew members into layered cold-weather gear as they stand watch on the open deck of the canoe.

But the journey has been full of rewards for the crew in making new friends, exchanging cultural information, and lending support to the revivals of native cultures going on along the coast. Despite the differences in climate and environment, the Hawaiian crew has found much in common with the native peoples of British Columbia--not just canoe-building traditions, but also the values of hospitality and sharing, reverence for ancestors and family, and caring for the environment.

At Alert Bay, the stop before Port Hardy, the "Hawai'iloa" crew attended a celebration of a victory of the Nimpkish tribe--a negotiated agreement with the provincial government to move a road that was built over an ancestral burial site. Two totems pole--Halibut Man and Eagle--were unveiled to commemorate the victory.

After an afternoon potlatch and a Salmon Princess and Prince competition that honored a young boy and girl for their knowledge of the native language and culture, chief Bill Kramer, director of the U'Mista Cultural Center, told the "Hawai'iloa" crew the story of how the Center was created from a struggle to bring back to the community sacred masks and coppers that had been confiscated by the government and placed in a museum in Montreal after potlatches had been outlawed. Moved by the strength of cultural revival among the Nimpkish and in show of solidarity, Captain Blankefeld of "Hawai'iloa" presented the Cultural Center with one of the paddles that made the journey with the canoe to Tahiti, Nukuhiva, and back to Hawai'i.

Despite these victories the struggle between traditional and modern uses of the land continues in the Northwest as in Hawai'i, with the traditional uses losing ground to commercial interests. Chief West, who brought his cedar canoe out to greet "Hawai'iloa" at Alert Bay and was invited aboard "Hawai'iloa" for the trip to

Port Hardy, told the crew the story of how the the cod and salmon had disappeared from the waters around Alert Bay, the traditional fishing ground of the Nimpkish. He said the cod had been overfished and the salmon spawning streams had been ruined by logging.

Crew for the First Leg / Seattle to Vancouver

1. Chad Baybayan: Captain; veteran navigator. Kailua-Kona, Hawai'i
2. Snake Ah Hee: Veteran crew member from Lahaina, Maui.
3. Junior Coleman: Crew memberÑ1995 Voyage. Honolulu, HI.
4. Terry Hee: Veteran crew member. Towing specialist. 'Aina Haina, Oahu.
5. Jerry Monahan: Pilot. Seattle, WA.
6. Mel Paoa: Veteran crew member. Moloka'i.
7. Sam Pautu: Crew memberÑ1995 Voyage. Ua Pou, Marquesas Islands.
8. Mau Piailug: Master navigator. Satawal, Caroline Islands, Micronesia.
9. Gary Suzuki: Crew memberÑ1995 Voyage. Lana'i.

Crew for the second leg / Vancouver to Ketchikan

1. Bruce Blankenfeld: Captain; veteran navigator. Niu Valley, O'ahu
2. Nainoa Thompson (From Port Hardy to Ketchikan): Project Director for "Hawai'iloa"; veteran navigator. Niu Valley, O'ahu.
3. Brad Cooper: Watch-captain, teacher of Hawaiian Studies at Kamehameha Schools in Honolulu. Crew memberÑ1995 voyage. Kaneohe, O'ahu.
4. Hauoli Suzette Smith: Watch-captain, veteran sailor; member of America's cup all-women team, 1995. Honolulu, O'ahu.
5. Aaron Young: Watch Captain, fireman. Niu Valley, O'ahu.
6. Bob Bee: Crew member. Honolulu, O'ahu.
7. Tia Blankenfeld: Bruce's daughter; first voyage.
8. Junior Coleman: Crew memberÑ1995 Voyage. Honolulu, O'ahu.

9. Terry Hee: Veteran crew member. 'Aina Haina, Oahu.

10. Tom Huska: Bruce's friend. Vancouver, B.C.

11. Dennis Kawaharada: Media and documentation; Polynesian Voyaging Society staff. Professor at Kapi'olani Community College. Crew member on interisland voyages. Makiki, O'ahu.

12. Ka'au McKenney: co-navigator on Hokule'a, 1995 voyage from Hilo to Tahiti; crew member 1995 voyage from Nukuhiva to Hawai'i. Palolo Valley, O'ahu.

13. Jerry Monahan: Pilot. Seattle, WA

14. Brad Quinto: Crew member. Honolulu, O'ahu.

15. Kaikane Young: Aaron Young's son; first voyage

Port Hardy, B.C. / June 17	Prince Rupert, B.C. / June 22	Ketchikan, Alaska / June 26	Angoon, Alaska / July 2	Sitka, Alaska / July 4	Hoonah, Alaska / July 7	Haines, Alaska / July 10	Haines, Alaska / July 12	Juneau, Alaska / July 15
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Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions
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Home	Search	Archives	Past Education Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)
----------------------	------------------------	--------------------------	---	---------------------------------	--

Prince Rupert, British Columbia / June 23, 1995

Photo Below: Native Drummers at Bellabella, B.C.; Ross Dennis Hunt Joins In

It's 8 p.m. and the sky over Prince Rupert is still as bright as early afternoon. This city where "Hawai'iloa" arrived on June 21 is the last stop in Canada before the canoe crosses into Alaska. The crew has gathered on the deck for an informal meeting and a late dinner. Visitors to the canoe are still dropping by.



"Do you believe in eagle feathers?" an old Haisla asks Captain Bruce Blankenfeld.

"Uh, we don't have eagles in Hawai'i, but I believe in the symbolism of the eagle for your people." The old man, a former alcoholic, leaves and returns a short time later with a fan-like ceremonial piece made from seven eagle feathers. The handle is adorned with beautiful beadwork done by his wife. He presents it to Bruce. "It's been blessed by a medicine man. Bring it out when you need good luck on your voyage," he explains quietly.

Off to the side a carver from Haida Gwaii (Queen Charlotte's Island) is showing crew member Ka'au McKenney drawings of traditional crest designs. There are over 700 crests among the Haida, some, like the hummingbird, can be used by anyone; others are owned by particular families. The carver pulls a mask out of his backpack. A raven man, adorned with human hair. Then a rattle. He brings out his tools, demonstrates how to use one of them on the back of the mask, and gives the tool to Ka'au.

Traditional gifting and sharing are alive in the native communities of the Northwest. The crew has received gifts of traditional foods (salmon, halibut, and a bag of dried seaweed that tastes like nori), it has received caps, t-shirts, towels, and pendants; it has received money. It's an insult to refuse. The crew has tried to reciprocate with "Hawai'iloa" t-shirts, caps, and sweaters; and visitors are invited to tour the canoe. But there's no way to repay the hospitality and the sharing. You say thank you and feel indebted.

There is a friendly competition in giving among the tribes. When Christine Hunt of the Kwakwaka'wakw, who has organized the British Columbia tour of "Hawai'iloa", was

told about the generosity of the Heiltsuk in Bella Bella, she laughed, "The Heiltsuk have out done us again."

The warmth of the people and the richness of the land has more than overcome the cold NW wind and the SW squalls.

Hauoli Smith, a "Hawai'iloa" crewmember who recently competed for America's Cup with the Women's Team shared her feelings at a crew talk-story session." I haven't laughed so much in a long time."The family feeling among the crew and the hospitality of the hosts have lightened her spirits after the intense, grueling competition to win the right to defend the Cup in San Diego. "I've been waiting for one big revelation on this journey, something like thunder, but it hasn't come. It's subtler. It's a series of small unforgettable moments."

After Smith performed a hula at Bella Bella, accompanied by Kamehameha School teacher Brad Cooper on ipu, a fan club of pre-teen girls formed around her and stayed with her for the rest of the evening, explaining the traditional dances to her. An old woman gave her an engraved silver bracelet.

Saturday, June 24, the Tsimshian Tribal Council of Prince Rupert along with Tsimshian, Nisga'a, and Haida dancers--have planned a belated welcome and farewell potlatch for the canoe and crew. That afternoon, "Hawai'iloa" will leave for Ketchikan, Alaska, the largest native community in the area of Southeast Alaska, from which the trees for the hulls of the canoe came--hence, the canoe's first home.

Port Hardy, B.C. / June 17	Prince Rupert, B.C. / June 22	Ketchikan, Alaska / June 26	Angoon, Alaska / July 2	Sitka, Alaska / July 4	Hoonah, Alaska / July 7	Haines, Alaska / July 10	Haines, Alaska / July 12	Juneau, Alaska / July 15
1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui		
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions			

[Home](#)

[Search](#)

[Archives](#)

[Past Education
Programs and
Materials](#)

[On-Line
Visuals](#)

[Bibliographies
\(Books and
Films\)](#)

Ketchikan, Alaska / June 26, 1995

Photo Below: Captain Wally Froiseth and Navigator Ka'au McKenney Catch a Ride on a Haida Canoe

The voyaging canoe "Hawai'iloa" arrived to a gala welcome in Saxman at 12 noon yesterday. Saxman is a native village two miles south of Ketchikan. The people of Saxman and Ketchikan lined the shore for about three miles, waving and honking their car horns. Native elders and dancers of the Tlingit, Haida, and Tsimshian nations greeted the canoe crew on shore.



Last night, over a thousand guests gathered at Saxman Community Hall for a feast, speeches, and entertainment that lasted till 1 a.m. The visit of the canoe had created great anticipation in the community. "We prayed for good weather," one elder said. "When we saw the canoe coming, my grandson started shouting, 'They're coming! they're coming!'"

The canoe left Port Simpson, British Columbia, at 3 a.m. yesterday for the 70 mile crossing of the Dixon Entrance, the second of two open ocean passages on the canoe's Northwest journey. The cloudy skies began clearing slowly as the canoe was towed up Tongass Narrows and the sky was bright and sunny when "Hawai'iloa" reached Saxman and Ketchikan, which are built on the shore of spruce-covered hills, with snow capped mountains in the distance.

Richard Jackson, a Tlingit leader who helped organize the reception in Ketchikan, noted that a pod of killer whales, traditional guardians of the Tlingit nation, came through Tongass Narrows earlier in the day, "opening the way for the canoe to enter Alaska and travel onto Juneau. The canoe symbolizes the bond between our people. The visit is a celebration of our cultures."

Nainoa Thompson, director of the "Hawai'iloa" project, explained the purpose of the visit was to show the people of Alaska that "the promise to build a canoe out of the logs donated by Sealaska has been fulfilled. This visit is the culmination of a 5 year project begun in 1989 to build a voyaging canoe out of traditional materials."

After no suitable logs were found in Hawai'i, Sealaska, a native corporation owned by the Tlingit, Haida, and Tsimshian people, donated 9 spruce logs, valued at \$41,000 dollars to the people of Hawai'i. The logs were bought at auction and cut on United States Forest Service land on Shelikof Island in Soda Bay, Prince of

Wales Island, west of Ketchikan. Two of the largest logs were carved into the hulls of "Hawai'iloa" by master canoe builder Wright Bowman, Jr. The canoe was launched in the summer of 1993, and after sea trials and modifications, made its first voyage to the South Pacific in the spring of 1995.

During a slide presentation about the 1995 voyage of "Hawai'iloa" to the Marquesas Island, Thompson praised the leadership of Judson Brown, a member of the Board of Trustees of Sealaska Heritage Foundation, in getting the logs to Hawai'i. He compared Brown's contribution to the project with the contribution of Mau Piailug to the revival of non-instrument navigation: "The canoe could not have been built without Judson's help," Thompson noted.

Brown responded, "We gave you wood to help you make your journey to your ancestral homelands. You gave us much more. You have shared with us your civilization, your spirit, your dreams. You have taught us that we can strive for and achieve the same kinds of things in the revival of our civilization."

Willard Jackson of the Tlingit tribe, who was invited to ride on the canoe after it entered Tongass Narrows, said that the visit of the canoe has brought the three native nations in the area together in celebration. "I felt a peace on board the canoe this morning as it went through the calm waters. I felt the unity of the four nations--the Tlingit, the Haida, the Tsimshian, and the Hawaiian.

An outstanding performance by the Cape Fox dancers closed the evening. Sixty members strong, the group drummed and chanted and danced, filling the large hall with stately rhythms and a religiously mystical mood. The traditional performances included the Dance of the Killer Whale and the Welcoming of the Chiefs, in honor of Thompson and "Hawai'iloa" Captains Bruce Blankenfeld and Wally Froiseth. The colorful, fringed Chilkat blankets swayed, the white fur caps with ermine tails flying and the wooden masks of ravens, eagles, bears, and wolves bobbed as the dancers spun and dipped on stage.

"Hawai'iloa" will leave Ketchikan with the tide tomorrow morning, June 27, at 8 for Hollis, on Prince of Wales Island to meet with the peoples of Klawock, Craig, and Hydaburg villages. Other stops in Alaska will include Wrangell (June 29), Petersburg (June 30), Kake (June 30-July 1), Angoon (July 2), Sitka (July 3-5), Hoonah (July 6-9), Haines (July 10-13), and Juneau (July 14-18).

Crew for the Third Leg / Ketchikan to Juneau

1. Wally Froiseth, Captain; canoe builder, waterman, and veteran crew member.

Kaimuki, Oahu.

2. Nainoa Thompson (Joined the crew in Sitka): Project Director for "Hawai'iloa" ; veteran navigator. Niu Valley, O'ahu.

3. Tava Taupu: Watch captain; canoe builder and veteran crew member. Kona, Hawai'i; originally from Taiohae, Nukuhiva.

4. Brad Cooper: Watch captain; teacher of Hawaiian Studies at Kamehameha Schools in Honolulu. Crew member on 1995 voyage from Hilo to Tahiti on "Hawai'iloa". Kaneohe, O'ahu.

5. Ka'au McKenney: Watch captain; co-navigator on Hokule'a, 1995 voyage from Hilo to Tahiti; crew member 1995 voyage from Nukuhiva to Hawai'i. Palolo Valley, O'ahu.

6. Terry Hee: Veteran crew member. Towing specialist. 'Aina Haina, Oahu.

7. Kim Guerin: Musqueum tribe, Vancouver, B.C.; Dragon boat paddler.

8. Dennis Kawaharada: Media and documentation; Polynesian Voyaging Society staff. Professor at Kapi'olani Community College. Crew member on interisland voyages. Makiki, HI.

9. Lilikala Kameielehiwa: Professor of Hawaiian Studies at the University of Hawai'i at Manoa. Crew member on interisland voyages. Kane'ohe, HI.

10. Shantell Ching: Crew member on the 1995 voyage from Hilo to Tahiti, on Hokule'a; weight training supervisor, Kamehameha Schools. Polynesian Voyaging Society staff. Kalihi, HI.

11. Kala'i Miller: Crew member on interisland sails, Tahiti, 1995. Team Soljah. Kahalu'u, O'ahu.

12. Kaponu Aluli: Crew member on interisland sails, Tahiti, 1995. Massage and body therapyV healing arts. Team Soljah. Kailua, O'ahu.

13. Alike Winter: Owner of Soljah Clothing, Hawai'i. Kaimuki, O'ahu.

14. Diane Warncke: Medical officer. Nurse. Paddler with Hui Nalu Canoe Club. Hawai'i Kai.

The canoe will be escorted by the "Sea Wolf," a 30-foot fishing boat piloted by

Ernie Hillman of Sealaska; "Sea Raven," piloted by Byron Mallot will join the canoe is Sitka.

<u>Port Hardy, B.C. / June 17</u>	<u>Prince Rupert, B.C. / June 22</u>	<u>Ketchikan, Alaska / June 26</u>	<u>Angoon, Alaska / July 2</u>	<u>Sitka, Alaska / July 4</u>	<u>Hoonah, Alaska / July 7</u>	<u>Haines, Alaska / July 10</u>	<u>Haines, Alaska / July 12</u>	<u>Juneau, Alaska / July 15</u>
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<u>1976: Tahiti</u>	<u>1980: Tahiti</u>	<u>1985-87: Aotearoa (New Zealand)</u>	<u>1992: Rarotonga</u>	<u>1995: Marquesas</u>	<u>1995: West Coast, British Columbia, & Alaska</u>	<u>1999-2000: Rapanui</u>
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<u>Voyages</u>	<u>Canoe-Building</u>	<u>Wayfinding</u>	<u>Life on a Canoe</u>	<u>Polynesian Migrations</u>	<u>Proverbs and Traditions</u>
--------------------------------	---------------------------------------	-----------------------------------	--	--	--

<u>Home</u>	<u>Search</u>	<u>Archives</u>	<u>Past Education Programs and Materials</u>	<u>On-Line Visuals</u>	<u>Bibliographies (Books and Films)</u>
-----------------------------	-------------------------------	---------------------------------	--	--	---

Angoon, Alaska / July 2, 1995

Photo Below: Lilikala Kameeleihiwa Accepts a Talking Stick from a Tlingit Elder

"Hawai'iloa" arrived in Angoon, Alaska, a native Tlingit community of about 750 people at 1 p.m. today. Angoon is southwest of Juneau. The crew was greeted by elders and dancers at dockside.



The first stop for some of the crew was the garbage dump for sightseeing. Bears hang out among the wrecked cars, soda cans, and smoldering garbage. There were nine bears there--five adults and four cubs--sitting on their haunches or lumbering around on all fours. One adult had his snout in a spam can. According to Fred, Jr., son of the village spokesperson of the Raven/ Beaver clan, bears began coming around the dump a few years ago when there was a shortage of berries, and have stayed around town ever since.

Two bears were roaming through town yesterday. Seventeen hundred-square-mile Admiralty Island, on which Angoon is the only permanent community, has one of the largest concentrations of brown bears in the world. The bears look friendly, almost silly, but they have been known to attack people. Fred says that he cannot recall a bear mauling on the island, but he is apprehensive since the "garbage dump" bears, as he calls them, are no longer afraid of people.

The wildlife is closer to everyday life in this sparsely populated region. Bald eagles and ravens are everywhere. On the way to Angoon, "Hawai'iloa" was towed past a large pod of spouting, breaching humpback whales in Frederick Sound. These whales, which spend their winters in warmer waters, such as those around the Hawaiian islands, congregate in the inland passages of Alaska during the summer.

The various animals of the region are represented in the highly stylized art of the native Alaskans, and are an integral part of identity, with each person belonging either to the Raven or the Eagle subdivision of the tribe, and then to a clan identified by its totem, such as the Beaver or the Frog, the gentler animals of the Raven moiety, or the Killer Whale or the Bear, the more ferocious animals of the

Eagle moiety.

Angoon is one of the more conservative villages in Southeast Alaska. Twenty-five years ago, the elders of the village were opposing development of the island, including a dock for the Alaska State Ferry which runs between Juneau and Ketchikan. The village was destroyed in 1882, after Tlingits demanded reparations for a shaman who was killed by an exploding harpoon gun on a Northwest Trading Company vessel. More recently the younger natives have been more open to some development, and a ferry dock has been built.

The Hawaiian crew was warmly received and greeted as cousins by the Tlingit community, as has been the case at each of the five stops so far in Southeast Alaska. Crew members were escorted to the community center to be introduced to their host families. A potlatch celebrating the arrival of the canoe will be held tonight.

Crew member Brad Cooper, a teacher of Hawaiian studies at Kamehameha Schools, was hosted by Sherene Hull, a Kamehameha School alumni and an elementary school teacher in Angoon. The meeting was a reunion of sorts. During a distance learning TV program broadcast live from Hawai'i during the 1995 voyage of "Hawai'iloa" to the Marquesas, Cooper spoke about Polynesian voyaging with Hull's students and answered their questions about life on the canoe.

Two days ago in Kake, when "Hawai'iloa" arrived at 10 p.m., seventeen vessels, including a single-hull fiberglass canoe built from a traditional Tlingit design, and a 55 foot seine boat carrying the Kake community dancers came out to meet it in choppy sea under a grey twilit sky. A cedar bonfire was blazing on the beach, a traditional sign that the visitors were welcome and that there was food and housing available on shore. The welcome ceremony lasted until 1 a.m.

Tomorrow, "Hawai'iloa" will leave for Sitka, Alaska, at 5 a.m. and will spend the fourth of July there. The canoe is on its way to Juneau for a July 14 celebration of the accomplishments of "Hawai'iloa", which was built from spruce logs donated by Sealaska, a corporation owned by the tribes Southeast Alaska. Sealaska is headquartered in Juneau.

<u>Port Hardy, B.C. / June 17</u>	<u>Prince Rupert, B.C. / June 22</u>	<u>Ketchikan, Alaska / June 26</u>	<u>Angoon, Alaska / July 2</u>	<u>Sitka, Alaska / July 4</u>	<u>Hoonah, Alaska / July 7</u>	<u>Haines, Alaska / July 10</u>	<u>Haines, Alaska / July 12</u>	<u>Juneau, Alaska / July 15</u>
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Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions
-------------------------	--------------------------------	----------------------------	-------------------------------------	---	---

Home	Search	Archives	Past Education Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)
----------------------	------------------------	--------------------------	---	-------------------------------------	--

Sitka, Alaska / July 4, 1995

Photo Below: The Volcano L'ux; the Pacific Ocean lies Beyond

After a week in the inland waters of SE Alaska, "Hawai'iloa" was greeted by ocean swells as it arrived in the city of Sitka on the Pacific Coast of Baranof Island on the afternoon of July 3.

The Tlingit name for Baranof Island was Shee. Sitka is an anglicized version of "Shee atika," meaning "on the ocean side of Shee."



Elder Mark Jacobs, Jr., spoke at the welcoming ceremony of the shared seafaring heritage of the Tlingit and the Hawaiians. According to one tradition, a voyager named Kachachgook was blown off course during a storm and landed in Hawai'i. After resupplying his canoe there, he returned to SE Alaska with his paddlers, navigating by the stars and bringing with him a never-before-seen hollow plant--possibly bamboo. His first sign of landfall was smoke from the volcano L'ux (Mt. Edgecumbe), which is no longer active.

According to Jacobs, coconut husk fiber has been found in some Tlingit artifacts. While western scholars claim the coconut was brought over by Captain Cook, Jacobs believes the fibers came from ancient contacts between the Tlingit and the Hawaiians.

Nels Lawson of the Eagle-Wolf clan says that the Tlingit once traveled and traded from Juneau to Baja California in their cedar canoes. After Western contact, the arts of canoe building, along with the people and culture of the Tlingits, began dying out. Although Lawson's uncle has carved a 50-foot canoe from a huge cedar tree towed up to Sitka from British Columbia, the canoe was done for display only at the city's cultural center. The canoe was not "spread" using a traditional technique in which the cedar hull was filled with water and heated to a boil with hot stones in order to soften the wood and allow the carver to widen the beam to make the canoe more stable.

Lawson has been trying to get the Tlingit community to buy a fiberglass replica of a traditional canoe, which he plans to use to teach students both about their seafaring heritage and about teamwork. Hopefully, the visit of the "Hawai'iloa"

will help stir local interest in such projects.

Lawson has been pushing for Native Studies and Language courses in the local schools as well. He says that currently the primary means of educating young people in the culture is an after-school program run by the Alaskan Native Brotherhood. Lawson is disappointed by the fact that young Tlingits of today are dependent on MacDonald's and Subway sandwiches and no longer know much about how to use the resources of the land and sea around them for survival, even though many of the resources are still available. He says it would take a year of hunting, fishing, and gathering to show students the annual cycle of food production in traditional times.

Lawson is one of the Tlingits hosting "Hawai'iloa" crew members during their stay in Sitka. Today crew members participated in the July Fourth Parade through downtown Sitka, performing a haka, or dance, shirtless in the 56 degree weather, to the delight of the crowd.

Tomorrow afternoon at 5 p.m., the canoe will depart for Hoonah, a native community about 150 miles from Sitka through Peril Strait and other inland passages. The canoe will stop in Poison Bay overnight and arrive in Hoonah on July 6 for a three day stay, before continuing on to Haines and Juneau.

Port Hardy, B.C. / June 17	Prince Rupert, B.C. / June 22	Ketchikan, Alaska / June 26	Angoon, Alaska / July 2	Sitka, Alaska / July 4	Hoonah, Alaska / July 7	Haines, Alaska / July 10	Haines, Alaska / July 12	Juneau, Alaska / July 15
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Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions			
Home	Search	Archives	Past Education Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)			

Hoonah, Alaska / July 7, 1995

Photo Below: *Hawai'iloa* Sailing Down the Icy Strait, Alaska

"Hawai'iloa" sailed across Port Frederick in a light northerly wind to the native community of Hoonah (pop. 800) at 2 p.m. yesterday afternoon. The crew was greeted at the wharf by the village elders. A seagull dance followed.

The seagull, actually the arctic tern, is the totem of one of the clans of Hoonah. The terns inhabit cliffs on the Pacific Coast of Glacier Bay

National Park, the area where the four clans of Hoonah originally lived, across the Icy Strait from Hoonah. According to tradition, when terns are alerted by a loud sound, thousands of them swoop down and rise up again as if to greet the visitor, then return to their nests in the cliffs. Elder Richard Dalton says that the terns will even say the name of the visitor in any language. The clan dancers imitate the motions and sounds of a seagull, crying out "It's just me."

As "Hawai'iloa" came into the harbor, 400-foot long log transport ship with four deck cranes was loading logs near tiny Pitt Island, a traditional burial site. A long float of logs ready for loading was nearby. Logging is one of the mainstays of the local economy.

The mountains around Hoonah have been clear-cut, with wide swaths of treeless land near the shore. The spruce and cedar logs are shipped whole, mainly to Japan, which is stockpiling wood, and more recently to China and Korea. Sales to the Far East bring a premium price for timber. Despite the sparse population of the region (the whole of Alaska has about the same about of people as the island of O'ahu), the human impact on the environment has been great because of the worldwide demand for Alaska's resources.

The logging takes place on land belonging to Sealaska Corporation and the Huna Totem Corporation, which profit from the timber sales. According to elder George Obert, the native residents generally oppose the logging around their town because it destroys the habitat of deer, one of their traditional foods. Native hunters now



have to travel farther to find deer. However, the board of directors of Huna Totem sold the timber in order to maximize profits for all its shareholders, the majority of whom no longer live in Hoonah.

Sealaska, the regional native corporation of Southeast Alaska, and Huna Totem Corporation, a native village corporation, were formed after the Alaska Native Claims Settlement Act (ANCSA) of 1971, which awarded cash (nearly \$1 billion) and land (44 million acres) to the native peoples of Alaska for the illegal seizure of aboriginal lands by the U.S. Government. Sealaska, one of fourteen regional corporations, received 300,000 acres while 12 native villages and towns in the Southeast with at least twenty-five inhabitants received 23,000 acres. (Some villages were left out; as of the summer of 1995, five more were applying for land.)

Not everyone is happy with the settlement. According to Frank Williams, the village of Huna, with the largest number of native people, received the same amount of land as the villages with fewer people. Also, because the land selected had to be contiguous to the village, the people of Hoonah were not able to take the land with the best resources, or land in their original homeland in Glacier Bay National Park, which is rich in animal and plant life. Williams also believes that the native people would not have formed profit-making corporations, as stipulated by ANCSA, if they had had a choice.

The Tlingit language and traditions have been largely lost through assimilation of the younger generation. There are no native speakers under 40. District School Superintendent Virginia Fryrear, says that the Hoonah School is taking the lead in developing a curriculum in Tlingit language and culture. But a 35-year old Tlingit remains skeptical. Although he considers himself a radical and has developed a strong interest in his culture in the last three years, neither he nor anyone else of his generation can speak the language. "Until I see that the school can produce one Tlingit speaker, I can't say that its program will work."

At a crosscultural workshop, Lilikala Kame'eleihiwa, crew member of Hawaii'iloa and Hawaiian Studies professor at UH Manoa, shared with Tlingit educators the successes of the Hawaiian Language Immersion program in Hawai'i. "It's wonderful to hear our children speaking in Hawaiian and arguing in Hawaiian." "I am impressed with the immersion method and would recommend it for the teaching of any language, including Tlingit. You would have an easy time starting a school in Hoonah because you still have native speakers among the older generation."

The "Hawai'iloa" crew will tour Glacier Bay tomorrow before departing for Haines and Juneau tomorrow afternoon.

<u>Port Hardy, B.C. / June 17</u>	<u>Prince Rupert, B.C. / June 22</u>	<u>Ketchikan, Alaska / June 26</u>	<u>Angoon, Alaska / July 2</u>	<u>Sitka, Alaska / July 4</u>	<u>Hoonah, Alaska / July 7</u>	<u>Haines, Alaska / July 10</u>	<u>Haines, Alaska / July 12</u>	<u>Juneau, Alaska / July 15</u>
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<u>1976: Tahiti</u>	<u>1980: Tahiti</u>	<u>1985-87: Aotearoa (New Zealand)</u>	<u>1992: Rarotonga</u>	<u>1995: Marquesas</u>	<u>1995: West Coast, British Columbia, & Alaska</u>	<u>1999-2000: Rapanui</u>
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<u>Voyages</u>	<u>Canoe-Building</u>	<u>Wayfinding</u>	<u>Life on a Canoe</u>	<u>Polynesian Migrations</u>	<u>Proverbs and Traditions</u>
--------------------------------	---------------------------------------	-----------------------------------	--	--	--

<u>Home</u>	<u>Search</u>	<u>Archives</u>	<u>Past Education Programs and Materials</u>	<u>On-Line Visuals</u>	<u>Bibliographies (Books and Films)</u>
-----------------------------	-------------------------------	---------------------------------	--	--	---

Haines, Alaska / July 10, 1995

Photo Below: *Hawai'iloa* Spent the Night Off Lincoln Island; Kala'i Miller Fishing from the Manu of the Canoe at Dawn

The voyaging canoe "Hawai'iloa" arrived in Haines, Alaska, at 10 a.m. this morning after sailing east down Icy Strait from Hoonah, then taking a tow up Lynn Canal, a narrow waterway bordered by steep, jagged, snowcapped mountains. Haines (pop. 2,200) is the northernmost destination of the voyaging canoe. The crew was welcomed by Tlingits from four communities--Haines, Kluckwan, Whitehorse, and Skagway.



Haines is the hometown of Judson Brown, who was approached by his friend Herb Kawainui Kane, one of the founders of the Polynesian Voyaging Society, in 1990, about the possibility of purchasing two Alaskan logs to build "Hawai'iloa".

Brown introduced Kane to Byron Mallot, then CEO of Sealaska. Mallot, who had seen documentaries about Hokule'a, said he visualized spruce logs rising over Pacific Ocean swells as the hulls of a Hawaiian voyaging canoe and made the decision to donate the logs. "The "Hawai'iloa" project is in keeping with the mission of Sealaska to strengthen native cultures by looking to the past in order to find a direction for the future," Mallot explained at the welcoming ceremony.

Before leaving Hoonah on July 9, the crew of "Hawai'iloa" was given a tour of Glacier Bay National Park, west of Juneau, by four Tlingit elders. The trip was bittersweet for the elders. One of them said it was a chance to revisit the sites of their childhood, when the Tlingits of Hoonah used to fish, hunt, and gather food in the area--their ancestral homeland before advancing glaciers drove them out. But the trip was a sad one, too, because the National Park Service prohibits hunting and gathering today, except by special permit.

Frank Williams, a full-blooded Tlingit who was born in Glacier Bay during a seagull egg gathering trip his parents made one summer, says that certain environmentalists oppose any human activity that will affect the wildlife and plantlife in the park. "But we lived here for 10,000 years or more, and the land was

healthy. It's our tradition to protect all living things. We pray to the forest people before we take anything from their domain. It's only since the white man came that the environment has become endangered."

Williams says there is a bill before Congress to allow Tlingits to hunt, fish, and gather for subsistence in the area. To those who say that Tlingits should be allowed to hunt and fish only with traditional tools such as the bow and arrow, Williams says "That's like telling the tour operators who bring visitors to the National Park that they can only bring tourists in by canoe."

It took Williams over two years to get a permit to hunt two goats so his aunt could weave him a traditional tunic out of goat hair. It took him three days to find and shoot the two large goats needed for the tunic. Did he eat the meat? "Yes. But they were old goats and kind of tough." His aunt dyed the tunic in the traditional way, with dark brown made from hemlock bark, yellow from a moss, and blue-green made from boiling the wool with copper in urine.

Williams told me about a case pitting a Tlingit traditionalist and Park Service environmentalists. In October, 1992, Gregory O. Brown, Sr. (Tlingit name: Shaa-yakw-nook), shot a seal with a rifle upon the request of one of his uncles, who wanted the seal for a potlatch in honor of one of Brown's aunts. Seals are a traditional food for the Tlingit, and potlatches are considered religious ceremonies. The Park Service arrested Brown, confiscated the rifle and the seal, and charged him with taking a seal without a permit within the boundaries of Glacier Bay National Park. Brown at first asserted his native hunting and gathering rights, then religious freedom as grounds for dismissing the charges. After his lawyers questioned the right of the Park Service to enforce regulations on land it did not own below the mean high tide line in Glacier Bay, the U.S. Government dropped its prosecution of Brown at the end of 1993, not wishing to litigate the issue of ownership of submerged land in Glacier Bay at that time, although it continued to maintain it had the right to regulate all hunting and gathering within the boundaries of the national park.

Brown wanted the issues resolved, but could not find a lawyer to pursue his case. He wrote in a letter addressed to his "Hawaiian brothers and sisters": "I was given no help from all governmental entities such as the Tlingits and Haidas, Sealaska, BIA (Bureau of Indian Affairs), Huna Totem, these people only offered to pay the fine for me. I think (and its only my opinion) that these entities have a compact with the government to assimilate us Tlingits. Assimilate is just another word for GENOCIDE." He signed the letter Shaa-yakw-nook, "Tlingit Warrior."

Port Hardy, B.C. / June 17	Prince Rupert, B.C. / June 22	Ketchikan, Alaska / June 26	Angoon, Alaska / July 2	Sitka, Alaska / July 4	Hoonah, Alaska / July 7	Haines, Alaska / July 10	Haines, Alaska / July 12	Juneau, Alaska / July 15
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Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions
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Home	Search	Archives	Past Education Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)
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Haines, Alaska / July 12, 1995

Photo Below: A Dancer with a Bear Mask, Klukwan, Alaska

At a potlatch on July 11 commemorating the visit of the voyaging canoe "Hawai'iloa" to Haines, Alaska, navigator Nainoa Thompson was honored with a new Tlingit name--Xaat eesh [Kot eesh], "Island Father." Tlingit elder Judson Brown, who bestowed the honor, explained that the name described a navigator and voyager, someone who looks for islands. Last October, Thompson had been given the name "Goosh Klein," "Big Fin," when he was adopted into the killer whale clan by Brown. "Goosh Klein" refers to the leader of a pack of killer whales.



Thompson accepted the new Tlingit name on behalf of the hundreds of people in Hawai'i who helped to build "Hawai'iloa" between 1990-1993 and who sailed the canoe to Tahiti, Nukuhiva, and back to Hawai'i in the spring of 1995. He presented a koa paddle from the canoe to the city of Haines to commemorate "Hawai'iloa"'s visit. "This paddle is made from the same wood we sought when we first decided to build "Hawai'iloa",," Thompson said. "When we couldn't find koa trees large enough in Hawai'i, we had to turn to the native people of Alaska, and you responded. This project is about bringing people together, about working together, about overcoming prejudices and divisions, and about turning fear into hope." "Hawai'iloa" Captain Wally Froiseth added, "This paddle was used to paddle the canoe into the sacred pass to Taputapuatea, the most sacred marae (site of worship) in Polynesia. The paddle is full of mana (spiritual power), and we are transferring this mana to you."

The next day, the crew of "Hawai'iloa" attended a commemorative lunch at Klukwan, a native village of 135 residents, located 22 miles outside of Haines. David Katzeek, chief of the thunderbird clan, told his guests a story about a man who found dead salmon in bits and pieces along a stream. He tried to restore a fish to life, so that salmon would come up the stream again as food for his people. Each time he removed a little bit more of the sand and bits of leaves and branches contaminating the reassembled fish until he succeeded in restoring the fish to life on the fourth try. Katzeek said his grandfather, Jimmy George, who told him the story, gave it the following interpretation: that the bits and pieces of the salmon

represented the bits and pieces left of the Tlingit culture today and that the contamination was the materialism that pervades modern life. The culture could only be restored to life through a return to the spiritual beliefs of their ancestors.

Lani Hotch, a resident of Klukwan whose father was half Hawaiian, brought out for display a half-finished Chilkat Blanket, woven of goat's hair. One of these intricately-designed, hand-woven, storytelling blankets took about a year to complete. The blankets are used in dances and are considered by some to be the highest expression of Tlingit art. The Chilkat River Valley, in which Klukwan is located, was famous for its weaver.

The story of the search for the logs for "Hawai'iloa" inspired Hotch to put the half-finished blanket on display for the Hawaiians. The last master weaver of Chilkat, Jennie Thlunaut, died in 1986. Hotch said that like the Hawaiians, the Tlingits had to look for help outside of their own people in order to begin to recover a lost art. They turned to Cheryl Samuelson, a non-native from Hawai'i, who had taken apart a blanket to analyze its intricate weave. Samuelson showed Hotch and her team of natives and non-natives how to make the blankets, and the team has been working on their first blanket ever since. Samuelson was adopted into the wolf clan of the village and periodically returns to check on the progress of the blanket. Hotch called the blanket a healing robe. Like the canoe "Hawai'iloa", the blanket has brought people together. "There have been many conflicts between natives and non-natives in Alaska," she explained. "Now is a time for healing."

"Hawai'iloa" will depart from Haines for Juneau tomorrow and arrive on July 14 at 10 a.m. for a welcoming celebration at Sandy Beach.

Port Hardy, B.C. / June 17	Prince Rupert, B.C. / June 22	Ketchikan, Alaska / June 26	Angoon, Alaska / July 2	Sitka, Alaska / July 4	Hoonah, Alaska / July 7	Haines, Alaska / July 10	Haines, Alaska / July 12	Juneau, Alaska / July 15
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Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions
-------------------------	--------------------------------	----------------------------	---------------------------------	---------------------------------------	---

[Home](#)

[Search](#)

[Archives](#)

[Past Education
Programs and
Materials](#)

[On-Line
Visuals](#)

[Bibliographies
\(Books and
Films\)](#)

Juneau, Alaska / July 15, 1995

Photo Below: A crowd welcomes *Hawai'iloa* at Sandy Beach, Juneau, Alaska

The Northwest journey of "Hawai'iloa" culminated in Juneau, Alaska, arriving at 10 a.m. yesterday. The canoe sailed into Sandy Beach on the shore of Gastineau Channel and anchored offshore across from a 500 foot high, forested cliff with waterfalls. A crowd of about 300 people, including native Alaskans and Hawaiians and other Pacific Islanders living in Juneau greeted the crew.



After a picnic, the dedication of a replica of a Hawaiian canoe petroglyph at a native Cultural Arts Park on the Juneau waterfront, and a performance by Naa Kahidi, a world-famous native theater group, the crew attended a dinner celebration held in commemoration of "Hawai'iloa"'s visit.

It was an evening of cultural exchange. After a performance of the Southeast Alaskan native national anthem, an elder offered the song to the Hawaiians. Myron "Pinky" Thompson, president of the Polynesian Voyaging Society, invited the native Alaskans to join the family of the canoe, which has spread throughout the Pacific and has now arrived at this far northeast corner of the rim.

"Hawai'iloa" crew members have been performing Hawaiian songs and dances at each stop under the direction of Lilikala Kame'eleihiwa and Brad Cooper. Tava Taupu from Nukuhiva in the Marquesas led the male crew and men from Juneau in a shirtless pig dance of the famous pig god kamapua'a. The Hawaiians were adopted into the Eagle/Raven Dancers under Agnes Bellinger, and performed Tlingit songs and dances. Two young crew members--Kala'i Miller and Kapono Aluli--because of their exuberant dancing, were asked to join the Haida Dancers in their performance. The Mark Trail Dancers serenaded the entire crew.

Robert Martin, chairman of Goldbelt, a native corporation, spoke about Tlingit voyaging traditions along the Pacific Coast and suggested the Hawaiians may be

able to help the Tlingits in recovering those traditions. Leo Barlow, CEO of Sealaska, noted that there are already plans to build a traditional canoe in his hometown of Wrangell, Alaska.

Byron Mallot, the former CEO of Sealaska, gave his Tlingit name "Dook da Naik" to Nainoa Thompson, and adopted Thompson into the Raven/Humpback Salmon clan. Dook Da Naik was the name of a Tlingit hero who helped his people drive the Russians from Yakutat, an area on the Pacific coast west of Glacier Bay National Park.

In responding to Mallot, Thompson spoke emotionally about what the last five years of building and sailing "Hawai'iloa" have meant to him and the Hawaiian community. He noted that "Hawai'iloa" was not just about canoes and sailing, it was also about reviving and perpetuating traditional values. "We have been overwhelmed since coming here by your generosity and hospitality, your willingness to give. What the native Alaskans and Hawaiians have in common are their values of caring and sharing. The project is also about achievement and pride. By taking risks and reaching our goals we raise our self-esteem, and that makes everyone healthier."

"Hawai'iloa" will be in Juneau until July 18, when it will be barged to Seattle for shipment to Hawai'i. The barging from Juneau to Seattle has been donated by Alaska Marine Lines; the barging from Seattle to Honolulu has been donated by Aloha Cargo Transport.

Port Hardy, B.C. / June 17	Prince Rupert, B.C. / June 22	Ketchikan, Alaska / June 26	Angoon, Alaska / July 2	Sitka, Alaska / July 4	Hoonah, Alaska / July 7	Haines, Alaska / July 10	Haines, Alaska / July 12	Juneau, Alaska / July 15
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Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions
-------------------------	--------------------------------	----------------------------	---------------------------------	---------------------------------------	---

[Home](#)

[Search](#)

[Archives](#)

[Past Education
Programs and
Materials](#)

[On-Line
Visuals](#)

[Bibliographies
\(Books and
Films\)](#)

Aboard Hokule`a at 10/08/99 a.m. by Sam Low

At about ten AM local time, a few hours after having first seen Rapa Nui ahead off our port bow, Nainoa called us all aft to share some thoughts about the voyage.

Nainoa: The voyage is pau and this gives me almost an empty feeling. But everyone should be proud of this accomplishment. We have traveled to the last corner of the Polynesian triangle and that achievement is not just ours - it belongs to everyone who has donated a portion of the millions of man hours spent taking care of the canoe over the almost 25 years since her creation.

We worked hard to prepare for this voyage but it was not just academic preparation and physical training that got us here. It was my plan to continue sailing southeast and tack back northeast at sunset - but the wind shifted northeast and if we tacked we would have been going back the way we had come. So instead I decided to follow the wind around and in the morning the island was off our port bow. The wind brought the canoe here. It's about mana. Hokule'a has latent, quiet, sleeping mana when she is tied up at the pier in Honolulu. But when the canoe is sailed by people with deep values and serious intent the mana comes alive - she takes us to our destination.

The mana is inside all of us. It's tied to our ancestry and our heritage. Sometime, in the press of daily life, we neglect it. But when we come aboard this canoe and commit our spirits and souls and lives to a voyage like this one, I think we all feel it. I know I do. This is a very privileged moment for all of us - we have stepped inside that realization of mana on this voyage.

When we go back to our special island home, we need to remember this moment. Mana comes from caring and commitment and values. We malama our canoe and she takes care of us. When we return to Hawaii we need to remember to malama our islands just as we do this canoe. We need to commit ourselves to the values that give life meaning. This canoe is so special - and our island home is also very special - if we learn to care for our land and our ocean they will also take care of us.

Bruce: A lot of things have happened on this voyage that gave me chicken skin. The port hull of the canoe is the wahine hull and the starboard hull is the Kane hull. The symbolism is that the male and the female forces give us life. The symbolism is that they also balance each other - they help each other survive in the ocean.

The mana in this canoe comes from all the people in the past who have sailed aboard Hokule'a and cared for her. I think of the literally thousands of people who have come down and given to the canoe when she was in dry dock. I think of Bruno Schmidt in Mangareva who showed up with his truck every morning to take us wherever we needed to go. I think of the people in Tautira and Aotearoa and the Marquesas who did the same. The list is endless. All of this malama - this caring - adds to the mana of the canoe. It is intangible but it is alive and well. We can all feel it. I just want to acknowledge it.

In this crew we have shown a nice respectful balance. We have shown that we all know how to work hard and how to treat each other well and that was one of the most memorable parts of the voyage for me. The work ethic among this crew was fabulous. There was not one negative word. This kind of caring for each other is part of the on-going rediscovery of what voyaging is all about.

Chad: What made this voyage so special for me was that I felt so comfortable because I knew I was among people who had earned their spot on the crew. You guys are my heroes because you all showed such a dedicated professionalism. I am proud to have sailed with you. Now we have another special journey ahead of us - to return the canoe home to our own special part of the Polynesian triangle and by doing that we honor not only our ancestors but all those people at home who have supported us at home.

Friday - October 8 - Last day at Sea / Sam Low

When it became obvious that we did not have enough time to tack against the wind to reach the anchorage at Hanga Roa before nightfall, I think that we were all relieved - happy to have one more evening at sea. And what an evening! The wind was warm and gentle. The sky, once having cleared by mid-day, remained clear into the night. The lights of Hanga Roa glistened on

the eastern horizon. We sailed along the coast of Rapa Nui, some distance off, until the watch change at ten PM when we tacked toward the island - a dark smudge on the horizon against a glittering curtain of stars.

The 6-10 watch lingered on deck, enjoying the last few moments of comradeship with each other and with our canoe. We watched Jupiter and Saturn rise over the island to starboard and to port the Pleades and their guardian, Taurus. We did not speak - yet our presence together on Hokule'a's heaving deck expressed more deeply than words the bond that has been made in the last seventeen days at sea.

Our view of Rapa Nui between Hokule'a's twin manus must have been the same - except for the lights of the town - that the crew of a similar canoe beheld many centuries earlier. Their exact Homeland is lost in time but legends tell of a great king - Hotu Matua - who settled this island. He must have heard what we hear - the soft lap of waves on twin hulls, the rush of wind over sails, the murmur of sailors as they sit shoulder to shoulder waiting for the first scent of land to reach them. Hotu Matua may have looked forward to landfall with more anticipation than we do, however. Our feelings are mixed. We are proud of our accomplishment and eager to explore the island and then to return home to our families. Yet there is also an edge of sadness. This voyage is ending - the adventure is almost over. For a short time we have been privileged to share a tiny world with each other. Surrounded by an immense sea and forced to turn inward, we have discovered a harmony within ourselves and with the natural world that the rush of daily life on land isolates us from. It has been rare gift.

In the morning, when the 6-10 watch takes the deck, wisps of cloud surge from Rano Kau, the volcanic caldera that rises to the south of Hanga Roa. Motu Kau Kau is a knife thrusting from the sea - a slash of sunlight behind it. Mist spills off dark cliffs. The ocean is the color of gunmetal. A towering mountain of torn cumulus stalls over Motu Nui. In the saddle between Rano Kau and Maunga Tere Vaka, the island's tallest mountain, we see Hanga Roa. Ivory breakers rim the seam between ocean and cold black cliffs.

Shantell Ching collects passports as the rest of us methodically strip Hokule'a's decks of bagged sails, boxes of food, cooking utensils and personal gear - stowing them below - making the canoe ready for port. Kama

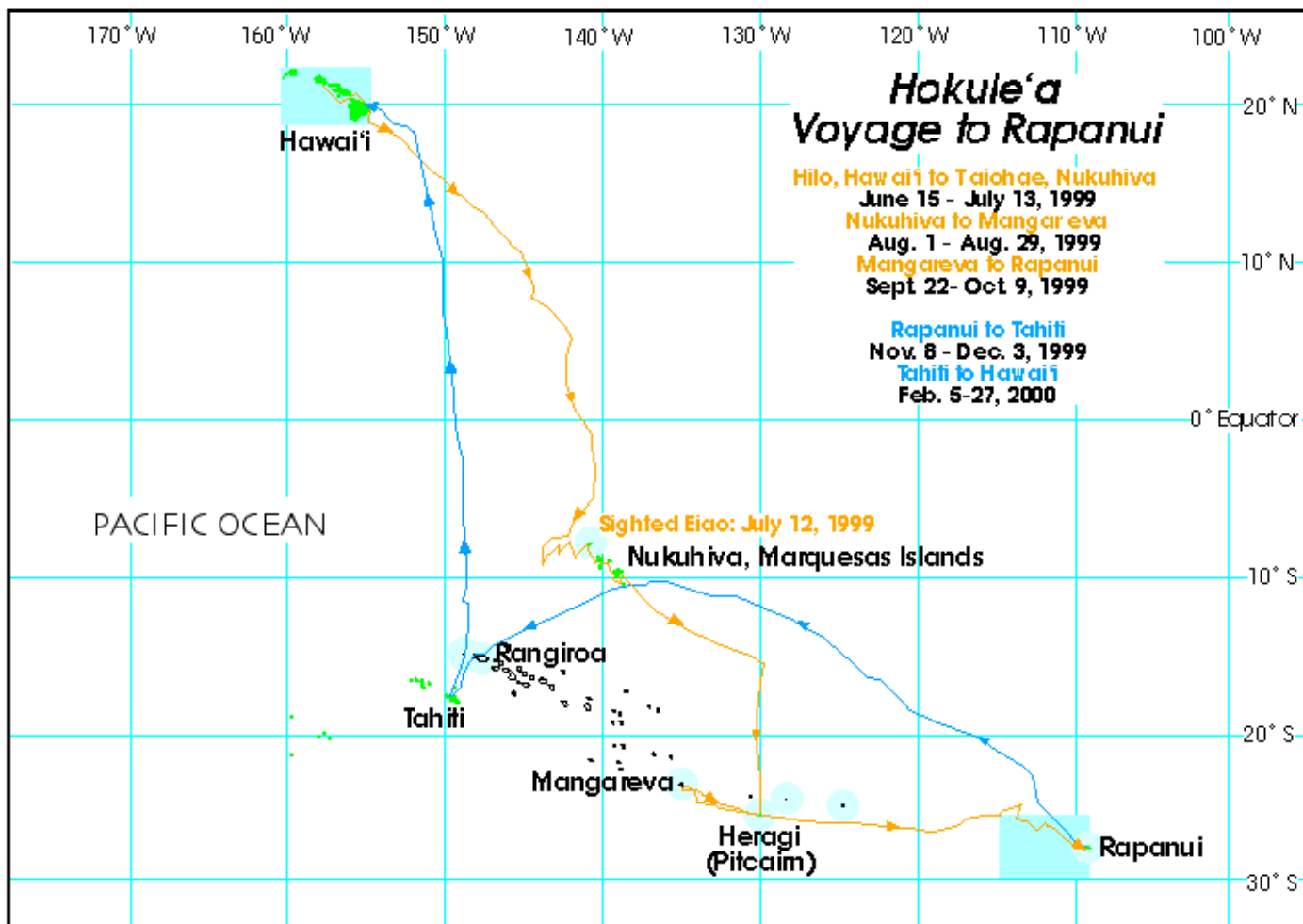
Hele swarms with sailors garbed in red slickers doing the same tasks.

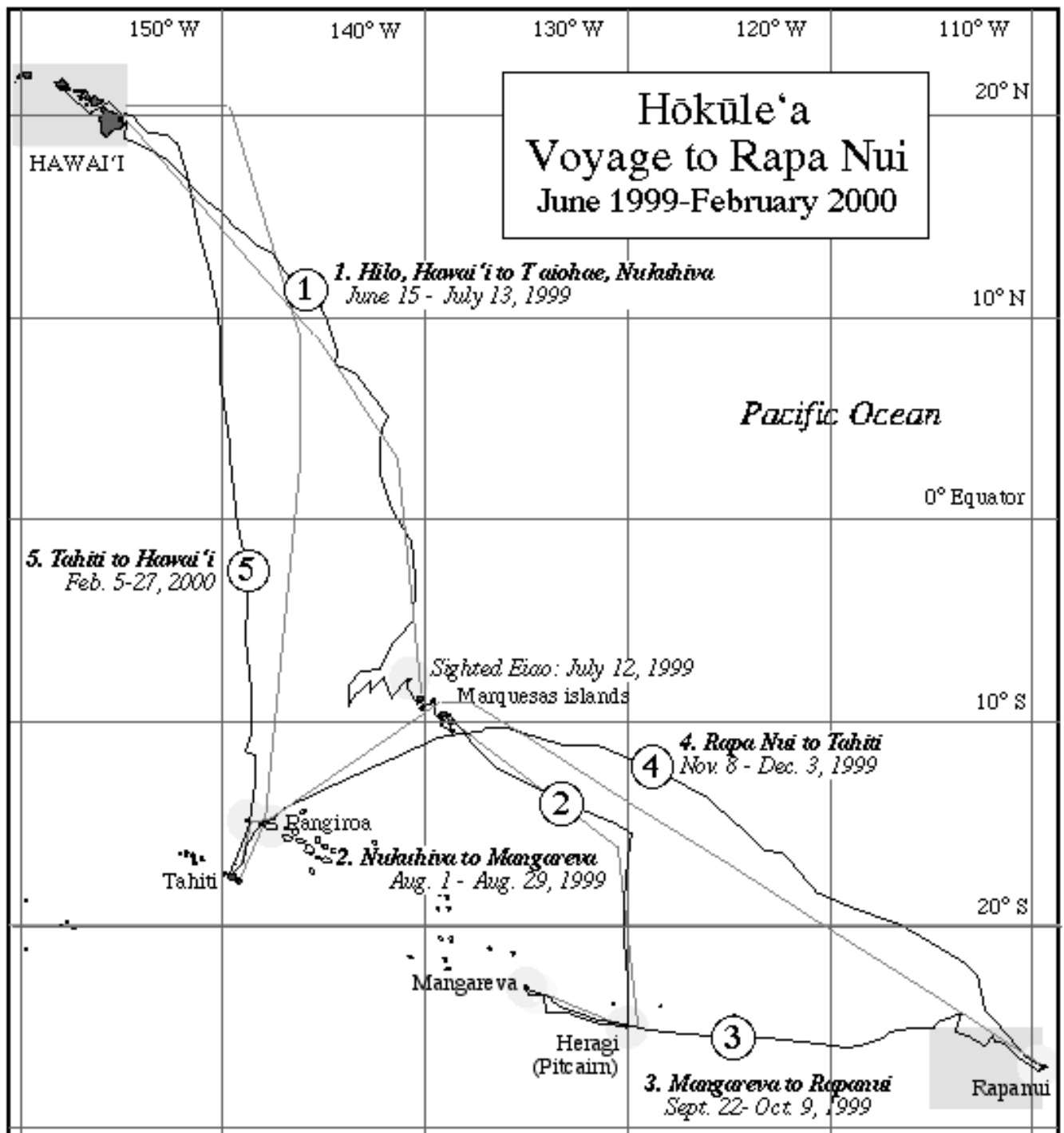
Landfall is imminent. Much too soon the sea borne routine of work and caring for each other will be broken. It is a sad thought - one that we gratefully put aside - concentrating instead on the details of readying our canoe for port.

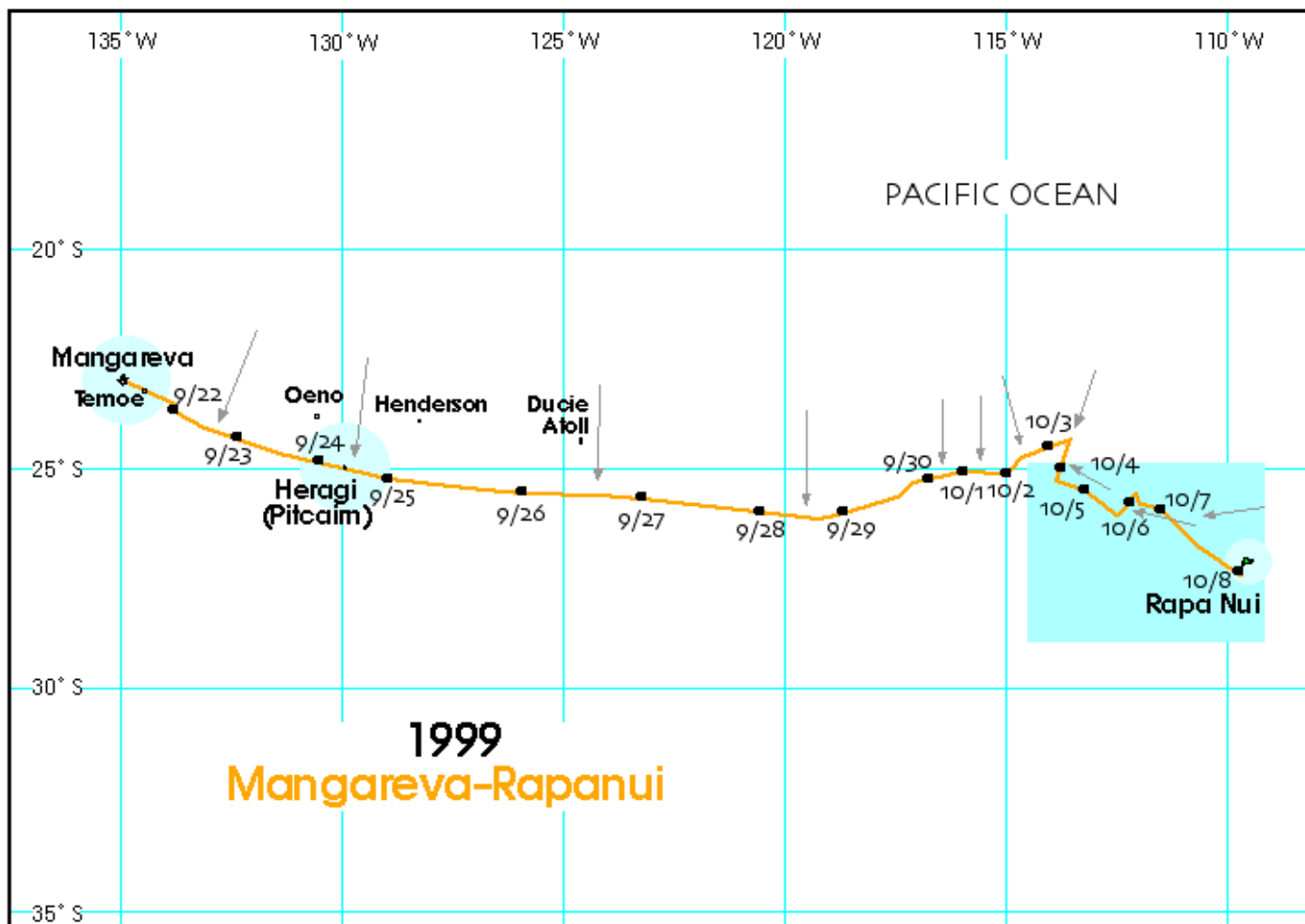
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For more information on the leg to Rapa Nui, go to [The Mangareva-to-Rapa Nui Page](#)

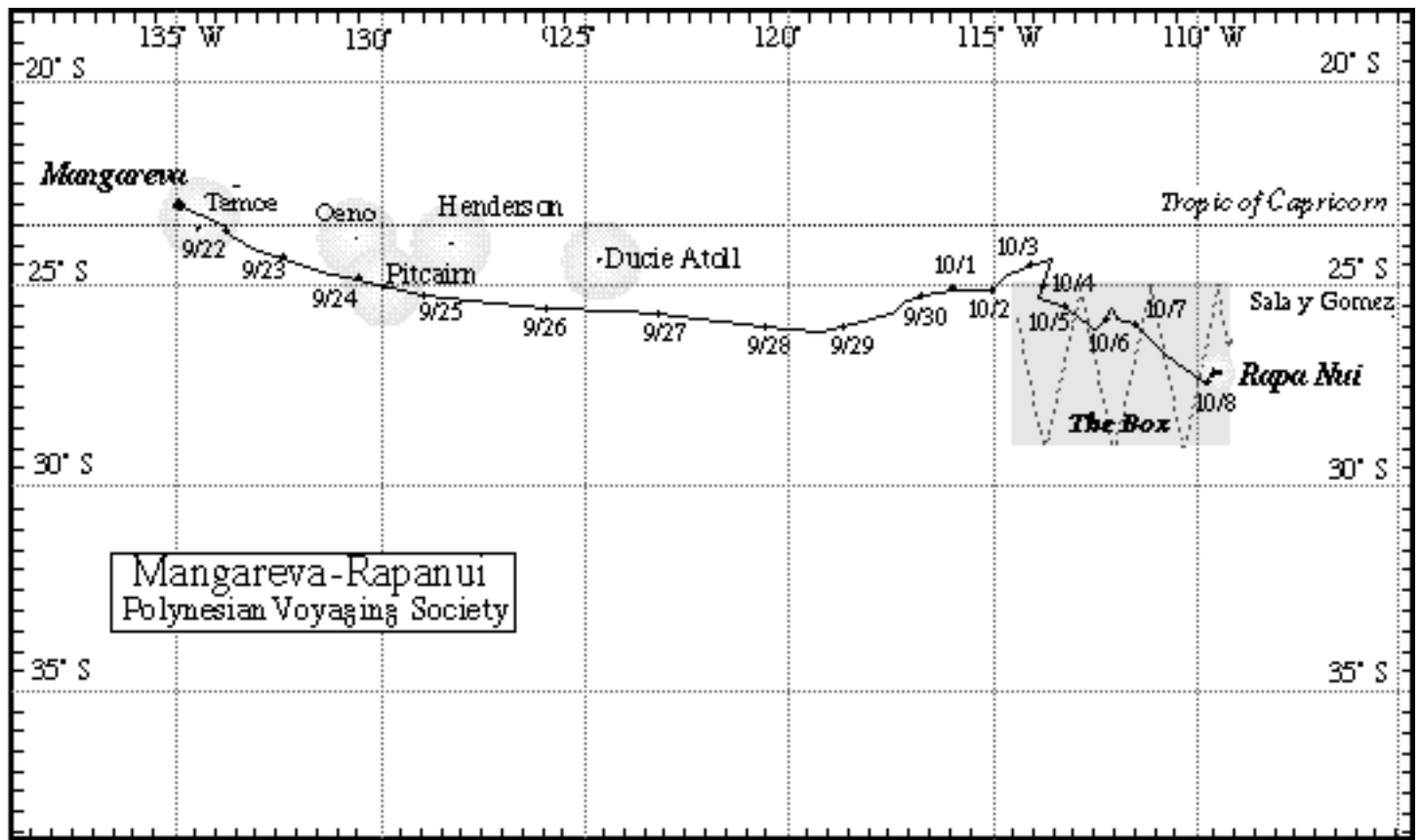
For more information on the quest for Rapa Nui, go to the [PVS Homepage](#)

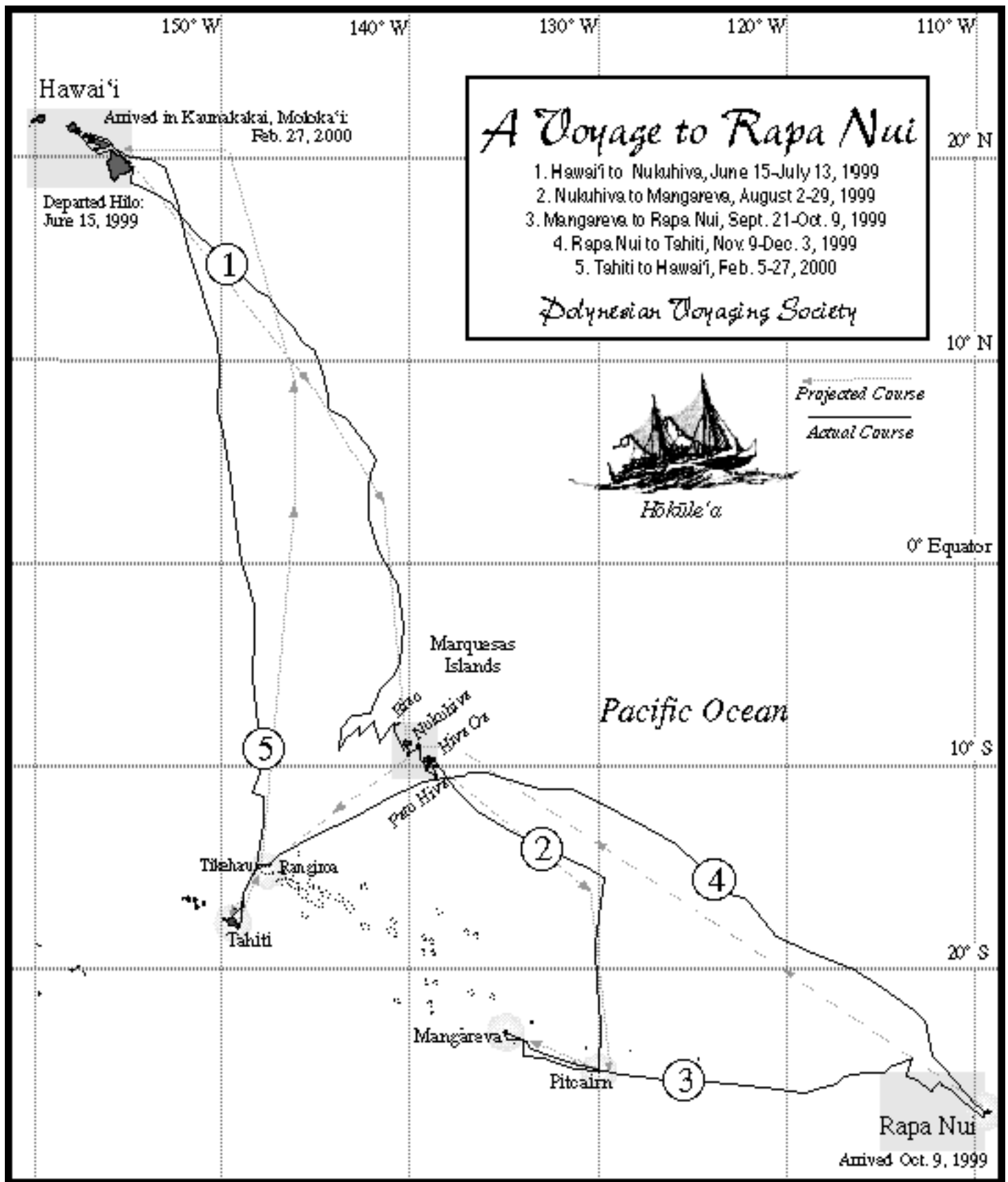


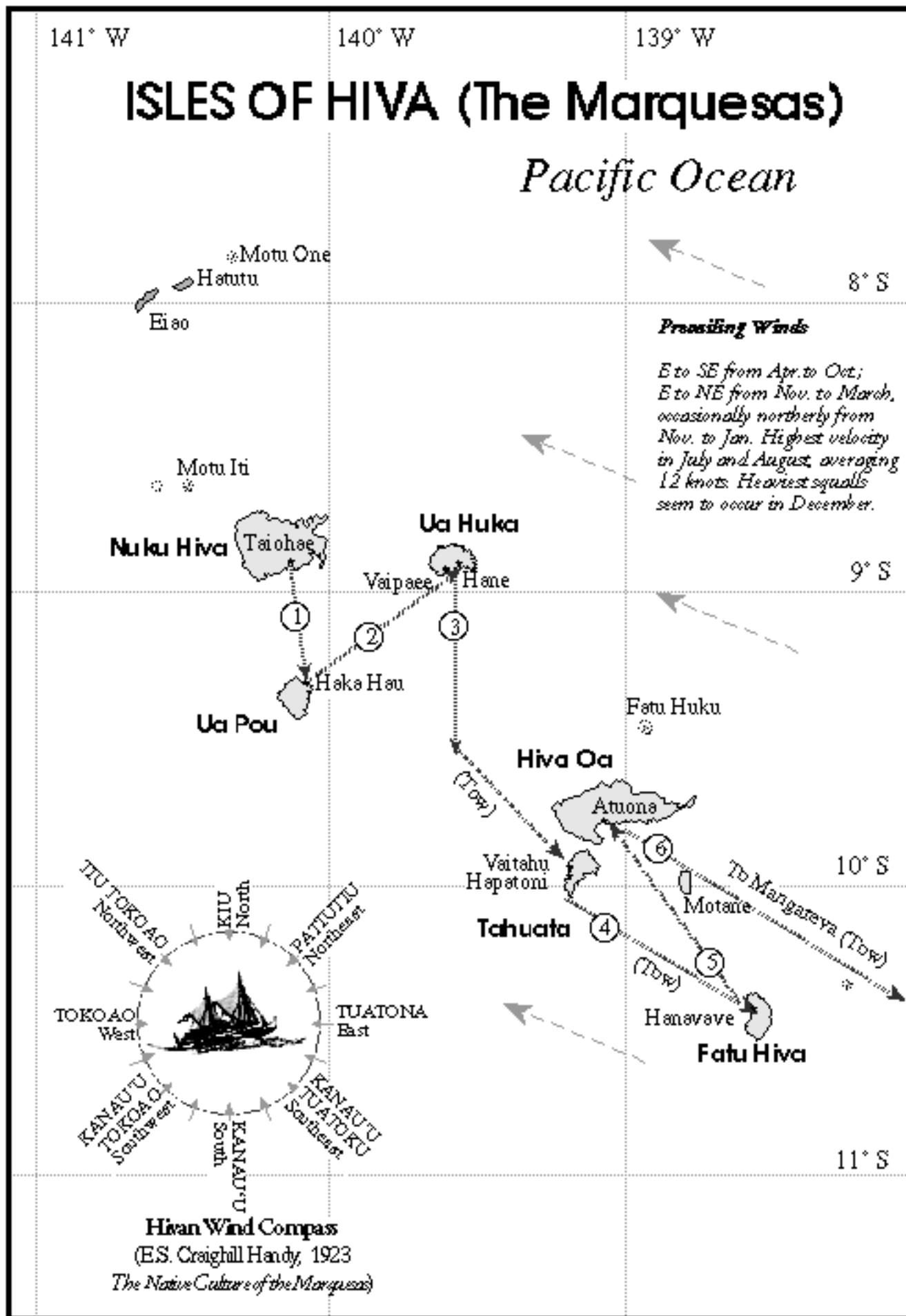




1999
Mangareva-Rapanui









Gift of the Wind

Aboard Hokule'a on her Miraculous Journey to Rapa Nui

Sam Low

Upwind,
It juts out
As a permanent contour
In the midst of the rising sun

- Sailing directions to Rapa Nui, according to an ancient navigational chant

By the end of 1995, Hokule'a had sailed almost 85,000 miles since her launching twenty years earlier. She had voyaged between Hawai'i and Tahiti five times, and between Tahiti and New Zealand twice. She had visited the Marquesas, Tuamotus, Cooks, Australs and Samoa. She had been to all the corners of the great expanse of the Pacific Ocean known as the Polynesian Triangle - all, that is, except one: the eastern corner, which is occupied by a tiny island all alone in a vast, empty sea. Europeans know it as Easter Island, but throughout Polynesia it is called Rapa Nui. "We have never sailed to Rapa Nui not because we didn't want to," Polynesian Voyaging Society director and head navigator Nainoa Thompson once said. "But because we didn't think we could do it."

In 1999, however, he decided to try.

The trip, as Nainoa envisioned it, would involve sailing directly into the prevailing southeast tradewinds from the nearest major landfall, the island of

Mangareva far to the west. This, after all, was the route that ancient Polynesian navigators themselves may have followed to arrive at Rapa Nui. To recreate this epic journey, **Hokule'a** would almost certainly have to tack into constant headwinds, extending the distance she would need to travel from 1,500 straight-line miles to more than 4,000 zigzagging ones. And every mile would be cold and wet, severely testing the crew's endurance. Adding to the difficulty would be the fact that Rapa Nui is a tiny target, only thirteen miles wide and 1,600 feet high, so **Hokule'a** would have sail within about thirty miles of the island for the crew to spot it. The odds against finding this mythic landfall were daunting indeed. Nainoa and the two other experienced wayfinders on board - Bruce Blankenfeld and Chad Baybayan - would be guiding the canoe as their ancestors had done, without the benefit of charts or instruments, and a navigational error of only a degree of latitude would cause **Hokule'a** to sail past the island. If that happened, the next landfall would be South America - 2,000 miles away.

"If we looked at this voyage scientifically, there is almost no chance of finding Rapa Nui," Nainoa told his crew as they prepared for the journey. "If we thought that way, we would not have chosen to go. But we do not explore because it's easy; we explore because it's a great challenge." The voyage to Rapa Nui would represent the ultimate test of ancient Polynesian navigational skills, and it would be an opportunity to reunite the people of the island, long a colony of distant Chile, with their Polynesian family to the west.

"We go to Rapa Nui in great humility and with respect for our ancestors," he said. "We go to rekindle the pride and dignity of our people and to reunite our ancient seafaring family."

On June 15, the canoe departed from Hilo and traveled to the Marquesas, where she made stops at the islands of Nukuhiva, Ua Huka, Tahuata, Ua Pou, Fatu Hiva and Hiva Oa - each seemingly more beautiful than the last. At each landfall, the island people welcomed and cared for the crew like long-lost cousins.

En route to Mangareva, **Hokule'a** anchored in Bounty Bay on Pitcairn Island, an isolated landscape of steep inclines and fields rich with fruit and vegetables. There the crew was received warmly by the island's forty-two

people, members of several families descended from the Bounty mutineers who had sought refuge on Pitcairn two centuries before.

A few days later, the canoe moored at the government pier in the town of Rikitea, on Mangareva. On September 14, I joined the canoe there, along with other members of the crew that had been selected to make the passage to Rapa Nui. My job would be to document the human and scientific drama of the voyage. While waiting for favorable winds, we loaded provisions, trekked to ancient temple sites and talked with island elders who told us the history of their ancient land - including the legend of a Mangarevan navigator who may have sailed to Rapa Nui.

Finally, on September 22, the winds blew fair and **Hokule'a** set sail. For a week or so, I traveled aboard the escort boat Kama Hele and then transferred to **Hokule'a** in a small rubber dingy, in heavy seas, clutching my tape recorders and cameras wrapped in waterproof bags. Upon boarding the canoe, I was immediately assigned a "puka" in which to sleep and a place in the watch schedule.

"Sweep!"

With this command from the watch captain, I join two other sailors wrestling a massive steering paddle to bring **Hokule'a** off the chilly, twenty-five-knot wind that slices across our port bow. Rain sweeps the canoe's decks and cascades off her sails. We are now living in our heavy-weather gear - working, eating and sleeping fully encased in glossy yellow Patagonia slickers. Completing our watches, we seek the shelter of our cramped, damp berths in one of **Höküle'a's** hulls and try to sleep, grateful for the respite from the cold wind and the cry of "sweep!" It is September 29, the seventh day of our journey, and so far we have experienced continuous strong winds and heavy seas.

"This voyage will test you," Nainoa had warned us a few days before our departure. "It will test you physically, mentally and spiritually."

Any voyage without instruments is, of course, extremely difficult, but this

one is especially tricky. On all their previous journeys, Nainoa and the other navigators have always been able to aim their canoe at a broad chain of islands. Tahiti, for example, is part of a chain that stretches across some 400 miles of ocean' a kind of navigational safety net. But on this voyage, there is no net. Rapa Nui stands alone.

We had expected the southeast tradewinds that blow steadily in this part of the Pacific to be the greatest challenge of all, forcing us to tack constantly. But so far we have experienced a kind of miracle - the winds have blown from every direction but southeast. They have been strong from the north, west and south, allowing us to proceed east at speeds sometimes in excess of seven knots. If this keeps up, we will be in the vicinity of Rapa Nui within a week.

Having traveled more than a thousand miles toward our objective, we are jubilant - but silent. We don't talk about our good fortune lest we break the spell. How long can it last?

As we continue east we encounter squalls and heavy seas, but the canoe rises easily over the swells, channeling tons of water cleanly between her hulls. She seems alive - responding to the forces of nature as she was designed to, a testament to the genius of our ancestors. Contemplating the almost otherworldly grace of this wonderful seagoing machine, I reflect back on an event that had almost spelled her doom.

It was in May of 1997. Anticipating the rigors of our voyage, Nainoa had hired a marine surveyor to inspect **Hokule'a**. After so many ocean miles, was she still seaworthy? The surveyor laid his hands on the canoe, seeking imperfections in her outer skin. With a penknife, he probed for dry rot. He banged on the hull with a rubber mallet, listening for discordant notes. Finally, after many hours, he made his report.

"The canoe is rotten," he said. "I cannot certify her seaworthiness. I suggest you think about putting her in a museum."

The pronouncement came as a surprise, but not a exactly a shock. Nainoa had seen places where there was rot and structural damage, but **Hokule'a** had taken him safely across immense ocean distances. Far more than just

demonstrating her seaworthiness, she had shown her mana, her strength of spirit. Retiring her to a museum was not an option.

"OK, I need two lists," Nainoa said to the surveyor. "I need a list of what's wrong and a list of what we have to do to make her stronger than when she was built." The list was long and the repairs expensive. But in 1998, after a long stay in dry dock, the expenditure of \$100,000 and the gift of some 5,000 hours of volunteer labor, **Hokule'a** took to the sea once again. The surveyor returned and qualified her sound in every respect. In the process, the canoe had been thoroughly refitted for the Rapa Nui voyage. Her hulls had been lightened and made more efficient, and special sails had been designed to help her point into the wind. "This canoe has mana for many reasons," Nainoa said of this remarkable rebirth. "But one of the most important is the care that so many people have given to her, the literal laying on of thousands of hands, that has given **Hokule'a** a new life time and time again."

On October 1, our ninth day at sea, the winds die. The ocean turns to satin, disturbed only by the deep southwest swell that has been our constant companion. A serene, crystalline sky encircles us. At night we steer by Jupiter and Saturn rising ahead, bright as tiny moons, and Scorpio behind us, her deadly sting high in the sky. Within the dark stain of night, in light winds, we sail with painful deliberation - perhaps a mile and a half every hour - toward Rapa Nui.

For the next five days the wind flukes around, forcing us into a weaving dance. When it shifts southeast, we respond by moving north, away from our target; when it swings northeast, we slant south again. Squalls descend, bathing us in cold rains and pushing the wind up to twenty-five knots. Nainoa forms a plan: We will sail southeast to the latitude of Rapa Nui and then begin tacking northeast in a search pattern intended to keep the island within the enclosing triangles of our motion until we find it. On the evening of October 7, he figures we are at Rapa Nui's latitude and about 175 miles west of it. He wants to sail further southeast, then tack northeast, beginning our search. But the wind curves north, stymieing us. Conferring with the other navigators, Nainoa decides to gamble. We will abandon the careful

search pattern and sail due east - directly toward where he thinks the island should be. But for two days we have had no star sights because of the overcast sky, and our position is known only by dead reckoning. What if we have misjudged our latitude? What if we sail past the island?

"This wind is a gift to go east," Nainoa explains, "so I say let's go. It's scary, but it's exciting. If our dead reckoning is good, and I think it is, we should take the chance."

Near dawn on October 8, Nainoa stations Micronesian crew member Max Yarawamai - whose ability to see islands at a great distance is legendary - at the bow. Ahead, the horizon is totally obscured by clouds, except for two slim holes. Max probes the one to starboard - nothing. Then he focuses on the one to port and sees a hardness there, a flat surface that does not change.

"There it is!" he yells. "Rapa Nui!"

Nainoa sees the flat shape too, but it looks like nothing he remembers from his previous trips to Rapa Nui. "At first, I was more concerned with searching behind us to be sure we had not passed the island in the night," he later explains. "Then, when I saw what Max was pointing to, the shape seemed wrong. Finally, I realized that we were seeing just a tiny part of it - the flat place near Rapa Nui's southern caldera, Rano Kau." Soon the entire crew is on deck, staring at the island off our port bow. Nainoa climbs the mast and stays there for a long time. When he comes down, tears streak his face. After breakfast, he calls us to a meeting. We stand in a silent circle, listening to his words.

"The voyage is pau, and this gives me almost an empty feeling," he tells us. "But everyone should be proud of this accomplishment. We have traveled to the last corner of the Polynesian Triangle, and that achievement is not just ours - it belongs to everyone who has put their heart and soul into this canoe over the last twenty-five years."

"The wind brought the canoe here," he continues. "It's about mana. **Hokule'a** has latent, sleeping mana when she is tied up to the pier in Honolulu. But when the canoe is sailed by people with deep values and serious intent, the

mana comes alive - she takes us to our destination."

When it becomes obvious that we do not have enough time to reach the anchorage at the main village of Hanga Roa before nightfall, we are relieved - happy to have one more evening at sea. The wind is warm and gentle. The sky, having cleared by mid-day, remains clear into the night. We sail along the coast of Rapa Nui, some distance away, until the ten p.m. watch change, when we tack toward the island.

In the morning, we glide close ashore, watching wisps of cloud surge from Rano Kau. Ivory breakers rim the seam between cold black cliffs and the gray-blue ocean. From the harbor, boats come out to greet us. After only eighteen days, a fraction of the time we thought the passage might take, a voyaging canoe has once more arrived at the easternmost frontier of Polynesian civilization.

We have traveled so fast, in fact, that we have arrived ten days before our own welcoming committee - a contingent of Hawaiian dancers and chanters who are scheduled to participate in a massive celebration. While we wait for their arrival, we spend our days preparing the canoe for the next step in her voyage: the passage to Tahiti en route back home.

On the evening of October 18, we take to the sea again to sail to Anakena, a white strand of beach where Rapa Nui's mythical discoverer, the Polynesian king Hotu Matua, is thought to have landed. Sunrise reveals eroded cinder cones and calderas spilling toward a sharp slash of surf at Anakena. We see the moai - the enigmatic statues that are the globally recognized icons of Rapa Nui's ancient civilization - standing tall over a prehistoric temple. A large crowd of maybe a thousand people, one third of the island's population, awaits us.

On a promontory overlooking the beach, we gather at a triangular ahu (stone altar) that has been painstakingly built for the occasion by a tall Rapa Nui man whom most of us know simply as "Carlos." Many of us met him in 1995, when he voyaged with the fleet of canoes that sailed from the Marquesas to Hawai'i. "I have been waiting for this day to arrive," he says in greeting. "I always knew that you would come."

We have brought three stones from Hawai'i, symbolic of the spirit of our 'āina, the sacred Hawaiian earth from which we set out. Now we place them on the northwest corner of Carlos' temple, which is shaped to represent the Polynesian triangle, and with this gesture we signal a reunion between our two people, a joining once again of Polynesian families.

October 21. On this, my last day on the island, I sit on a ledge of rocks down by the harbor in Hanga Roa, lost in a reverie. As I listen to the waves crash on the reef offshore, I remember the excitement of sighting Rapa Nui and the inner peace of the evening before our arrival, as **Hokule'a** ghosted along the coast. We had all lingered on deck, enjoying the last few moments of comradeship with each other and our canoe. Hotu Matua and his men must have seen what we were seeing - the dark smudge of the island against a backdrop of stars - and they must have heard what we were hearing: the rush of wind over sails, the soft lap of waves on twin hulls, the murmur of sailors as they sit shoulder to shoulder, waiting for the first scent of land to reach them.

Our feelings had been mixed. We were proud of our accomplishment, yet there was also a sharp edge of sadness. For a short time we had been privileged to share the tiny world of the canoe with each other. Surrounded by an immense sea and forced to turn inward, we had discovered a harmony within ourselves and with the natural world. For all of us, this voyage had been a rare gift of mana.



Rapa Nui: The Navel of the World

Sam Low

The wind sweeps across a thousand miles of empty ocean and ascends over the island's eastern shore, the ancient statues at Hanga Nui and the slopes of Rano Raraku crater where the statues had been carved. The wind is cold and clean. Kara Kara hawks wheel in the updrafts, their cries like tiny knives drawn across slate. Halfway up the slope of Rano Raraku, I follow archeologist Sergio Rapu along a narrow trail cut into the crater's sloping flanks.

Sergio and I step carefully around an outcrop of volcanic tuff and pause to examine a half finished statue, one of the stone figures called moai that were first seen by a European, Jacob Roggeveen, on Easter day 1722. Nothing like them has since been discovered in Polynesia.

In memory of Roggeveen's discovery, Europeans call this place Easter Island but many of the natives here, including Sergio, know it as Rapa Nui. It is one of earth's truly remote places, 2000 miles from the coast of Chile and 2400 from Tahiti.

"Coming here to Rano Raraku is like going to Greece and facing the Parthenon," Sergio tells me in an effusive mood, part Chilean, part Polynesian. "In Greece, where you had such a flow of ideas and civilizations, it's not surprising to find a complex civilization and great works of art. But here, in the middle of the Pacific, in such isolation, the achievement is stunning."

Sergio's pride seems justified. He points out house-size cuts in the crater's wall where ancient sculptors quarried stone to fashion the moai, some of them weighing 80 tons. About halfway up slope, we discover a lithic giant

emerging from a matrix of living stone in an arrested state of birth - as if its creators had suddenly thrown down their tools and walked away. This impression of abrupt abandonment is confirmed as we ascend past dozens more statues in various stages of completion.

"Look at those two moai there," Sergio says, "one of them is completely carved and ready to be taken away, the other is only half finished. In the 16th century, this place was boiling with activity."

In fact, about 700 unfinished moai lie here in the quarry or along ancient roads where they were abandoned in the process of being transported across the island. At least 200 more stand on platforms called ahu.

Our tour presents questions that have sparked the human imagination for two centuries. Who were the ancient sculptors of Rano Raraku? Why did they invest so much time and effort to carve their moai? And what caused them to suddenly abandon their work?

Dark swords, the fronds of coconut palms, stab the sky above the beach at Anakena. The fronds clatter in a soft wind as I move through the grove and out across the sand which rises gently from the sea toward distant hills. Moonlight burnishes the beach and the undulating hills beyond. Approaching the temple of Ahu Nau Nau, five stone moai soar above me, black silhouettes against glowing clouds. I lock my camera to its tripod and begin to take pictures, moving around the ahu to frame the moai against the moon. The blast from my flashgun casts flickering shadows. The moai seem to move, breathing with the distant sound of surf.

I do not hear the horseman until he reins in next to me in a spray of sand. For a moment I am struck dumb and immobile. The rider towers over me. His face is dark and Polynesian and sheened silver by the moon.

"I saw firelight on the face of the moai," he says, "so I came to investigate."

It's my fault. I explain that I'm using a flash to take photographs. The horseman asks me why I am taking the pictures. For a moment I'm not sure what to say. Is he the statues' guardian? Is he angry? "To capture the spirit of

this place and take it home as a memory," I tell him. He nods and settles into his saddle. "Do you know the story of this beach" he asks.

No, I do not.

"This where the great king Hotu Matua landed," he explains, speaking slowly in Spanish so I will understand him. "He lived a long time ago in a distant land called Hiva. In a dream he saw a lonely island in an immense sea and he sent out his greatest explorers to find it. When they reported the discovery, Hotu Matua came here and landed at this beach. He was our first king. This is the most sacred place on our island."

I remembered hearing the story before, from Sergio. Archeologists are uncertain who Hotu Matua may have been and exactly where he sailed from. Perhaps Hiva was in the Marquesas, 1600 miles to the west; perhaps not. What is certain is that the first king and his subjects spoke a Polynesian tongue and were shaped by Polynesian genes. Radio carbon dates point to an arrival sometime around 400 AD. "The real name for the island is Te Pito Te Henua," the horseman went on. "It means 'the navel of the world.' Europeans call it 'Easter Island' and the people who came here later call it 'Rapa Nui,' but Hotu Matua called it 'The Navel of the world'. Come visit me soon," he said, tapping his horse's neck with his reins.

I watched him gallop across the beach and enter the palm grove where he blended with moon shadows. The wind had died and there was no sound except for waves washing the beach. I sat for a time watching the waves leave a rime of liquid frost in the moist sand.

"The navel of the world" - it seemed an appropriate name for such a place. Perhaps the people of Te Pito Te Henua kept in touch with their Polynesian brethren to the west, but it seems unlikely. Archeological evidence points to isolation. So, over the centuries, the islanders realized they were alone in an immense sea - a world empty of others where they would live or die by their own hands. The navel of the world. And so it was.

On the island's western border, the shoreline creases to produce a bay and

two tiny harbors, one for freighters and the other for a small fishing fleet. The fishing boats are skiffs, maybe 20 feet long, with sharply upturned bows to throw off spray and to rise quickly in heavy seas. Even when local wind may be gentle, distant trade winds, sliding across thousands of miles of empty ocean, push steep ocean swells into the harbor. They rise up against jagged talons of lava, trailing silver manes which sheen the still air. Leaving the harbor, fishermen observe the swells carefully, waiting for a moment when they have lost their energy. Then they gun their engines and speed out to sea.

Above the harbor is the main town of Hanga Roa where a dozen or so shops purvey craftsmanship, clothing, rent-a-cars, horsefeed and hardware. There are two super markets which, to give you a sense of the scale and pace of things, are about the size of a Vermont general store. There is an open-air market where you can buy fresh vegetables and fruits. There is at least one video store. One of the houses along the main street has windows fashioned from glass fishing net floats. They protrude from the walls like green eyeballs.

The people of Hanga Roa have done much to beautify their town. They have planted gardens of poinsettia, dusty miller, daisies, nasturtiums. There are coral trees, star of India, African flame trees, eucalyptus, bamboo. The houses are made of wood, stone or cement block. The roofs are galvanized tin. It's a picturesque town, but it's not quaint.

In the public park across from the school is a memorial to Captain de Fragata Policarpo Toro who annexed Rapa Nui to Chile in 1888. A bronze bust reveals a man, perhaps in his forties, with arched eyebrows under thick wavy hair, a full mustache and European features. Today, young men lounge beneath Policarpo's statue. They are lean and healthy looking. They wear their hair long and tied up under bandannas to make a hat. They are dark skinned and their features are Polynesian.

Although the vast majority of the island's residents live in Hanga Roa, it's not by choice. About 90% of Rapa Nui is owned by the Chilean government in the form of the island's National Park and a single large ranch. Native islanders believe these Federal lands belong to them. Up at the Catholic Church a hand-lettered sign says: "Demand the restitution of your lands

usurped by the state of Chile." Feelings against Chileans who have settled here can run strong. They are called "pasto" - "weeds" - by those who see them as a threat to the island's native culture. None of this, however, affects tourists. They are a welcome source of both income and entertainment.

Publicists for the island call it an "open-air museum," and so it is. The National Park contains hundreds of archeological sites, most of them unrestored, all of them open to tourists. Exploring them without a guide is one of the island's great pleasures.

On a clear sunny day, I rode a motorcycle over chocolate colored dirt roads that skirted the coast. Lost in a rare sense of isolation, I passed toppled moai blackened by salt spray and eroded by wind. I stopped at an ahu, an ancient temple. There are hundreds of these on Rapa Nui - platforms, some hundreds of feet long and dozens wide and made of fine cut stone, others tiny and crude. Beneath the ahu, the inhabitants of Te Pitu-te henua buried the bones of their ancestors, and on top they erected their moai - megalithic symbols that did not to represent a particular person but rather a line of descent going back hundreds, even thousands of years to the founder of their lineage.

The rough-hewn stone platform of this ahu confronted the sea over a steep cliff. Heeding inner dictates, I knelt and asked permission to enter. A single Kara Kara hawk landed nearby, regarding me with sharp and insolent eyes.

I found two walls stepping down a gentle slope toward the ocean. They were fashioned of smooth finished stones, a course of long slim ones beneath heavy rectangular ones - a delight in variety. In the distance I made out a circle of stones - perhaps a house foundation; then others - perhaps a village. Some archeologists think ten thousand people once lived in settlements such as this, each surrounding an ancestral temple. But the land is now empty. The wind, flowing up from New Zealand and the South Pole beyond, is cold. The sea shimmered, harsh and corrosive, eating away my sense of time and place and identity.

I rode on across a prairie rising to cinder cones under a thin layer of saucer-shaped cloud. Men on horseback were common. Stonewalls defined

pastures. The sun set. Beside the road, under slanting shafts of light, a moai lay face down in molasses grass. His arms were pinched tightly to his side. His belly was round. His empty eye sockets stared into the ground."In Easter Island the past is the present," wrote Katherine Routledge during a prolonged stay in 1914. "It is impossible to escape from it; the inhabitants of today are less real than the men who have gone; the shadows of the departed builders still possess the land. Voluntarily or involuntarily, the sojourner must hold commune with those old workers; for the whole air vibrates with a vast energy and purpose which has been and is no more."

In 1722 when Jacob Roggeveen discovered the island he found a virtual desert of "withered grass, hay, or other scorched and burnt vegetation," a place that conveyed to him an impression of "a singular poverty and barrenness."The tallest tree was ten feet, the largest native animal was an insect and the single domesticated species was the chicken. Yet the presence of the temples and the moai suggested a thriving civilization. How could this barrenplace have supported such an explosion of art and culture?

Excavations in an ancient garbage dump at Anakena, led by archeologist David Steadman of the New York State Museum at Albany, produced the bones of about two dozen species of tropical seabirds, six species of land birds, also porpoise, seals, rats and chickens. Other researchers, examining mud cores taken from lakes in the island's volcanic craters, teased out tiny grains of pollen to reveal a cornucopia of plant life. There was once a native palm tree that grew 80 feet tall and six feet in girth; it would have provided wood for canoes and rollers for moving the giant moai. There was a subtropical forest canopy here with associated bushes and a lower layer of herbs, ferns and shrubs. There were hauhau trees, which would have provided rope. There was the toromiro tree for firewood. When Hotu Matua arrived, he discovered a Polynesian paradise. For more than a millennia the people of Te Pitu-te henua lived in splendid isolation, in harmony with their environment and each other, to create one of the most spectacular civilizations of the Polynesian world.

Three volcanic craters dominate Rapa Nui's landscape - Poike to the east, Rano Aroi in the center, and Rano Kau to the west. Rano Kau is an almost perfect circle - a caldera formed by the most recent eruption. At the crater's lip, basalt cliffs are fractured by rain and wind into large blocks that hang in delicate equilibrium above steep talus slopes. The slopes are a Joseph's coat of subtle colors - muted green tones of grasses and grape vines; light shades of yellowed sedge; and black slashes of volcanic talus. There is the sharp cry of the Kara-Kara and the light chirping of songbirds; the sound of crickets and bees; the aspiration of distant surf. Through a cleft in the southern end of the crater I see the ocean, dark blue, extend to the vanishing point. At the bottom of Rano Kau, a lake is blanketed by totora reeds through which still waters rise like a dark mirror.

Along the crater's rim, on a narrow basalt ledge overhanging the sea, are the ancient houses of Orongo. They are boat-shaped, arranged in twin rows and made of cleverly fitted stone slabs. The entrance to each is tiny, framed by stone uprights and a horizontal lintel. With friends, I squirm through one of them into a space shaped like the interior of a loaf of French bread. It's cool and damp and claustrophobic. Inside, we find a face inscribed on the wall, framed by the blade of a ceremonial paddle. In front of the houses are platforms upon which we sit watching surf crash against the stiletto shaped offshore island of Motu Nui.

Orongo is the sacred place of the ancient Birdman festival, held every year to commemorate the island's supreme deity, Make Make, who sent sooty terns to the small motu offshore during the Southern Hemisphere's spring - August to October.

"The people waited for the arrival of the birds eagerly because it meant food, birds eggs, and plenty of them," Sergio told me.

From excavations, oral traditions and the reports of early European explorers, archeologists like Sergio have pieced together what went on here. With the terns arrival, priests occupied the houses. Sweet potatoes, chickens and other delicacies were cooked in great earth ovens. The people feasted and waited for the terns to lay their eggs. The man who found the first egg on the offshore motu and who successfully swam the shark infested waters back to Orongo would become the Birdman, graced with special

powers. "The men had dancing paddles (rapa) in their hands and they jumped with them," wrote anthropologist Alfred Metraux who visited the island in the 1930s. "They wore on their heads wigs of women's hair, Tapa (bark cloth) headdresses or wreaths of Toro-miro leaves. Tufts of women's hair hung behind. Everybody else carried a'o (dance paddles) and they shook their bodies." According to some experts, the Birdman may have had the power to choose victims who would be sacrificed to ensure the island's prosperity.

"The winner was given a ceremonial paddle and he became the Birdman," Sergio told me. "His group took over political control of the island. They now had the supreme mana, the power of the god Make Make. So the enemies of the Birdman would go into hiding. They went to caves or special subterranean rooms hidden beneath the houses of their clansmen hoping not to be found."

The cult of the Birdman may have been a human response to an unparalleled disaster that overtook the island about a millennia after it was first settled. Once more, the story is told by clues from the sands of Anakena.

As archeologist David Steadman examined the bones from his excavations he noticed that those of seabirds, offshore fish and porpoise began to disappear over time. Bones of inshore reef fish became more common for a while and then they too began to decline. Finally, in the top layers of the ancient garbage heap, he discovered an increase in human remains. The islanders had begun to eat each other.

Pollen from lake cores reveal the motive for this dramatic change in diet. In the deepest and earliest cores, scientists found abundant plant remains. Then tree pollen became scarce and disappeared. In the top levels, the pollen was almost entirely of native grasses. Famine stalked the land.

In the archeological museum just outside of Hanga Roa is an exhibit of small wooden sculptures fashioned during this time of decline. They are pathetic representations of bent-over old men, their ribs showing, their private parts shriveled. "They were trying to tell a story of famine and scarcity so they carved a figure with their ribs showing," Sergio told me. "The teeth are bared in pain. Unlike the moai who are looking up in pride, they are bent

over with downcast eyes. The artist is telling a sad story of decadence. Once we carved proud monumental sculpture in stone, and now in decline we carved pathetic tiny figures in wood. What once were created by the labor of dozens of men and transported by hundreds are now made by a single man."

Scarcity brought famine, famine brought warfare, and warfare brought the rise of the Birdman cult. The island was once ruled by the noble descendants of Hotu Matua - the ariki - but Sergio thinks the Birdman cult, which began sometime in the 15th century, marks a change in political power.

"The ariki still have respect, but now their position is largely ceremonial, they are like the British queen, but the Birdmen gave the orders, like the prime minister."

Not everyone agrees with Sergio, but his theory takes into account what may have been a growing frustration of the common people as population grew and the island's resources were exhausted. It was a time when competition over scarce resources might have led to conflict and warfare.

"I think that what they were trying to do was channel warfare into a less dangerous game, the game of being the first to get the egg," Sergio says. "And this may have led to a new form of society in which the leader is not chosen by his nobility but by his ability - by showing his talents - and this is accompanied by an increased emphasis on heroes in the oral literature."

During the first week of my stay, southern winds brought clear days. Then the wind veered east in the night, carrying mist and rain. Heavy swells rose up to reveal turquoise bellies that crashed against ebony spikes of lava in cascades of opalescent sea froth. The island hunkered in upon itself, curtailing vistas, seeking solitude. The wind gathered strength and drove rain before it in sheets. I stood before an ahu watching water cascade from the statues' gaunt faces.

What am I to make of these strange staring figures? Anthropologists like Sergio say they are status symbols created by one family to impress others. They are also giant tombstones marking ancestral graves, and the focus of

prayers to the ancestors beseeching them to intervene with the gods. But there must have been a deeper and even more personal meaning for the ancient dwellers of Rapa Nui.

What would life have been like in this "navel of the world" where the sea-girt land around me encompassed all I knew? My father would be buried in the ahu. His father also. And his. Through the figures of the rain-drenched moai before me, I could trace my ancestry for a thousand years. I might recall stories that went back even further - to Hotu Matua and the beginning of life on my island. For the briefest moment, I imagined the shimmering moai were my founding ancestors. I stood immersed in an infinite dimension of genealogical space-time. The surf breathed.

Sometime, perhaps in the social chaos that ensued as the island's natural resources were depleted, the moai were toppled from their pedestals atop the ahu. No one is certain how this was done, or why, or exactly when. Some say that when a clan was defeated in warfare, the victors pulled down the statues of their vanquished enemies. But Sergio believes the moai were destroyed by those who built them because they had lost their mana - their spiritual power.

"Our relationship between the living and the dead is reciprocal," he once told me. "If we are good to the gods we expect the gods to be good to us. But if the gods are not good, we feel it as a rejection so we will punish them. That's why I don't think outsiders toppled the moai. They were toppled by the people who carved them when there were times of famine or plague or when a war was lost."

The Moai stared back at me through the sheeting rain, their gaze fixed toward the distant crater of Rano Raraku. In the subdued light, grass in the plaza displayed hues of ochre and burnt sienna. An islander rode a dark horse across the plaza and disappeared toward town. The surf was a distant heartbeat.

Anyone who spends enough time in this "navel of the world" comes away with ambivalent thoughts. There is the wonder of the moai, carved with stone tools and passion. There is the isolation of this tiny speck of land that turns thoughts inward. There is the vast sweep of time that shrivels our

impression of self-importance. And there is an abiding feeling that what happened here is a warning that we must bring away with us.

"We no longer had wood to build canoes so we were trapped here," Sergio told me just before we left the island. "When we needed to escape from the social pressures it was too late. So we continued to build our moai to impress our neighbors and to keep them from attacking us, and finally, we dropped our tools and went to war. In the end, there was cannibalism."

For a moment, Sergio paused in his discourse, seeming to wait for a thought to take shape. Later, I came to realize that it must be a familiar one and that he was seeking words to express it. It was a thought that had unique power in this place.

"It is a microscopic representation of what can happen to our own planet," he continued. "What is happening today is like what happened to us in the past. Our forefathers ate up their soil. They gave their hands and hearts and mind to the work of their ancestors. It was a work of passion and devotion and a search for status. But they forgot something more vital - they forgot their own survival."

VOYAGING AND ISOLATION IN RAPA NUI PREHISTORY

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...the most important and central fact leading to an understanding of Easter Island culture-history is its unusual degree of isolation by sea. (William Mulloy 1979:111).

The trend of Pacific Island settlement has been eastwards. Some 50,000 years ago when vast quantities of water locked in the glaciers greatly lowered sea levels, early seafarers--probably traveling by raft--crossed the narrowed channels from Sunda, the extension of mainland Southeast Asia that most of Indonesia had become, to Sahul, a great continent formed by New Guinea, Australia and surrounding continental shelves. Around 1,500 B.C., well after the glaciers had receded and sea levels had risen, canoe voyagers with roots in Southeast Asia pushed eastwards from islands off the north shore of New Guinea, and moved rapidly through island Melanesia to reach the mid-Pacific archipelagos of Fiji, Tonga and Samoa. Their identifiably Polynesian descendants then spread farther eastwards, reaching all the way to Rapa Nui perhaps as early as 400 A.D.

A solution to the puzzle of why Polynesia should have been settled by the descendants of seafarers who began on the faraway Asian side of the Pacific, rather than by voyagers from the much closer shores of South America, presents itself if we study the map of the Pacific (Keegan and Diamond 1987).

Thousands of miles of open ocean lie between South America and Polynesia, a vast expanse of blue water broken only by the Galapagos and a few other islands immediately offshore South America. In contrast, the seas between Polynesia and the south-eastern end of Asia are filled with islands, beginning with the rich island world of the Philippines, Indonesia and New Guinea where the seagoing canoe and deep-sea navigational skills were apparently developed, and extending across Melanesia and Micronesia to that vast island realm so aptly named Polynesia. Whereas this *vi r t u a* II y continuous distribution of islands extending eastward evidently encouraged generations of canoe voyagers to sail farther and farther into the ocean by rewarding them with island after island to colonize, the empty seas off South America apparently offered little inducement for continental sailors, despite their fine sailing rafts, to cross thousands of miles of open ocean to explore and colonize an island world that was beyond their experience. Otherwise, the inhabitants of Rapa Nui and other islands of Polynesia would be speaking languages derived from the American side of the Pacific, not, as is the case, from Asian side.

Yet, however logical such reasoning might seem, it does not answer the question of how the lone island of Rapa Nui, located so far to the east of the easternmost archipelagos of Polynesia, came to be settled. A canoe sailing directly to Rapa Nui from the Marquesas, thought by some to have been the source of Rapa Nui migrants, would have to cross almost 2,000 miles of open ocean. At 1,450 miles away, Mangareva, another candidate as a source island, is somewhat closer. A scattering of atolls and the tiny high island of Pitcairn lying to the east of Mangareva cuts this gap by 300 miles. But, even from Pitcairn, a voyage across 1,150 miles of open ocean to a single, small island would be a difficult undertaking.

That Rapa Nui lies to windward, with respect to the easterly trade winds, of the rest of Polynesia would seem to compound this difficulty immensely. Polynesian canoes can tack to windward, but it is a long, slow process as almost four miles has to be sailed obliquely to the wind to make one mile directly to windward, a ratio that increases greatly when also sailing against a strong current (Finney 1985:10). A crossing from Pitcairn to Rapa Nui made directly against the southeast trades and accompanying currents would therefore require a canoe to sail over 4,000 miles, a task made even more difficult by the beating the canoe and crew would suffer pushing directly against wind and sea. According to such reasoning, a voyage from Pitcairn or any other Polynesian island to Rapa Nui would seem out of the question; even the colonization from the west of the main Polynesian archipelagos would look improbable because of their position to windward. Indeed, Heyerdahl (1978:332) largely based his argument against the orthodox theory of Polynesian settlement from the west on his assertion that canoe voyagers could not have sailed across the tropical Pacific against "the permanent trade winds and forceful companion currents of the enormous Southern Hemisphere."

The easterly trade winds are, however, anything but permanent. Periodically they die down, and the winds blow from the west, not from the east. This monsoonal pattern is strongest in the western Pacific; in Indonesian waters the alternating seasons of winter easterlies and summer westerlies are still exploited by commercial sailing vessels to carry cargo back and forth from one end of the archipelago to another. The regular extension of these summer westerlies virtually to the edge of Polynesia was undoubtedly exploited by the immediate ancestors of the Polynesians, the makers of the famous Lapita pottery, to expand so rapidly into the central Pacific. Although these summer westerlies become much more episodic in the eastern Pacific, spells of westerly winds apparently were frequent and long-enduring enough to enable the Polynesian descendants of the Lapita pioneers to spread beyond Samoa and Tonga to the archipelagos directly to the east (Finney 1985:11-15).

But once seafarers reached the easternmost of these island groups--the Marquesas, Tuamotus and Australs--they had, in effect, run out of archipelagos. Whereas for many generations members of this seafaring lineage had been rewarded with landfalls on island after island in a virtually continuous series of archipelagos that extend from Southeast Asia two-thirds out into the Pacific, any of their descendants who tried to search for yet more archipelagos farther to the east must have been sorely disappointed when they found only empty seas except for Pitcairn and its two little outliers. Furthermore, it appears that the spells of summer westerlies become even more episodic and briefer in duration the farther one sails east through these lonely seas. Indeed, the difficulties of sailing farther eastward, and the frustration of not immediately finding rich lands over the horizon, may well have played a role in those initiatives to the north-northwest and to the southwest that resulted in the discovery and colonization of Hawai'i and Aotearoa (New Zealand) respectively.

Yet, despite the problems of exploring eastward, and the lack of immediate rewards for so doing, some voyagers apparently kept searching in that direction, as witness the temporary settlement of the tiny island of Pitcairn and its even more minuscule outlier of Henderson Island--and, of course, the subject of this essay: the colonization of that loneliest outpost of Polynesia, Rapa Nui.

Over the last eighteen years we have sailed the reconstructed voyaging canoe **Hokule'a** some 40,000 nautical miles through Polynesian waters, touching on islands in Tuamotus, Societies,

Cooks, Aotearoa, Tonga and Samoa, as well as throughout the Hawaiian archipelago. Although we have not yet attempted to sail to Rapa Nui, we have learned enough about the wind patterns of the Pacific, and how to use them to sail where we want to go, to hazard some educated guesses about how Polynesians might have reached this island, and, once there, what maritime links they might have had with their kinsmen to the west. In previous analyses of Polynesian voyaging and settlement I speculated on this question (Finney 1976, 1979). A brief visit to Rapa Nui in 1989, as well as by conversations with others intrigued by this question--notably, Sergio Rapu, Jo Anne Van Tilberg and Cesar Caviedes--now leads me to expand on those speculations.

The key to reaching Rapa Nui would be to get enough days of favorable westerly winds to enable a canoe to sail sufficiently far to the east in order to come close enough to the island to see it, or detect it indirectly by telltale cloud formations, by the appearance of terns or other "land finding" birds, or by other signs by which island navigators use to recognize when land is near (cf. Lewis 1972:153-232). In my earlier discussions on how voyagers might have been able to get enough westerly ~wind to push as far east as Rapa Nui, I expressed some doubt that the spells of regular summer westerlies would last long enough in eastern Pacific seas, or be frequent enough there, to enable a canoe to be worked as far east as Rapa Nui. Accordingly, I suggested an alternate way to gain easting by exploiting the zone of westerlies located between about 35° and 50° South, winds that square riggers sailing from Tahiti and other points in the Pacific once used to reach the west coast of South America.

That some exploring Polynesians must have discovered this westerlies zone seems likely. However, whether they ever tried to utilize them to explore eastward is, of course, open to question, as is how long they could have survived in their open canoes the cold wind and seas that can be encountered even before entering the tempestuous latitudes known as the "roaring forties". Suppose, however, that some especially adventurous voyagers did go down to around 35° South to try to run before westerlies there, and that after a week or two the cold wind and rough seas forced them to angle north to seek the warmth of the tropics. If so, they might have stumbled across Rapa Nui in their flight from the cold.

Eric de Bisschop's unsuccessful attempt to use these westerlies to sail a bamboo raft from Tahiti to South America in 1956-57 (de Bisschop 1958), relates to the above scenario. De Bisschop first sailed south from Tahiti to get out of the trade wind zone, and then turned toward South America, at around 30° South, hoping to find enough westerly wind there to work eastward without having to expose his craft and the crew to the rigors of the higher latitudes. Although they found some westerly wind there, they were not far enough south and therefore had to endure long spells of easterly head winds and calms. After months of slowly working eastward, de Bisschop and his crew were finally forced to abandon their disintegrating raft--but not before they had passed a just a few hundred miles to the south of Rapa Nui. Perhaps sometime in the past a sleek double-canoe with sailing characteristics superior to that of de Bisschop's raft might have followed a similar course, but just far enough to the north to have resulted in a landfall on Rapa Nui.

Since then, two, perhaps even more plausible possibilities for finding enough westerly wind to reach Rapa Nui have come to mind, one stemming from the realization that warm currents known as El Nino that periodically wreak havoc to the food chain in the waters immediately offshore Peru are part of basin-wide disturbances in oceanic and atmospheric circulation, and the other from our success in sailing *Hokule'a* from Samoa to Tahiti using winter westerlies rather than those

occurring during the summer.

Typically preceding or during an El Nino event the usual atmospheric pressure gradient across the South Pacific of high in the east and low in the west flattens out or reverses. This is known as the "Southern Oscillation"; hence total phenomenon of ocean and atmosphere disturbances is referred to as an "El Nino-Southern Oscillation" (ENSO) event, although here I will use the simpler label of El Nino event. This oscillation manifests itself in a weakening of the trade winds, and the outbreak of prolonged and intensive periods of westerlies, generally during or around the summer season. Although these westerlies are usually confined to the western and central Pacific, in 1982-83 a particularly massive El Nino event brought a prolonged outbreak of westerlies that pushed far into the eastern Pacific. Reports of these westerlies has led me to hypothesize that early voyagers from West Polynesia might have employed the widespread westerlies of such major El Nino events to expand to the Marquesas and other archipelagos of central East Polynesia, and that if these El Nino-intensified westerlies extended all the way to Rapa Nui they might have been crucial in the discovery of this easternmost outpost of Polynesia (Finney 1985:16-18). Subsequently, Caviedes and Waylen (MS 1989) have developed the latter suggestion, citing wind data gathered on Rapa Nui during the 1982-83 El Niflo event showing that prolonged spells of westerlies indeed reached the island.

Among others, Bierbach and Cain (1988), interpret evidence from oral traditions and cultural and linguistic comparisons to indicate that the land from whence sailed the legendary colonizer Hotu Matua was located in the Marquesas. Yet, because this group lies so far directly downwind (with respect to the trade winds) from Rapa Nui, it is difficult to conceive of how voyagers from the Marquesas could ever have found sufficient westerly winds during a typical summer to sail far enough to the southeast to even get within range of the island. Nor, because of the relatively northerly position of the Marquesas, would voyagers from there have been ideally situated to catch of winter westerlies which, as outlined directly below, are more prevalent in the more southerly islands of Polynesia. The more widespread westerlies of a major El Nub event would therefore appear as the most likely wind regime that Marquesan voyagers could have exploited to sail southeast to Rapa Nui.

When the Hawaiian navigator Nainoa Thompson was planning how to work **Hokule'a** from Samoa to Tahiti in 1986 he chose to sail during the winter, when the trades have a reputation for being steadiest, instead of the summer when westerlies are typically most common. He did this for two reasons: first, because he wanted to avoid sailing during the summer hurricane season, and second, because his research had shown that even during the winter there may occur spells of westerly winds favorable for sailing to the east. These winter westerlies are caused by the passage through the trade wind field of troughs that extend up from low pressure systems moving across the ocean far to the south. The winter of 1986 proved to be unusual winter season, for low pressure troughs repeatedly disrupted the trade wind field, bringing westerly wind shifts that enabled **Hokule'a** to sail first to the southern Cooks and then from there on to Tahiti (Finney 1988).

These winter westerlies are more prominent in the seas along the southern edge of Polynesia, since these waters are closer to the low pressure systems that generate them as they cross the ocean still farther to the south. For example, during May through September the weather on Rapa Nui (270 South) is often unsettled and rainy with frequent spells of westerlies winds (British Admiralty Vol. 2:37); during the week I was there in August of 1989 westerly winds, or northerly winds which are

also favorable for sailing to the east, prevailed during four of those seven days. Yachtsmen wishing to sail to Rapa Nui from the west have found these winter westerlies most useful, typically sailing from Mangareva (23° South) to Pitcairn (25° South), and then on to Rapa Nui. As Green (1988:55) and Langdon and Tryon (1983:53-55) have suggested, perhaps earlier voyagers chanced upon Rapa Nui in following this route, or in sailing a parallel route from one of the Austral Islands, which extend from Rurutu (22° South) to Rapa (27° South), or in sailing from as far west as Rarotonga (21° South) or Mangaia (22° South) in the Southern Cooks. **Figure 1** shows a weather map for 8 July 1988 obtained at the Chilean meteorological office on Rapa Nui which shows the pattern of mid-latitude low pressure systems moving eastwards with troughs extending into Polynesian waters, and bringing westerly wind shifts that could be exploited to sail east toward Rapa Nui.

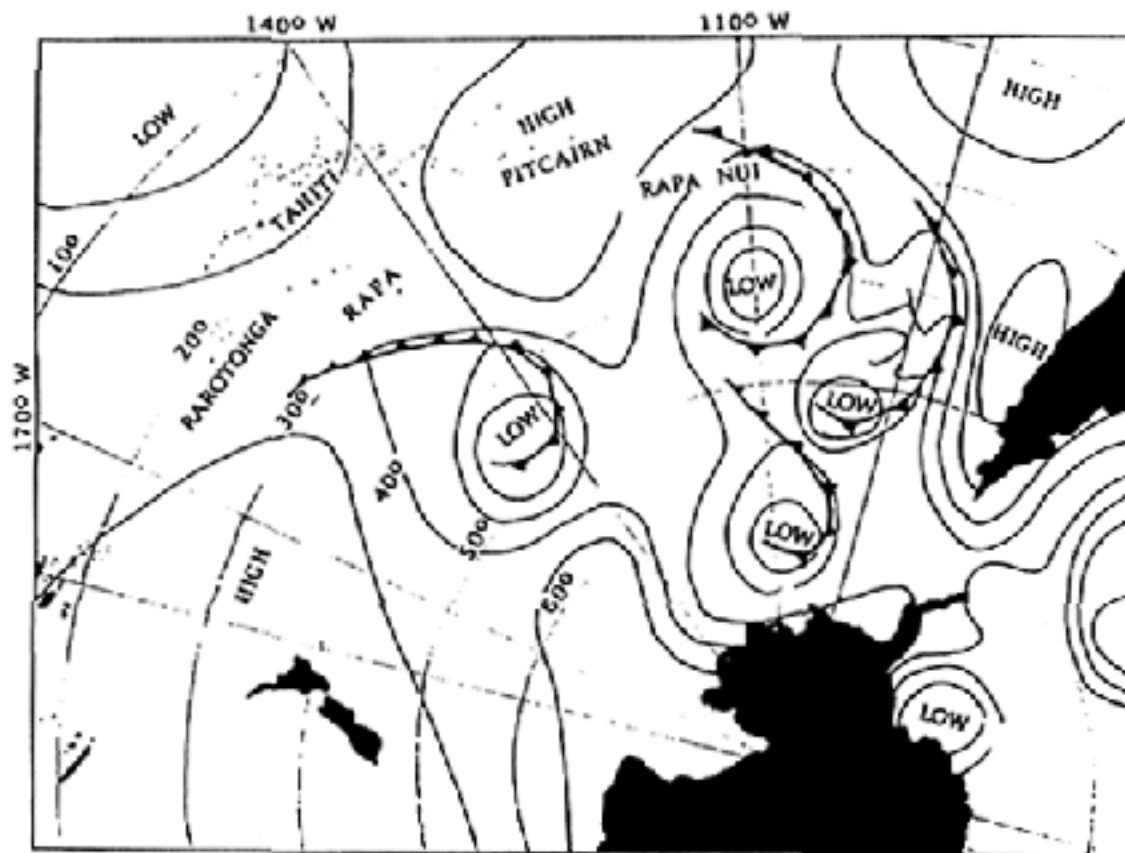


Fig. 1--Surface weather pattern on 8 July 1988. The two low pressure troughs extending above 30° S are bringing northerly and westerly winds favorable for sailing to the east from the southern margins of central East Polynesia to Rapa Nui.

Some support for the thesis that Rapa Nui was reached by voyagers who exploited westerlies to intentionally explore to the east beyond the last known points of land comes from computer simulations in which these wind patterns are programmed. Although the original computer simulation study of Levison, Ward and Webb (1973) in which only drift voyages were simulated virtually ruled out the possibility that Rapa Nui could have been reached by drifting there from any other point in Polynesia, when Ward (MS 1988) and then Irwin, Biskler and Quirke (1990) subsequently made intentional sailing and navigation part of the computer algorithm they were able to simulate some voyages to Rapa Nui.

The famous "Manuscript E", which records a Rapa Nui account of the colonization of the island

([Barthel 1978](#)), the colonizers had foreknowledge of the island and sailed directly to it. Inasmuch as knowledge of Rapa Nui was obtained by the voyage of the dream soul of Hau Maka to Rapa Nui and back the homeland, one is tempted to dismiss the account as so much fantasy. Yet, there is some ethnographic background to it. According to the journal of Edward Robarts (Denning 1974:62,119; cf. Porter 1822, Vol. 2:54-55), a British sailor who lived in the Marquesas at the beginning of the 19th century, even at that late date the shamanistic prophets (tau'a) were still having dreams of rich islands over the horizon that were inspiring groups of Marquesans to take to their canoes in search of them. Even though the computer simulation study of Levison, Ward and Webb (1973) would seem to rule out a "pure" drift voyage all the way to Rapa Nui from any other point in Polynesia, unexpected westerly gales might have played a role in the island's discovery. Marquesans sailing to the Tuamotus could have been driven far to the east by sudden westerly gales, and then have elected to keep heading in that direction in hope of finding land sooner than it would take them to work their way back to the west. Similarly, people making a crossing from Mangareva to Pitcairn, or between islands in the Austral group might have been driven far past their target by strong westerlies and then opted to keep pressing eastward.

Whether the result of an intentional exploring initiative, or of a combination of unexpected westerlies and a desperate gamble to run before them, the discovery of such a lone, small, and distant island as Rapa Nui was truly an impressive achievement. Could more than one canoe have reached the island, as some traditional accounts (for example, Englert 1970:88-84 and Mulloy 1979:113) might appear to indicate? Multiple landfalls from different islands in central East Polynesia (or from the same source island, but from different time periods) are of course possible, though the odds against very many canoes reaching Rapa Nui would seem to be high. Perhaps at the most there may have been a trickle of canoes that fetched up off Rapa Nui over the centuries. More unlikely is the possibility that there was any regular intentional two-way communication back and forth between the island and the rest of Polynesia.

It has often been posited that two-way voyaging occurred between distantly-separated islands in Polynesia, both during the settlement period involving exploratory round-trips followed by planned colonization voyages, and during post-settlement times involving voyages made back and forth for adventure, exchange or other reasons. While the four round-trip voyages between Hawai'i and Tahiti we have made on **Hokule'a** might seem to indicate that there were no technical reasons why Polynesians could not have periodically made two-way voyages between widely-spaced islands, it is necessary to consider the sailing and navigational conditions of each candidate route before making any judgment.

Hawai'i and Tahiti are aligned so that a nearly north-south course line cuts across the easterly trades, a situation that allows voyaging back and forth without having to wait for wind shifts. Furthermore, this route involves sailing between the massive archipelago of Hawaii and an island arc extending hundreds of miles from the western Societies to the northeastern Tuamotus. The southbound navigator has only to hit one island in the Society-Tuamotu arc to be able to re-orient himself for Tahiti, while the northbound navigator has to find only one of the islands spread along the lengthy Hawaiian chain. For example, on each of **Hokule'a's** southbound legs landfall was made in the western Tuamotus, which let the navigator know exactly where he was in relation to the final destination of Tahiti. Similarly, on each of the northbound legs landfall was made on the "Big Island" of Hawai'i allowing the navigator to with confidence head directly from there to O'ahu.

Sailing back and forth between central East Polynesia and Rapa Nui would have been much more difficult than between Hawaii and Tahiti despite the shorter distance involved. To begin with, Rapa Nui probably never was rich in good canoe-building timber, and as the population grew the island was deforested forcing the islanders to build their small fishing craft out of scraps of wood or out of reeds. For the purposes of discussion, however, let us assume that at the time of first settlement and for some centuries thereafter, there was sufficient wood on Rapa Nui to build canoes capable of sailing a thousand or more miles. The question then is how easy it would have been for the Rapa Nui to sail one of these craft back to central East Polynesia.

Actually, such a voyage would not appear to present any insuperable navigational or sailing problems, even for rather modest craft guided by relatively unskilled navigators. Rapa Nui sailors would only have had to wait for a solid spell of easterly trade winds, then head downwind to the west toward the relatively huge targets presented by the archipelagos of central East Polynesia. During the 1940s and 1950s, when the islanders were restricted from traveling by Chilean authorities, periodically groups of Rapa Nui men set sail for Tahiti in rowboats stolen from the Chilean Navy and in tiny, makeshift sailboats, and with nothing much more sophisticated in the way of navigation than instructions to head for the setting sun (Jacquier 1948; Laguesse 1954; McCall 1981; Negres 1956). Although some of these craft were lost at sea, several did land in the Tuamotus, and one made it as far west as Rarotonga, indicating how even makeshift, rudimentarily-navigated craft can sail from Rapa Nui to central East Polynesia.

However, such crossings to central East Polynesia would not in themselves have any impact on Rapa Nui culture unless they led to more voyages from central East Polynesia back to Rapa Nui. It is precisely this return voyage that would have been most difficult, whether mounted by Rapa Nui sailors seeking to return home, or by those they had told about the island and its location. Not only would sailors have needed just the right wind conditions to head that far east, but they would have had to have been able to find a lone island in an immense ocean space without benefit of a surrounding or screening archipelago. This navigational task would have been particularly tough if they had been forced to repeatedly tack against easterlies between spells of favorable westerly winds. "Never say never" is probably the safest word of advice to offer to anyone attempting to judge whether or not an ocean crossing could have been made in a canoe or some other traditional craft. Nevertheless, I think it reasonable to assume the problematic wind and navigational conditions for sailing back and forth between central East Polynesia and Rapa Nui would have made two-way communication over that route much more difficult than between archipelagos within heart of East Polynesia.

A good case can be made that the wind conditions in central East Polynesia, the circumstance that all islands there form part of larger island groups, and the relatively close proximity of these archipelagos to one another would have facilitated inter-archipelago voyaging there, a theme that some archaeologists are now investigating (Walter In Press; Rolett In Press). Canoes going back and forth, particularly during the early centuries of colonization when populations were relatively small, would have meant that new ideas, artifacts, institutions and linguistic forms could have been widely shared among the islands of the Societies, Cooks, Tuamotus, Australs and Marquesas, thereby slowing cultural and linguistic differentiation within this region (Pawley and Green 1984:138-139; Kirch 1986; Finney et al. 1989:293). Even after individual island societies had begun to mature, and their citizens began to focus more on internal affairs than voyaging overseas, these conditions would have allowed some diffusion of innovations around the region. In contrast,

Rapa Nui's situation as a lone island located so far to windward would have prevented the people there from easily communicating with their East Polynesian cousins, and therefore from freely sharing innovations, including linguistic ones (Biggs 1972:150), that developed over the centuries in the central East Polynesian archipelagos.

Therein lies the significance of Mulloy's statement about isolation being the central fact of Rapa Nui prehistory. Rapa Nui culture looks so archaic and different from its East Polynesian neighbors not necessarily because it was settled earliest, or most directly from West Polynesia, or because it was an amalgam of Polynesian traits mixed with those brought by South American raft voyagers or Iberian sailors from lost Spanish galleons. Rapa Nui is so unique because it was so isolated from the rest of Polynesia.

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Photo by Sonny Ahuna

Closing the Triangle: A Quest for Rapa Nui

Polynesian Voyaging Society

(Updated: July 23, 1999)

A Voyage to Rapa Nui

I lunga (upwind)

e tau (it juts up)

e revareva ro a (as a permanent contour [i.e., not a moving cloud])

i roto i te raa (in the midst of the [rising] sun)

Directions to Rapa Nui,
from [a migration tradition of Rapa Nui](#)

From June-October 1999, PVS is planning to culminate the last 25 years of voyaging--a generation of voyaging--with a voyage to Rapa Nui. Since Hokule'a was launched in 1975, it has touched every major island or island group in Polynesia except Rapa Nui. We sail to Rapa Nui to close the Polynesian Triangle, to make a connection with the far southeast corner of Polynesia and strengthen the bonds between the people of Hawai'i and Polynesia and the people of Rapa Nui, who are of one family.

We sail to honor the people who found and settled Rapa Nui. Rapa Nui is the most isolated high island on Earth, and its discovery and settlement by Polynesian voyagers is one of the great accomplishments of exploration in human history. How did they find such a small island, over a thousand miles upwind of the nearest Polynesian settlement?

We sail to honor our elders and kūpuna and the many others who contributed to voyaging and its revival possible in the 20th century.

We sail to train a younger generation of deep sea sailors and navigators to perpetuate Hawai'i's proud traditions of voyaging and navigation.

We sail to explore our history and learn more about the history of Rapa Nui: By the time Europeans reached the island in the 18th century, it was practically treeless. No canoes. What happened to the trees? Because of the limited size of the island, perhaps the population outgrew the capacity of the island to support the people; or some natural disaster (e.g., a prolonged drought) may have caused the island environment to deteriorate beyond recovery. What lessons does the history of Rapa Nui have for Hawai'i and the planet earth?

A Timeline and Itinerary (Updated: July 23, 1999)

June 1999-January 2000: Voyage to Rapa Nui

[Click Here for Map](#)

[Click Here for Educational Projects](#)

[Click Here To Participate in the Virtual Voyage](#)

Leg 1: Honolulu - Hilo, Hawai'i (5/28 - 6/8, 1999)

Leg 2: Hilo - Nukuhiva (6/13 - 7/13, 1999; switch crews on Nukuhiva)

Leg 3: Marquesas to Mangareva (approx. 8/1 - 8/31, 1999; switch Crews on Mangareva)

Leg 4: Mangareva - Rapa Nui (approx. 9/10 - 10/31, 1999; switch Crews on Rapa Nui)

Leg 5: Rapa Nui - Tahiti (approx. 11/10 - 12/10, 1999; switch Crews on Tahiti)

Leg 6: Tahiti - Rangiroa - Hawai'i (approx. 12/30 - 1/28, 2000)

March 6, 2000: 25th Anniversary of the Launching of Hokule'a-- Celebration at Hakipu'u/Kualoa in Kane'ohe Bay

The Challenge

To get from Hawai'i to Rapa Nui, Hokule'a must travel to the 2820 nautical miles south (from 20 degrees N to 27 degrees S) and 2760 nautical miles east (from 155 degrees W to 109 degrees). The first three destinations (Nukuhiva, Mangareva, and Rapa Nui) lie upwind of the departure points, so the canoe will have to struggle to get east against the prevailing winds.

The sail from [Mangareva to Rapa Nui](#) will be the most difficult, as Rapa Nui lies 1450 miles to the east of Mangareva. (See [Sailing Strategies](#).) On this leg, Hokule'a will be navigated without

instruments by a team of Hawai'i's best navigators, headed by Nainoa Thompson. They will guide the canoe by celestial bodies (sun, moon, planets, and stars), ocean swells, and land-based sea birds.

Rapa Nui is a small, isolated island, making it a difficult target for the non-instrument navigator. [Traditional non-instrument navigation](#), or wayfinding, cannot achieve the pinpoint accuracy of satellite navigation. The wayfinder sails into the vicinity of his destination and begins looking for the island. He may find an island close by and re-orient the canoe to his destination. The fact that many islands in the Pacific are part of island chains, with relatively closely-spaced islands made this sort of navigation practical in ancient times. However, there are no islands close to Rapa Nui. Pitcairn, the nearest inhabited island, is 1150 miles to the west.

Furthermore, Rapa Nui is a small, low island, a triangle 13 x 11 x 10 miles, whose highest point is the 1674-foot Terevaka. To find this island, the wayfinders will have to sail within 46 miles of it, in clear weather, during daylight hours. (Formula for seeing objects at sea: Distance in Nautical Miles = Square Root of the Object's Height (in feet) + Square Root of Observer's Height (in feet; the height of the observer on the canoe, when the observer climbs the mast, is approximately 25 feet high).

The wayfinders plan to use dead reckoning (estimating distance sailed, based on estimates of direction, speed, and time) and latitude stars (see below) to get within a couple hundred miles of Rapa Nui, then employ a zigzagging search pattern along the latitude of Rapa Nui (27 degrees S) to find the island. The zigzags in the pattern must be close enough together, so that the canoe will not sail past the island unseen just over the horizon.

Wayfinders in the Pacific Ocean have traditionally used [land-based seabirds](#) flying home in the evening or flying from home in the mornings to fish. This clue to the direction of land expanded the target island, by a radius of up to 150 miles around the island. Once Rapa Nui had a thriving population of seabirds. In 1934-35, while conducting research on the island, Alfred Metraux reported gray, white, noddy, and gray-backed terns, as well as boobies, tropic birds, and frigates. Today Rapa Nui has few seabirds. A hawk introduced to the island to control the rat population has reduced the bird population. Thus, this landfinding technique is no longer available to the Hawaiian wayfinders.

The quest to reach Rapa Nui will be made in the early spring of the Southern Hemisphere (September-October), when storms around Antarctica may break down the easterly trade winds and bring westerly winds. The wayfinders will observe the weather patterns that set up to figure out the best strategy for reaching the island. Starting on September 15, the crew on Mangareva will wait for favorable winds to launch.

The voyage to Rapa Nui is the most challenging voyage undertaken by the Polynesian Voyaging Society; the results are uncertain. The probability that the wayfinders will find the island is not high. The highest priority is the safety of the crew. In searching for Rapa Nui, PVS will place a time limit on how long the crew will search for the island-around 40 days, after which limited food and water and fatigue may become safety issues. But whether the Hokule'a reaches Rapa Nui or not, we know that the early Polynesians did so.

Beyond reaching the destination, what is important for the Polynesian Voyaging Society is to

honor the great achievements of our Polynesian ancestors, to learn what we can about how they accomplished what they did, and pass on what we learn to future generations.

Readings

Oral Tradition of Rapa Nui Settlement: The Voyage of Hotu Matua

"Voyaging and Isolation in Rapa Nui Prehistory"(Article by Anthropologist Dr. Ben Finney about how the ancient Polynesians may have reached Rapa Nui.)

Wind, Weather, Ocean Currents of the Pacific

Sailing Strategies

Geography, History, and Culture of Islands in the Eastern Pacific



The Voyage to Rapa Nui / 1999-2000

Leg 1: Hawai'i to Nukuhiva

Photo below by T. Wright: Departure Ceremony, Hilo Hawai'i, June 13, 1999.

Maps: [the Voyage to Rapa Nui, June 1999-February 2000](#): (1) Hawai'i-Marquesas, (2) Marquesas-Mangareva, (3) Mangareva-Rapa Nui, (4) Rapa Nui-Tahiti, (5) Tahiti-Hawai'i; Reference Course Line: [Leg 1: Hawai'i to Nukuhiva](#)

[Course Strategy: Hawai'i to Nukuhiva](#)

[Summary of the Voyage to Nukuhiva / Satellite Fixes and Navigator's Estimates, June 15-July 13, 1999](#)



[Navigators' Estimates Plotted with Actual Course](#)

[Wind, Weather, and Currents of the Pacific](#)

[Geography of Islands, Atolls, and Reefs Along the Way](#)

Reports and Photos

Photos by T. Wright; Departure Ceremony, Hilo, Hawai'i, June 13, 1999

[Passing the 'Awa Cup](#)

[A Blessing for Hokulea](#)

Report: [June 15, 1999](#)--Departure from Hilo

Photos of Crew and Canoe

[Hokule'a Sailing at Sunset/Open Ocean.](#)

[Captain/Navigator Bruce Blankenfeld.](#)

[Apprentice Navigator Pi'ikea Miller.](#)

[Watch Captain Dennis Chun with his guitar.](#)

[Watch Captain Leon Sterling being interviewed by Crew Member Hauoli Smith.](#)

[Medical Officer Darcy Attansani.](#)

[Crew Member / Documentor Makanani Attwood; on shore in Nukuhiva carving a stone .](#)

[Crew Member Desmon Antone.](#)

[Crew Member Ka'au McKenney with his guitar.](#)

[Crew Member Kekama Helm with his guitar.](#)

Report: [June 17, 1999](#)

Report: [June 19, 1999](#)

Report: [June 20, 1999](#)

Report: [June 21, 1999](#)

Report: [June 22, 1999](#)

Report: [June 23, 1999](#)

Report: [June 24, 1999, with GPS fixes from June 23-24.](#)--Doldrum Conditions at about 10 degrees north

Report: [June 25, 1999](#)

Report: [June 26, 1999](#)

Report: [June 27, 1999](#)

Report: [June 28, 1999](#)

Report: [June 29, 1999](#)--Out of Doldrums about 4.5 degrees N

Report: [June 30, 1999](#)

Report: [July 01, 1999](#)

Report: [July 02, 1999](#)--Crossing the Equator

Report: [July 03, 1999](#)

Report: [July 04, 1999](#)--Searching for the Marquesas Islands to the Southwest

Report: [July 05, 1999](#)

Report: [July 06, 1999](#)

Report: [July 07, 1999](#)

Report: [July 08, 1999](#)--Tacking into the SE trades, searching for the Marquesas Islands to the East

Report: [July 09, 1999](#)

Report: [July 10, 1999](#)

Report: [July 11, 1999](#)

Report: [July 12, 1999](#)--Landfall: Eiao, an uninhabited island at the NW end of the Marquesan Archipelago. Believed to be an island of ghosts.

Report: [July 13, 1999](#)--Hokule'a Arrives in Taiohae Harbor, Nukuhiva, in the early evening.

Report: [July 14, 1999](#)--Hokule'a Safely Anchored in Taiohae Harbor, Nukuhiva; Summary of voyage

Captain/Navigator for Leg 1, Hawai'i to Marquesas Islands--Bruce Blankenfeld: [Bio](#); [Photo](#);
Apprentice Navigator for Leg 1--Pi'ikea Miller: [Bio](#); [Photo](#); **Watch Captains:** Dennis Chun (Kaua'i), Terry Hee (O'ahu), Leon Sterling (Maui); **Crew of Hokule'a:** Russell Amimoto (O'ahu), Desmon Antone (Maui), Darcy Attisani (Kaua'i), Kekama Helm (Moloka'i), Ka'au McKenney (O'ahu), Atwood Makanani (Kaua'i), Hau'oli Smith (O'ahu; Sausalito, CA), Wallace Wong (Hawai'i); **Kamahale (Escort Boat)**--Captain: Alex Jakubenko (O'ahu); Crew: Elsa Jakubenko (O'ahu), Tai Crouch (O'ahu), Tim Gilliom (Maui), Kealoha Hoe (O'ahu), Sean McKeever (Maui), Gary Suzuki (Lana'i).

Leg 1: To Nukuhiva	Leg 2: To Mangareva	Leg 3: To Rapanui	Leg 4: To Tahiti	Leg 5: To Hawai'i		
1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	

<u>Home</u>	<u>Search</u>	<u>Archives</u>	<u>Past Ed Programs and Materials</u>	<u>On-Line Visuals</u>	<u>Bibliographies (Books and Films)</u>
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The Voyage to Rapa Nui / 1999-2000

Leg 2: Nukuhiva to Mangareva

Photo: Sailing toward Ua Pou, Marquesas Islands

[Map of the Voyage to Rapa Nui, June](#)

[1999-February 2000 \(5 Legs\)](#): (1)

Hawai'i-Marquesas, (2) Marquesas-Mangareva,
(3) Mangareva-Rapa Nui, (4) Rapa Nui-Tahiti,
(5) Tahiti-Hawai'i

[Map of Marquesas Interisland Sails](#)

[Course Strategy: Nukuhiva to Mangareva](#)
(Revised August 13, 1999)

[Chad's Explanation of the New Course Strategy](#)

[Reference Course Line: Nukuhiva to Mangareva](#)

[About the Isles of Hiva \(Marquesas Islands\)](#)

[About Pitcairn, Temoe, and Mangareva](#)



Catherine Fuller's Journal / Leg 2

[Catherine Fuller's Journal, Nukuhiva to Mangareva](#) The journal entries were published in The Honolulu Advertiser during the voyage.

Reports and Photos: Nukuhiva / July 31-August 2, 1999

Reports: [07/31/99](#) and [08/02/99](#)

Photos

[Marquesan Schoolchildren](#) Welcomed the Crew to the Marquesas with a Song (July 26, 1999).

[Taiohae Bay from the Heights of Mouake Looking South](#) (July 26, 1999). A kuku (native pigeon) flies across the scene. Hokule'a is anchored near shore on the western

side of the bay.

[Mona, Moana, and Kaniela](#) Kanikapila (Making Music) at the Nuku a Hoe Canoe Club House, Taiohae.

[Kealoha \(R\), Gary Y., Russell, Gary S., Sean \(kneeling\), Kaniela and Cat](#) Celebrating Gary S.'s Birthday at the Nuku a Hoe Canoe Club House.

[Gary Y. Mona, and Mel](#) Building a Better Toilet.

[Gary Yuen Takes It on The Chest](#) from a Tattoo Artist.

[Russell, Maka, Aldon, Mona, and Desmon Testing the Kalua Pig.](#) The crew dug an imu and prepared the pig for a pa'ina to thank the community for its support of the crew.

[The Pig](#) Before Entering the Imu; the Paddler is from Nuku a Hoe canoe club. The Marquesan pig demi-god Makaiaanui is said to have sacrificed himself for the people during a time of no food. This story of Makaiaanui was told to us on Ua Pou. (See report for [08/04/99](#).) A text of this legend can be found in "Von den Steinem's Marquesan Myths"--[the story of Akau](#) (pp. 32-35).

[Maka Carving a Stone Pestle](#) on the Beach at Taiohae. He presented the pestle as a gift to Nuku a Hoe for hosting the crews of Hokule'a and Kamahale.

[Tava Taupu](#) led the crew on a tour of his ancestor Pakoko's tohua (dance plaza) in the hills above Taiohae. Below him is the stream where Pakoko threw down the bodies of slain French Sailors. He was executed by a French firing squad in 1845 for having allegedly ordered the killing. The family in Taiohae still remember his execution with bitterness. When thunder rolls, they believe it is a sign that Pakoko is returning.

Report and Photos: Haka Hau, Ua Pou / August 3, 1999

Report: [08/04/99](#)

Photos

[Hokule'a Sailing into Ua Pou.](#)

[Stone Pillars of Ua Pou.](#) The name of the island means "Pillars" or "Posts," i.e. posts used to put up a house. The central peak, usually clouded, is called Te-Ava.

[The Dancers of Ua Pou](#) Greeted Hokule'a at the Dock.

[Alex and Elsa, Kamahale Captain and Crew,](#) in Haka Hau, Ua Pou.

[Petran Toti, leader of the dance group of Ua Pou,](#) gave the crew a tour of his home

island.

[Petrano cutting down some cooking bananas](#) at his family plantation in the hills above Haka Moui, The Valley of the Chiefs. The bananas grow straight up, at the top of the plant. Petrano gave the bananas to the crew.

[The large paepae \(stone foundation and floor of a traditional Marquesan House\) of Te-iki-tai-uao](#), chief of the Ati Papa tribe of Haka Moui, who secured control of the whole island of Ua Pou. After his death in 1860, the valley was kapu, for the chief was thought to be a god...no one lived there for a century.

Report and Photos: Hane, Ua Huka / August 4, 1999

Report: [08/06/99](#)

Photos:

[Hokule'a and Kamahale Anchored in Hane, Ua Huka.](#)

[Kealoha Hoe Assists Protocol Officer Kaniela Akaka with his Kihei.](#)

[Cat, Aero, and Tim at the Steering Sweep.](#)

Photos: Tahuata / August 5 & 6, 1999

[Sailing for Tahuata, Near Sunset](#); Ua Pou on the Horizon. The ki'i kane (male god) on the starboard side of Hokule'a.

[Vaitahu, Tahuata.](#)

[Documentor Nalani Wilson Goes Over the Operation of the Video Camera with Camera Man Hugh Gentry.](#)

["The Best Meal Yet,"](#) said crewmember Kealoha Hoe after the crew's visit to Hapatoni, along the coast of Tahuata south of Vaitahu. "It was all from the land and sea--fruits and fish." The food was served on leaves.

[The Pu Sound--Kaniela and Kealoha Call Out the People of Hapatoni.](#)

[Tava Bids Farewell to the People of Hapatoni.](#)

Report and Photos: Hanavave, Fatu Hiva / August 7, 1999

Report: [08/08/99](#)

Photos:

[Captain/Navigator Chad Baybayan, Sailing for Fatu Hiva.](#)

[Hokule'a Beneath the Cliffs of Hanavave, Fatu Hiva.](#)

[The Women of Hanavave Preparing Their Dance Ornaments.](#)

[Petroglyph, Hanavave, Fatu Hiva.](#)

[Vai-Ee waterfall at the Back of Valley of Hanavave:](#) The crew visited this waterfall and some of the brave practiced lele kawa (cliff jumping) from a ledge 40 feet above the pool. They saw a freshwater eel swimming in the pool. (The children who came with us kept shouting, "There's an eel in the pool!") [A legend tells of Koe-e-iti \("small eel"\), who lives under this waterfall,](#) which feeds the large clear stream called Uiha that empties into the bay. Various versions of this legend can be found in "Von den Steinen's Marquesan Myths" (1-5).

[Tava in a Headdress of Leaves.](#) Tava picked the leaves in the valley of Hanavave, where he found the remains of ancient paepae. The leaves on the back of the Headdress are 'awa.

[Hokule'a Anchored in Hanavave Within Swimming Distance from Shore.](#)

[The Children of Hanavave Hamming on Hokule'a.](#) Shaka!

Reports and Photos: Atuona, Hiva Oa / August 8-14, 1999

Reports: [08/10/99](#), [08/12/99](#), and [08/13/99](#)

Photos:

[Opening Sails for Hiva Oa.](#)

[Cat Fuller, Leaving Fatu Hiva.](#)

[Squall Sweeping Over the islands of Terihi and Motane](#) as Hokule'a sailed from Fatu Hiva to Hiva Oa.

[Arriving in Atuona, Hiva Oa.](#)

[Takaii \("Powerful Belt"\), the Largest Stone Tiki in French Polynesia,](#) at the Me'ae of Ipona, Puamau, Hiva Oa. (L to R): Robert O'Connor, whose family hosted the crew in Atuona; Bernard Heita'a, the mayor of Puamau; Tava Taupu. Human sacrifices at this me'ae were made to insure the growth of ulu, or breadfruit, the staple of Marquesan diet in traditional times. Periodic droughts during which the breadfruit failed to ripen brought famine to the Islands.

[The Stone Used to Prepare Inks for Kakau \(Tatoos\)](#); Ipona, Puamau. The base was oil of the kukui, which is called lama in the Marquesas where the oily nut was burned for light (cf. Hawaiian "lama": torch, light). Our host Robert O'Connor (right) demonstrates the tattooing technique.

[Patrice Kaimuko, kumu of the Marquesan Dance Group Te Pua o Feani](#), leading the pig dance. He teaches to the youth of Atuona what he learned about Marquesan Dance from his mother.

[Raita Gramont \(right\) and the female dancers of Te Pua o Feani](#). Raita teaches English and French at the local school and served as translator for the crew while we were in Atuona. Raita told us a version of the Marquesan creation story, which Te Pua danced at their performance: The god Oatea and goddess Atanua built the islands as their house: Ua Pou was the posts; Nukuhiva the rafters, Hiva Oa the ridge pole; Fatu Hiva, the thatching; Tahuata, the fireplace; Ua Huka, the rubbish pit; Motane, the bird singing to the rising sun; Eiao, the rising sun. (Another version in Greg Denning's "Islands and Beaches": "Their god Atea built a house. Nukuhiva was its pointed roof, Ua Pou its support posts, Ua Huka its binding, Hiva Oa its ridge pole, Fatuiva its thatching, Tahuata the celebration of its completion" (13-14).

[Departing from Atuona, August 14, 1999, 9 a.m.](#)

Reports and Photos: Hiva Oa to Mangareva via Pitcairn, August 14-1999

Leaving the Marquesas:[August 14](#). From the journal of Moana Doi

Report: [August 15, 1999](#). From the journal of Captain Chad Baybayan. On His Birthday, August 15.; **Photo:** [Chad](#) with his Birthday Cake.

Reports: [August 16, 1999](#) / [August 17, 1999](#) / [August 18, 1999](#) / [August 19, 1999](#) / [August 20, 1999](#) / [August 21, 1999](#) / [August 22, 1999](#) / [August 23, 1999](#)

Photos (by crew member Nalani Wilson)

[Mona Shintani working on a carving.](#)

[Gary Suzuki and Mel Paoa motoring out to Hokule'a in Kamahele's dingy \(Nukuhiva\)..](#)

[First aku caught.](#) That's Aldon holding the fish.

[Gary Yuen Slicing Up the Mahimahi.](#)

[Tava Drying the Aku and Mahimahi.](#)

[Tava and Kealoa](#) Husking a Coconut with a Stick.

[Gary](#) Cooking.

[Tava and Mel](#) Relaxing.

[Kaniela](#) Reading.

[Booby Bird](#) Accompanies the canoe. One of the only visitors on the open ocean.

[The Mid-Morning Watch.](#)

[Crew member Mona Shintani relaxes with a ukulele.](#)

Report: [August 24, 1999](#); Sighted and landed on Pitcairn; **Photo:** [Sailing for Pitcairn.](#)

Report: [August 25, 1999](#). From the journal of Moana Doi: Sighting Pitcairn; Landing; Homestay

Photos of Pitcairn by crew member Moana Doi

[Pitcairn Arrival:](#) Hokule'a was towed into Bounty Bay by Kama Hele.

[The dock at Bounty Bay.](#)

[Adamstown, Pitcairn Island.](#)

[The Boathouse on Pitcairn.](#)

[Tim Gilliom with 'Ahi.](#) Tim caught eleven 'ahi (yellow-fin tuna) and one big ono (wahoo) in two hours of hand-line fishing off Pitcairn...the fish was for a lu'au that the crew prepared for the 42 inhabitants (1999 census) of the island.

Report: [August 26, 1999; Crew Activities on Pitcairn.](#)

Report: [August 27, 1999; Gary Suzuki](#)

Report: [August 28, 1999; Sighting Temoe \(an atoll near Mangareva.\)](#)

Report: [August 29, 1999; Arrival in Mangareva](#)

Photos of Mangareva by crew member Moana Doi

[Mangareva:](#) Hokule'a approached Mangareva under a bright moon (La'aukukahi, 18 days old).

[On Mount Duff, Mangareva](#) The crew hiked up to the highest point on Mangareva..the peak of Mount Duff (1447 feet).

[Rikitea, the main town on Mangareva, beneath Mount Duff.](#)

Captain/Navigator for Leg 2: Chad Baybayan (Hawai'i; [Bio](#); [Photo](#); **Apprentice Navigator**--Moana Doi (O'ahu; [Bio](#); [Photo: Leaving for Mangareva / Honolulu Airport / July 17, 1999](#)); **Apprentice Navigator**--Catherine Fuller (O'ahu; [Bio](#); [Photo: Leaving for Mangareva / Honolulu Airport / July 17, 1999](#)); **Student Navigator**--Aldon Kim (O'ahu; [Photo: Leaving for Mangareva / Honolulu Airport / July 24, 1999](#). Aldon is on the left; Nainoa Thompson on the right.) **Crew members:** Watch Captains Terry Hee (O'ahu), Mel Paoa (Moloka'i), and Tava Taupu (Nukuhiva / Hawai'i); Kaniela Akaka, Protocol Officer (Hawai'i); Tim Gilliom (Maui); Kealoha Hoe (O'ahu); Aeronwy Polo (Hawai'i); Mona Shintani (Ni'ihau); Gary Suzuki (Lana'i); Nalani Wilson (O'ahu); Gary Yuen (O'ahu). PVS Education Coordinator Dennis Kawaharada (O'ahu) and video cameraman Hugh Gentry joined the crew of Hokule'a for the Marquesas interisland sails. **Kama Hele (Escort Vessel) Crew:** Captain Alex Jakubenko (O'ahu); Elsa Jakubenko (O'ahu); Sean McKeever (Maui); Russell Amimoto (O'ahu), Atwood Makaanani (Kaua'i); Kamaki Worthington (O'ahu).

Leg 1: To Nukuhiva	Leg 2: To Mangareva	Leg 3: To Rapanui	Leg 4: To Tahiti	Leg 5: To Hawai'i		
1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
Home	Search	Archives	Past Ed Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)	



The Voyage to Rapa Nui / 1999-2000

Leg 3: Mangareva to Rapa Nui

Photo: Hokule'a Sailing off Rapa Nui.

Maps: (1) [Map of the Voyage to Rapa Nui, June 1999-February 2000 \(5 Legs\)](#); (2) [Mangareva-Rapa Nui](#); (3) [Course Strategy: Mangareva to Rapa Nui](#); (4) [Map with Reference Course Line: Mangareva to Rapa Nui](#)

[Winds, Weather, and Currents of the Pacific](#)

[Geography of Islands, Atolls, and Reefs Along the Way](#)

[Naked-Eye Astronomy Data](#)

Latitude Stars for Rapa Nui

[Northern Meridian/List and Diagram](#)

[Southern Meridian/List and Diagram](#)

[Northern Meridian-Horizon Views](#)

[Southern Meridian-Horizon Views](#)



Reports and Photos

Reports by Sam Low and [Chad Baybayan](#) / Photos by Sonny Ahuna on Hokule'a and Sam Low on Kama Hele. (Chad Baybayan's Journal Entries appeared in the Honolulu Advertiser during the voyage.)

[Sept. 14, 1999](#)--Documentor Sam Low interviews crew members Aaron Young, Dr. Ben Tamura, and Mike Tongg about how they prepared themselves for the voyage.

[Sept. 15, 1999](#)--Arrival in Mangareva (Sam Low)

[Sept. 17, 1999](#)--Hokule'a Day at Mangareva School (Sam Low)

Photos sent 9/19/99 from Rikitea, Mangareva, French Polynesia

[The Rapa Nui Crew, with Mangarevan Host Bruno Schmidt](#), at the Steering Sweep of Hokule'a (Left to Right): Mike Tongg, Bruno Schmidt, Shantell Ching, Mel Paoa, Bruce Blankenfeld, Chad Baybayan, Aaron Young, Ben Tamura (Sitting in the Center). Missing: Terry Hee, Tava Taupu, Sonny Ahuna, Nainoa Thompson, Max Yarawamai, who will be flying into Mangareva tomorrow.

[Navigator Nainoa Thompson Under Cloudy Skies](#)

[Canoe Petroglyph and Konane \(checker\) Board](#) by Makanani Attwood--a Gift to the People of Mangareva in Commemoration of the Visit of Hokule'a.

[The Anchorage at Rikitea](#)

[Loading Hokule'a at the Dock at Rikitea](#)

[Sept. 20, 1999](#)--A Traditional Voyaging Story of Mangareva (Sam Low)

[Sept. 20, 1999](#)--Departure Imminent (Sam Low)

[Sept. 20, 1999](#)--Practicing the Person Overboard Rescue Procedure (Sam Low)

[Sept. 20, 1999](#)--Chad Baybayan: Thoughts on Departure

[Sept. 21, 1999](#)--On the Escort Boat Kama Hele (Sam Low)

[Sept. 21, 1999](#)--Final Preparations for Departure (Sam Low)

[Sept. 22, 1999](#)--Chad Baybayan: Decision to Depart; Meeting Max, Farewell to Mangareva

[Sept. 22, 1999](#)--Nainoa Thompson: Thoughts on the Mission of the Voyage (Interview by Sam Low)

[Sept. 22, 1999](#)--Departure (Sam Low)

Photos sent 9/22/99 from Kama Hele and Hokule'a at Sea, about 150 miles out of Mangareva, French Polynesia: [Towing Out of Mangareva. \(Wide Shot\)](#) The navigators backsighted on the high peaks of Mangareva until the island disappeared from view; [Towing Out of Mangareva. \(Tight Shot\)](#); [Opening the Sails](#); [Under Sail 1](#); [Under Sail 2](#)

[Sept. 23, 1999](#)--First Day at Sea

Photos sent 9/23/99 from Hokule'a at Sea

[Hokule'a's navigators meeting to go over the sailing strategy for Rapa Nui.](#)

[The crew put on new sails this morning for the lighter winds.](#)

[The smaller sails were folded and put away.](#)

[Mel working the sheet lines.](#)

[Nainoa navigating; Tava working the back sail.](#)

[Bruce setting out the fishing lines.](#)

[Mike Tongg working the radio.](#)

[Living in Tight Quarters.](#)

[Hokule'a pointing for Pitcairn.](#)

Photos sent 9/24/99 from Hokule'a at Sea

[Hokule'a Sailing for Pitcairn under Bright Skies](#)

[Sails Full of Wind...the Best!](#)

[Kama Hele Gets First Hit...](#) Tim Gilliom, Professional Fisherman, Lands the First Fish in the Mangareva to Rapa Nui Fishing Tournament--a 24 lb. Mahimahi. Timmy's assistants Kealoha Hoe and Makanani Attwood Hold the Fish. (Kama Hele: 1; Hokule'a:0). [Tim is famous for catching 11 ahi and a huge ono](#) with a hand line in about 2 hours when Hokule'a was anchored off Pitcairn island on Aug. 25, 1999. (Photo by Moana Doi).

[The Crew: TH, Bruce, Shantell, Dr. Ben, Nainoa, Mike, Aaron, Chad, Mel.](#)

[Shantell and Max enjoying a breakfast moment.](#) Max really did make it onto the canoe.

[Sept. 24, 1999](#)--Sighting Pitcairn

[Sept. 24, 1999](#)--Chad Baybayan: Memories of Pitcairn

Photos sent 9/25/99 from Hokule'a at Sea

[The Navigators found Pitcairn on the morning of Sept. 24, 1999.](#)

[Bruce and Shantell working the sails](#) in foul weather gear

[Sept. 25, 1999](#)--After a brief stop at Pitcairn, Hokule'a continue on in favorable 15-25 knots of wind (Sam Low)

Photos sent 9/26 a.m. from Hokule'a at Sea

[Hokule'a sailing in 25 knots of winds](#), heading La Malanai, one house (103 true) south of the sun rising in Hikina (E), sea spray flying over her bow, atmosphere hazy with

"smoke." (See the Sept. 25 report below). The crew has put on smaller sails for the higher winds.

[Navigators Nainoa and Bruce Trimming the Back Sail.](#)

[Tava with Navigator Chad Baybayan.](#)

[The Crew at the Back of the Canoe, Sunday Morning Watch.](#) Nainoa (right) leaning over the navigator's platform..looks like he is estimating the speed of the canoe by counting the seconds it takes for patches of foam coming off the bow of the canoe to reach the aft. The faithful Kama Hele following about 100 yards behind Hokule'a.

[Tava Taupu Steering the Canoe.](#)

[Mike Tongg Steering the Canoe.](#)

[The major swell](#) is coming from the south and hits the canoe on the starboard bow as it heads E by S. The swells look about 4-6 feet. The swells are being generated by the winds from a low pressure system southwest of the canoe. The navigators use the swells for holding direction and steering.

[The fishing line at the back of the canoe.](#) No strikes yet.

[SPLASH!](#): A wave hits the back of the canoe and provides a natural flush for the toilet.

[Sept. 26, 1999](#)--Traveling at 6 knots in 25 knots winds from the NNE.

[Sept. 26, 7 p.m.1999](#)--Reading cloud formations (Sam Low)

Photos sent 9/26/99 from Hokule'a at Sea

[Ancient Searoad from Mangareva to Rapa Nui.](#) The story of [the first migration voyage to Rapa Nui](#), over 1500 years ago, gives the following directions to the island:

I lunga (upwind)
e tau (it juts up)
e revareva ro a (as a permanent contour [i.e., an island, not a moving cloud])
i roto i te raa (in the midst of the [rising] sun)

Hokule'a is headed in the direction of the rising sun. The navigators could sight Rapa Nui "in the midst of the rising sun." The sun projects a shadow of the island over the horizon, so its contour can be seen in the dawn light before the actual island can be seen.

[Hokule'a lifts out of the water in brisk northerly winds on its way to Rapa Nui.](#)

[Sleepless Intensity.](#) The navigator must stay awake for practically the whole voyage, up to 30-35 days, tracking the canoe on a mental map of the ocean between his

starting point and his destination. Nainoa has probably not slept for six days, ever since Hokule'a left Mangareva on the afternoon of Sept. 21. Here he is studying the clouds and determining the direction of the swells at sunset.

[Shantell Studying the Sky at Sunrise.](#)

[The Mahalo Express](#)Photos shot on the canoe are put in a water-tight bucket and tossed overboard; the escort boat crew retrieves the bucket from the sea, takes out the photos, and e-mails them back to the Hawai'i.

[Sept. 27, 1999](#)--Chad Baybayan: Getting into a Rhythm

[Sept. 27, 1999](#)--Past 125 degrees W (Ducie Atoll 100 miles to the N)

[Sept. 27, 1999](#)--Thoughts of Navigator Nainoa Thompson on the Voyage So Far Half the Distance to Rapa Nui (interview by Sam Low)

[Sept. 28, a.m.1999](#)--Story of Maka's Petroglyph, a gift to Mangarevan host Bruno Schmidt (Sam Low)

[Sept. 29, 1999](#)--A night of squally weather (Sam Low)

[Sept. 29, 1999](#)--Nainoa's latest thinking on finding Rapa Nui (Interview by Sam Low)

[Sept. 29, 1999](#)--Chad Baybayan: Life at Sea

[Oct. 1 a.m., 1999](#)--Light and Variable Winds, Slow Progress

[Oct.1, 1999, p.m.](#)--Navigator's meeting at sunrise (Sam Low)

[Oct. 1, 1999](#)--Chad Baybayan: The Crew

[Oct. 2, 1999, a.m.](#)--Weather predictions

[Oct. 2, 1999, p.m.](#)--Wind freshens (Sam Low)

[Oct. 3, 1999, a.m.](#)--Morning Position

[Oct. 3, 1999, p.m.](#)--Tacking South

[Oct. 4, 1999, a.m.](#)--Wind Dies

[Oct. 4, 1999, p.m.](#)--Slow Going (Sam Low)

[Oct. 4, 1999, p.m.](#)--Memories of Pitcairn Island (Sam Low)

[Oct. 4, 1999](#)--Chad Baybayan: Cherishing the Spirit

[Oct. 4, 1999, p.m.](#)--Interview with Nainoa by Tiare Lawrence (On Oct 4 at 10:00 p.m.)

[Oct. 5, 1999, a.m.](#)--Tacking East

[Oct. 5, 1999, p.m.](#)--Steering in Light Winds (Sam Low)

[Oct. 6, 1999, a.m.](#)--Interview with Chad by Amber Ladera (on Oct 5 at 7:30 p.m.)

[Oct. 6, 1999, a.m.](#)--No winds; then too much wind (Sam Low)

[Oct. 6, 1999](#)--Chad Baybayan: Gray Skies

[Oct. 7, 1999, a.m.](#)--Position Reports

[Oct. 7, 1999, a.m.](#)--Interview with Chad by Kahula Hoke (on Oct. 6 at 7:30 p.m.)

[Oct. 7, 1999, p.m.](#)--Squalls! (Sam Low)

[Oct. 8, 1999, a.m.](#)--Position Reports

[Oct. 8, 1999, a.m.](#)--Interview with Chad by Brandon Fernandez (on Oct. 7 at 7:30 p.m.)

[Oct. 8, 1999, p.m.](#)--Landfall--riding the winds to the east (Sam Low)

[Oct. 8, 1999](#)--Chad Baybayan: Landfall

[Oct. 8, 1999, p.m.](#)--Thoughts of Navigators and Documentor Sam Low at the End of the Voyage

Photo: [Hokule'a and Rapa Nui under Grey Skies.](#)

Photo: [Hokule'a sailing toward Rapa Nui.](#) Crew member Max Yarawamai sighted the island just before dawn on October 8 after a seventeen and a half day voyage from Mangareva (Photo: Polynesian Voyaging Society).

[Oct. 9, 1999, a.m.](#)--Arrival in Rapa Nui--Report by Juan P. Soler from "Gazette Te Rapa Nui," October 10, 1999: Welcome on Rapa Nui.

Photo: [Hokule'a entering Hanga Piko harbor, Rapa Nui, October 9.](#) (Photo: From "Gazette Te Rapa Nui"; courtesy of Sebastian Englert Anthropological Museum).

[Oct. 12, 1999, a.m.](#)--Activities on Land.

Photo: [The Crews of Hokule'a and Kama Hele on Rapa Nui.](#) Front Row: Sonny Ahuna, Kealoha Hoe, Tava Taupu, Aaron Young, Max Yarawamai, Tim Gilliom; Middle Row: Dr. Ben Tamura, Bob Krauss (Honolulu Advertiser); Back Row: ?, Shantell Ching, Mike Tongg, Navigator Chad Baybayan, Mel Paoa, Sam Low, Navigator Bruce Blankenfeld, Makanani Attwood, Navigator Nainoa Thompson, Kamaki Worthington. Missing: Crew Member Terry Hee; Escort Boat Captain Alex Jakubenko and Elsa Jakubenko.

Photo: [Anakena, Rapa Nui:](#) Hokule'a was formally welcomed at a ceremony at Anakena on the north side of Rapa Nui on October 19, 1999. A triangular stone platform representing the Polynesian Triangle was built above the beach at Anakena by Carlos Hucke. Anakena is the landing site of Hotu Matua, the founder of Rapa Nui. Stones from Hawa'i were placed at the northern corner of the platform. Stones were brought from Niu Valley, O'ahu, by Pinky

Thompson, president of the Polynesian Voyaging Society; Kipahulu, Maui, by Sol Kaho'ohalahala representing Maui County; Pu'ukohola Heiau on the Big Island; Le'ahi, O'ahu, by Kumu John Lake's Hula Halau; Kawainui Marsh, O'ahu, by Chuck Burroughs of the Hui Lama Club of Kamehameha Schools and the Kawainui Marsh Foundation, which is restoring cultural sites at the Marsh; a stone was also placed by the Royal Order of Kamehameha I (photo courtesy of Bob Alakai, who accompanied Kumu John Lake's Hula Halau).

Captain Nainoa Thompson ([Bio](#)); **Navigators** Nainoa Thompson, Chad Baybayan ([Bio](#)), Bruce Blankenfeld ([Bio](#)). **Hokule'a Crew:** Sonny Ahuna, photographer and videographer (O'ahu), Shantell Ching (O'ahu), Terry Hee (O'ahu), Mel Paoa (Molokai'i), Ben Tamura, M.D. (O'ahu), Tava Taupu (Nukuhiva/Hawai'i), Mike Tongg (O'ahu), Max Yarawamai (Micronesia/Hawai'i), Aaron Young (O'ahu). **Kama Hele (Escort Vessel) Crew:** Captain Alex Jakubenko (O'ahu); Elsa Jakubenko (O'ahu); Tim Gilliom (Maui); Kealoha Hoe (O'ahu); Attwood Makaanani (Kaua'i); Kamaki Worthington (O'ahu); Sam Low, Writer.

Leg 1: To Nukuhiva	Leg 2: To Mangareva	Leg 3: To Rapanui	Leg 4: To Tahiti	Leg 5: To Hawai'i		
1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
Home	Search	Archives	Past Ed Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)	



The Voyage to Rapa Nui / 1999-2000

Leg 4: Rapa Nui to Tahiti

Photo below by N. Anthony: Bruce Blankenfeld, Navigator

Maps: (1) [Map of the Voyage to Rapa Nui, June 1999-February 2000](#); (2) [Map with Reference Course Line: Rapa Nui to Tahiti](#)

[Course Strategy: Rapa Nui to Tahiti](#)

[Wind, Weather, and Currents of the Pacific](#)

Reports and Photos

Photos (Photos of Leg 4 by Na'alehu Anthony and other crew members.)

[The Gift, Nov. 5, 1999](#)--Rapa Nui

Museum: The crew of the fourth leg from Rapa Nui to Tahiti presents a gift to the people of Rapa Nui--a model of Hokule'a built by Wright Bowman Sr., who built it in memory of his son, master canoe carver Wright Bowman Jr.

[Crew member Na'alehu Anthony](#) with his mom Lilikala Kame'eleihiwa, board member of the Polynesian Voyaging Society.

[Captain Wally Froiseth](#) works on the boom before departure. The loose-footed sails used on the Rapa Nui run have been replaced with the inverted triangular sails attached to spars and booms.

Reports: [Nov. 7, 1999](#)--Preparing to leave; [Nov. 9, 1999](#)--Departure

Photo: [Josie and Ramon Paoa, along with others](#), bid Hokule'a farewell.

[Kimo Lyman: reflections on leaving Rapa Nui](#)

[Reflections on the Health of the Rapa Nui People, by Dr. Blane Chong, medical officer on board Hokule'a;](#)



Reports: [Nov. 10, 1999](#)--Winds slacken; [Nov. 11-12, 1999](#)--Slow going; [Nov. 13, 1999](#)--Becalmed; [Nov. 14, 1999](#)--Entering the Southeast tradewind zone; Nov. 18: [Long-line fishing vessel sighted](#)

Photo: [Navigator Bruce Blankenfeld at Sunset](#). Light winds, small seas, cloud cover: typical weather for the first 9 days

Reports: [Nov. 15, 16, 17, 18, and 19, 1999](#)--Light and variable winds, slow going

Photos: [The Crew shares an evening meal](#); [Sunrise](#)-- Weather is generally mild in the Southeast tradewind zone at this time of the year. The Southern Hemisphere is moving from spring to summer while Hawai'i and the Northern Hemisphere move from fall to winter.

[Kimo Lyman: thoughts on life at sea](#)

Photo: [Kimo Lyman](#) writing in his journal.

[Kimo's introductions to the crew](#)

Photos of the Crew and Life at Sea: [Navigator Bruce Blankenfeld](#) measuring the height of the sun. / [Navigator Bruce Blankenfeld](#) at sunset. / [Captain Wally Froiseth](#) making repairs. / [Captain Wally Froiseth](#) working on the new booms before departure. / [Watch Captain Dennis Chun](#) providing music for the crew. / [Watch Captain Dennis Chun](#) getting ready for bed. / [Watch Captain Terry Hee](#) steering. / [Watch Captain Terry Hee](#) taking care of the fishing equipment. / [Kimo working the lines](#) with Kawika. / [Apprentice Navigator Kamaki Manavaroa Worthington](#) working on a plan with Navigator Bruce Blankenfeld and Student Navigator Na'alehu Anthony. / [Apprentice Navigator Kamaki Manavaroa Worthington](#). / [Dr. Blane Chong](#) inside his sleeping compartment. / [Dr. Blane Chong](#) helps with cleaning. / [Cook Nalani Kaneakua](#) gets ready to carve up an ahi. / [Cook Nalani Kaneakua](#) slicing fish. / [At meal time](#), the crew gathering around Nalani to find out, "What's for lunch?" / [Crew member Bob Bee](#) with Blane Chong. / [Crew member Bob Bee](#) steering. / [Crew member Kawika Crivello](#) looking out from his sleeping compartment. / [Crew member Kealoha Hoe](#) steering in the shadow of Hokule'a's back sail. / [Crew member Kawai Warren](#) on the side sweep. / [Crew member Kawai Warren](#) with motus (islands) of Rapa Nui at the stern: Rapa Nui, Motu-kaokao, Motu-iti, Motu-nui. / [Documentation Equipment Specialist Na'alehu Anthony](#) with the video camera. / [Na'alehu Anthony](#) on the sweep.

Reports: [Nov. 20](#)--10-20 knot tradewinds; Hokule'a begins to fly at 6 knots; [Nov. 21](#)--Sailing at 6 knots; [Nov. 22](#)--Sailing at 5.5 knots; [Nov. 23](#)--Sailing at 5.5 knots.

Photos: [Raising the jib](#) for downwind sailing in light winds; [Full moon setting](#) ahead as the canoe heads west.

Reports: [Nov. 24](#)--Sailing at 4.5 knots; [Nov. 25](#)--Sailing at 7 knots; [Nov. 26](#)--Sailing at 6 knots, looking for an island; [Nov. 27](#)--Sailing at 6.5 knots, looking for an island.

Photos: [Rain squall](#): the crew in foul weather gear; [Talking story around the cooking box.](#);

[Swabbing the Deck](#): the crew cleans up in fair weather.

Reports: [Nov. 28](#)--Landfall! Fatu Hiva in the Marquesas; [Nov. 29](#)--Heading for Rangiroa and Tahiti; [Nov. 30](#)--Sailing at 6-7 knots. Good fishing; [Dec. 1 and 2](#)--Towing in light winds toward the Tuamotus.

Photos: [Kealoha Hoe](#): Looking for an island; [Towing](#)

Reports: [Dec. 3 and 4, 1999](#)--Sighting Tahiti; Arrival in Pape'ete

Navigator: Bruce Blankenfeld-- [Bio](#); [Photo](#); Captain: Wally Froiseth--[Bio](#); [Photo](#): Wally is on the left, with wife Moku and navigator Bruce Blankenfeld; **Hokule'a Crew:** Na'alehu Anthony (O'ahu); Bob Bee (O'ahu); Blane Chong (O'ahu); Dennis Chun (Kaua'i); Terry Hee (O'ahu); Nalani Kaneakua (Kaua'i); Kawika Crivello (Moloka'i); Kealoha Hoe (O'ahu); Kimo Lyman (O'ahu); Kawai Warren (Kaua'i); Kamaki Worthington (O'ahu); **Kama Hele (Escort Vessel) Crew:** Captain Alex Jakubenko (O'ahu); Elsa Jakubenko (O'ahu); Alicia Akuna-Ika (Rapa Nui); Tim Gilliom (Maui); Attwood Makanani (Kaua'i); Jacky Tetuanui (Tahiti); Nalani Wilson (O'ahu)

Leg 1: To Nukuhiva		Leg 2: To Mangareva		Leg 3: To Rapanui		Leg 4: To Tahiti		Leg 5: To Hawai'i	
1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui			
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions				
Home	Search	Archives	Past Ed Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)				



The Voyage to Rapa Nui / 1999-2000

Leg 5: Tahiti to Hawai'i

Photo below by A. Makanani: Hokule'a's twin masts appear above a huge North Pacific Swell

Maps: (1) [Map of the Voyage to Rapa Nui, June 1999-February 2000](#); (2) [Map with Reference Course Line: Tahiti to Hawai'i](#) (See [Feb. 18](#) report for explanation of modifications in Route)

[Course Strategy: Hawai'i to Tahiti](#)

[Winds, Weather, and Currents of the Pacific](#)

Reports and Photos

Reports by Sam Low / Photos by Sam Low on Hokule'a and Makanani Atwood on Kama Hele /
Photo Captions by Dr. Ming-lei Tim Sing

[January 27: The Old Men of Tautira](#)

[January 27 and 28 Reports](#)--Preparations for Departure

[January 29 and 30 Reports](#)--Notes on Navigation; Watching the Weather

[January 31 Report](#)--Wind Watch

[January 31 Photo](#)--Nainoa, Shantell, Ka'iulani, and Kahualaulani Plotting the Course to Hawai'i (See Jan. 29 report.)

[Feb. 1 and 2 Reports](#)--Wind Watch

[Feb. 3](#)--Departure Delayed

[Feb. 4](#)--Navigation Lessons Before Departure



[Feb. 4 / Photo](#)--The Medical Team: Dr. Ming-lei Tim Sing and Kau'i Pelekane

[Feb. 5 / Photo](#) --Tautira Farewell: Tereraura says goodbye to expedition doctor Ming-Lei (posted 2/07).

[Feb. 6](#)--A Squally First Night

[Feb. 7](#)--Sighting Tikehau

Photos posted February 7-- [Photo 1: Chad points out Tikehau in the dawn light.](#) / **Photo 2:** [Tikehau Atoll--Coconut Palms](#) / **Photo 3:** [Nainoa goes over the navigation with Shantell](#) / **Photo 4:** [Ming and Pomai making breakfast--banana pancakes and salmon omelette!](#) / **Photo 5:** [First day out on our way home to Hawaii. Hokule'a is being steered by Nainoa who is showing Ka'iulani and Shantell some of the nuances of steering in variable winds ranging from 10-20 knots.](#) / **Photo 6:** [In the afternoon and evening the wind increases to 20 knots from the E-SE gusting from 40-45 knots with occasional squalls. The crew is forced to take in sail and heave-to about ten times on the first day at sea. Here Tava and Bruce change out a light wind to a heavy wind jib.](#)

[Feb. 8](#)--Calmer Seas

[Feb. 9](#)--Light Winds

Photos posted February 9-- [Photo 1: Kona and Kau'i help put on a bigger sail for light wind conditions.](#) / [Photo 2: Life-giving Water of Kane: Tava gathers a handful of precious fresh water from a passing squall](#) / [Photo 3: Kona showers in the passing rain.](#) / [Photo 4: Ming tries the Steering Paddle.](#) / [Photo 5: Pomai and Kahua Make Music](#) / [Photo 6: Navigators huddle beneath a rainbow.](#) / [Photo 7: Sunrise, Feb. 8](#)

[Feb. 10](#)--Very Slow Going

Photos posted February 10-- [Photo 1: Joey Mallot spreads a tarp to protect the crew against the intense heat of the tropical sun.](#) [Photo 2: Kahua finds shelter from the blinding sunlight in the net under the front deck...his pareau reflected in the still ocean beneath.](#) / [Photo 3: Snakes takes shelter under the tarp.](#) / [Photo 4: Kau'i types up an e-mail report.](#)

[Feb. 11 \(with Photos\): Weather Forecasting from Signs in the Ocean and Sky--Returning Trades](#) by Nainoa Thompson

[Feb. 11](#)--Moving Again

Photos posted February 11-- [Photo 1: As the winds came up yesterday afternoon, Hokule'a started sailing again; Joey Mallot steering.](#) / [Photo 2: Hokule'a sailing at sunset.](#) / [Photo 3: Escort Boat Kama Hele Captain: Alex Jakubenko..](#) / [Photo 4: The Escort Boat Crew: Our Tahitian Brothers: It to rt: Richard Konn, Eric Deane \(w/shaka sign\), Teikinui Tamarii \(steering\) and Mate Hoatua.](#) / [Photo 5: Sunset, Feb. 10, 2000.](#)

Photos posted February 12-- Photo 1: [Hokule'a under sail at sunrise, Feb. 12.](#) / **Photo 2:** [Tava and Shantell guiding the canoe.](#) / **Photo 3:** [Nainoa watching for squalls; squall activity picked up again, Feb. 11.](#) / **Photo 4:** [Wrapping up the back sail before a squall hits.](#) / **Photo 5:** [Snake and Mike pull down the jib as the squall approaches.](#)

[Feb. 13](#)--Squalls again.

Photos posted February 13-- Photo 1: [Nainoa goes over navigation with his students Shantell, Kahua, and Ka'iu, Sunday Morning, February 13.](#) After a hard night of dodging many squalls, the navigators discuss their position. Because the night sky was almost totally clouded over, they had no opportunity to observe the stars, so they must estimate where they are by dead reckoning--averaging various headings, speeds, and deviations from their course. / **Photo 2:** [A ghostly-looking freighter passes Hokule'a in the misty rain.](#) / **Photo 3:** [Passing mail and photos between escort boat and canoe.](#)

[Feb. 14:](#) Clear Skies; Determining Latitude from Star Pairs

[Feb. 14--Reading Clouds: The Road of the Wind \(with photo\)](#) by Nainoa Thompson

Photos posted February 14--Photo 1: [Hokule'a Sailing in 10 knots of wind under clear skies](#) / **Photo 2:** [Silhouettes on Evening Watch--Joey and Chad at Sunset.](#) / **Photo 3:** [Bright morning: Snake Ah Hee](#) / **Photo 4:** [Documentor Sam Low: Out from Behind the Camera](#) / **Photo 5:** [Happy Valentine's Day from the Crew to Loved Ones Back Home.](#)

[Feb. 15:](#) Nainoa's Weather Analysis at Sunrise: Light Winds and Fair Weather Ahead

Photos posted February 15-- Photo 1: [Fair-wind clouds at sunrise](#) / **Photo 2:** [First fish: a small aku pulled in by Hokule'a fisherman Bruce Blankenfeld](#) / **Photo 3:** [Ready for sashimi.](#)

[Feb. 16:](#) Trying to hold the course line; Hokule'a and the Internet

Photos posted February 16-- Photo 1: [Heading for Home: Hokule'a's Manu](#) / **Photo 2:** [Six Canoe Sisters](#) (The most ever on a single Hokule'a crew--Kona, Kau'i, Ka'iulani, Ming, Pomai, Shantell). / **Photo 3:** [Ka'iulani and Shantell Going Over the Navigation](#) (Shan is looking intense!) / **Photo 4:** [Ka'iulani Steering in a Light Rain Squall.](#) Apprentice navigators Ka'iulani and Kahualaulani stand longer and more frequent watches than the rest of the crew--six hours on and six off./ **Photo 5:** [Darkening Skies:](#)February 15-sunset Tava steers into an impending line of squalls, bringing the canoe slightly off the wind so a crew working at the bow can bring down the jib. / **Photo 6:** [Bruce Steering:](#) The sweep is tied to port because Hokule'a is trimmed to have a 'windward helm'--to steer herself off the wind. In fickle winds, Nainoa experiments with shifting weight on the canoe, trimming, and changing the sails to achieve top performance. / **Photo 7:** [Breakfast Meeting at Sea, February 16.](#)

[Feb. 17:](#) A New Sail Plan

Photos posted February 17-- Photo 1: [Feb. 17--Hokulea's sailing in rougher seas, stronger](#)

[winds.](#) / **Photo 2:** [The crew lowers the back rig to put on a smaller sail for the stronger winds.](#) / **Photo 3:** [Nainoa and Bruce pulls in another small aku just after sunrise on Feb. 17.](#) / **Photo 4:** [Ono! Fresh raw fish for breakfast!](#)

Feb. 18: A New Reference Course Line

Photos posted February 18-- Photo 1: [Feb 18-Hokule'a's steering sweep is tied up; the canoe, balanced by her sail trim, is steering herself in 15 knot winds and steep eight foot swells.](#) / **Photo 2:** [Pomai, Tava, and Nainoa adjusts the sheet lines as after a squall sweeps across the deck of the canoe.](#) / **Photo 3:** [Nainoa and Kaiulani going over the navigation at sunrise.](#) / **Photo 4:** [Navigator Chad Baybayan](#) / **Photo 5:** [Veteran Voyager and Radio Operator Mike Tongg.](#)

Feb. 20 a.m.: Crossing the Equator

Photos posted February 20-- Photo 1: [Feb 19-Hokule'a sailing in 25 knots winds, 8-foot swells; the winds have picked up after Hokule'a entered the northern hemisphere.](#) / **Photo 2:** [Hokule'a sailing under a squall.](#) / **Photo 3:** [The novice crew \(crossing the equator for the first time\) entertains the veterans. Dr. Tim Sing's newly formed halau.](#) / **Photo 4:** [Nainoa gets ready to carve up the a'ulele caught this morning, Feb. 20](#) / **Photo 5:** [The crew steering at the back of the canoe.](#)

Feb. 20: Reading the Clouds and Sea State (by Nainoa Thompson)

Feb. 20 p.m.: Sailing on the Edge of the Wind

Feb. 21 a.m.: Gaining Back Some Easting

Feb. 22 a.m.: On the reference course line again and heading home

Feb. 23: Strong trade winds; putting up a storm sail.

Photos Sent from Na'alehu Elementary School, 3rd Grade, on the Big Island: Tracking Hokule'a--Photo 1: [A student logged onto the website: Where are they? What are they doing today?](#) / **Photo 2:** [The tracking board: plotting the position of the canoe.](#) / **Photo 3:** [Students drawing pictures of the canoe.](#) / **Photo 4:** [The finished drawings.](#) / **Photo 5:** [Drawings posted.](#) / **Photo 6:** [Hokule'a is Calling! Pomaikalani Bertelmann of the Big Island called Na'alehu Elementary on Feb. 23 to give them a live update from the canoe.](#) (Courtesy of Vanessa Sales, 3rd Grade Teacher; Mary Aranguena, Technology Coordinator; Matt Willard, Technology Assistant)

Photos posted February 23-- Photo 1: [Hokule'a sailing at sunrise, Feb. 22.](#) / **Photo 2:** [Charging Home--brisk 25-30 knot tradewinds are driving the canoe homeward.](#) / **Photo 3:** [The winds have been so strong, the canoe had to heave to in ten-foot seas to tighten the rigging.](#) / **Photo 4:** [The crew tightens the rigging; the hull almost hidden by the large swells.](#) / **Photo 5:** [Mike Tongg pulling in something big on the fishing line.](#) / **Photo 6:** [The prize: a 130 lb. ahi.](#) **Photo 7:** [The 10 a.m.-2 p.m watch.](#)

Feb. 24: Moderating trade winds

Feb. 25: Entering the Search Area. The navigators have been measuring the altitudes of Hokupa'a and stars crossing the meridian near the horizon at night to determine their latitude. The estimate for Feb. 24 p.m. near midnight was 17 degrees 30' from a measurement of Miaplacidus, which was less than 3 degrees above the horizon; actual latitude was 17 degrees 09'; so the latitude estimate of the navigators in training (Shantell, Kahualaulani, and Ka'iulani) was within 21 miles of their actual latitude after almost 2000 miles of sailing and navigating. Winds are forecasted to be at 15-25 knots as the canoe approaches Hawai'i.

Photos posted February 25--Photo 1: [Feb. 25--Hokule'a sailing home under gray skies; storm sail on back mast.](#) / **Photo 2:** [Two days earlier, the sea was wind-whipped and rough.](#) / **Photo 3:** [The canoe stopped and put down its sails in the strong winds to put up a smaller sail.](#) / **Photo 4:** [Only the top of the twin masts were visible from behind a huge swell.](#) / **Photo 5:** [Portrait of Pomaikalani Bertelmann.](#)

Feb. 26: Report from Na Pua No'eau students Likeke Sawyer of Moloka'i and Kahula Hoke of Hawai'i, based on a call from navigator in training Kahualaulani Mick.

Photos posted February 26--Photo 1: [Feb. 26--Sunrise.](#) / **Photo 2:** [Nainoa on lookout for land.](#) / **Photo 3:** [The crew on lookout for land.](#) / **Photo 4:** [Mike, Kau'i, and Tava manning the sweeps to keep the canoe on its downwind course toward Hawai'i.](#)

Feb. 26: Looking for Land

Feb. 27: Home

Photos /Feb. 27: Photo 1: [Sailing off Maui.](#) / **Photo 2:** [Sailing off Maui \(close-up\).](#) / **Photo 3:** [Along the Valleys of East Moloka'i.](#) / **Photo 4:** [Toward Kauankakai, Moloka'i](#)

Feb. 27 [Moloka'i Welcome \(From Cat Fuller\)](#) / [Moloka'i Welcome \(From Likeke Sawyer\)](#)

Hokule'a Crew / Tahiti to Hawai'i 2000: [Snake Ah Hee](#), [Chad Baybayan](#), [Pomaikalani Bertelmann](#), Bruce Blankenfeld, [Shantell Ching](#), Sam Low, [Joey Mallot](#), [Kahualaulani Mick](#), Ka'iulani Murphy, [Kau'i Pelekane](#), ["Tava" Teikihe'epo Taupu](#), Nainoa Thompson, Mike Tongg, Dr. Patrice Ming-Lei Tim Sing, Kona Woolsey. (Total: 15.)

Kama Hele Crew / Tahiti to Hawai'i 2000: Alex and Elsa Jakubenko, Makanani Atwood (Hawai'i), Eric Deane (Tahiti), Mate Hoatua (Tahiti), Richard Konn (Tahiti), and Teikinui Tamarii (Tahiti). [About the Escort Boat Kama Hele and its Owners, Alex and Elsa Jakubenko.](#) **Photo:** [Escort Boat Owners Elsa and Alex Jakubenko](#) in Rapa Nui.

[Leg 1: To
Nukuhiva](#)

[Leg 2: To
Mangareva](#)

[Leg 3: To
Rapanui](#)

[Leg 4: To
Tahiti](#)

**Leg 5: To
Hawai'i**

<u>1976: Tahiti</u>	<u>1980: Tahiti</u>	<u>1985-87: Aotearoa (New Zealand)</u>	<u>1992: Rarotonga</u>	<u>1995: Marquesas</u>	<u>1995: West Coast, British Columbia, & Alaska</u>	<u>1999-2000: Rapanui</u>
<u>Voyages</u>	<u>Canoe-Building</u>	<u>Wayfinding</u>	<u>Life on a Canoe</u>	<u>Polynesian Migrations</u>	<u>Proverbs and Traditions</u>	
<u>Home</u>	<u>Search</u>	<u>Archives</u>	<u>Past Ed Programs and Materials</u>	<u>On-Line Visuals</u>	<u>Bibliographies (Books and Films)</u>	



Voyage To Tahiti Cancelled After Canoe Swamping-1978

In mid-March, 1978, Hokule`a left on a voyage to Tahiti to document a round-trip navigated without instruments. The wayfinder would be a young Hawaiian named Nainoa Thompson. The crew also planned to test traditional lauhala sails and to survive on traditionally preserved food.

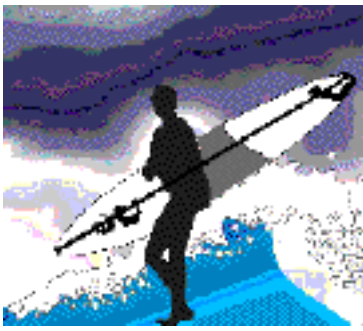
The canoe left O`ahu in strong trades and high seas. Will Kyselka, in *An Ocean in Mind* (31) describes what happened as the canoe, south of Moloka`i, headed toward Lana`i:

"Swells were high, but the canoe had ridden out such seas before. However, this time it was heavily laden with food and supplies for a month's journey. The added weight put unusual stress on the canoe, making it difficult to handle. Turning off-wind eased the strain but it also caused the sea to wash in over the gunwales, filling the starboard compartments and depressing the lee hull. Winds pushing on the sails rotated the lighter windward hull around the submerged lee hull, now dead in the water. Five hours after leaving Ala Wai Harbor, Hokule`a was upside-down in the sea between O`ahu and Moloka`i.

"All that night [sixteen crew members] clung to the hulls of the stricken vessel, huddling to protect themselves as best they could from wind and wave. Daylight came. Airplanes flew overhead but no one saw Hokule`a. Adding to the problems of the crew was exposure to the sun, intense and nearly overhead at mid-day. Most alarming, though was the fact that the canoe was drifting away from airline routes, decreasing its chance of being spotted.

"Snake Ah Hee left on a surfboard to summon aid. When a low-flying airplane appeared, he assumed that the overturned canoe had been seen, and

he returned. After a long period of waiting it became clear that it was not so.



"[Eddie Aikau](#) wanted to go for help. An expert waterman, he had saved the lives of many swimmers in trouble in the powerful surf of Waimea Bay on the north shore of O`ahu. Nainoa paddled out with him a short distance to test the surfboard and waves. Eddie would go alone. The crew, clinging to the overturned hulls, watch[ed] in silence as he rode the waves into a fate not unknown to many of the people of old who sailed toward distant lands."

Eddie Aikau was not seen again. The rest of the crew was rescued. The swamping and loss of a crew member brought a heightened concern for safety to the Polynesian Voyaging Society. Henceforth, the canoe would not voyage without an escort boat with which it would maintain regular radio communication. The hatch covers were made watertight. Finally, safety checklists and procedures, and training programs were made more rigorous; crew safety became the primary concern in preparing the canoe for a voyage.

CREW MEMBERS: HAWAI`I-TAHITI, 1978: Snake Ah Hee, Eddie Aikau, Charman Akina, Wedemeyer Au, Bruce Blankenfeld, Kilila Hugho, Sam Ka`ai, John Kruse, Dave Lyman, Marion Lyman, Buddy McGuire, Norman Pi`ianai`a, Leon Sterling, Curt Sumida, Tava Taupu, Nainoa Thompson

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Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
Home	Search	Archives	Past Education Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)	



The Building of Hawai'iloa

[Photo below: Hawai'iloa]

The construction of a double-hulled canoe named Hawai'iloa was funded by the National Parks Service. The plan was to build a Hawaiian voyaging canoe, as much as possible, out of traditional native materials. The purpose of the project was to recover knowledge and skills associated with traditional Hawaiian canoe-building.



One of the first problems in carrying out the plan to construct the canoe out of native materials was the discovery that the forests of Hawai'i did not contain koa trees large enough for the hulls of a voyaging canoe. A search for logs in 1989-1990 was unsuccessful, for over the years, the koa forests have been ruined by forestry and cattle grazing. (For information about the current condition of Hawai'i's native forests and trees, and Hawai'i forestry, see ["Hawai'i's Forestry Website"](#).)

The search took the builders to Alaska. When told about the unsuccessful search for logs, the SeAlaska Corporation (owned by the Tlingit, Haida, and Tshimshiam tribes of Southeast Alaska), offered to donate two Sitka spruce logs. Byron Maillot, the CEO of SeAlaska, explained the connection between the native peoples of Hawai'i and Alaska: "Both the reality and the symbolism of the [Hawai'iloa] project breathe hope and inspiration into all peoples seeking to maintain their traditions, heritage and culture in a society

that does not place a high priority on such things except when they may touch a nerve or help nurture shared values through an expression of such vision, initiative and sheer innate beauty that all can feel ennobled by it...You do it for the Hawaiian people, but it reaches far beyond. In your canoe you carry all of us who share your vision and aspiration for a people to live and prosper with their future firmly built on the knowledge of their heritage and tradition."

That Hawaiians used drift logs from Oregon to make canoes has been reported in several sources. For example, Menzies, a surgeon and naturalist accompanying Captain George Vancouver, described "the largest single canoe we had seen amongst these islands, being about sixty feet long and made of one piece of the trunk of a pine tree which had drifted on shore on the east end of the island of Kaua'i a few years back. She had sixteen men on her and was loaded on the outriggers with a large quantity of cloth, spears, two muskets, and other articles, which they were carrying up to Maui to Kaeo" (Tommy Holmes, *The Hawaiian Canoe* 24). The ancient Hawaiians considered the drift logs as gifts from their gods.

In 1990, SeAlaska Forestry Manager Ernie Hillman located trees large enough for the Hawaiian canoe on U.S. Forestry land on Shelikof Island in Soda Bay, Prince of Wales Island, west of Ketchikan, Alaska. The 200 foot tall trees, seven feet in diameter, were over 400 years old. After traditional Hawaiian and Tlingit tree-cutting ceremonies were performed (the forest gods were asked permission to take the trees for a canoe), the trees were felled and the logs shipped to Hawai'i.

The construction of Hawai'iloa began in 1991. The canoe hulls were designed by Rudy and Barry Choy and Dick Rhodes. ([Click here for construction drawings by Dick Rhodes.](#)) The rest of the canoe was designed by project director Nainoa Thompson, kahuna kalai-wa'a (master canoe carver) Wright Bowman, Jr, and Wally Froiseth. Canoe construction was supervised by "Bow." [Numerous volunteers](#) worked on the canoe--cutting, shaping, drilling, chiselling, sanding, painting, lashing, etc.



Bow Leading *Hawai'iloa* Out of the Canoe Shed

Hawai'iloa's kuamo'o (hulls) were carved from the two Sitka spruce logs donated. Native koa was used for the manu (bow and stern pieces); mo'o (sideboards); wae (braces to keep the hulls spread apart); mast step; steering paddle; and two steering blades. 'Ohia logs were used to shape the seven 'iako, or crossbeams; two kia, or masts; two spars; and two booms. The railings are made from hau (hibiscus) logs. Sennit (coconut husk fiber) was tested, but in the end, synthetic cordage was used for the lashings and rigging, for strength and safety. (The arts of making sennit and olona rope, traditional materials for lashing and rigging canoes in Hawai'i, had been lost. Lauhala sails were woven by Lily Jane Nunes, Elizabeth Akana, and others, and tested, but canvas sails were used during the voyage. The lei hulu (feather streamers) were made by Mary Lou Kekuewa.

Dimensions

Length: 57 feet

Beam: 19 feet

Sails (2): 240-420 sq. feet each



Keli'i Tau'a Blessing *Hawai'iloa*

The canoe was completed and launched in July, 1993, sea-tested, then dry-docked for modifications in October 1993. The modifications included trimming 3 tons from the weight of the canoe to increase its carrying capacity and speed, and reduce stress on the lashings. The canoe was relaunched in July, 1994, for more sea trials before its voyage to Nukuhiva via Ra'iatea and back.

The canoe was named for the voyager Hawai'iloa, who according to one tradition, was the first discoverer of Hawai'i. He is said to have found the islands on a long fishing expedition from the south or west, from a land called Ka-'aina-kai-melemele-a-Kane, "The land of the yellow sea of Kane." He returned home and came back to Hawai'i with his wife and followers, including eight navigators. Because only Hawai'iloa brought his wife with him, all Hawaiians are said to be descended from him. The island of Hawai'i was named for him, while Maui, O'ahu, and Kaua'i were named after his children.

The 1995 recreation of an early settlement voyage to Hawai'i will not only be a tribute to this great mariner of ancient Polynesia, it will also deepen the roots on which the Hawaiian community and culture continue to grow and flourish.

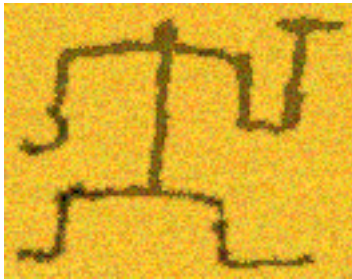
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<u>Home</u>	<u>Search</u>	<u>Archives</u>	<u>Past Education Programs & Materials</u>	<u>On-Line Visuals</u>	<u>Bibliographies (Books and Films)</u>



Hawaiian Canoe Building

Koakanu



[The following article, attributed to a man named Koakanu, is from Fornander, Vol. 5, 610-614.]

Canoe building was one of the industries of ancient Hawaiians, and it is still carried on to this day. This is how it is done: when a man desires to go up to the mountain forests to get a tree to build a canoe, he must first prepare a pig, red fish, black fish and various other things as offerings to propitiate the forest deities. When these things are ready he comes home and invites dreams in his sleep. If they are good dreams, he will go up to the forests; but if they are unfavorable, he won't go.

A woman should not go along with him to the mountains; that is wrong. Should a woman go along, the canoe would crack.

When he arrives at the place where the koa tree selected for his canoe stands, he kindles a fire for an imu to cook the offerings. After the fire is kindled, he gets a chip of the koa tree and burns it in the imu; when all the offerings are cooked, prayers are offered to the canoe-building gods: to Kupulupulu, Kumokuhali'i, Kuolonowao, Kupepeiaoloa, Kuho'oholo-pali, Kupa'aike'e, Kanealuka, and various others; then he eats some of the food and throws some to the gods. When all these things have been attended to, the tree is ready to be cut.

[Kalokuokamaile, who chose the goddess Lea as his canoe-building patron, used the following chant before cutting down a tree:

O Lea, woman who builds canoes,

Goddess of canoe making,
I have come up to cut a tree for a canoe.
Here is my payment, an offering,
A sacrifice for you, O Lea.
Here is red fish, a red loin cloth.
Grant me much skill, strength, and thought,
Grant me patience.
Make into trifles
all hindrances and obstacles,
In front, behind, And on all sides of the tree I cut.
Guide my adze to its target,
Let the chips fly at each stroke
Until the work is finished.
Amama, the prayer is freed.

(E Lea, ka wahine kua wa'a,
Akua kalaiwa'a,
I pi'i mai nei au e kua,
E 'oki i ku'u la'au wa'a,
Eia ka'u uku, 'alana,
Mohai ia 'oe e Lea,
Eia ka i'a 'ula, malo 'ula,
E ha'awi mai i ka 'ike a nui,
Ka ikaika, ka no'ono'o,
Ha'awi mai ia'u i ke aholoa,
O na alalai, o na ke'ake'a
Mamua, mahope,
A ma na 'ao'ao o ku'u la'au e 'oki ai,
E ho'olilo ia lakou i 'opala,
E ho'opili pono i ka maka o ke ko'i,
Ma ku'u wahi i makemake ai,
'Aole ho'opakua i ku'u ko'i,
Pa no lele ka mamala,
Ahiki i ka pau ana,
'Amama ua noa.)

After the pig was cooked, the part offered to the gods was accompanied by

the following prayer:

O Lea, woman who builds canoes,
Goddess of canoe making,
And Mokuhali'i and Kupa'aikē'e,
Male gods of canoe making,
Here is pork,
A pork gift, a sacrifice, an offering
From Kalokuokamaile.
Grant him much skill,
Skill and mana (power), unlimited mana;
you are obliged to him for his pork,
'Amama, it is freed.

(E Lea, ka wahine kua wa'a, akua kalaiwa'a, ame Mokuhali'i, Kupa'aikē'e, na akua kane kalaiwa'a, eia ka pua'a, he pua'a uku, mohai, 'alana ia 'oukou na Kalokuokamaile e ha'awi i ka 'ike a nui, ka 'ike mana, kana mana palena 'ole, a nolaila, ke 'ai'e nei 'o ukou i ka pua'a a Kalokuokamaile, 'Amama, ua noa.)]

The tool used for cutting in the olden times was a stone adze, ground until sharp and tied to a handle. When cutting down a tree, first dig away the dirt so that the roots show, then cut down the tree. It would take one man almost a week to fell a tree; if many hands worked together, the tree could be felled in two days. Nowadays we have iron axes, and because of their sharpness a tree can easily be cut down; a strong man can cut down a koa tree in half an hour.

After the tree is felled and before it is shaped into a canoe, more prayers are offered to the gods. After rough-shaping the log and making it light, the canoe is hauled down from the mountain and placed at a site prepared for it. After three months or more to cure the wood, the finishing work is done on the hull and the other parts of the canoe are attached.

This is the way to build the other parts: the wood for the sides and tops of the canoe is the 'ahakea; you need four rims (kupe) and two rails (mo'o). The four rims are called ki'apu'apu (the forward curving portion of the canoe's rim, generally known as the manu); ho'onoluonolu (the straight part of the rim); oio (a between section of the rim); and unu (the stern curving portion

of the rim, known also as the aft manu). These rims are hewn so as to fit along the rim of the canoe hull and are tied on to the canoe with the 'aha (sennit).

When the canoe is finished, the ceremony known as lolo is performed (the hog-sacrifice ceremony, when the deity is invoked to witness the canoe's satisfactory completion). Should the ceremony be performed without any interruption, then the canoe would be a sound, but should the ceremony be interrupted the canoe would not be sound, or else trouble would come to the owner of the canoe. After this ceremony, the ama and the 'iako (outrigger and its two connecting arms) are shaped and tied on; then the wae (braces inside of the canoe near the 'iako to stiffen and strengthen the sides of the canoe); then the kuapo'i (weatherboards covering the canoe fore and aft).

[Kalokuokamaile describes the lolo ceremony as follows: Everything was assembled to finish the canoe--the ama, the 'iako, the cords to bind the 'iako, and the wae. An imu was lit to roast a pig. The pig bristles were removed, and the pig roasted. Then the owner brought the canoe-making expert a live pig. The expert released the pig into the hull. If the pig went from stern to bow and leaped out, it was a good canoe, and the life of the pig was spared. If the pig went as far as the bow and laid down, then it was cooked in the imu. While the pig was roasting in the imu, the 'iako and ama were lashed to the canoe and the other parts joined on. When the pig was cooked, the head was cut off and set apart for the canoe-making expert, and the rest of the pig was cut up for the people gathered at the ceremony. The expert then petitioned the gods of the canoe makers:

O Mokuhali'i, Kupa'aike'e, Lea,
 Here is pork,
 A payment, a gift, an offering,
 A sacrifice to you.
 The canoe is finished,
 Ready to be launched into the sea,
 Its home where it will seek profit and wealth;
 Watch over it carefully
 Be alert for coral heads and stone heads of the reefs,
 For the waves and the swells of the open ocean.

Guide the canoe over the depths of the sea,
Let the canoe ride over the waves of the sea,
Till it is worn out, overgrown with limu, and aged.

(E Mokuhali'i, Kupa'aikē'e, Lea, eia ka pua'a, he uku, he makana,
he 'alana, he mohai ia 'oukou. Ua pa'a ka wa'a, a e ho'olanaia aku
ana i ke kai, o kona. 'aina ia e huli ai i ka loa'a ame ka waiwai.

(E nana pono loa 'oukou, e maka'ala i na puko'a, na pu'upohaku o
kahi laupapa, na nalu, na 'ale o ka moana. Ho'oholo no 'oukou i ka
wa'a ma kahi hohonu o ke kai; i hele ai ka wa'a a nalukai, a 'apulu,
a ulu ka limu pakaiea, a kaniko'oko'o.)

[The canoe was then carried down to the ocean and paddled a short distance out. The builder called from shore, "How is the canoe? Is it good?" (Pehea ka wa'a! Ua maika'i ka wa'a?") When the owner answered, "Yes, the canoe is good," ("Ae, ua maika'i ka wa' a"), the work on the canoe ended.]

Those people who build canoes for a living are called kahuna kalai wa'a—canoe-building priests. This occupation is a hazardous one, often resulting in death. I worked at it from the time I was twelve years of age. It is, however, a profitable industry if one should persevere in following it; because a canoe log four fathoms (24 feet) or more, even though not completed as a canoe, could sell for \$40.00. If completed it would bring \$80.00 for some, and more for others.

Supplementary Information from a man named Kauwenaolu: Before the canoe-making priests go up to the mountain, they sharpen their stone adzes until the edges are keen. If they have a favorable dream at night, they go up to the mountains; if they do not have a favorable dream, they should not go up. Here is another important thing: on going up and reaching the forest, if they should hear the 'alala (Hawaiian crow), the idea of building the canoe [from that particular log] should be abandoned, because it is evident to them that the tree is rotten inside. If they don't hear any noise from birds until they come to the canoe tree, those priests are happy.

Here is one prayer upon cutting the trunk and its branches: "E kua i uka, e kua i kai, e kua i o, e kua ia nei, e nana e ka la i kamana wa'a, e 'ike e ko

luna, e 'ike e ko lalo i ke 'oki ana o ka kakou wa'a." ("Hew mountainward, hew seaward; hew there, he w here. Watch over, O sun, the canoe builder. Witness, those above, witness, those below, the cutting of our canoe!")

Then these men begin cutting the tree until it falls. If the canoe is for fishing purposes, a different prayer is offered for the hewing of that canoe tree. If it is intended for sale, another prayer is used at its felling. There are also separate divisions in the prayer for cutting off the branches and the trunk, for shaping the trunk, for hauling the partly-shaped log down to the beach, for the construction of the canoe, and for launching it into the sea. The only trouble is I do not know those parts of the prayer.

About the Koa Canoe (From Fornander, Vol 5, 630-636)

During the period when Hawai'i was unenlightened (na'aupo), the people had already acquired the art of constructing canoes. The best koa forests, both for the size and quality of the trees and the convenience of getting the partly hewn trees from mountain to shore, were in the Hilo and Kona districts of Hawai'i and the Hana district of Maui. The Hawaiian people were able to construct canoes which reached about ten fathoms (60 feet) long, and smaller canoes which reached from four to six fathoms long. In depth, some of these canoes reached the armpit of a person when he stood inside of one of them. However, a common man was seldom seen in one of these large canoes, as they were mostly used by the chiefs in the old days. The depth of the smaller canoes is like the depth of canoes we see nowadays.

The Adze (Ko'i): The adzes used for cutting down and hollowing out the trees in those days were made of hard stone, seldom seen nowadays. The stone was called 'ala, basalt, and the principal quarry was high up on the slope of Mauna Kea. These stones are harder than ordinary; there were no metal axes in those days.

Cutting Down ('Oki) the Tree: When the canoe-building priest goes up and comes to the tree desired for a canoe, he looks first at the main branch, and where the main branch extends, towards that side is the tree to be felled. If the falling tree lands on another tree, the omen is bad [it is not right]; if it falls clear, it is good. After the tree is felled, the 'elepaio bird, the god of the canoe builders, alights on the tree. If the bird runs back and forth, without

pecking the tree here and there, then flies away, it is a good canoe. If it pecks along one side from the front to the back, then hew that side for the mouth of the canoe. If it pecks on on both sides, the log is rotten; better leave it alone. There is a prayer for cutting off the top, but I have not obtained it.

Shaping (Kalai) the Canoe: In shaping a canoe the outside is shaped first, and when the outside is finished, then the inside. At this time, however, no particular way of shaping is observed; anyway of hollowing the log is allowed, so that the canoe may be lightened for dragging down to the beach. The canoe is nicely tapered in the front, and is large and full in the rear. Some projections ("pepeiao," or "ears") are left on the insides of canoe; as many as four, five or perhaps six, according to the wishes of the priest and the size of the canoe. These projections are used for attaching the outrigger, the mast, and the seats. When the shaping is done, then the canoe-building priest reports to the owner that the work is completed. If the owner wishes to go up and view the canoe, then he accompanies the priest; if he does not so wish, the canoe is left alone until it is seasoned; then it is hauled down to the shore.

Hauling (Kauo) the Canoe to Shore: Hauling the canoe is another important job. It can not be done with only a few men; there must be many, perhaps forty, sixty, or eighty, according to the size of the canoe; a small canoe requires fewer men. The day set a part for hauling the canoe is a day of much pompÑlike the day of a funeral of a famous man. Men, women, children, and sometimes chiefs go up to the mountain. Food, pigs, chickens, turkeys (palahu), and fish, enough to feed the multitude, are taken up.

When the people arrive at the place where the rough-shaped canoe was left, preparations are made for dragging it. A rope is tied to the neck (maku'u) cut at the stern of the canoe, and when the ropes are ready, a chain of workers takes up positions from where the rope is tied to the canoe neck to the end of the rope far ahead. Strong men are placed at the end of the rope, so that the rope will be kept taut when being pulled, and will not slacken, tangle, and hurt the men when the canoe slides down a steep hill.

The canoe is hauled until it is brought to a moderately steep hill where it is impossible for many to pull together because of the steepness. There the people are reassigned, and fewer men are required to pull the canoe down

the hill. It is then that we see the skill of the man who guides the canoe downhill; it is then that he displays his great ability. When the preparations are complete, the man who will steer the canoe down the hill rides on it. Those who were selected to pull commence pulling, and the canoe moves along until it attains a good speed, when the men who are pulling desist and the canoe guide (ho'okele) takes over. A canoe coasting down a hill goes faster than a galloping horse.

If the path is rough, the canoe can be turned toward a smooth place; if a large tree or a stone is in the way, or the path is crooked, the canoe might be broken; it is up to the man guiding the canoe to prevent the canoe from being wrecked. Arriving at a flat area, the multitude hauls again, and thus they go until the house for building the canoe is reached. But if it is a half-witted man who directs the canoe, or a man with little ability, trouble will follow from the outset. I saw this happen continually at my birthplace.

The ho'okele (canoe guide) rides in front by the neck for attaching the ropes; he holds on to a short rope and a small stick made fast to the neck. The stick is used like the rudder of a ship. If the canoe swerves from the path selected, the stick is used as a lever to head the canoe properly. The ho'okele can direct the canoe to any chosen place or step back into the canoe while it is coasting, or restrain the canoe so that those who are dragging it are unable to do so.

The Finishing Work (Kalai Ho'omaika'i): If the priest is hewing a canoe in a house, then the rule is that an 'aha cord be stretched across the door of the house from side to side, so that people would not enter to talk, thereby diverting the attention of the canoe-building priest, and perhaps causing the canoe to be broken by careless hewing. Hence the 'aha cord is placed across the door, so that a person would come and talk from the outside, but is unable to enter the house. If that person has something important to say, the work is stopped and the conversation is then held. This is a rule strictly adhered to by some canoe-builders.

The finishing work on a canoe can begin from the front or the rear. If the hewing begins on the left side, do not switch over and work on the right side, for the work would end up defective. If the work begins at the bow, continue from that direction until the stern is reached, then quit; do not change the

direction of the hewing. Likewise, if you begin hewing from the stern then continue from that direction until the bow is reached, then quit. Do not hew from the bow, then from the stern, on the same side, or there might be a gap (puka) in the middle.

Adzes: There are two kinds of adze used for building canoe: ko'i kupa, an adze for digging out the inside, and any other rough work; and ko'i wili, a reversible adze used for finishing work. The ko'i kupa is used for digging out the inside and rough-hewing the outside [of the canoe] when the wood is still thick; and when it is thin then the ko'i wili is used for the finishing work. The ko'i wili is used in hewing both wide and narrow places.

Other Parts of the Canoe: When the canoe is finished, the wae (brace to stiffen and support the sides of the canoe) are placed in position; these parts are attached to the niao (the top rim of the hull), along with the manu (curved bow and stern pieces). The wae are made of 'aiea wood. Sennit is used to fasten these parts onto the canoe. When that is done, the 'iako (outrigger boom) and the ama (the outrigger) are attached; these parts are for steadying the canoe at sea. The proper woods out of which to make these parts are the hau and the wiliwili.

Three other kinds of wood (besides koa) were used in building canoes in ancient times--the wiliwili, the kukui (candle-nut tree), and the ulu (breadfruit tree). The wiliwili is yet being used. The kukui is not much seen at this time. The ulu is used for repairing a broken canoe; great skill is required to make the patching blend into the original canoe.

Painting: The paint used to daub the canoe black is called amaumau. Cane leaves and nanaku (rush) from the stream are burned; the ashes are collected and placed in a container, then mixed together with kukui gum. This mixture forms the black paint to adhere to [and protect] the wood.

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<u>Voyages</u>	<u>Canoe-Building</u>	<u>Wayfinding</u>	<u>Life on a Canoe</u>	<u>Polynesian Migrations</u>	<u>Proverbs and Traditions</u>
<u>Home</u>	<u>Search</u>	<u>Archives</u>	<u>Past Education Programs & Materials</u>	<u>On-Line Visuals</u>	<u>Bibliographies (Books and Films)</u>



Hawaiian Canoes

Edgar Henriques

[From the *34th Annual Report of the Hawaiian Historical Society*, 1925,
15-19]

The ceremonies in connection with the selection of a tree and the making and launching of a Hawaiian Canoe are of a more or less religious character.

In 1912 I had the good fortune to witness these ceremonies at a place called the Ahupua'a of Ki'ilae, in South Kona, Hawai'i, and from notes then made, I judge them to have been unlike the ceremonials described by other writers, and worth recording.

When the Kalai Wa'a (Canoe carver) whose name was Kealakahi was requested to make a canoe, he consented, with the understanding that he was to be in entire charge until the canoe was brought down from the mountain forests.

For three nights the Kahuna went to his family heiau to pray that his undertaking would be successful. On the fourth day he started up the mountain, with one assistant, to search out a suitable tree. After arriving in the koa woods, they made their camp and sat down, keeping silence, to watch for the bird 'Elepaio which was to help them select their tree.

After watching for two days, they saw the 'Elepaio. Then, for three days more, they followed the bird from tree to tree, taking note of its actions and behavior, for they knew that if the 'Elepaio lit on a tree and started pecking at the bark, the wood of that tree was not sound. Were they to fell it, they would find the wood decayed and the heart defective.

The 'Elepaio lit on many trees that it did not peck at, but the watchers always found some fault with the tree--the trunk might be too short, or twisted, or too large in diameter, or growing where it could not be felled properly. At last the 'Elepaio alighted on a beautiful, straight tree which the Kahuna declared was exactly the one he had in mind. He and his assistant thereupon hewed a deep groove in the trunk, near the ground, and we returned to the settlement to get assistance.

After securing supplies, including, food, blankets and tools, and resting at the settlement that night, the Kahuna and four men left again for the mountain the next day. Arriving at the selected tree the Kahuna first made sacrifice of a small pig at its base, with incantations and prayers. The koa tree was then cut down, each of the five men taking turns in cutting. The next operation was to trim off the limbs.

When this was finished, the Kahuna measured the trunk and designated where it should be cut off. The men then topped it as it lay on the ground. The trunk was then barked, and pointed at each end. About 18 inches from the stern a deep groove was cut in which to fasten the rope by means of which the trunk was to be hauled to the sea.

The men then roughly hollowed the trunk until the sides were down to about three inches thick, and the bottom of the canoe six inches thick. The Kahuna marked where the pepeiao, or brackets for seats, should be, and these were left as the men hollowed out the trunk.

The following day, after again camping a night in the forest, ropes were attached and the roughly outlined canoe was dragged down the mountain-side to a point about a mile from the sea where it was left beneath the shade of a clump of orange trees for about six months, to be seasoned, trimmed, and smoothed to its final thickness. The trimming and shaping of the canoe lasted several weeks.

The 'iako and ama (outrigger) were made from the hau tree; and the mo'o, or gunwale, from the breadfruit tree.

All during the course of preparations and making of the canoe exact attention was paid to the way in which each operation was performed. There

were ceremonies of consecration before the tree was felled, and a certain precedence and form was carefully observed. It was considered a very unfavorable omen if any quarrel or disagreement occurred among the men before the tree was cut down, or during its construction.

As the little pig was sacrificed, just before the tree was felled, the Kahuna chanted, in Hawaiian: "Now, thou art a tree. When I cut thee, thou wilt become a man."

When the canoe was completed in all its parts, after about six months had elapsed, and the wood had been polished and lacquered with Hawaiian oils and gums, the owner and the Kahuna joined in prayer and response, at the conclusion of which the owner placed a small pig in the stern of the canoe. The pig walked from stern to bow and sat down, without attempting to jump out. This was declared to be an especially favorable omen.

The event was celebrated by a luau, provided by the owner, in which all the people of the surrounding neighborhood participated. The following day, the canoe was taken to Napo'opo'o, to be launched.

The nine Hawaiians who had taken part in the making of the canoe from the time of the search for the tree to its completion, joined the owner and the Kahuna in the final ceremonials. They were naked except for red malo, and the owner wore a yellow malo. Each had fish-lines and hooks, and after they had paddled out into the bay, all fished. The owner caught the first fish, a red moana, which was doubly a good omen. The owner had to eat all of the first fish and the bones were thrown into the sea.

About noon, the party, after catching many fish, landed at Ke'ei where another pig was sacrificed and with the fish that had been taken, and many Hawaiian delicacies, were much enjoyed.

In dragging the canoe down from the mountain, the Hukiwa'a (master of ceremonies) uses the following expressions:

Ka pa'a--to hold when the canoe is going too fast;

Kai Kona--steer it to the north (toward Kona);

Kai Ka'u--steer it to the south (toward Ka'u;

Ho'olana mai--easy; raise the stern (lit. "float")

When it was launched, the canoe was christened "'Ehunuikaimalino" ("Ehu of the calm sea"). 'Ehu was a ruling chief of Kona.

The gods of the canoe, called upon in the ceremonial chants by the Kahuna, were:

Kumahaalii--God of him who journeys in the canoe.

Patrons of the Canoe Builders were the following:

Kuohanawao,
Kuka'ohi'alaka,
Kuka'ie'ie,
Kumokuhali'i,
Kupalalaki,
Kupa'aike'e,
Kupepeiapoko,
Kupepeialoa,
Kupulupulu;
'Elepaio, Goddess of the Canoe Builders;
Laea, Patroness of the Canoe Builders

Gods who assist in restoring and righting canoes when upset in the ocean:
Maikahulipu, Maikahuliwa'apu.

The following are the names of parts of the canoe, which, as will be remembered, has become a man:

Chin, 'Auwae, or Moa-moa--where the gunwale joins the bow;
Head, Po'o--the bow; and ku-apo'i, the shield, or weatherboard;
Eyes, Maka, or Manu--bow and stern;
Ears, Pepeiao--brackets for seats;
Ribs, Mo'o--gunwale;
Arms, 'Iako--arms of outrigger, and Ama, the outrigger float;
Wings, or kite, Lupe--the head of the outrigger;

Body, Kino--the hull;
Chest, Uma--the bow [cf. Pukui-Elbert Dictionary: uma is the stern.];
Back, Kikala--the stern [literally, the hip];
Feet, Kapua'i--where the outrigger is joined to walk on the sea;
Nose, Ihu--below the eye;
Wae, the braces.

Among general descriptive names relating to the canoe or its appurtenances are the following:

Hoe--Paddle,

Muku--the short end of the 'Iako

Pola--the seat between double canoes;

Pa'u o Lukia--fashion of tying outrigger for smooth water;

Kaula-'Ohi'a--fashion for tying outrigger for rough water;

Iwika'ele--the body of a canoe [Pukui-Elbert: keel of canoe.]

'Aki--the stools on which canoes are placed on dry land;

Aha hoa wa'a--canoe lashing, made from olona fiber;

Lanalana--the lashing that binds the Ama, or float, to the curved cross-pieces of the canoe's outrigger. These lashings were sometimes highly ornamental; one was called Pa'u o Lu'ukia, a very decorative affair;

Kioloa--a long, elegant, swift canoe used for display and for racing (Emerson's translation of Malo, p. 89). Also, a small canoe, (Andrews-Parker dictionary, p. 296).

Kapena--a tree sometimes used for making canoes.

The ceremony of consecrating the canoe was called "Lolowa'a," and the hog which was sacrificed after the canoe was finished and ready for launching

was "Lolo."

<u>1976: Tahiti</u>	<u>1980: Tahiti</u>	<u>1985-87: Aotearoa (New Zealand)</u>	<u>1992: Rarotonga</u>	<u>1995: Marquesas</u>	<u>1995: West Coast, British Columbia, & Alaska</u>	<u>1999-2000: Rapanui</u>
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<u>Home</u>	<u>Search</u>	<u>Archives</u>	<u>Past Education Programs & Materials</u>	<u>On-Line Visuals</u>	<u>Bibliographies (Books and Films)</u>	



The Building of Keawenuia'umi's Canoe

Samuel M. Kamakau



[From *Ruling Chiefs of Hawai'i*, 38, 41-42. This passage has been translated by Kenneth Emory from terms identified by Mr. Kupihea.]

When Keawenuia'umi learned that Paka'a [his kahu iwikuamo'o or chief personal attendant] had run away, that he had left him and was gone, he was filled with longing for him. The chief ordered strong paddlers to go from Hawai'i to Kaua'i to seek him. They sought him on the leeward and windward sides as far as Ni'ihau, and returned to the presence of the chief to report that Paka'a could not be found. They had not gone to the remaining island, Ka'ula. "It might be that a certain man at Kaluako'i, Moloka'i, was he [they said]. He was accompanied by a young boy on a canoe. The boy asked us questions, but the man did not raise his head. We inquired for Paka'a, but the boy replied that no stranger was seen there." They [the chief's paddlers] returned, leaving the two catching uhu fish at Kala'au Point.

Keawenuia'umi said, "I dreamt that Paka'a's spirit told me that he is on Ka'ula and will not come back until I, myself, go to fetch him. He will not return with the messengers of the chief. Great is my longing for my personal attendant. Let all of Hawai'i make double canoes and large single canoes, and let us go to fetch Paka'a."

Keawenuia'umi sent a proclamation to every high chief and every lesser chief for double canoes, for canoes that were joined together, and for single canoes, to be used in the search for the personal attendant of Keawenuia'umi. The chiefs were all supplied with canoes, but there was one thing lacking.

There was no double canoe for the ruling chief. The cause of the delay in the making of that canoe was two birds. When the tree selected for the chief was about to be felled, these birds called from the very top of it; "Say, the log is rotten." After the tree was felled, it was found that the trunk was rotten. The chief hired many canoe-making experts, but no canoe was finished for him. The chief hired bird-catchers, those who gummed birds, but none could catch the birds. The naughty birds which called about the decayed log flew away and vanished into the sky. They returned only when a koa tree was about to fall. The tree fell just after their cry of "The log is rotten" (puha ka waha). The chief was weary of them!

[The two birds were killed by the famous archer Pikoi-a-ka'alala, son of 'Alala and his wife Ko'uko'u, natives of Lihu'e, Kaua'i. In gratitude Keawenuia'umi gave Pikoi his daughter, and "all the lands on Hawai'i where bows and arrows were used".]

After the enemies of Keawenuia'umi had flown away to the sky, a man was found who was an expert in putting on canoe parts and in hollowing the log. His name was Lulana, and he came from Kipahulu, Maui. This man's skill was noticed when he went to the upland and saw two very large trees, one on either side of the trail. These were hollow trees used as dwellings by some of the canoe-makers. When the stranger went to the upland he noticed them and said to Keawenuia'umi's canoe-making experts, "These will make good canoes for the chief, as the centers are hollowed already."

The chief's men replied, "Who would convert these hollow trees into canoes? They are used as shelters for canoe-makers, bird-catchers, and experts in canoe-making."

Lulana said, "These are easy to use, for the openings are already there. They will be fine canoes, and there are no defects. If these were made into canoes for the chief, they would be excellent."

The hewing began at the spot pointed out by Lulana, until both trees fell. The large side branches and tops were cut off, the bark stripped until none remained on the outside, the prow and stern shaped, the sides smoothed off, and the prow and stern polished smooth. The canoe was then turned up, the edges leveled, and as the canoe was already hollow, leaving only the two

sides at the opening, the opening was then shaped. The opening was already there, so there was little work needed on it. The work was so on finished, and it was seen that there were no canoes to equal the canoes of Lulana in the days of 'Umi or of the ancient chiefs before him.

Word was carried to Keawenuia'umi of the fine canoes made by Lulana, that they were beautiful and free from defects. No canoes as beautiful had ever been seen in olden times. They were twenty anana long [20 arm spans, or 120 feet] and one anana and one iw ilei [1 and 1/2 fathoms, or nine feet] in depth. When Keawenuia'umi heard of the doings of this expert who was unequalled in his skill, he was filled with happiness and joy. In no time the canoes were finished inside and ready to be hauled to the shore. Keawenuia'umi, the chiefs, lesser chiefs, and commoners hauled the canoes to the shore of Hilo. Lulana became a favorite and was made chief over all canoe experts (po'e kahuna kalai) on Hawai'i by Keawenuia'umi.

Lulana and all the experts put together the canoes of Keawenuia'umi. When the pieces (la'au) and all the things which belong to a canoe were fitted together, the canoe which was to take the place of the outrigger float (that is, the 'ekea canoe) was set alongside. Then the connecting booms ('iako) of the canoe were put on. When the four large inner booms had been fixed, then were added the two booms for holding together the forward and rear ends of the double-canoe (na 'iako elua i na umi o na umi'i o mua a me hope). Now the wash strakes (palepale) were set over the booms, on the inside and outside. In front were placed the weatherboard (kua po'i). After the clamping down of the rear pieces (uma) of the canoe and the fastening with running sennit-cord (ho lo 'aha), the platform (pola) midway between the canoes was lashed on.

Just over the arch of the main booms was set up the house for the chief, so that the chiefs could sleep on the platform. It was lashed securely (helea) with sennit just as for the lashing (lu'ukia ana) of the booms. There at the big boom over the large lugs (pepeiao), the sail (pe'a) was set up (kukia). When the little imperfections of the canoe had been remedied, then all that was left was to sail it on the ocean.

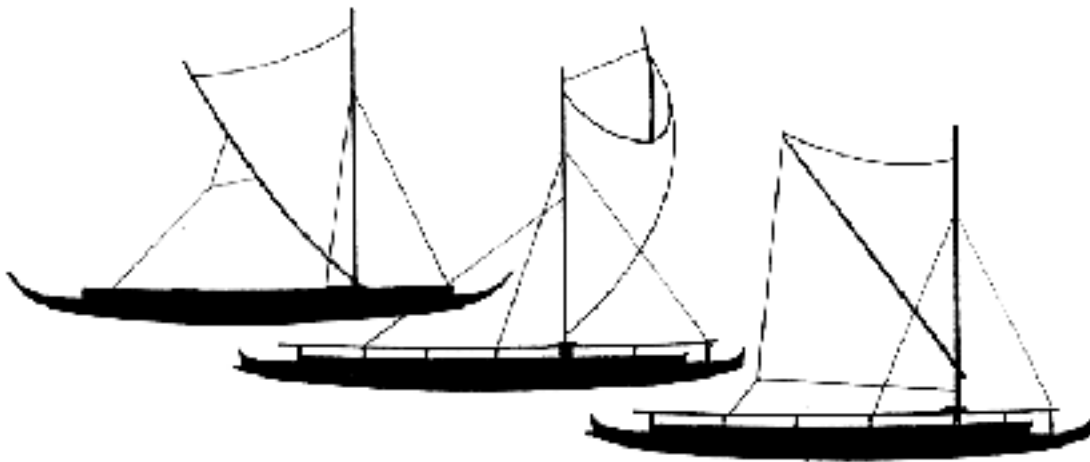
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<u>Voyages</u>	<u>Canoe-Building</u>	<u>Wayfinding</u>	<u>Life on a Canoe</u>	<u>Polynesian Migrations</u>	<u>Proverbs and Traditions</u>	
<u>Home</u>	<u>Search</u>	<u>Archives</u>	<u>Past Education Programs & Materials</u>	<u>On-Line Visuals</u>	<u>Bibliographies (Books and Films)</u>	



Evolution of the Hawaiian Canoe

Herb Kawainui Kane (herbkane@kona.net). All Rights Reserved.

Changes in the primary power mode of the larger canoes of the Hawaiian Islands from sail to paddling, followed by a return to sail. (Below, Left to Right: Ancient Polynesian sail; Hawaiian specialization (See [Full-Color Painting of a Hawaiian Interisland Canoe](#)); fore-and-aft spritsail adopted after 1790.)



The Ancient Sailing Canoes

During the exploration of Polynesia, canoes venturing outward from the same center must have been of the same design. Because of the great distances, these must have been sailing canoes, with paddling as auxiliary power used only for brief periods-to launch or land canoes, or keep off a dangerous lee shore. Even with a sufficient number of paddlers working in shifts, the amount of food and water required to sustain energy for paddling for two or three thousand miles would have exceeded the carrying capacity of the canoe. Throughout Eastern Polynesia, the same basic design probably persisted throughout the era of long distance two-way voyaging. Later, ships

being as mortal as their makers, this earlier "generic" design vanished as designs evolved which became specialized to each island group.

Using the "age-distribution" method, those hull and sail design features found to be most widely distributed throughout "Eastern" or "Marginal" Polynesia when Europeans arrived (including Hawai'i, the Marquesas, Tahiti, the Cook Islands and New Zealand) may be taken to be most ancient because they must have been carried outward from the same center of cultural diffusion.

Hulls were deep enough to track well while sailing across the wind or on a close reach into the wind. The round-sided V hulls of Tuamotuan and Tahitian pahi as well as the presence of a rounded V in a drawing of the hull section at the main crossboom of an early 19th century Hawaiian double-hulled sailing canoe are evidence that the windward efficiency of this shape, providing lateral resistance to the water while under sail, was well known to ancient builders. The superior structural strength of compound curves was well known-the weakness of simple curves and flat surfaces was avoided (flat surfaces passing through water also create "drag"), and all curvature below the waterline was convex .

The most widely distributed and presumably most ancient sail was a triangle made up of strips of fine matting sewn together and mounted to two spars, one serving as a mast; the other, as a boom, usually more slender and either straight or slightly curved. This survived in the Marquesas, Tuamotus, Cook Islands, and New Zealand, either as an equilateral triangle or one cut narrower with the apex downward.

Voyaging between Hawai'i and the South Pacific appears to have ceased several centuries before European arrival. No explanation is found in the traditions, but several may be imagined. The appropriation and development of lands much larger than any they had known in the South Pacific demanded the full attention of ruling chiefs, leaving little time for voyaging. Those who visited their southern homelands may have discovered that political events had made them less than welcome. Moreover, in the murky world of chiefly intrigue which S.M. Kamakau described so well, a ruling chief who went on a long voyage always risked returning to find his lands and wives usurped by another.

Specialization in Hawai'i

As long distance voyaging declined, the need shifted from voyaging canoes to large canoes for chiefly visits and warfare within the Hawaiian Islands, resulting in changes in canoe design. For these short coastal and inter-island trips, paddling replaced sailing as the dominant power mode. Never certain when hospitality might turn sour, chiefs prudently traveled with bodyguards. On a visit to another chiefdom, they might prepare his food to avoid poisoning. Their numbers were a silent announcement of his status. At a signal, they could launch a raid, fight a skirmish, or conduct a guarded retreat to the canoe landing.

And for a chief eager to make a quick getaway regardless of wind conditions, his bodyguards could also be put to work as paddlers. No longer need he wait for a favorable wind, or beat upwind to a destination on long tacks (a voyaging canoe could not sail to upwind as well as a modern yacht equipped with keel and headsails). Paddling provided great freedom of mobility, the ability to move canoes in any direction despite calms or adverse winds. The shift from sailing to a combination of paddling and downwind sailing caused a change in hull design from hulls with sufficient V shape and depth for tracking against the wind to shallower hulls, round-bottomed aft of the mid-section, which were more maneuverable under paddles or when sailing downwind. Sails, no longer needed for working upwind, evolved to a full-bellied shape, specialized for sailing with the wind.

18th century drawings depict a line (a boom lift) extending from the end of the boom to the top of the mast, which bent the boom to a curve, creating a deep pocket in the sail useful for running downwind. Bending the boom close to the mast created a sagging of the sail which enhanced the "crab claw" appearance; however the sail matting was not cut to a true crab claw shape as it was in Polynesian outliers in the Solomon Islands, but sewn up from strips of matting plaited to a desired curve. One drawing by Webber shows that when the boom lift was released, or eased out, the pocket was reduced sufficiently for the sail to function on a broad reach.

Engineer and canoe expert Ted Ralston has suggested that the deep curve in this sail is a safety feature, creating an opening which, as in the true crab claw of the Solomons, vents upwards, spilling excessive thrust. This shape also reduces the sail area toward the ends of the spars, which reduces the load the ends of the spars must carry.

There are several other distinctive features of the classical Hawaiian canoe. The manu, elliptical expansions at the tips of the bow and stern end pieces, may have anciently been carved as symbols or representations of birds or spirit images (manu may mean bird or person), but this form has, like a Brancusi sculpture, been reduced to its simplest abstraction. Usually considered ornamental, the writer has observed, while running downwind in the double canoe Nalehia under a strong press of sail in large swells, that the manu are not without function. The manu ihu (forward) seem to keep the bows from driving too easily into the back of a swell. A disastrous "boneyarding" is avoided, and the air space within the hollow formed by the end piece and the hull pops it to the surface. At the stern, the manu hope help split the face of a following wave that might otherwise board the canoe and swamp it. Another unique feature of the Hawaiian double canoe was the invention of the curved crossboom, arched in the center to hold the center deck higher above the water.

It's been argued by Tommy Holmes (*The Hawaiian Canoe*, p. 71) and others that the absence of ornament on Hawaiian canoes (by comparison with South Pacific canoes) may be attributed to the rough Hawaiian waters, an environment in which no carving or inlay that might weaken or burden the canoe could be tolerated. Be that as it may, accounts of Maori canoes in the rough waters off New Zealand, riding "like ducks" under sail or paddles, leave no doubt about their seaworthiness and structural integrity despite the elaborate carving of their end pieces and gunwales. Quite possibly, esthetics in Hawai'i simply took a different turn, inspired by some long forgotten designer who saw clean, flowing simple lines as the most beautiful as well as functional. Form follows function, but, as architects and automobile designers know very well, form is also shaped by esthetics.

Perhaps the only distinctive feature of Hawaiian canoes that may be considered non-functional (depending on how you think about ancestral

spirits) is the slight projection of the hull from under the manu at the stern, called the momoa. One version of an ancient saga tells us that as a canoe was embarking on a voyage to Hawai'i, a spirit announced his desire to go along. Informed by the chief that there was no room, the spirit leaped from shore to a small projection which he noticed at the stern, and rode there. That projection has become traditional in Hawaiian canoes, some say as a place where an invisible but benevolent ancestral spirit ('aumakua) can ride.

These were the canoes of Hawaiian chiefs who met Cook and the early European traders in the late 18th century. Europeans marveled at the workmanship accomplished with simple tools of stone and bone. Chiefs were not above showing off; when the Cook expedition arrived off Maui in 1778, King Kahekili came out in a canoe in which all aboard were dressed in feather capes, and "singing."

Paddlers of a chief's canoe were not a scratch crew, but highly trained. As Vancouver came to anchor at Kealahou Bay, Kona, in 1793, Kamehameha came out to formally greet him with eleven large canoes "...with great order. The largest canoe being in the angular point, was rowed by eighteen paddles on each side." The king wore "...the most elegant feathered cloak I had yet seen, composed principally of beautiful, bright yellow feathers... On his head he wore a very handsome helmet, and made altogether a very magnificent appearance. His canoe was advanced a little forward in the procession, to the actions of which the other ten strictly attended, keeping the most exact and regular time with their paddles, and inclining to the right or left agreeably to the directions of the king, who conducted the whole business with a degree of adroitness and uniformity, that manifested a knowledge of such movements and manœuvre far beyond what could reasonably have been expected. In this manner he paraded around the vessels, with a slow and solemn motion. ... He now ordered the ten canoes to draw up in a line under our stern, whilst, with the utmost exertions of his paddlers, he rowed up along the starboard side of the ship; and though the canoe was going at a very great rate, she was in an instant stopped, with that part of the canoe where his majesty was standing immediately opposite the gangway."

The Return to Sail Power

In the early 1790s the watch aboard a foreign ship sailing off O'ahu saw a vessel approaching which, by the cut of its sails, appeared to be European; but as it drew near and passed by it was seen to be a Hawaiian canoe with sails cut to European shape. This was the fore-and-aft spritsail.

It was a simple modification, changing the ancient triangular sail to a four-sided shape. The former boom was now a slender sprit stretching diagonally upward from the base of the mast to support the peak of the sail. Also from the base of the mast the foot of the sail ran horizontally aft to the clew (bottom trailing edge) where the sheet (controlling line) connected to it. In larger canoes the foot was laced to a boom. This rig quickly became the standard for most Hawaiian sailing canoes. Enduring well into the 20th century, it became an authentic Hawaiian canoe tradition.

On some of the largest double canoes a sail of about the same shape was used, not with a sprit, but gaff-rigged, the head (top of the sail) laced to a spar which was raised or lowered by halyards, and the entire foot of the sail laced to a boom.

Once again, sail had become the primary power mode, and again, canoes evolved to meet new demands. Kamehameha's drive to bring all the islands under the rule of Hawai'i Island required much more than the hit and run raids of earlier disputes. Keeping armies in the field required great numbers of huge canoes, not only for invasion but also for keeping the army supplied, which meant canoes capable of returning to Hawai'i Island, sailed (not paddled) short-handed and against the prevailing wind, for supplies and reinforcements. The peleleu class war canoes were invented for the purpose. These were sailing vessels with deep hulls, some armed with swivel guns, carrying fore-and-aft sail rigs, either as spritsails or gaff-rigged and capable of sailing upwind.

Another dimension presented itself when Vancouver had his carpenters lay up a schooner, *Brittannia*, at Kealakekua Bay, South Kona, as a parting gift to Kamehameha in 1794. Kamehameha apprenticed his canoemakers to the work, they learned quickly, completed the ship themselves under John Young's guidance, and set about building more. By 1802, visitor John Turnbull could write that Kamehameha "owned twenty vessels ranging in size from twenty five to seventy tons" (Turnbull, 1813).

Beyond Kamehameha's needs there were other changes that brought Hawaiians back to sail as their primary power mode. Under Kamehameha's laws erasing old boundaries and prohibiting oppression, murder, and theft, Hawaiians could travel in safety. Chiefs who went visiting no longer required bodyguards who could double as paddlers. Moreover, where once a chief could whistle up any number of strong paddlers who were eager for adventure, if only to check out the girls on another island, the impact of introduced diseases was now devastating the population. The worst was yet to come, but the population was already in free fall.

Before Europeans arrived, the exchange of goods and services had been confined to a complicated system of reciprocal gifting. After the concept of trade for profit was introduced and unification had erased barriers to travel, an expanding market economy and a suddenly mobile population presented new demands for the movement of products and passengers. Although schooners and sloops carried most of the traffic, much coastal and inter-island shipping during the 19th century was also handled by sailing canoes. During the 1843 siege of the government by British Lord George Paulet, Kamehameha III was whisked by canoe from Maui to Waikiki and back in order to sign protest letters to the U.S. and Britain. In 1856, the *Pacific Commercial Advertiser* reported that Hawaiians were still using sailing canoes for inter-island travel.

Other Writings by Herb Kawainui Kane: [In Search of the Ancient Polynesian Voyaging Canoe](#); [The Seekers--A Story of Hokule'a's 1985 Visit to Taputapuatea](#).

1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	

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[Past Education
Programs and
Materials](#)

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[Bibliographies
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Films\)](#)



Hawaiian Deities of Canoes and Canoe Building

[Photos below: Ki'ikane and Ki'iwahine, or male and female tiki (images) on Hokule'a]

The ki'i wahine, or female image, lashed to the manu or back-piece of the port hull on Hokule'a, is named "Kiha Wahine o Ka Mao o Malu Ulu o Lele." The ki'i kane, or male image, lashed to the back manu of the starboard hull is named "Kane o Hokule'a o Kalani." (Traditionally, the port, or left, hull of a double-hulled canoe is female; the starboard, or right, hull is male.) The ki'i were fashioned by master carver Sam Ka'ai of Maui. Ka'ai keeps the original ki'i under his protection; the duplicates on the canoe are called the traveling ki'i; they are in the keeping of Wally Froiseth. These ki'i embody the spirit of Hawai'i and watch over the canoe while it voyages. The female image has eyes that represents seeing and foresight; the male image represents knowledge; they work together to guide the canoe. Before the start of a voyage, the feet of the ki'i are wrapped with maile lei.



Hawaiians are traditionally a deeply religious and spiritual people. From ancient times the land and sea upon which they live belonged to their deities--the people are just the caretakers. The building of a canoe was (and is) a religious affair, and there are deities specifically associated with this activity. So too, when voyagers went to sea, they asked for protection from the god of the ocean, Kanaloa, and the god or goddess of the weather and

winds, La'amaomao. The gods and goddesses of canoes and canoe-building included the following (from Tommy Holmes' *The Hawaiian Canoe*, p. 31):

Hina-ke-ka: Goddess of canoe bailers

Hina-ku-wa'a: Another name for Lea

Hina-puku-'ai: "Hina gathering food"; goddess of food plants; sister of Lea; took the form of an 'elepaio

Ka-pu-'a-o-alaka'i: Another name for Ka-pu-o-alaka'i

Ka-pu-o-alaka'i: Forest goddess; presided over the lines (pu) by which new canoes were guided as they were transported from mountains to sea; also "Ka-pu-o-alaka'i"

Kama-i-ka-huli-wa'a-pu: "God who aided in floating, righting and bailing out upset canoes"

Kanealuka: God of canoe builders

Ku'alana-wao: Ku of the upland offering

Ku-holoholo-pali: "Ku who steadies the canoe as it is carried down steep places"

Ku-kalanawao: "Ku who guides through the mountain wilderness"

Ku-kanaloa: (No data; Kanaloa was the god of the Ocean; his ocean form is the he'e, or octopus; his land form is the banana.)

Ku-ka-'ohi'a-laka: "Ku of the sacred 'ohi'a;" also Ku-maha-ali'i: "Ku who journeys in the canoe"

Ku-mauna: "Ku of the mountains"

Ku-moku-hali'i: "Ku who bedecks the island"; canoe builders chief god; husband of Lea; also Mokuhali'i

Ku-ohanawao: (no data; cf. Ku'alana-wao and Ku-kalanawao)

Ku-'ohi'a-Laka: Another name for Laka

Ku-olonawao: "Ku of the deep forest"

Ku-pepeiao-loa: "Ku of the long comb-cleats"; god of the seat braces by which the canoe is carried

Ku-pepeiao-poko: "Ku of the short comb-cleats"; god of the seat braces by which the canoe is carried

Ku-pulapula: "Ku with many offspring"

Ku-pulupulu: "Ku, the chip-maker"; god of the forests

Ku-pulupulu-i-ka-nahele: Another name for Ku-pulupulu

Kulauka: Another name for Ku-pulupulu

Laka: God of canoe builders; also Ku-'ohi'a-laka

Lea: Goddess of canoe builders; wife of Ku-moku-hali'i; sister of Hina-puku-'ai; she takes the form of an 'elepaio (a forest bird); also "Hina-ku-wa'a," "Laea," "Lea-ka-wahine"

Lea-ka-wahine: Another name for Lea

Moku-hali'i: Another name for Ku-moku-hali'i

1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
Home	Search	Archives	Past Education Programs & Materials	On-Line Visuals	Bibliographies (Books and Films)	



Parts of the Hawaiian Canoe

[Photo below: Kalawaia Goo Works on the *manu* of *Hawai'iloa*]

Click [here](#) for a diagram of *Hokule'a* with parts labeled.

The canoe was called "wa'a." "Wa'a kaukahi" was a single-hulled canoe; "wa'a kaulua" was a double-hulled canoe. The various parts of a canoe had the following names:



'aha: braided or twisted cord used in lashing the canoe, made of pulu-niu (coconut husk fiber), olona fiber, or hau (hibiscus bark fiber); 'aha-niu: cordage made of pulu-niu

'akea: hull of an outrigger canoe; starboard hull of a double canoe

ama: float on an outrigger canoe; port hull of a double canoe.

awa: harbor, port, cove; awa ku wa'a: canoe harbor or anchorage; awa pae: landing place

'eku: "snout" of the canoe, the prow, which digs into the ocean as the snout of a pig digs into the earth

halau wa'a: canoe house

heleuma: anchor

hoe: a paddle; to paddle

hoe uli: center steering paddle; hoe ama: port steering blade; hoe 'akea:

starboard steering blade

'iako: arched crossbeams which fasten the floater (ama) to the hull in an outrigger canoe

iwikuamo'o: keel

iwi ka'ele: keel

ka'ele: canoe hull

kaula: line; kaule hau: hau (hibiscus) rope

kaula hope: backstay, or line from mast to stern

kaula huki: halyard, or line used to haul up the sail

kaula ihu: forestay; line from mast to bow.

kaula lana: mooring line

kaula luahine: lashing line running alongside the canoe (in the mo'o on Hokule'a) to which the pa'u or ahu (storm cover) is lashed

kaula pa'a: stay; line to secure the mast

kaula paepae: sheets (lines controlling the angle of the sail to the wind)

kaula pe'a: tricing line; used to open and close sail

kaula pu: shrouds (lines which stay the masts to each side of the vessel)

kaupo'i: median canoe-bow cover

kawelewele: ropes used to assist in righting a capsized canoe

ke'a: beams connecting the hulls of a double canoe

kia: mast; kia hope: aftermast; Hokule'a's was named "Heiau" by Chief Tofa in 1976; kia ihu: foremast Hokule'a's was named "Terikitu" by Chief Tofa in 1976.

ki'i: tiki, or carved image of a god; ki'i kane: the male tiki; ki'i wahine: the female tiki

ko wa'a: line for towing a canoe, or dragging a canoe hull down from the mountain forest where it was chopped down and rough hewn.

kua 'iako: portion of the 'iako lashed to the canoe hull

kuamo'o: hull; keel

kuapo'i: weatherboard

kumu kia: mast step; kumuhonua: base of mast step

kupe: curved endpieces covering the fore and aft parts of the hull; also called "manu"; kupe also means "to steer a canoe"

la: sail; la-hope: aftersail; la-ihu: foresail

lanalana: ornamental lashing which binds the ama to the 'iako in an outrigger canoe

lei hulu: feather lei flown from the tip of the boom

liu: bilge, or inside bottom of the hull

lona: blocks on which a canoe rest when out of water

maka ihu: point at the bow end of a canoe

manu: curved endpieces covering the fore and aft parts of the hull; manu hope: back manu; manu ihu: forward manu

moamo'a: point at the stern end of a canoe

mo'o: side planks fastened to the top edges of the hulls to increase the height of the sides of the canoe above the waterline

mouo: buoy

muku: the part of the 'iako or ke'a (crossbeams) which extends beyond the

hull

niao: the rim of the hull

noho: seat

'o pe'a: spar, or sprit; on Hokule'a, the spar is fastened to the luff (leading edge) of the sail, and is drawn up to the mast by the halyards

'ope'ope: bundles, packages, baggage brought on board the canoe

paepae: boom; the spar to which the foot of the sail is fastened, and to which are fastened the sheets (lines for controlling the angle of the sail to the wind); the boom is raised and lowered with tricing lines

pale: barrier; **pale-kai** or **pale-wai:** splashguards, sideboards, or weatherboards, used to keep breaking waves or swells out of the hull; **pale kana:** safety railing along or around the deck

pa'u: storm covers which fit over the openings of the hulls

pe'a: sail; **pe'a hope:** aft-sail; **pe'a ihu:** foresail

pepeiao: "ear" or projections on the inside of the hull to hold the seats

pola: center platform or deck of a wa'a kaulua (double-hulled canoe); also called papahele

polena: forestay; "polena" also means "furled, as a sail is furled" (see kaula ihu).

pueo: shrouds

pukolu: a triple-hulled canoe

wae: spreader, used to keep the hulls of a canoe from collapsing inward

<u>1976: Tahiti</u>	<u>1980: Tahiti</u>	<u>1985-87: Aotearoa (New Zealand)</u>	<u>1992: Rarotonga</u>	<u>1995: Marquesas</u>	<u>1995: West Coast, British Columbia, & Alaska</u>	<u>1999-2000: Rapanui</u>
---	---	--	--	--	---	---

<u>Voyages</u>	<u>Canoe-Building</u>	<u>Wayfinding</u>	<u>Life on a Canoe</u>	<u>Polynesian Migrations</u>	<u>Proverbs and Traditions</u>
--------------------------------	---------------------------------------	-----------------------------------	--	--	--

<u>Home</u>	<u>Search</u>	<u>Archives</u>	<u>Past Education Programs & Materials</u>	<u>On-Line Visuals</u>	<u>Bibliographies (Books and Films)</u>
-----------------------------	-------------------------------	---------------------------------	--	--	---



Plants Used for Building Canoes

Chad Baybayan, Rowena Keaka, Melissa Kim, Beatrice Krauss, and Mollie Sperry

[Illustration below: Niu / Coconut, by Melanie Lessett]

The Hawaiian environment provided all the necessary items to construct and provision a canoe. The native Polynesian possessed a tremendous ability in discovering the many uses his natural environment provided for him. It is this resourcefulness that allowed him to move freely upon the ocean. The following is a list of plants and their uses in building canoes.

'akoko: paint, dye

'uhaloa: paint, dye

'aka'akai: paint, dye

'ama'u: paint, dye

olona: lashing

'ie'ie: lashing

niu: sennit, water-sealant

hala: sails, covers

ipu: bailer



koa: hull, manu, seats, gunnels, spar, mast, paddles

'ulu: hull, manu, gunnels, seats, caulking

kukui: hulls, paint

hau: 'iako (outrigger boom), ama (outrigger float), boom, paddles

wiliwili: ama (outrigger float)

'Aha (Sennit)

(Originally published in Polynesian Seafaring Heritage, Honolulu: Kamehameha Schools, 1980, edited by Cecilia Kapua Lindo and Nancy Alpert Mower.)

People have made and used cordage for many centuries. It has been used to attach one object to another and to lift, pull, or secure things into place. Cordage has been not only useful but also decorative. Because of the various uses of cordage, individual s have created many ways of knotting and lashing. 'Aha (coconut sennit cordage) is still being made in many places in the Pacific. Both the green and dry husks of the coconut are used.

There are several ways in which Polynesians prepare the coconut fibers. One method is to break the husk apart into sections. Each section is then turned over to expose the slick outer skin. This outside portion is then pounded. Pounding aids in breaking t he inner fibers away from the outer skin. The sections are next soaked in seawater for several weeks before the long fibers that are worked into cordage are removed. Another method is to break the husk apart, then remove some of the long fibers which are soaked in seawater for eight weeks. Pacific Islanders who use the green husk just remove the long fibers by pulling the husk apart and working the fibers into cordage.

Canoe sennit, which must be a very tight braid, is extremely difficult to make. Because of the roughness of the fibers, only a few lengths can be made in a day.

Several different kinds of cordage were used throughout Hawai i and the

Pacific. Bark from the hau (hibiscus) was easier to work with than coconut fibers. Hau bark strips are longer and when braided or twisted are very strong. Hau cordage was used for securing items such as umeke (bowls / calabashes), or rolls of kapa or lauhala.

Making Cordage

Making Coconut Cordage (Sennit)

1. Husk mature dry coconuts and break into 8-10 sections. Remove shorter fibers next to outer shell, at both ends of the husk, and discard.
2. Soak sections for 2 weeks, or until they are easy to work. Soaking fibers in running water helps in the cleaning process. Weight them down with a brick or stone when soaking.
3. Remove sections--work sections by twisting or use table edge and press sections over the edge; peel and discard outer skin.
4. Beat each section with a wooden mallet. Use a piece of hard wood or a flat stone for an anvil.
5. Start beating. Beat sections starting from the center and working to the edge. Turn section around, repeat process to remove extraneous matter.
6. Rinse to separate "chaff" from fibers. Shaking the bundle helps to remove the "chaff." Tools like shells or a strong comb help in removing extraneous material. Work through fibers. This process cleans and untangles fibers. Tie each section around middle. This is for easy handling.

Making Hau Cordage

1. Cut hau (hibiscus) branch. Select a straight branch with few branch scars.
2. Strip outer bark (bast) using a sharp instrument ('opihi shell or knife). Peel the bark away from the branch.
3. If a fine cordage is desired, scrape off the outer bark.
4. Soak in water for about a week. Running water is desirable (a stream

would be ideal), or change tap water periodically to prevent the bark from rotting. The object of soaking is to soften the fibers and separate them into layers .

5. Take strips of the material and braid or twist to make cordage.

6. Take three strands of fiber, start each one about 1" from the other. Place right palm over fibers; place fibers on leg; firmly roll downward towards knee. Keep adding fibers to lengthen the single fiber thread.

Another method to use when making hau cordage:

1. After all the fibers are cleaned, tie 15 fibers together with a knot. This will make cordage.

2. Divide the fibers in 3 groups of 5 fibers. It is better if the groups of fibers are not the same length.

3. The knot may be held between your toes or tacked at the edge of a table. Braid the fibers.

4. Before you reach the end of a fiber group, add in a new group of 5 fibers. Individual fibers may also be spliced in as needed.

1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
----------------------------------	----------------------------------	---	-------------------------------------	-------------------------------------	--	--

Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions
-------------------------	--------------------------------	----------------------------	-------------------------------------	---	---

Home	Search	Archives	Past Education Programs & Materials	On-Line Visuals	Bibliographies (Books and Films)
----------------------	------------------------	--------------------------	---	-------------------------------------	--



Tools for Building Canoes

[Petroglyph below: Man with Adze]

Ko'i, or Adzes / Dr. Kenneth P. Emory and Rowena Keaka

The stone adz was the most important tool of the Polynesians. With it they felled trees, shaped their canoes and canoe parts, and hewed timbers and household furnishings, wooden spears, and clubs.



The Polynesian adzes varied in size and shape, depending on their use. The styles used by the Hawaiians were similar to those used in the Marquesas and Society Islands and clearly show their origin from these islands. A noteworthy feature of the Hawaiian adz is the angle of the blade which does not cut at a right angle like the European ax.

The stone that was used in making the adz was basalt. Basalt comes from close-grained volcanic rock. Basalt quarries were usually found in volcanic mountains. Chipping was done with other stone tools. The adz maker would grind the blade edge on a grinding stone with sand and water to sharpen the blade. The adz blades were secured to their handles by lashing with coconut fiber cord or braid known as sennit, as shown in the illustration.

Types of Adzes and other Tools for Building Canoes / Chad Baybayan

The primary tool in building a canoe was the ko'i or adze. The ko'i was made from basalt and gathered from quarries. The islands had to be explored to find where the best "rock" could be found. The largest and best of the quarries was found on the slopes of Mauna Kea at an elevation of 12,400 feet. The tons of flakes that remain piled upon the slopes of Mauna Kea stands as a testimony to the skill of the Hawaiian craftsman. (The following

list is from Tommy Holmes, *The Hawaiian Canoe*, p.27)

Adzes

ko'i 'ahuluhulu: planing adze for rough lumber

ko'i alahe'e: hardwood adze

ko'i 'auwaha: scoop adze

ko'i 'awili: socketed adze

ko'i holu: broad, bent adze; used to shave off smooth in the direction of the grain

ko'i ho'oma: narrow and deep adze

ko'i kahela: chisel

ko'i kaholo: planing adze

ko'i kalai: carving adze

ko'i kapili: finishing adze

ko'i kikoni: small finishing adze; used to shave off and smoothen the wood surface

ko'i kila: steel adze

ko'i kukulu: straight-edged adze; used to shave down canoe sides

ko'i kupa: adze used for hollowing out the canoe hull

ko'i kupa 'ai ke'e: swivel-headed adze; used for narrowing out the hollow bow and stern sections, smoothing and polishing

ko'i kupele (pele): adze used to hollow out bottom of canoe hull by cutting zig-zag trenches; to scoop out

ko'i lipi: sharp adze; used for hewing koa trees

ko'i meki: iron adze

ko'i milo: adze used on the outside of canoe

ko'i nunu: "greedy" adze; same as ko'i kalai

ko'i 'ole: conch shell adze

ko'i' oma: small, oval adze; used for finishing

ko'i 'opaka: adze used on the outside of canoe; cuts smoothly

ko'i 'owili: gouge; twisting adze; same as ko'i kupa'ai ke'e

ko'i pa'ahana: adz for shaping hull

ko'i pahoa: chisel; "dagger" adze

ko'i paukuku: adze used to cut canoe log into sections

ko'i wili: socketed adze

Other Tools

'ana: pumice; used for rubbing

'eleku: coarse basalt; used as a polishing stone

'oahi or ola'i: rough stone, pumice, or coral rock for polishing

'o'io: close-grained basalt; used for polishing

pohaku 'anai wa'a: finishing stones

pohaku pao: stone chisels

pohaku kapili wa'a: stone hammer

puki'i wa'a: wooden clamps

puna: fine coral; used for rubbing

wili: drill

<u>1976: Tahiti</u>	<u>1980: Tahiti</u>	<u>1985-87: Aotearoa (New Zealand)</u>	<u>1992: Rarotonga</u>	<u>1995: Marquesas</u>	<u>1995: West Coast, British Columbia, & Alaska</u>	<u>1999-2000: Rapanui</u>
---	---	--	--	--	---	---

<u>Voyages</u>	<u>Canoe-Building</u>	<u>Wayfinding</u>	<u>Life on a Canoe</u>	<u>Polynesian Migrations</u>	<u>Proverbs and Traditions</u>
--------------------------------	---------------------------------------	-----------------------------------	--	--	--

<u>Home</u>	<u>Search</u>	<u>Archives</u>	<u>Past Education Programs & Materials</u>	<u>On-Line Visuals</u>	<u>Bibliographies (Books and Films)</u>
-----------------------------	-------------------------------	---------------------------------	--	--	---



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---	---	--	--	--	---	---

<u>Voyages</u>	<u>Canoe-Building</u>	<u>Wayfinding</u>	<u>Life on a Canoe</u>	<u>Polynesian Migrations</u>	<u>Proverbs and Traditions</u>
--------------------------------	---------------------------------------	-----------------------------------	--	--	--

<u>Home</u>	<u>Search</u>	<u>Archives</u>	<u>Past Education Programs & Materials</u>	<u>On-Line Visuals</u>	<u>Bibliographies (Books and Films)</u>
-----------------------------	-------------------------------	---------------------------------	--	--	---



Modern Wayfinding

"The principles of wayfinding are simple; the practicalities are very complex.

--Nainoa Thompson

(Photo by M. Doi: Nainoa Thompson Training Some Cook Islanders in Non-Instrument Navigation)

Wayfinding involves navigating on the open ocean without sextant, compass, clock, radio reports, or satellites reports. The wayfinder depends on observations of the stars, the sun, the ocean swells, and other signs of nature for clues to direction and location of a vessel at sea. Wayfinding was



used for voyaging for thousands of years before the invention of European navigational instruments. In the 20th century, it is still practiced in some areas of Micronesia, although the traditional knowledge and techniques are in danger of being lost because of modernization and Westernization of the cultures of these areas. However, a revival of the art and science of wayfinding is underway among the Pacific islands, a revival led by [Nainoa Thompson](#), the first modern-day Polynesian to learn and use wayfinding for long-distance, open-ocean voyaging. Thompson studied wayfinding under Mau Piailug, a master navigator from the island of Satawal in Micronesia. Mau navigated the first voyage of the Hokule'a to Tahiti in 1976; Thompson was Hokule'a's wayfinder on the 1980 and 1985-87 voyages. He is currently

training 18 new navigators from Hawai'i and other Pacific islands.

A voyage undertaken using wayfinding has three components:

1. Setting up a course strategy, which includes a reference course for reaching the vicinity of one's destination, hopefully upwind, so that the canoe can make an easy downwind sail to the destination rather than having to tack into the wind to get there; (Tacking involves sailing back and forth as close as possible into the wind to make progress against the wind; it is very arduous and time-consuming, something to be avoided if at all possible. Psychologically and physically, it would be very difficult for the crew to face the most demanding part of the voyage at the very end.)
2. Trying to hold this course while keeping track of one's position in relationship to it during the voyage.
3. Finding land after reaching the vicinity of one's destination.



[Course Strategy and Departure Time](#)



[How the Wayfinder Holds the Canoe's Course](#)



[Compensating for Leeway in the Canoe's Heading](#)



[How the Wayfinder Calculates His Distance Made Good](#)



[Determining Position East or West of the Reference Course](#)



[How the Wayfinder Determines Latitude](#)



[How the Wayfinder Locates Land](#)



[How the Wayfinder Predicts Winds and Weather](#)



[Bibliography - Wayfinding and Astronomy](#)

<u>1976: Tahiti</u>	<u>1980: Tahiti</u>	<u>1985-87: Aotearoa (New Zealand)</u>	<u>1992: Rarotonga</u>	<u>1995: Marquesas</u>	<u>1995: West Coast, British Columbia, & Alaska</u>	<u>1999-2000: Rapanui</u>
---	---	--	--	--	---	---

<u>Voyages</u>	<u>Canoe-Building</u>	<u>Wayfinding</u>	<u>Life on a Canoe</u>	<u>Polynesian Migrations</u>	<u>Proverbs and Traditions</u>
--------------------------------	---------------------------------------	-----------------------------------	--	--	--

<u>Home</u>	<u>Search</u>	<u>Archives</u>	<u>Educational Programs and Materials</u>	<u>On-Line Visuals</u>	<u>Bibliographies (Books and Films)</u>
-----------------------------	-------------------------------	---------------------------------	---	--	---

Nainoa Thompson

(click for photo)

Over the last 15 years, Nainoa Thompson, navigator for the Polynesian Voyaging Society, has inspired and led a revival of traditional voyaging arts in Hawai'i and Polynesia-arts which have been lost for centuries due to the cessation of such voyaging and the colonization and Westernization of the Polynesian archipelagos. In 1980, Thompson became the first Hawaiian and the first Polynesian to practice the art of wayfinding on long distance ocean voyages since voyaging ended in Polynesia around the 14th century. Thompson has developed a system of wayfinding, or non-instrument navigation, synthesizing traditional principles of ancient Pacific navigation and modern scientific knowledge. This system of wayfinding is being taught in schools throughout Hawai'i the Pacific. In addition to being a navigator, Thompson is a leader with a vision, and a charismatic, spell-binding storyteller. The following accounts of the revival of voyaging and navigation in modern times, the history of the Polynesian Voyaging Society, and the Society's long-range vision and mission for rethinking the future of Hawai'i, is presented, as much as possible in Thompson's own words-from his interviews, talks and writings.

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[Rapa Nui-1999](#)

[Mau's Legacy and Importance of Education](#)



Provisions for Polynesian Voyages

Tommy Holmes

[Tommy Holmes, a freelance researcher and writer, and a top-notch rough-waterman, was a co-founder of the Polynesian Voyaging Society. He was a crew member on *Hokule'a's* first voyage to Tahiti in 1976 and directed food, plant and animal experiments for the voyage. The following piece on provisioning is from "Voyaging," the second chapter of his classic book on canoes *The Hawaiian Canoe*, first published by Editions Unlimited in 1981.]

"Mr. Handy has seen ma [fermented breadfruit] a hundred years old, which is occasionally eaten at the present time."¹ This was admittedly an unusually old batch (though still edible); the preferred aging time for fermented breadfruit in the Marquesas was about ten years. The Polynesians preserved most of the meals they would need for a long canoe voyage by drying or fermenting either raw or cooked food. Compact, light, nutritious and almost spoilage free, the voyagers' diet would have consisted of fish and other marine organisms, bananas, sweet potatoes, yams, breadfruit, taro, pandanus flour and other regional favorites. For the beginning of the voyage there would have been a number of fresh food items—sweet potatoes, yams, taro, breadfruit, drinking coconuts, bananas and sugar cane.²

Undoubtedly there were trolling lines out all day, every day. However, on some runs, as from eastern Polynesia to Hawai'i, there was a wide swath of relatively unproductive ocean, where marine life is scant. Thus in voyaging to Hawai'i one could not depend on catching many fish. The *Hokule'a*, which both times (1976 and 1980) took courses very probably similar to ones used many centuries ago, did catch some fish, though most of them within several hundred miles of an island group. Even under the most ideal conditions, it would have been nearly impossible to catch enough fish to

sustain a canoe full of people and animals.

A hearth lined with stone, coral and sand and fueled by coconut husk and shell enabled the voyagers to cook at sea. Water was carried in gourds and sections of bamboo and stored along with drinking coconuts wherever space or ballast needs dictated. If a canoe encountered or could seek out a rain squall, water supplies could be supplemented by collecting water as it ran off the sail; if water was critically short people could temporarily subsist on the moisture found in the flesh of freshly caught fish, turtles, sharks and other marine organisms. Salt water could not effectively be used to stretch a dwindling water supply; it only hastens the dehydration process. Water rationing was undoubtedly practiced.

Floating zoos, Polynesian voyaging canoes carried pigs, chickens and dogs which were intended as breeding stock for a new settlement, though they could also be eaten if stores dipped perilously low. Rats were sometimes uninvited passengers and may have occasionally provided an emergency meal.

Experience had taught the Polynesian that very few edible plants grew on previously uninhabited islands, so with him he took a traveling garden. To Hawai'i he brought about two dozen varieties of plants, though probably not all at the same time. Slips, cuttings, tubers and young plants were first swathed in fresh water-moistened moss, then swaddled in dry ti-leaf, kapa (bark cloth), or skin from the banana tree. Finally, these bundles were put in lauhala (pandanus leaf) casings and hung from the roof of the canoe's hut. Here they would best be protected from lethal salt water and salt spray. In a few cases, he took seeds.

On the first voyage of the **Hokule'a** down to Tahiti, an attempt was made to transport many of the same plants the Polynesians originally brought with them to Hawai'i. Working with only fragments of the once sophisticated horticultural techniques the Polynesians employed to ensure viability, some plants died. However, most survived and were planted upon arrival in Tahiti. The dog, chickens and pig taken down on the **Hokule'a** adapted readily, arriving in Tahiti in excellent health.

Notes

1. Handy, E.S.C., Native Culture in the Marquesas. Honolulu: Bishop Museum, 1923, p. 188
2. Because of variations in geoclimatic conditions not all the foods mentioned were available at all island groups.

1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
Home	Search	Archives	Past Education Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)	



Traditional Foods and Their Preparation

Chad Baybayan

The land and sea provided the Hawaiian with everything he needed to sustain himself. His diet helped him maintain a healthy, disease-free body. Today, it is our modern diet that produces many of the problems that ails Hawaiians. A dietary reform back to a traditional diet is the cure to some of the Native Hawaiian's health problems.

Preserving food was essential to providing nourishment during a voyage. Drying and fermenting were the two techniques used in food preservation. Fresh foods were eaten at the start of the trip. Fishing along the way also supplemented food the voyagers brought with them. The Polynesians had to be excellent horticulturist also if they expected to survive once they got to land. [Plants were transported as slips, cuttings, tubers and seedlings.](#)

The traditional diet is everything the doctor ordered for a long trip--compact, light, and nutritious. Here is what they brought:

Plant Food--'ulu (breadfruit); niu (coconut, meat and drink); uhi (yam); 'uala (sweet potato); mai'a (banana); kalo (taro); kukui (candlenut); ko (sugar cane); hala (pandanus flour, paste)

Animal Food--i'a (fish, dried and fresh); pua'a (pig); moa (chicken); 'ilio (dog)

Preparing Foods for Voyaging by Paige Kawelo Barber, Moku Froiseth, and June Gutmanis

Pepeie'e 'Ulu (Breadfruit and Coconut Cream)--Use the commercial variety of coconut cream or make your own by grating ripe coconut meat. Cover

with warm water, let set, then squeeze through fine sieve. Liquid is coconut cream. Thoroughly mash very ripe 'ulu, mix in a great deal of coconut cream, wrap in ti leaves and cook thoroughly. Set oven at 350 degrees, bake until firm. Cool, slice and dry in sun so that a hard oily film forms on the surface.

Kukui (Candlenut)--Remove outer husk and roast in barbecue pit over medium coals or in oven at 350 degrees for about one hour. Crack shell, remove nut, mash, add rock salt. Use as a flavoring in raw fish dishes. Oil of the nut serves as light fuel and body oil to prevent sunburn.

Ki or Ti--Cut stalk two to four feet long. About the time the stalk starts to sprout new leaf buds, which will take about three months, cut the top of the stalk off. Wrap in green ti leaves and cook. Use the lowest temperature setting on your oven. Cook 24 hours. Dry.

Limu (Seaweed)--Clean and wash well, set out to dry. Takes one to two days for drying. Reconstitute with water when ready to eat. Sea water is acceptable.

Mai'a (Banana)--Select firm-ripe mai'a with slight green tinge remaining on skin. Peel and slice lengthwise into three or four strips. Arrange on drying rack; turn once a day. Dries between four and fourteen days depending on area; faster drying occurs in Makaha and slower drying in Manoa. Do not be concerned with the change of color of the mai'a during the process of drying. Mai'a is ready when consistency resembles dried apples.

Ko (Sugar Cane)--Select mature cane which has not begun to 'sprout;' cut at base and bottom of leafy top. Wrap exposed ends to prevent cane from drying out. Store in cool, dry place. Cut off bark and cut again in stick-like pieces for eating.

Niu (Coconut)--Life expectancy of fresh niu is quite good; the entire nut is useful as food, drink, and fuel. The a a niu (coconut cloth) is not used to wrap things. It substitutes for toilet paper; is not as rough when wet.

'Ulu (Breadfruit)--Select 'ulu which has reached the o o (mature) stage of ripeness, picking those still on the tree. 'ulu has reached the o'o stage when

white sap appears on skin of fruit, and 'browning' of the skin can be seen. Bake for one-and-a-half hours, or steam for one hour. Let cool. Remove skin and seeds; mash into pulp. Spread on sheet of wax paper; place similar length of wax paper over 'ulu pulp. Using rolling pin or bottle, spread 'ulu out as you would when preparing dough for pie. Remove top wax paper. Place 'ulu on lower wax paper on drying rack; save the other piece of wax paper for later. When surface of 'ulu dries, turn entire sheet of 'ulu onto the first wax paper. Repeat until drying process is complete, turning once a day. 'Ulu assumes a deep reddish brown color when dried; takes four days in hot area to dry completely. Tuck in one end of dried 'ulu, and roll as you would a jelly roll. Wrap in plastic wrap.

Hapu'u or ama'uma'u (Ferns)--Cook the butt ends of the fern stalk. Store when cool. The Hawaiians considered ki and hapu'u to be famine foods. When food was scarce, due to drought, these plants were eaten.

I'a (Fish)--Immediately after catching, keep the fish cool and under cover. As soon as possible after catching, cut and salt fish for drying. Cut fish on one side of dorsal line through the head, leaving the belly line intact. If fish are large, cut through bones parallel to spinal column, and cut flesh to allow salt to penetrate. Spread open the cut fish, remove gills, viscera, and the coagulated blood along the spinal column and wash the cavity clean. Hawaiians in the past rubbed the exposed flesh on both cut sections with the blood. Slap the cut portion onto the salt which should be evenly distributed over the exposed flesh. The skin section need not be treated in this manner, as it will receive an adequate amount of salt when the fish is stacked in the container. Place the fish in a wide container with the salted portion down and stack in layers as evenly as possible. The fish in each layer should be laid vertically to those on the bottom layer. After all the fish have been salted, place container under cover and allow to stand overnight. The next morning wash salted fish thoroughly and soak in water for one or two hours. During this period the water should be changed two or three times. When salt can barely be tasted, fish is ready for drying.

'Uala (Sweet Potato) and Uhi (Yam)--Rinse and cook, preferably by steaming. Test for readiness by piercing with fork; do not overcook. Let stand to cool, then slice into 1 / 2 inch pieces; arrange on drying rack, turning

once a day. Dries within three to four days.

He'e (Octopus)--Keep freshly caught he'e cool and damp. Before drying, remove the ala ala (ink bags) and salt them for drying (usually to be used for other purposes although it is used as a flavoring ingredient when prepared for raw consumption). Pound the he'e thoroughly with approximately two handfuls of salt. Add more salt as it dissolves. Pound in an up-and-down motion, grasping the central or head portion and pounding it on the rest of the body and tentacles. After as much as seven hundred strokes and intermittent washing, the whole he'e becomes tender enough so that the flesh tears easily with a minimum of effort. The process of pounding in salt serves two purposes: (1) removing mucus and (2) tenderizing. After pounding and rinsing off the extraneous matter, hang up the he'e to dry for three or more days.

Kalo (Taro)--Wash and cook thoroughly, preferably by boiling. Best to leave skin on while cooking, removing skin as soon as kalo is cooked and cool enough to handle. When dried after pounding, kalo is similar to hard-tack, especially if rolled out into thin layers or sliced. To prepare pa'i'ai, follow the above cooking instructions, wet board and pounder lightly with water. With even strokes, begin mashing kalo while still warm from cooking, producing a doughy mass. Lightly wet board and pounder to prevent sticking. Be careful not to use too much water; the less water the better. Be sure to mash thoroughly so you have a smooth, heavy poi. Fermentation of pa'i'ai acts as a preservative, as it does in regular poi. The process of fermentation is much slower in pa'i'ai.

1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	

[Home](#)

[Search](#)

[Archives](#)

[Educational
Programs and
Materials](#)

[On-Line
Visuals](#)

[Bibliographies
\(Books and
Films\)](#)



Provisions for a Modern Voyage on Hokule'a

[Photo below: Oranges for the Crew / Honaunau, 1992]

Like an ancient voyaging canoe, Hokule'a is relatively a self-contained environment. It has to take with it what the crew needs to survive for the number of days at sea, though food and water can be supplemented by fish and rain caught during the voyage.



The canoe has a displacement of about 12.5 tons (25,000 pounds). It weighs 7 tons (14,000 pounds) with its rigging, so it can carry an additional 5.5 tons (11,000 pounds)-which includes the weight of the crew, as well as the weight of provisions, supplies, and personal gear.

Food consists mainly of canned, packaged, and dried foods, and weighs about a ton. On a long voyage, about one-and-a-half tons of water are stored in five-gallon plastic jugs. The crew eats three meals and is allotted one quart of water per day. During the voyage, the captain monitors how much is being consumed. If the voyage is taking longer than expected because of unfavorable winds, the food and water are rationed. However, dehydration can be a problem in hot, humid weather, so water has been rationed. This was done only twice in the history of Hokule'a voyaging. Rainfall, caught in tarps, helps replenish the water supply.

The quartermaster must distribute the weight of the supplies in the two hulls and be careful not to overload the canoe because overloading would reduce the canoe's maneuverability and increase the possibility of swamping. On

the 1992 voyage, quartermaster Harry Ho and the captains supervised the provisioning and loading of the canoe.

On its 1992 voyage from Hawai'i to Tahiti, which was estimated to take about 30 days, the canoe left with a crew of 13 (twelve men and one woman) and about 35-40 days of food and water.

Provisions and supplies for the canoe included the following:

1.75 tons (3,500 pounds) of water (or about 407 gallons in 81 five-gallon containers; water weighs 8.6 pounds per gallon);

One ton (2,000 pounds) of food

Galley Equipment (e.g., propane gas stove, pots and pans, kitchen utensils, dishes)

Safety Equipment (e.g. life preservers, safety harnesses, safety nets, fire extinguishers, man-overboard float with pole, surfboard, anchors, portable hand-operated bilge-pumps, foul-weather gear, waterproof flashlights

Global Positioning System (GPS) unit to give the crew the position of the canoe in an emergency; ARGOS transponder to send position back to UH Manoa; EPIRB to send out emergency position reports)

Communication Equipment, powered by two 12-volt marine batteries and three solar energy panels mounted at the back of the canoe (VHF radio and antennae for short-range communication; single-side band radio for long-range communication.

Optional: Inmarsat-C equipment which can transmit GPS position reports via satellite back to Hawai'i [these position reports are sent automatically and without the crew's knowledge whenever the computer is turned on and every 10 minutes thereafter.

Documentation Equipment (e.g., pens and tablets, tape recorders, video camera, camera)

Medical Supplies (See ["Medical Needs"](#); a medical officer is included as a member of each crew.)

Various Sizes of Sails and Extra Ropes and Lines

Tools (e.g. screwdrivers, hammers, hand saws, planes, pliers, wrenches, files, clamps)

Recommended personal gear for each crew member includes such items as: a passport, a driver's license, medical card, knife with fid, dark glasses with tether, hat or head protection, small flashlight, extra batteries, roll of small line, ball of wax, roll of duck tape, log book and writing implements, camera and film, poncho liner or light sleeping bag, as well as toiletries (sun screen and lip balm, towels and wash cloth, sea soap, shampoo, tooth brush and paste, dental floss, razor, a small mirror, toilet paper and sanitary napkins, etc.). For passing the time, paperbacks, a star book, and a walkman and tapes are permitted; no radios are allowed as they can be used to locate the direction of land (by turning the radio in different directions to find the direction of a radio signal) or to hear reports of the canoe's location. Mask, fins, and snorkel are optional. Each crew member packs his or her gear in a 48 qt. cooler and a small duffle bag, with a hip pack and gear hammock for carrying or hanging things.

See also [Traditional Provisions](#) and [Micronesian Provisions](#).

1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
Home	Search	Archives	Past Education Programs & Materials	On-Line Visuals	Bibliographies (Books and Films)	



Provisions for a Micronesian Voyage

Thomas Gladwin, from "East is a Big Bird"

After the crew is selected the remainder of the preparations go forward almost automatically since everyone knows what is required to equip the canoe, provision the voyage, and meet the personal needs of each person aboard. This does not mean that the preparations are simple, especially the equipment which must be stowed aboard for an ocean trip. Its complexity can perhaps best be conveyed by running through the list of essential items which must be carried. They include:

- a number of paddles, enough for all crew members
- two bailers, one for each end of the canoe
- spare ropes of various sizes for mooring, repairs, and so on
- eight to ten pieces of hardwood a couple of inches in diameter and about 3 feet long used for splicing broken spars, for driving into the sand to moor the canoe, and in an emergency for firewood, lashed to the outer end of the outrigger platform
- two longer straight poles about the same diameter as the above but 14 feet long used to replace lost spars and to pole the canoe through shallows
- a heavier timber of the same length but 6 to 8 inches in diameter used as a lever to right a capsized canoe or to fashion a spare mast, lashed with the two slender poles to the inboard end of the outrigger platform
- a number of mats roughly plaited from coconut fronds used to keep food and other goods dry and to shield the canoe from the sun and drying winds when it is moored or ashore

- a box containing an adze, chisel, brace and bits, and a plane for repairs
- an open iron box (usually from wrecked Japanese equipment from World War II) for cooking fish caught at sea, with sand in it if the trip is to be short and extra weight does not matter, otherwise empty
- dried coconut husks to use for fuel for cooking
- cleaned, combed coconut fibers to twist into rope splices
- strips of coconut midrib from which to make fishhook lures, formerly used also for divination by knots
- a conch shell with a hole in its side to be blown as a horn to announce arrival, to keep track of other boats in convoy at night if there is no flashlight, and in the past to scare away storms and rain squalls
- one or two flashlights and batteries if available, used especially to check the compass at night and to shine on the sail when in convoy so that each canoe can locate the others
- a large compass, preferably protected in a box, belonging to the navigator
- needle and thread for sail repairs
- sticky breadfruit sap to patch leaks
- black paint to cover abrasions and keep the hull from waterlogging
- fishlines and fishhooks for both trolling and handlines
- a large bottle or glass float-ball filled with emergency drinking water
- if available, traditional conical hats for sun and rain made from pandanus and tied under the chin, better than any imported hats

"These things are brought aboard and stowed away, along with food, trade goods, gifts, and personal effects, and all are checked by the navigator before he pronounces the canoe ready to leave. Assembling the items is not, however, as difficult as the length of the list might suggest. Most of them

are conveniently stowed between voyages in the eaves of the canoe house and need only be lifted down and carried to the canoe. Only after everything else is aboard and checked is the sail brought out. The sail comes last because until it is raised it forms a bulky barrier impeding movement of men on the readying canoe.

"Meanwhile food for the voyage is prepared and assembled. There is a special word in Puluwat for the food which provisions a canoe going to a far island, but the food itself is no different from that eaten ashore. If the departure is hasty food may even be collected from that already on hand in the various households. It is better, however, if the journey is to be long to cook freshly picked breadfruit or fresh taro and pound it and package it in big breadfruit leaves the morning the voyage begins. In this way it will be fresh and last as long as possible under the hot sun. For a long trip there should in addition be some preserved breadfruit. It is not as good to eat, but lasts much better even after it is taken from the cool ground. If people become hungry after several days at sea it is usually not because too little food was put aboard but because the food became sour. Some ripe coconuts are carried as extra rations. Until the inside shell is cracked the rich, oily meat of a ripe coconut will last almost indefinitely. It is also good to eat along with starchy breadfruit or taro if no fish have been caught. Finally there are several bunches of younger green coconuts, drinking nuts to quench the thirst and provide the extra pleasure afterward of scraping out the soft white meat of the young nut."

1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
Home	Search	Archives	Past Education Programs & Materials	On-Line Visuals	Bibliographies (Books and Films)	



Daily Living Aboard Hokule'a

Elisa Yadao

[Photo below: Cooking on an Open Deck at a Gas Stove in a Cooking Box]

[Elisa Yadao was a crew member on the voyage from Rangiroa to Hawai'i in 1987.]

"Once you go on the canoe, because it's so small, you try to make it like one family."--That is the sailing philosophy of Snake Ah Hee, a 16-year veteran crew member of the Hokule'a. For a dozen plus people to live happily and harmoniously in tight living quarters and over thousands of miles, he and other crew members know the right mental and emotional attitude is key.



Living space is tight--the deck is about 40 feet long and 10 feet wide, totaling 400 square feet.



Sleeping quarters (photo left) are even more cramped and less than comfortable. The sleeping compartments run the length of both sides of the deck and are covered with canvas. Individual spaces measure about 6 feet in length and 3 feet across, usually with two crew members assigned to each space. One person sleeps while the other stands watch. Personal

belongings are stowed here, with each crew member allowed one 48 quart

cooler. Beds consist of a board placed over the coolers, covered by a sleeping pad.

Bathroom facilities, located on either side of the canoe, take things right down to basics. Going to the bathroom involves strapping a safety harness on, hooking the harness to a railing or safety line, and then relieving yourself overboard while standing or sitting on the running board on the outside of the hull. The flushing action depends on how fast the canoe is going. (Click here for a close-up of [the flushing action](#).)

Bathing is done either forward or aft on the canoe. Forward, you sit in a net slung between the two canoe hulls. Aft, you bathe in an open compartment, pulling salt water up in a 5 gallon bucket. You use a special sea soap, which makes bathing in salt water actually refreshing.

Because the canoe is so small, privacy is limited at best, but all crew members respect the needs of others. Generally, when someone is bathing or going to the bathroom, the rest of the crew moves away out of courtesy. When women are sailing, certain accommodations are made, such as hanging a curtain over the aft bathing area.

Cooking is done in the center of the canoe. The galley, or kitchen, is a two burner propane gas stove housed in a metal box. By necessity, most of the food on board comes out of a box or can, supplemented by whatever fresh fish the crew can catch. Each voyage has a designated fisherman, who puts his trolling lines out off the back of the canoe every morning.

On long trips, food is much more than a source of nutrition and sustenance. Mealtime is one of the few times during the day that the entire crew is together on deck. On long monotonous days, meals are a highlight. When the weather is cold and rainy, a hot meal can do wonders for morale.

The canoe carries bottled fresh water for cooking and drinking. On an estimated 30 day voyage the canoe will carry enough water for 40 days at sea. If water supplies become too low, the captain can order that water be rationed. Crew members also store rain water for cooking and bathing.

It takes a lot of work to sail Hokule'a and everyone is assigned a job. Crew

members are divided into watches, teams of people who work specific shifts. On the normal three-team watch system, each person works a four hour shift twice a day, with eight hours off in between. If you are on the 2 to 6 watch, you'll work from 2 to 6 in the morning and the again from 2 to 6 in the afternoon. In bad weather, the crew may go to a two-team watch system.

The watch on duty is responsible for maintaining the canoe, working the steering paddles, handling the sails and keeping water out of the compartments. At the start of watch the crew runs through a safety checklist to ensure that Hokule'a is in optimum sailing condition. Each watch has a captain responsible for supervising the others on his or her team.

When crew members are off watch, they rest, read, write in their journals, wash laundry, make music or simply relax and enjoy being out at sea. Time can pass slowly although this is the exception rather than the rule. Being away from home for extended periods of time, the crew does experience ups and downs and homesickness is not uncommon, especially for the new crew members. Older crew members have the responsibility to make sure that everyone gets through these low points.

1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
Home	Search	Archives	Past Education Programs & Materials	On-Line Visuals	Bibliographies (Books and Films)	



Roles and Duties of Hokule'a Crew Members

Elisa Yadao

[Photo below: Steersman Tiger Espere / Captain Gordon Pi'ianai'a / Navigator Keahi Omai]

Sailing Hokule'a is a rigorous job and it requires the participation of all crew members on board. To ensure that the canoe sails safely and efficiently, each person fills a specific role. Jobs vary from that of the navigator, to those crew members whose primary responsibility is documentation of the voyage for historical purposes.



Providing they fill the job requirements, both men and women can hold the various positions described below.

The person who carries the overall responsibility for the canoe and crew is the sailmaster. While he serves primarily in an advisory capacity, it is the sailmaster who has the final say on the canoe's sailing strategy and course and on all other operations of the canoe. He works in consultation with the navigators and captain.

The navigator determines the canoe's course, sets the sailing strategy, and determines the direction in which the crew will sail Hokule'a. He must stay oriented at all times, and this means that generally he is assigned no other duties aboard the canoe. In order to keep track of the canoe's direction, the navigator stays awake 20 hours a day, seated on a platform at the aft of the canoe. Much of the time, the navigator gives direction to the crew through the ship's captain.

The captain's primary responsibility is the safe sailing of Hokule'a and this encompasses everything from ensuring that a capable well-trained crew is on board to the physical maintenance of the canoe. Much preparation is done before the crew and canoe ever leave shore and this is done under the captain's direction. In consultation with the other officers, the captain schedules work parties for preparing the canoe to sail. Re-lashing canoe parts, mending sails, cleaning and painting Hokule'a's hulls are just some examples of the kinds of work done before sailing.

Another big job is loading the canoe with food, water, and safety gear required on voyages. Again, it is the captain's responsibility to ensure that this is done properly.

At sea, the captain executes all decisions relative to sailing. Once the navigator sets the sailing strategy, it is the captain who directs the crew to hoist, drop or change sails and he determines which steering paddles to use. He is responsible for coordinating activities with the escort vessel and providing a daily work schedule for the watch captains. The captain holds overall responsibility for maintaining the canoe's inventory, and he decides when and if to ration food and water. When approaching land, the captain handles most administrative matters, such as dealing with customs officials and maintaining the canoe's security while it is moored.

The watch captains direct those crew members assigned to their watch or work shifts, carrying out instructions relayed by the captain. The watch captain is responsible for ensuring that his crew is up and on duty in a timely fashion, assigning specific steering positions to his crew and directing rotations through the various positions, going through the safety check list, and maintaining his watch log. He is responsible for maintenance of the canoe during his watch, including cleaning up after meals. Additionally, the watch captain is responsible for monitoring the safety, health and morale of his crew.

Other tasks are assigned to crew members and carried out in addition to standing watch. The medical officer, usually a certified doctor, is aboard Hokule'a for each long voyage. His primary responsibility is the health of the crew. It is the medical officer's responsibility to ensure that the canoe is

equipped with all medications and medical supplies needed for a long journey. When the canoe is in foreign ports, the medical officer is also responsible for attending to the crew's health and medical needs on shore.

The radio operator handles all radio transmissions between Hokule'a, and the escort vessel and between the canoe and land. He maintains an accurate log of all radio traffic, and is responsible for the upkeep of the radio equipment.

A designated carpenter oversees all repairs done on the canoe. He also maintains the tool inventory. An assigned electrician maintains all electrical systems.

The cook plans the canoe's menus, maintains inventory of food supplies, and does most of the cooking. While this may not seem like an important job, the ability of the cook is directly related to the morale of the crew as meals are the highlight of each day. Good nutrition is also an important factor in maintaining the health of the crew.

The quartermaster is responsible for provisioning the canoe--loading food, water and all needed supplies, and for maintaining Hokule'a's inventory. While this is not an on board job, it is critical to the safe and efficient sailing of the canoe. Weight must be evenly distributed for optimum sailing.

Fishing off of the canoe is not a leisure time activity, but an actual designated job, and one crew member is responsible for setting and bringing in fishing lines each day and for landing all catches. Fresh fish provide an important food source at sea.

Documentors keep historical records of the voyage by various means including writing, video and audio taping.

The safety officer is responsible for all safety and emergency systems and equipment. Life jackets, life preservers, flares and fire extinguishers are just some examples of the gear the canoe carries. In addition, all crew members must be trained in man overboard and fire procedures.

Crew responsibilities are exactly the same as the watch captain, with the exception of the administrative duties. Off watch, crew members main obligation is to keep out of the way of those on duty.

Leisure time is spent in a variety of ways including resting, reading, writing, and taking care of personal chores (laundry, cleaning out compartments etc.). In the event of bad weather or an emergency and an all hands on deck call, all of the crew members are expected to work.

All jobs on the canoe, no matter how routine they may seem, are important to the overall safe sailing of Hokule'a. A crew member's most critical responsibility is to realize that his crewmates depend upon him to carry out his assigned duties, and to work well as part of a team.

<u>1976: Tahiti</u>	<u>1980: Tahiti</u>	<u>1985-87: Aotearoa (New Zealand)</u>	<u>1992: Rarotonga</u>	<u>1995: Marquesas</u>	<u>1995: West Coast, British Columbia, & Alaska</u>	<u>1999-2000: Rapanui</u>
<u>Voyages</u>	<u>Canoe-Building</u>	<u>Wayfinding</u>	<u>Life on a Canoe</u>	<u>Polynesian Migrations</u>	<u>Proverbs and Traditions</u>	
<u>Home</u>	<u>Search</u>	<u>Archives</u>	<u>Past Education Programs & Materials</u>	<u>On-Line Visuals</u>	<u>Bibliographies (Books and Films)</u>	



Fishing Aboard Hokule'a

[Photo below: Tava Taupu with an ['Ahi \(Yellow-fin Tuna\)](#)]

The only way to supplement food supplies on an ancient voyaging canoe at sea was to catch fish, and possibly birds. Fishing was a matter of survival. In the same tradition, fishing is more than just a pastime on Hokule'a. A good-sized fish provides a day or two of food for the crew and allows the crew to stretch its supply of food and lengthen the time the crew can survive at sea.



One crew member on board the canoe serves as a designated fisherman, responsible for putting out the lines at sunrise, bringing in the catch with the assistance of other crew members, and pulling in the lines at sunset.

Hokule'a trails up to four 400 pound-test fishing lines, with lures attached. Two of the lines extend out from each side of the canoe on bamboo poles to prevent the lines from tangling. The canoe needs to travel at 6-7 knots for good results. The crew catches a range of open ocean fish, including [aku \(bluefin tuna\)](#), ['ahi \(yellowfin tuna\)](#), [mahimahi \(dorado\)](#), [ono \(wahoo\)](#), and [a'u \(billfish\)](#). On the 29-day voyage to Tahiti in 1992, 35 fish were caught; on the 35-day voyage from Rarotonga to Hawai'i in 1992, 27 fish were caught, including a 150-pound and a 200-pound marlin.



Two [aku](#)



Sesario Sewalur Holds up a [Mahimahi](#)



Tava Taupu Cutting Up an [Ono](#)

Fish is appreciated by the crew because it is the only fresh food eaten during

the voyage after the fruits and vegetables have been consumed, usually within the first few days. The fish is eaten raw, marinated for po-ke, or fried. The leftover fish parts and bones are used to make soup. Leftover strips of meat are dried from the rigging, then put into buckets as snacks for the crew.

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Fish, Birds, and Mammals of the Open Ocean



Voyagers of the Pacific encounter animal life at sea. Some of these are strictly pelagic, roaming the open ocean; some of the fish and mammals return to near shore waters to breed and nurse their young; some birds breed and raise their young on land, but spend most of their adult lives at sea; some birds fish at sea during the day, but return to land at night to sleep.

Pelagic: living in open seas or oceans rather than near-shore waters; from the Greek word *pelagikos*, "ocean."

Fish	Birds	Mammals
'Ahi (Yellow-fin Tuna)	'A (Booby)	Nai'a (Dolphin)
Aku (Blue-fin Tuna)	'Iwa (Frigate Bird)	Whale
Au (Billfish)	Ko'ae (Tropic Bird)	
Mahimahi (Dolphin Fish)	Manu Ka'upu (Albatross)	
Malolo (Flying Fish)	Manu-o-Ku (White Tern)	
Mano (Shark)	Noio (Noddy Tern)	
Ono (Wahoo)	Shearwater	
	Storm-Petrel	

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Dangers at Sea

[Photo below: Hokule'a in Rough Sea]

The ancient voyagers faced various dangers when they ventured out to sea in their canoes. The Tahitian story of the voyager Tumu-nui, king of Tahiti, lists eight dangers: isolated-coral-rock, sea-monster, long-wave, short-wave, fish-shoal, animal-with-bur ning-flesh, crane-empowered-by-Ta'aroa, and giant-clam-opening-at-the-horizon.



His nephew Rata eventually destroyed six of these eight dangers of the sea, so that today, only two, long-wave and short-wave, indestructible elements of the ocean, remain to challenge voyagers.

The most potent danger faced by the modern-day voyager are high winds and seas, which could flood the hulls; capsize the canoe; break the mast, boom, or spare; or break the hulls apart. Careful storm sailing procedures are designed to prevent these mishap s from occurring. In the event of heavy weather, the following procedures are adopted by the Hokule'a crew:

The sails may be partially or fully triced (closed); this is usually done prior to

a squall.

The sails may be lowered and changed, with smaller storm sails replacing larger sails. The smaller sails reduce the stress on the mast, spar, and boom, making it less likely that they will break.

Some dangers associated with storms include: (1) capsizing; (2) breaking apart; (3) flooding; (4) crew members being washed overboard. Preventive procedures include the following:

--To prevent capsizing, run downwind with the storm sail on the forward mast; adjust the distribution of weight on board the canoe for greater stability; and keep water out of the hulls by constantly bailing or pumping.

--To prevent breaking apart, use rope collars to reinforce the lashings of the hull to the 'iako. The weak points of the canoe are where the wae are secured to the hull.

--To prevent flooding, keep the hulls pumped, especially the front and back compartments of the hulls; keep hatch covers secured and tied down; monitor water levels in all compartments.

--To prevent crew members from being washed overboard, put on safety harnesses and secure them to the canoe. Life preservers should be worn.

Other dangers include fire, man overboard, and serious injury or illness. A medical doctor is usually included among the crew to handle medical problems or emergencies.

Crew safety is the highest priority. The crew is screened for good health, physical conditioning, and the ability to swim and stay afloat in the open ocean. The crew is trained to handle the canoe in rough ocean conditions, and the canoe is stocked with safety equipment, including water-pumps, fire extinguishers, life jackets, safety harnesses and nets, a man-overboard float tethered to the stern of the canoe, and equipment to give the canoe's position in an emergency (GPS, Argos, EPIRB). Radio equipment allows communication with an escort boat or land stations.

Two experiences during the 1985-87 Voyage of Rediscovery illustrate

life-threatening situations and how they are handled. While sailing from Aotearoa to Tonga, a crew member fell overboard in the night when his safety harness broke while he was hanging over the side of the canoe to use the bathroom. Luckily navigator Nainoa Thompson saw his hat float by and sounded the alarm. Part of the crew scrambled to stop the canoe by letting the wind out of the sails; the others threw in the man-overboard float; Thompson went out on a surfboard to retrieve the crew member. On the voyage home in 1987, a crew member developed a skin infection; as he was allergic to penicillin and none of the other medicines on the canoe worked to stop the infection, the captain finally had to radio for help and the injured crew member was taken off the canoe by the U.S. Navy.

In 1995, a crew member on board Hawai'iloa's escort boat Kama Hele was injured while cutting up a fish the escort boat had caught. While the injury was not serious, he was medivaced off the boat by the Coast Guard since the crew did not want to risk infection of the wound on the 4 week voyage to Tahiti.

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Medical Needs Aboard Hokule'a

"Kauka" Pat Aiu, M.D.

[Drawing below: *Awapuhi* / Ginger: the dried root is a traditional medicine for preventing seasickness (Illustration by Susan G. Monden, in *Kahuna La'a Lapa'au* (Honolulu: Island Heritage, 1976). Today modern medicines are also used to treat illnesses and injuries on the canoe.)]

Some hints and thoughts from the medical side of long canoe voyages: It is very important to be in good health, in good shape and to be in good physical condition before embarking on any open ocean voyage. The reason being that, although we wish all voyages were smooth without inclement weather, viral and bacterial onslaught, the reality is, that these adversities do exist. The healthier and in shape you are, the better able you will be able to cope and recover from any ill that may come upon you. Being so, you'll better be able to stand your watch, cook, wash dishes, etc. etc. In all honesty, aside from jesting, the trip becomes fun and a joy instead of being a total drag. This is for every one on the crew.



Now this part pertains more to specific medical issues and is appropriate to and for the Doc on board. I'll discuss first the medical needs from the past voyages, then the medical kit, some preventive measures and helpful hints learned over time, and finally some emergency procedures.

Medical Needs

Skin Problems: Folliculitis; Fungal rashes; Sunburn—first degree and second degree; Carbuncles; Paronychia; Lacerations; Splinters; Non-specific rashes; Cracked skin; Dry skin; Abscess.

Folliculitis, particularly on hairy guys, is the most encountered complaint. Fortunately it is a minor problem and is easily treated with Mycolog cream.

Sunburn is prominent the first week at sea. First degree burns are common, but second degree blistering is not uncommon. Sun screen helps prevent burn if the crew will use it.

Tinea of every variety show up with surprising frequency and Lotrimin works well. Dry, cracked skin occurs often enough to be a problem. Any of the dermal creams and lip balms work well. The other problems listed above do occur and other docs and I have encountered them but infrequently.

Cardiovascular-Respiratory Ailments: Upper respiratory infections are by far the most common ailment. Any of the decongestant/expectorant and analgesic/antipyretics can be used. These meds get used up very fast, so be well stocked. I never encountered any of the crew with suspicious signs of Strept, so I never had the occasion to use injectable penicillin. I did see a lot of suspicious Strept. in the islands and treated a number empirically with oral antibiotics. Cultures, as you would suspect, were unavailable. I think a Strept screen kit would be useful today.

Bronchitis: infrequent. Saw 4 cases between 1980 and 1987.

Hypertension: six (6) people were on antihypertensive medication and needed to be monitored. I feel that because of the possibility of water rationing during protracted voyages, individuals who must be on diuretics should not be on board.

Pneumonia: no acute pneumonia seen so far.

Cardiac compromised status should disqualify a person from becoming a crew member.

Gastro-intestinal Ailments: (a) Motion Sickness - Common. Most cases resolve after twelve (12) to twenty-four (24) hours. Dermal patch would probably help but most actually say, "Nah! I don't get sea sick." End quote! One individual required IV solutions to counter dehydration; (b) Gastro-enteritis - This is usually seen on land or soon after leaving land. All were short termed, twelve (12) to twenty-four (24) hours. Imodium,

Donnatal tabs or Lomotil all worked. Some preferred taking their own Pouchai pills; (c) The scariest case was one of acute Gastro-intestinal bleeding. By all means of rough estimation, individual dropped 5 - 6 grams of hemoglobin. His conjunctiva and other mucous membranes showed a distinct pallor. He also had all the signs and symptoms of acute severe blood loss except shock which spoke well for his good physical condition.

Genito-Urinary Ailments: (a) Urinary tract infection was seen in only one female; (b) Individuals with history of gout, those on allopurinol, those with history of kidney stones all should be on special precaution for dehydration and water intake should be monitored. Don't want a kidney stone out there. Water rationing on a long voyage would definitely exacerbate this condition and the placement of a person with this condition on such a voyage should be carefully considered.

Musculo-Skeletal Ailments: One incidence of dislocated shoulder. One dislocated finger. One broken toe. Remember to stress safety, safety, safety and be prepared for whatever.

Psychiatric Problems: No real psychoses appeared but three (3) individuals needed "talking out" sessions and psychological support to help maintain equilibrium. Just be on the look out, observe and talk to and most important, listen a lot.

The Medical Kit (Packed in one to four coolers!)

Topicals: (a) Antibiotic--creams, ointment; (b) Cortisone/antibiotic/anti-fungal combinations Mycolog, Mycelex--these go out like no nuff; (c) Emollients--dermal creams, moisteners, sun screens, tanning oils, mono'i, etc. Most guys have their private stock.

Antibiotics: Doxycyline; Penicillin; Amoxicillin; Cephalosporin; Cipro or Floxin; Septra (for the one wahine!); Vag cream for monilia; Erythromycin; Indocin (for the gout guys).

Gastro-intestinal Medicines: Imodium and or Lomotil; Donnatal; Tagamet; Laxative/softener; antacid

URI Meds: Decongestants - I would suggest Seldane to avoid drowsiness;

Expectorants/cough suppressants

Analgesics: ASA; Tylenol; Tylenol 3; NSAID - Motrin, Clinoril, Naprosyn, whatevers.

Injectables: Morphine 504 - 10mg size - (2); Demerol - 50mg - (4); Epinephrine 1:1000 - (4); Benadryl 25 mg - (4); Valium 10 mg - (2); Vistaril or Compazine - (2) Would suggest using tubex mode for uniformity.

Dressings (Need plenty!): 4 x 4 lots and lots; kling; telfa; Xeroform gauze (1/2 inch, one bottle for packing); Cloth tape - 1, 2 and 3 inch size; Micropore tape - 1, 2 and 3 inch; Ace bandages - 3" and 4" - dozen of each

Splints: Air splints only, otherwise can improvise a board

Scrubs: Betadine scrub - 250 cc size; Betadine solution - 500 cc - this doubles as a water purifier; Hibiclens or PhisoHex; some sterile scrub brushes

Cuts and Bruises Department: Suture sets (2) - set up sterile, if more needed can re-use soaking in betadine or hibiclens, unless you can bring along some cideX. Set to include a needle holder, pair of pick-ups (Brown-Adsens or toothed) two(2) crile or mosquito clamps, scissors. Keep the set small. Space is tight. Stick to one size of suture, i.e., 4-0. Use monofilament nylon for skin, vicryl for subcutaneous or muscle. Because of the incessant moisture, all the casting material I brought turned to concrete before Tahiti. I think a Colles fracture can be splinted to a formed board with ace bandage and worked to good apposition over time with gentle lomi. All other large bone fractures should be air evacuated.

Eye and Ear Tray (keep it small, mark it well): fluorescein strips; topical ophthalmic analgesic; topical ophthalmic antibiotic; Irrigation solution, option use IV sol'n but waste a lot usually; Can substitute 4 x 4 gauze for eye patches; brew hot tea, then use the tea bag for a warm compress, works well; otic solution - Cortisporin; bulb syringe.

Dental Kit: temporary filling kit (these come prepacked, I've used them in the field with soldiers); tooth puller plier - if gotta - numb it first; one or two foley catheters - some guys are over 50 and their prostates might obstruct!

Foley can double as a posterior nasal pack for the high ethmoid bleed.

OCP: The wahine member always forget

IV solutions: LR - 4 liters - intracaths, tubing, and those things.

Spirits: I prefer cognac or brandy - medicinal; We all needed some after Kimo came back on board.

Preventive Measures and Helpful Hints

Skin ailments and upper respiratory gunk are the most common problems, so, topicals, decongestants and expectorants along with the aspirins and tylenols go really fast. A surprising amount of antibiotics get used up, primarily for dirty or infected cuts, abscesses, bronchitis, tooth and gum abscesses, enteritis and urinary tract infection. They also get used up on land when you treat the natives. Next most used stuff are the GI ones, imodium, lomotil, donnatal and doxycycline, particularly when on an island and the crew is eating everything under the sun.

Expect Islanders to seek aid when Hokule'a is in port and they discover a doctor is on board. Supplies get use up fast in this situation. Occasionally other ships in port will seek medical aid and this was always rendered cheerfully.

It was surprising how many gouty and / or bursitis flareups occurred. Indocin worked well in these cases. Lots of Tagamet was used but only on two (2) individuals.

Whenever making landfall it is imperative to check the on board water supply and then to check the local water supply. Definitely check it's source, treatment if any, and testing facility for water potability. Then use your judgment whether further treatment is needed. I used halogenation to purify water. Two cc of betadine solution was added to a gallon of water (or 10 cc to a five gallon container) and let stand for an hour. The water did have a faint yellow color but did not have a bad taste. Most on board did not know I treated much of our water supply in this manner and did not complain of any taste to the water. We did not have a problem with water borne disease. Water caught off of the sails tastes yucky, but in a pinch is o.k. to drink after

treatment. When on island, advise some inquisitiveness (niele) and check out the food sources. We always found food well prepared except in one area. Pig cooked in an umu in Samoa sometimes tends to be under cooked, raw actually. But looking at the plethora of Samoan physical specimen, guess it doesn't hurt them! Pig cooked in Umu/Imu elsewhere was excellent.

When at sea, check the galley all the time to keep it clean, the utensils washed and air dried properly and check the status of all left overs. Use your judgment, sense of taste, and your nose.

Some people will become constipated and will not tell, so again be nose-y but not irritating. When the guys trust you, they'll usually tell you everything. Crew members as a whole are a tough minded, independent, "macho" lot and generally don't tell the Doc their problems until very late. This I noted early on in 1980. However if you communicate to them your competence and concern and they take you for one of them rather as the "doc" over there, then everything works out very well.

Make a strong pitch for tooth and gum care. Pass out floss or stimulents after each meal. A dental emergency is a bad problem at sea.

A fun thing to do if you can and have the time, is to weigh and tape every crew member prior to sailing. Generally on any trip lasting twelve (12) to twenty-four (24) days, there will be a marked weight loss and the addition of real muscle mass. Weight loss can be as high as thirty-five (35) pounds for a large man. Trips shorter than nine (9) days generally don't have much change and those twenty-four (24) to thirty-five (35) days have the effect of compensation and regaining of lost weight if eating habits remain the same. The Rangiroa to Hawai'i sail in 1987, the crew ate an average of 3500 calories per person per day, with a range of 2700 to 5200 calories per person per day. So it is easy to see that sailing on Hokule'a causes a tremendous caloric expenditure with concomitant weight loss in spite of such high caloric intakes. With this in mind, watch for the individual not eating for any reason because he'll go down fast.

Medical Emergency Procedures

During a crisis emergency, the doc will have to use the radio. I have an

advantage in that I know how to run radios from my military experiences. If you don't already know how to operate a radio, I would advise you to learn. In an emergency, the call is yours and you must speak one on one to the Coast Guard or Navy Doc in charge, who will then decide if a ship or plane should be sent out, particularly if the distress is farther than 500 miles from land.

Our Coast Guard is good for 600 miles plus or minus a few and the Navy may go further, but generally they like you to be inside of 500 miles. At sea you get help from any source you can. On every island group we visited, I met, talked to and learned the call sign of every radio operator who came forth. Then at sea, I would call all of them to stay in contact. Since I was the radio operator on board, I felt it was within my job to be able to contact any one

IF YOU HAVE AN EMERGENCY AT SEA, DO THE FOLLOWING:

1. Turn on your Inmarsat-C/GPS unit to get the canoe's position. [Holding down the emergency button for 5 + seconds sends out a distress signal with the position of the canoe.]
2. Contact your escort boat on channel 16 VHF and describe the emergency and the help you are requesting. Ask the escort boat for help in calling for help from any boat or ship in the area. Watch the voltage of the batteries. If the voltages are below 12.5, let the escort boat try to call for help on its single-side band radio and save your power for communicating with the escort boat. If the voltages are above 12.5, try 3 and 4.
3. Use the single side-band to contact the US Coast Guard on channels A9-A13 or through KMI on channels B1-B9. Break into any conversation by saying: "MAYDAY! MAYDAY! MAYDAY! This is WBJ3292, Sailing Vessel Hokule'a, Position [Give longitude and latitude in degrees and minutes from GPS unit]," then describe the emergency and the kind of help you are requesting.
4. If you are unable to raise the Coast Guard for some reason, try Peace-Sat at UH Manoa during working hours on Channels C1-C7 (One of these channels will be designated as the priority channel.)

5. If numbers 2, 3, and 4 fail, go to general SOS to any ship in the area.

Six hundred to a thousand miles out from Hawai'i where no one is close or in range, the decision is yours; to turn around, or push for our Coast Guard or Navy safety net, and obviously the condition of your patient would dictate what you decide.

If you are in the vicinity of an island group, then you can if you have kept in touch, call a local radio ham and they can patch to Hawai'i or a facility by phone. You must let someone know if you have an emergency. Often the escort vessel will not have a ny more luck than you on their radio. If you happen to be in an inversion zone and can not send or receive, the escort will probably be in it too. Just keep trying, don't give up~Never.

Recruit other crew members to help care for the injured or sick. Our guys are sharp and willing to help. It's also a good teaching opportunity and they like to be involved. Snake and Stanley were able assistants when we did skin and ulcer debridement ever y two days the last long trip out. They were really top notch.

Keep yourself fit physically and mentally so you won't go down with anything. Be available on sea and on land, ready to listen, help, treat and comfort. And even if those "Macho" buggers won't usually admit to you, they feel comfortable with their "Doc" a round.

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Crew and Navigational Training Programs (1990-1995)

[Photo below: Training Sail Off Moloka'i's North Coast]

CREW TRAINING (1990-1995)

The following is an outline of the curriculum the Polynesian Voyaging Society developed to train a new generation of voyagers for [the 1992 voyage to Rarotonga](#) and [the 1995 voyage to Nukuhiva](#):



Qualifications for Entrance to Master Sailor Training Program: medical examination; swimming test; age between 25-50; minimum of 100 days of sailing experience on voyaging canoes; sound values--respect and aloha for all people and all living things (abuse in any form not tolerated); ability to work on a team; positive attitude and good communication skills; ability to carry out designated tasks; honesty, patience, humility.

To complete the Master Sailor Training Program, the following requirements must be met:

Practical Experience--minimum of 200 days of sea-time, both coastal / interisland sailing and open-ocean sailing (100-day minimum)

Knowledge in the following areas:

-- Polynesian / Hawaiian voyaging history and lore (Oral Traditions)

- Navigational heiau
- Migration patterns of Polynesians and Hawaiians
- Geography of the Pacific
- Ocean and weather patterns of the Pacific
- Hawaiian language nautical, canoe, and environmental terms
- Design of the traditional Polynesian voyaging canoes
- Canoe parts and functions
- Canoe construction techniques and materials
- Conservation practices to maintain natural resources
- Wayfinding skills

Practical Skills for Sailing

- Seamanship (rigging, lashing, tying specialized knots, loading a canoe, distribution of weight)
- Canoe repair and maintenance
- Sailing skills (basic sail theory; multi-hull sailing theory; raising, lowering, rigging, and trimming the sails; steering)

Other Practical Skills for Voyaging: carpentry, fishing, weaving and repair of lauhala sails, storage and preservation of food, transportation and care of plants

Emergency Procedures: flooding, fire, man overboard, damage control, accidental jibe, storm sailing

Health and Safety Procedures: physical training program, psychological and spiritual preparation, accident prevention, diet, protection from harsh ocean environment

Master sailors must receive certification in the following areas: first-aid, CPR, and life-saving; in additions, captains must have a coastal masters license and an ocean masters license.

A master sailor must also possess a basic knowledge of wayfinding, including:

- understanding the star compass
- understanding the canoe as a compass

- identification of stars
- knowledge of rising and setting points of the stars, sun, and moon
- understanding of movement of celestial bodies, including the sun's relationship to the moon
- determining latitude by using Hokupa'a north of the equator, and by using meridian pairs of stars and pairs of stars rising and setting together
- understanding of and ability to read ocean swells
- understanding and application of expanded landfall techniques
- ability to maintain direction at all times while at sea
- ability to hold steering course as directed by the wayfinder

Individuals invited to participate in the training program met the following qualifications:

- Successful completion of a medical examination
- Successful completion of a swimming test
- Between 23Ð50 years of age
- Sailing experience and sailing ability and skills
- Experience in an ocean environment
- Ability to work with others
- Demonstration of skills for research, documentation, and education
- Demonstration of other specialized knowledge such as medicine and health care

Preference is given to those of Hawaiian ancestry.

NAVIGATOR TRAINING

Training to Become a navigator includes the following requirements, in addition to the requirements of the Master Sailors program:

Experience

- Successful completion of master sailors program
- 500 days at seaÑ on Hokule'a & traditional
- 200 days at seaÑ navigation in command
- Licensed captain
- Two 500-mile trips navigation in command

-- Two open ocean passages navigation in command

Knowledge

- In-depth knowledge of ancient canoes and voyages (mythical, legendary, and historical)
- Achievements of navigators in oral traditions; achievements of Satawalese navigator Mau Piailug
- Hawaiian Language (navigation terms; Hawaiian star names; ocean terms)
- Sail plan (based on tropical cyclones seasons; desired winds; cloud cover/rain; temperature; land stars; geography)
- Course & course strategy (plot all courses; calculate all course strategy; rhumb courses; easting data; tacking performance / strategy; memorize course information; memorize and practice the compass; memorize and practice navigation routines; latitude; longitude in terms of miles; names of each island in each target group; distance and bearing of each island to others; description of each island (size, elevation, lagoons, reefs, etc.); chart general bearing of each target)

Holding Direction

Night Time Navigation

Heavens

- stars
- star compass
- azimuth changes
- meridian stars
- parallel stars
- rising changes in azimuth of star path
- 3 cardinal star paths
- ecliptic
- planets
- zodiacal constellations
- declination
- moon
- relation to sun

- declination
- moon phases
- variance from the ecliptic
- time at meridian (related to sun)
- time of rising and setting (related to sun)

Sky

- wind (apparent bearing of wind)
- clouds (apparent direction of movement; direction of cloud streets)

Ocean

- identification of swells
- direction of the movement of all swells
- true direction of the seas

Day Time Navigation

Heavens

- sun
- declination (rise and set)
- azimuth change as it rises
- meridian passage
- relation to moon
- moon
- phases of moon
- relation to sun
- declination
- variance from ecliptic
- time at meridian (related to sun)
- time of rising and setting (related to sun)

Sky

- wind (apparent bearing of wind)
- clouds (apparent direction of movement; direction of cloud streets)

Ocean

- swells (identification, direction)
- seas
- true direction of seas
- current
- direction
- speed

All directional keys are determined by reference to the heavens. All directional keys are in relation to the star compass.

Latitude

- height of stars at the meridian
- height of pair stars at the meridian
- equal distance pairs at the meridian
- height of parallel stars at the meridian
- height of north star as it circles the celestial pole
- height of circumpolar stars on the low axis
- synchronous rising of stars
- synchronous setting of stars

Expanded landfall (for each target)

- geography of islands
- size and elevations (visual distance and visual appearance)
- birdsÑhabits, populations, nesting cycles
- clouds as they are affected by each island group
- swells as they are affected by the islands/by lagoons
- reflection, deflection, and absence of swells near shore
- marine life

Weather

- basic weather patterns of the Pacific Ocean
- basic weather patterns of specific sailing routes
- interpreting pre-voyage weather data from various weather reporting services

-- interpreting signs of nature (cloud types and movement, winds, colors of atmosphere, swell patterns) for general weather prediction

Storm sailing

-- reading the signs of nature to foresee storms and squalls
 -- determining the proper sail rig for weather

Canoe performance (given various size sails)

-- windward performance
 -- speeds
 -- storm sailing
 -- lee drift
 -- weight distribution
 -- steering methods
 -- sail trim

Leadership

-- loading of canoe for stability
 -- trimming sails
 -- lowering, raising, changing sails
 -- steering
 -- emergency commands

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Hawaiian Terms Used in Voyaging

Terms for Crew of the Canoe (from Oral History, Language and Ceremony Committee, NHCAP, Bishop Museum)

'aukai: travel by sea; sailor

'aumoana: travel on the ocean; sailor

hoe wa'a: paddler

holokahiki: sail to foreign lands; sailor

holomoana: sail on the ocean; sailor

holomoku: sail on a ship; sailor

ho'okele or ho'okele wa'a: steersman and navigator

kamahele: traveler

kapena: from English word for "Captain"

kilo or kilo hoku: "star-gazer," navigator

Canoe commands / Carlos Andrade, Chad Baybayan, Ben Finney, David Kawika Kapahulehua, Palani Kelly, Kiki Mookini, Dick Rhodes, and Keli'i Tau'a

'alu: to slack, loosen; 'alu na pe'a: ease the sheets to let the wind out of the sails

'awala: pull in steadily on a line

emi mai ka la!: lower the sail!

hapa'i: lift

hauhoa: to tie, lash, bind

hi'pu'u: tie a knot

hoe kawele: paddle moderately or slowly

homa: hold a canoe on course in rough seas

ho'olala: turn aside out of one's course

ho'ololi ka pe'a: change the sail

ho'olana: refloat a canoe after swamping

ho'omakaukau: get ready!

ho'omalo: make taut, as a cord or a sail

ho'omau: keep it up; steady as you go; continue; persist

ho'opa'a: make fast, firm, tight, solid; to bind; to hold fast to

ho'opae: go ashore

ho'opahu'a: move sidewise (against the wind); sail windward

huki: pull on a line

huli i lalo: turn downwind

huli i luna: turn upwind

huli 'ao'ao: turn to one side; lean to one side; when sailing it is sometimes necessary to get the crew weight to the windward side to keep the vessel close-hauled

huli hope: turn back v huli pau: capsize

ka'alalo: sail downwind v ka'aluna: sail upwind

ka i na liu: bail water out of the bilge

kokua: help

ku!: Stop!

lana: be moored or anchored

maika'i: good; well done

naki'i: to tie

nana: check, look

pa'a: secured, tight, solid

pani ka pe'a: close the sail

piho, or piholo: swamped; flounder

poholua: billow out, as sails

une: use the paddles as a lever to change the heading of a vessel

'u'u: drew in a line to hoist a sail

wehe ka pe'a: open the sail

1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
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Home	Search	Archives	Past Education Programs & Materials	On-Line Visuals	Bibliographies (Books and Films)	



The Spirit of 'Ohana and the Polynesian Voyagers

Cecilia Kapua Lindo

Illustration Below: Departure, from Peter Buck's *Vikings of the Pacific*

The 'ohana (family) of old made it possible for the Polynesian voyagers to venture forth to unknown lands. This seafaring 'ohana was able to travel thousands of miles on double-hulled canoes



because it was in touch with nature and the gods. The 'ohana felt safe because there were no barriers between the spiritual and cultural world. The Hawaiian was never separated from his makers and ancestors because the gods and demi-gods showed themselves everywhere; in the sky, in the earth, and in the sea. They could move from one realm to another.

"Every cloud, rainstorm, lightning flash, ti plant, and maile vine was a body form of Kane. Rainclouds, rain, lush ferns, aholehole fish and certain types of seaweed revealed the god Lono. The god Kanaloa was represented by the deep ocean depths by squid, octopus and certain kinds of seashells" (William Pila Kikuchi, "Heritage of Kaua'i," *The Native Hawaiian*, February 1979, Vol. 111, No. 4, page 4). Ku was god of agriculture and of war. Every rock, waterfall and natural feature had a name and explanation as to its origin, just like the Hawaiian race.

The Hawaiians had their own mystical and ancestral roots. According to tradition the Hawaiian Islands and its people were born of the spirit world.

The honored genealogies of the Hawaiians do not stem from Adam and Eve but from Papa and Wakea. Wakea was the first man and the ancestor of the Polynesians. Haloa, son of Wakea was born a shapeless mass and was buried beside Wakea's home. A taro plant grew in this spot. The ancients believed that the progenitors of the Hawaiians came from this mystic man called Ha-loa. The word Haloa means long stem, which represents the long stem of the taro plant.

The word 'ohana comes from the 'oha, or corm of the taro plant. The taro plant links the Hawaiians to the origin of their people. Is it any wonder, since taro was, and still is, the staff of life for the Hawaiian people?

The ancient Hawaiians not only used taro corm, stems and leaves as food, but they also used various parts of the plant as medicine. The leaf stalk was rubbed on insect bites to take away the sting. The juice of the stalk, blended with sugar or coconut milk, was drunk to reduce fever, cut root stopped bleeding, and thickened poi was applied as a poultice to infected sores.

Since there were 84 types of taro, some varieties were offered to Hawaiian gods, others were kapu (sacred) to the ali'i (royalty), but there were enough varieties to make poi the mainstay of the Hawaiian diet. Varieties of taro could be identified by the color of the corm—green, red, white, gray, rose and purple.

Taro was not native to Hawai'i. The first written records of taro came from China, 200 years before Christ. It was also recorded in Egypt, 23 B.C. The first Polynesian voyagers who settled in Hawai'i probably carried taro plants on their double-hulled canoes. Records show that some taro patches in Hawai'i have been under cultivation for over 100 years.

Hawaiians believed that 'oha, or taro corm, was the "root of origin." It did not matter how many offshoots came from the 'oha. In Hawaiian terms regardless of how distantly people were related, they were still all brothers and sisters. Even if they were 14th or 16th cousins, their roots were from the 'ohana, so they were 'ohana. The 'ohana included parents, grandparents, children, ties of blood and non-related persons and immortals like the 'aumakua, or family god. The 'ohana in nearly every sense were those adopted in friendship. A loved, non-related child could be made a ho'okama

(son or daughter adopted in friendship).

Members of the 'ohana, like taro shoots, were all from the same root. Taro gave the Hawaiian poi, and poi was god given, like the 'ohana. Pule (prayer) was important in the 'ohana. This helped to prevent unhappiness. Pule was so much a part of the 'ohana that to this day, the word 'ohana is often used to mean pule 'ohana (family prayer).

Affection and warmth were the values of the 'ohana. Hawaiians believed it was important to keep lines of communication open. Members of the 'ohana did not strain feelings by forcing other members to conform. In the 'ohana there was a sense of shared involvement, mutual responsibility, interdependence and helpfulness. The 'ohana meant love and loyalty. All its members practiced the spirit of sharing and caring. Forgiveness was very important. There was great respect for the elders.

Members of the 'ohana knew that life was interconnected. The 'ohana who farmed depended on the 'ohana that fished. Each depended on the other for survival.

The maka'ainana (commoner) lived on the 'aina (land) of the ali'i. The ali'i knew they could not survive without the maka'ainana, upon whom they depended for food and well-being. If an ali'i treated his tenant unfairly, the tenant could leave and become a tenant of another ali'i. There was an old Hawaiian proverb that said, "You are a chief because of your people." The 'aina did not belong to the chief; he was caretaker of the land that belonged to the gods.

The beliefs of the ancient 'ohana corresponded with the view of the relationship between humanity and nature. And it really made good sense. If you look back to Hokule'a and its origin, interdependency was the key to the canoe's success. Herb Kawainui Kane, Dr. Ben R. Finney and Charles Tommy Holmes founded the Polynesian Voyaging Society, but they had to rely on hundreds of people and resources to make Hokule'a a reality.

We can learn from the ancient 'ohana who practiced the art of dealing with people and understanding feelings. In other words they practiced the spirit of aloha. The Hawaiians constantly gave thanks to their gods and to nature.

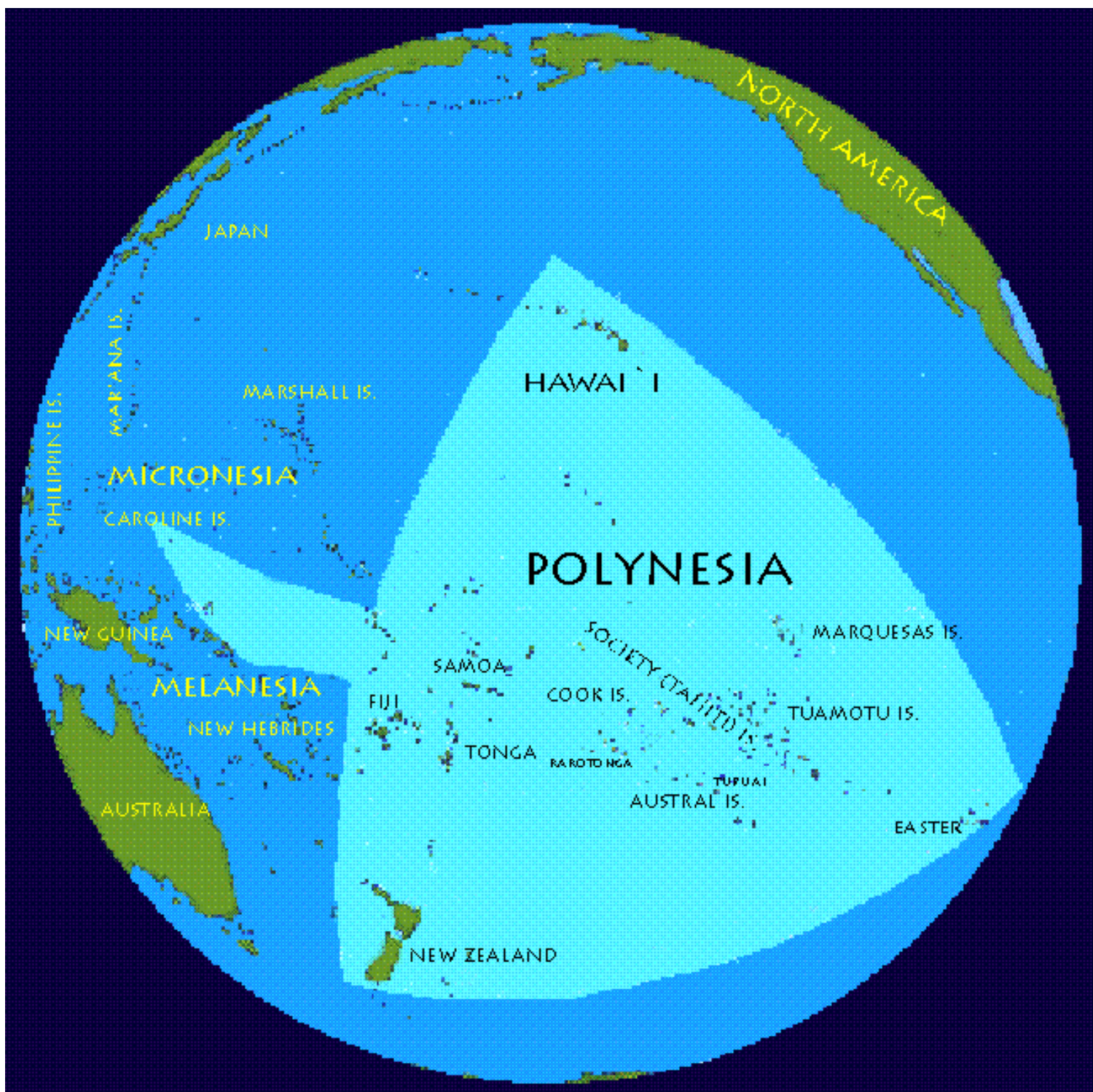
They were grateful even for the tiny 'elepaio bird (flycatcher) which they considered a deity, because the bird helped them select good trees for their canoes. If the 'elepaio pecked at a tree trunk, they knew that the tree had worms and would not be good for a canoe. They considered the 'elepaio a canoe goddess and called her Lea.

We can learn meaningful and beautiful lessons from the ancient 'ohana.

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Map of Polynesia



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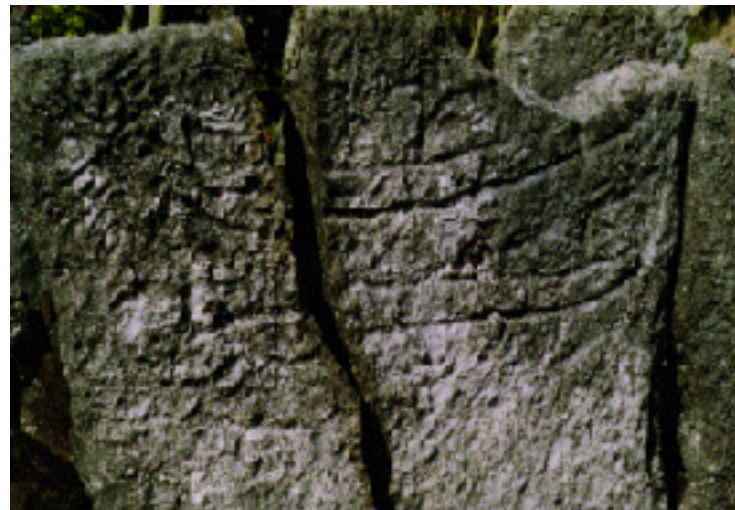
The Settlement of Polynesia, Part 1

Dennis Kawaharada

Photo Below: Canoe Petroglyph, Huahine, Tahiti

Exploration and Discovery

In the 19th century, Hawaiian scholars Kamakau and Kepelino attributed the discovery of Hawai'i to a fisherman named Hawai'iloa. He is said to have discovered the islands during a long fishing trip from a homeland in the west called Ka 'Aina kai melemelea Kane ("Land of the yellow sea of Kane"); the Big Island was named after him while Kaua'i, O'ahu, and Maui were named after his children. Hawai'iloa's navigator, Makali'i, steered in the direction of Iao, the Eastern Star, and hoku'ula, the red star (perhaps the rising Aldebaran in the constellation of Taurus). After replenishing his supplies, Hawai'iloa returned home and brought his wife and his children back to Hawai'i, again using the fixed stars as guides. The Hawaiian people are all descended from him.



Some scholars have questioned the authenticity of the tradition of Hawai'iloa because of similarities between Biblical stories and stories in the tradition of Kumuhonua, of which the story of Hawai'iloa is a part. These scholars believe that parts of the tradition of Kumuhonua were invented in the 19th century to conform to Biblical traditions. However, Randie Kamuela Fong of Kamehameha Schools writes, "after careful review of Fornander's version of the Kumuhonua tradition, the Hawai'iloa portion bears no resemblance to any biblical account. The names, places, and basic settings and plots give us

no reason to question their age and authenticity. Further, Patience Bacon of the Bishop Museum remembers kupuna (elders) being interviewed in the 1920's and 30's by Tutu Puku'i. These kupuna spoke of Hawai'iloa as their 'reality.'"

A tradition published in Teuira Henry's Ancient Tahiti attributes the discovery of Hawai'i to a voyaging hero named Tafa'i (Hawaiian Kaha'i), son of Hema and an underworld goddess named Hina-tahutahu (Hina, the magician). Tafa'i "cut the sinews" of the islands of Tahiti (i.e., fixed them in their places), fished up the islands of the Tuamotu Archipelago and then "went exploring the trackless ocean northward." He found a chain of islands beneath the sea and fished it up, naming the first island "Aihi" ("Bit-in-fishing," now called "Hawai'i"). "Next he drew up Maui and all the other islands of our archipelago.Éthen those intrepid navigators went south and returned with people to dwell on the beautiful new land, bringing with them their gods, their chiefs, and breadfruit and other plants." Later, Tafa'i tried to pull the Hawaiian islands south, closer to the Tahitian islands, but failed when the kapu forbidding the crew to speak or look back from the canoe was broken.

The connection between discovery and fishing is part of pan-Polynesian tradition of islands being fished out of the sea. A fisherman named Huku is said to have found Rakahanga island while on an aku fishing voyage from Rarotonga; later the three Maui brothers came to the same area and began fishing.. Maui-mua caught a shark; Maui-roto an ulua; and Maui-muri the island of Manihiki (Tairi "The Origin of the Island Manihiki"). Maui is also said to have fished up, among other islands, Tonga, Mangaia in the Cook Islands, and Aotearoa (New Zealand) (Buck 53).

This traditional association between fishing and the discovery islands suggests that fishermen, of whatever identities, were perhaps the most frequent discoverers of islands in ancient times, either while they roamed the ocean looking for new fishing grounds or chasing schools of pelagic fish, or after they were driven off course by storms on their way to known fishing grounds. A poetic way of describing their discoveries would be to say that the fishermen caught islands, not fish. Perhaps the name of Maui was given to anyone who discovered an island, in honor of some ancestral

fisherman-explorer noted for finding islands.

Another intriguing possibility is proposed in Geoffrey Irwin's *The Prehistoric Exploration and Colonization of the Pacific*. Irwin suggests that those who settled Polynesia may have used a deliberate strategy of exploration that allowed them to find islands without an inordinate risk to their lives and with a high rate of survival. (Other scholars have assumed that the exploration of the Pacific was full of danger and involved high casualties at sea.) This deliberate strategy of exploration, according to Irwin, involved waiting for a reversal in wind direction and sailing in the direction that is normally upwind (i.e. eastward in the Pacific) for as far as it was safe to go given the supplies that were carried on the canoe. The return home (westward) would be made easy when the wind shifted back to its normal easterly direction. Irwin believes that this strategy is supported by the west to east settlement of the Pacific, from the islands of southeast Asia and Melanesia to Samoa, Tonga, the Cook Islands, the Society Islands, the Tuamotus, and Hiva (the Marquesas). Although no factual evidence would prove that this strategy of exploration was actually employed by Polynesian navigators, the strategy would have been obvious to anyone familiar with sailing. The tradition of 'imi fenua (Hawaiian: 'imi honua), or "searching for lands," reported from Hiva and other Polynesian islands, supports such a notion of deliberate exploration. Teuira Henry gives exploration and discovery as the motivation for the voyages of [Ru and Hina](#), a brother and sister who circumnavigated the earth in their canoe Te-apori to locate islands: "After exploring the earth, Hina's love of discovery did not cease. So one evening when the full moon was shining invitingly, being large and half visible at the horizon, she set off in her canoe to make it a visit." She decided to stay there and remains today as the figure seen in the moon.

Whatever the motives and methods of exploration and discovery, once the location of an island was known, it became open to settlement.

The Polynesian Settlement of the Pacific

The Polynesian migration to Hawai'i was part of one of the most remarkable achievements of humanity: the discovery and settlement of the remote, widely scattered islands of the central Pacific. The migration began before

the birth of Christ. While Europeans were sailing close to the coastlines of continents before developing navigational instruments that would allow them to venture onto the open ocean, voyagers from Fiji, Tonga, and Samoa began to settle islands in an ocean area of over 10 million square miles. The settlement took a thousand years to complete and involved finding and fixing in mind the position of islands, sometimes less than a mile in diameter on which the highest landmark was a coconut tree. By the time European explorers entered the Pacific Ocean in the 16th century almost all the habitable islands had been settled for hundreds of years.

The voyaging was all the more remarkable in that it was done in canoes built with tools of stone, bone, and coral. The canoes were navigated without instruments by expert seafarers who depended on their observations of the ocean and sky and traditional knowledge of the patterns of nature for clues to the direction and location of islands. The canoe hulls were dug out from tree trunks with adzes or made from planks sewn together with a cordage of coconut fiber twisted into strands and braided for strength. Cracks and seams were sealed with coconut fibers and sap from breadfruit or other trees. An outrigger was attached to a single hull for greater stability on the ocean; two hulls were lashed together with crossbeams and a deck added between the hulls to create double canoes capable of voyaging long distances.

The canoes were paddled when there was no wind and sailed when there was; the sails were woven from coconut or pandanus leaves. These vessels were seaworthy enough to make voyages of over 2,000 miles along the longest sea roads of Polynesia, such as the one between Hawai'i and Tahiti. And though these double-hulled canoes had less carrying capacity than the broad-beamed ships of the European explorers, the Polynesian canoes were faster: one of Captain Cook's crew estimated a Tongan canoe could sail "three miles to our two."

After a visit to the Society Islands in 1774, Andia y Varela described the canoes he saw: "It would give the most skilful [European] builder a shock to see craft having no more breadth of beam than three [arm] spans carrying a spread of sail so large as to befit one of ours with a beam of eight or ten spans, and which, though without means of lowering or furling the sail, make sport of the winds and waves during a gale, their safety depending

wholly on two light poles a couple of varas or so long (about eight feet), which, being placed athwartships, the one forward and the other aft, are fitted to another spar of soft wood placed fore and aft wise in the manner of an outrigger. These canoes are as fine forward as the edge of a knife, so that they travel faster than the swiftest of our vessels; and they are marvellous, not only in this respect, but for their smartness in shifting from one tack to the other." (Corney, Vol. II, 282).

The voyaging was by no means easy. There was always a danger of swamping or capsizing in heavy seas, of having sails ripped apart or masts and booms broken by fierce winds, of smashing the hulls against unseen rocks or reefs; and while there were grass or leaf shelters on the decks of voyaging canoes, the voyagers were often exposed to the wind, rain, and sun, with only capes of leaves or bark-cloth wrappings for protection. A stormy night at sea, even in the tropics, can be brutally chilling. If supplies ran short during a long voyage, and no fish or rainwater replenished them, then starvation became a possibility. As a tradition about a voyage from Hiva (the Marquesas) to Rarotonga puts it: "The voyage was so long; food and water ran out. One hundred of the paddlers died; forty men remained."

A long voyage was not just a physical, but a mental challenge as well, particularly for a navigator without compass or chart. To navigate miles of open ocean required an extensive and intimate knowledge of the ocean and sky. Captain Cook noted that Polynesian navigators used the rising and setting points of celestial bodies for directions. Andia y Varela was told how Tahitians also used the winds and swells to hold a course: "There are many sailing-masters among the people, the term for whom is in their language fa'atere (Hawaiian: ho'okele). The fa'atere are competent to make long voyages like that from Otahiti to Oriayatea [Ra'iatea] (about 150 miles) and others farther afield. One of these sailing masters named Puhoro came to Lima on this occasion in the frigate; and from him and others I was able to find out the method by which they navigate on the high seas.

"They have no mariner's compass, but divide the horizon into sixteen parts, taking for the cardinal points those at which the sun rises and sets.

"When setting out from port the helmsman partitions the horizon, counting from E, or the point where the sun rises; he knows the direction in which his

destination bears. He observes, also, whether he has the wind aft, or on one or the other beam, or on the quarter, or is close-hauled. He notes, further, whether there is a following sea, a head sea, a beam sea, or if the sea is on the bow or the quarter. He proceeds out of port with a knowledge of these [conditions], heads his vessel according to his calculation, and aided by the signs the sea and wind afford him, does his best to keep steadily on his course.

"The task becomes more difficult if the day is cloudy, because the sailing-master has no mark to count from for dividing the horizon. Should the night be cloudy as well, the sailing-master regulates his course by the wind and swells; and, since the wind is apt to vary in direction more than the swell does, he has his pennant, made of feathers and palmetto bark, by which to watch changes in the wind, and he trims his sails accordingly, always taking his cue for holding his course from the indications the sea affords. When the night is clear, he steers by the stars; and this is the easiest navigation for him because he knows the stars which rise and set over not only the islands he is familiar with, but also the harbours in the islands, so that he makes straight for the entrance by following the rhumb of the particular star that rises or sets over it. These sailing masters hit their destinations with as much precision as the most expert navigators of civilized nations could achieve" (Corney, Vol. II, 284-6) .

To keep track of their position at sea during long sea voyages, the navigators used a system of dead reckoning—memorizing the distance and direction traveled until the destination was reached. Finding islands before they could actually be seen was also part of the art of navigation. Voyagers followed the flight of land-dwelling birds that fished at sea as these birds flew from the direction of islands in the morning or returned in the evenings. The navigators also watched for changes in swell patterns, cloud piled up over land, reflections on clouds from lagoons, and drifting land vegetation.

When European explorers found the islands of Polynesia, the common ancestry of the Polynesians was evident—the inhabitants of widely separated islands looked alike, spoke alike, and had similar cultural practices. Their manufactured products such as fishhooks, trolling lures, adzes, and ornaments also revealed similarities. And they had the same basic stock of

domesticated plants and animals.

The peoples of Polynesia came from a common ancestral group that developed a distinctive fishing and farming culture in the islands of Tonga and Samoa.

While dates constantly change with new archaeological discoveries, the general sequence for the settlement of Polynesia has been relatively well established (Dates represent earliest archaeological finds; they almost certainly do not represent the earliest presence of human beings.):

--Hunters and gatherers inhabited Australia and New Guinea by 50,000 years ago.

--Around 1600-1200 B.C., a cultural complex called Lapita (identified by a distinctive pottery and named after a site in New Caledonia) spread from New Guinea in Melanesia as far east as Fiji, Samoa, and Tonga. Polynesian culture developed at the eastern edge of this region (i.e., in Samoa and Tonga).

--Around 300 B.C. or earlier, seafarers from Samoa and Tonga discovered and settled islands to the east—the Cook Islands, Tahiti-nui, Tuamotus, and Hiva (Marquesas Islands).

--Around 300 A.D. or earlier, voyagers from central or eastern Polynesia, possibly from Hiva, discovered and settled Easter Island.

--Around 400 A.D. or earlier, voyagers from the the Cook Islands, Tahiti-nui, and /or Hiva settled Hawai'i.

--Around 1000 A.D. or earlier, voyagers from the Society and/or the Cook Islands settled Aotearoa (New Zealand).

The ethnobotanical evidence reflects this progression of settlement from the Western Pacific islands, through central Polynesia (the Cook Islands, Society Islands, and Hiva), and then to Hawai'i. Of the 72 plants identified as having been transported to Polynesia by people, 41-45 are found in the Cook Islands, the Society Islands, and Hiva; 29 are found in Hawai'i, including taro, breadfruit, sugar cane, bamboo, ti, yam, banana, 'awa, paper

mulberry, kukui, coconut, gourd, sweet potato, and mountain apple. The settlers also brought the pig, dog, chicken, and rat along with them. The transport of plants and domesticated animals on voyaging canoes suggests that the early settlers planned to colonize Hawai'i, after having discovered its location.

The Settlement of Hawai'i

Hawai'i, which contains the largest islands in Polynesia outside of Aotearoa, must have appeared particularly rich in land and resources to its discoverers. The tradition of Hawai'iloa records the event as follows: "[The voyagers] went ashore and found the land fertile and pleasant, filled with 'awa, coconut trees, and so on, and Hawai'iloa, the chief, gave that land his name. Here they dwelt a long time and when their canoe was filled with vegetable food and fish, they returned to their native country with the intention of returning to Hawai'i-nei, which they preferred to their own country." (Fornander, Vol. 6, 278; other traditions suggest that 'awa and coconut were brought by those who settle Hawai'i.)

Scholars believe that early settlers of Hawai'i came predominantly from Hiva (Marquesas). The argument for a Hivan homeland is based in part on linguistic and biological evidence: "Indeed, the close relationship between the Hawaiian and Marquesan languages as well as between the physical populations constitutes strong and mutually corroborative evidence that the early Hawaiians came from the Marquesas" (Kirch 64).

The Marquesan language has been grouped under the category Proto Central Eastern Polynesian, along with Hawaiian, Tahitian, Tuamotuan, Rarotongan, and Maori. Vocabulary comparisons seem to indicate that the dialect of the Southern Marquesan Islands (Hiva Oa, Tahuata, Fatu Hiva), is the closest relative of Hawaiian language (Green 1966):

Hawaiian / Marq-So. / Marq-No. / Gloss

inoa / inoa / ikoa / name

mano / mano / mako / shark

moena / moena / moeka / mat

one / one / oke / hunger

(From "Lexical Diffusion in Polynesia and the Marquesan-Hawaiian Relationship," Samuel H. Elbert, *Journal of the Polynesian Society*, 91 (4) December 1982, 505.)

About 56% of basic words in the two languages are the same or similar. For example:

Hawaiian / Marquesan / Gloss

mahina / mahina / moon, month

po / po / darkness

pu / pu / conch

kino / tino / body

kahuna / tuhuna / expert

imu / umu / oven

i'a / ika / fish

lawai'a / awaika / fisherman

wa'a / vaka / canoe

hoe / hoe / paddle

("Glossary of Marquesan Native Terms," E.S. Craighill Handy, *The Native Culture in the Marquesas*, Honolulu: Bishop Museum, 1923)

Hawaiian and Marquesan also share words that are not found in other Polynesians languages:

Hawaiian / Marquesan / Gloss

'elele / ke'e'e / messenger

makali / mata'i / tie bait to hook (Haw.); string to tie bait to a hook (Marq.)

pa'akai / pa'atai / salt

(For a longer list of words, see Elbert's "Lexical Diffusion in Polynesia and the Marquesan-Hawaiian Relationship," 510-511.)

The two languages also share unique phonological changes from Proto Central Eastern Polynesian (the hypothetical original language). Elbert concludes that the linguistic evidence supports the hypothesis that the Hawaiian language derives from Marquesan (511).

Another argument to support the proposition that the primary migration to Hawai'i came from Hiva is that the islands of Hiva are the best departure point for sailing to Hawai'i from the South Pacific. They are closer to Hawai'i and farther east than the Society Islands, the Tuamotus, or the Cook Islands. A canoe heading north in the easterly tradewinds is better off starting from a point as far east of Hawai'i as possible. In computer simulation of voyages from the Marquesas to Hawai'i, over 80 percent of the canoes that headed in the right direction (NNW to NW by N) reached Hawai'i (Irwin 164-166).

Archaeological evidence also connects early settlers of Hawai'i with Hiva. *Nadzes*, fishhooks, and pendants found at an early settlement site at Ka Lae on the Big Island of Hawai'i are similar to those found in Hiva. Of course, the archaeology of the Pacific is still in its infancy. As comparative work progresses in the Pacific, similarities are emerging among artifacts of all the Polynesian islands, suggesting that perhaps widespread contact and trading were more frequent than previously thought.

It is probably too simplistic to attribute the settlement of any island group to a single migration from another single island group. The voyages of the Polynesian Voyaging Society's *Hokule'a* and computer-simulated voyages have shown that Polynesians could have sailed in traditional canoes all the north-south and east-west routes among their islands. Kenneth Emory has noted that some words in the Hawaiian language (such as the names of some days in the lunar month) are shared uniquely with the Tahitian language

(Kirch 66), suggesting settlers to Hawai'i came from Tahiti as well as the Marquesas. More archaeological evidence is needed from Hawai'i, Hiva and other islands of Polynesia before any definitive statements can be made about the relationship among the island groups during the period of the early settlement of Hawai'i.

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The Settlement of Polynesia, Part 2

Dennis Kawaharada

Photo Below: Hawaikinui, a Replica of a Traditional Tahitian Pahi

Two-Way Voyaging after Settlement

According to Hawaiian oral traditions collected in the 19th century, voyaging continued between Hawai'i and the South Pacific after the original settlement of Hawai'i. The motives given for voyaging are various:



1. **Maintaining Family Connections:** The earliest traveller mentioned in oral tradition is the goddess Papa, or Walinu'u; according to tradition she returned to Kahiki because her parents were from there; in Kahiki she became a young woman again; after her rejuvenation, she returned to Hawai'i (Kamakau 92). Mo'ikeha is said to have sent his son Kila to Tahiti to bring his grandson La'amaikahiki to Hawai'i (Fornander, Vol. IV, 112-128). Kaha'i-a-Hema is said to have gone to Kahiki to find his father Hema, who had sailed to Kahiki to get the apo'ula, or sacred red girdle, as a birth gift for Kaha'i. Hema originally came to Hawai'i from Kahiki (Kamakau 94).

2. **Marriage:** Hawai'iloa voyaged from Hawai'i to Tahiti to search for husbands or wives for his children. He brought back his brother Ki's first born son Tu-nui-ai-a-te-Atua as a husband for his daughter O'ahu (Fornander, VI, 279). Keanini (whose mother was from Hawai'i) sailed from Kahiki to Hawai'i to marry Ha'inakolo; he and Ha'inakolo returned to Kahiki. After they had a child called Leimakani, Ha'inakolo and Leimakani returned to Hawai'i (Kamakau 103-4). Lu'ukia went from Hawai'i to Kahiki where she married 'Olopana; Kaupe'a, the daughter of 'Olopana, went from

Kahiki to Hawai'i to marry Kauma'ili'ula (Lu'ukia's brother); Kaupe'a returned to Kahiki to be with her parents and to give birth to a child, who later returned to Hawai'i, becoming an ancestor of chiefs (Kamakau 102).

3. Family Quarrels and Unhappy Love Affairs: Pele, the volcano goddess, quarrelled with her sister Namakaokaha'i, a sea goddess, and left her homeland (the mystical land of Kuaihelani) to come to Hawai'i (Emerson ix-xvi). Pa'ao feuded with his brother Lonopele. After each killed the other's son, Pa'ao migrated to Hawai'i (Kamakau 3-5; 97-100). According to one tradition, 'Olopana grew jealous of his brother Mo'ikeha, so Mo'ikeha left for Hawai'i (Kalakaua 115-135). Another version of the Mo'ikeha tradition says he left Tahiti for Hawai'i after being rejected by his brother's wife Lu'ukia (Fornander, Vol. IV, 112-114).

4. Burial in Homeland: La'amaikahiki took Mo'ikeha's bones back to Tahiti for burial (Fornander, Vol. IV, 152-154).

5. Acquiring Mana from the Homeland: Pa'ao, who brought the war god Kukailimoku to Hawai'i, returned to Tahiti to bring back a chief of pure blood (Kamakau 3-5; 97-100).

6. Escaping Flood and Famine: Pupu-hulu-ana left Kaua'i during a famine and searched for islands to the east (Kamakau 103). 'Olopana left Waipi'o for Kahiki after a flood brought on a famine (Kalakaua 115-135).

7. Maka'ika'i'iŃSightseeing and Adventure: Kaulu "traveled throughout Kahiki, saw all the kingdoms of the worldÉ" (Kamakau 92). Paumaukua "was a chief who traveled around Kahiki and brought back with him several foreigners" (Kamakau 95). Mo'ikeha's grandson Kaha'i-a-Ho'okamali'i went sightseeing to Tahiti and brought back with him a breadfruit tree from 'Upolu (Taha'a in the Society Islands) and planted it at Pu'uloa, 'Ewa district, O'ahu (Kamakau 110).

Similar motivations and motifs appear in the voyaging traditions of other Pacific islands. Another motivation for voyaging, not represented in this list, was to obtain materials or plants not available on one's home island. The tradition of Aka describes a voyage from Hiva (Marquesas) to Rarotonga to obtain highly prized red feathers; the story of Pepe-iu describes a voyage

made to bring the breadfruit plant from Hiva to Rarotonga.

The End of Voyaging

By the time Europeans arrived in Hawai'i in the 18th century, voyaging between Hawai'i and the rest of Polynesia had ceased for more than 400 years, perhaps the last voyager being Pa'ao or Mo'ikeha in the 14th century. The reason for the cessation of voyaging is not known. However, after the 14th century, the archaeological evidence reveals a dramatic expansion of population and food production in Hawai'i (Kirch 303-306). Perhaps the resources and energies of the Hawaiian people went into developing their 'aina; and ties with families and gods on the islands to the south weakened.

Voyaging and Human Survival

As Ben Finney suggests in "One Species, or a Million?" (From Sea to Space), the history of humanity is a history of migrations. Human beings originated in Africa perhaps 200,000 years ago, spread through Europe and Asia, walked across a once-existent land bridge (or paddled along the coastline) to the Americas, then traversed short sea distances to the once-unified land mass of New Guinea-Australia. The human movement into Polynesia was the final phase of the human settlement of the globe, into the most isolated, most difficult to reach habitable land. The particular genius and contribution of the Polynesians was the development of seafaring and navigation skills and canoe technology that enabled them to voyage back and forth across the long sea distances among islands of the Pacific. The motivation for the exploration was probably universal: the search for new lands for settlement and new resources for survival.

Human beings have been one of the most successful species on earth, adapting technology and culture for survival in new environments. Human population has flourished in many different places and times. The Polynesians, with their expertise in fishing and farming, were able to develop healthy, stable communities on islands with limited resources. Resource management and conservation were essential on such islands, since overexploitation could result in damage to or permanent loss of resources. Malama 'aina, caring for the land, was a key value for survival. At their best, Polynesian societies found a balance between human needs and

limited resources. Extended families, or 'ohana, worked the land and sea; those near the coast supplied the products of the sea to those living inland, who in turn supplied land products. The division of labor and sharing is embodied in the tradition of two brothers and their wives—Ku'ula-uka, a farmer of the uplands, and his wife Hina-ulu-'ohia, a goddess of the forest; and Ku 'ula-kai, a fisherman, and his wife Hina-puku-i'a, who gathered products of the reef and seashore. As part of an 'ohana, everyone worked together and received a share of the produce. Stinginess and hoarding was criticized, as was laziness, sponging, and gluttony. Hospitality to malihini (persons from outside of the community) was also a strong tradition.

Yet establishing such a stable community on one island did not eliminate the need for exploration and migration. There was always the possibility of finding and settling a better island with more resources and space. And no human society is stable and secure forever. Natural disasters occur—tsunamis, rising sea levels or sinking islands, typhoons and hurricanes, floods, and droughts could bring on famine. Even if no natural disaster occurred, population generally increases in favorable environments, and the maximum carrying capacity of islands were eventually reached. Successful food production, unless combined with birth control, results in overcrowding. One solution to overcrowding was migration to marginal areas of the inhabited island, or to a new island. The tradition of Ru tells how this Ra'iatean migrated to the uninhabited Aitutaki with a group of settlers because of overpopulation on Ra'iatea following a long period of peace and prosperity (Koro 17-24).

Without the safety valve of migration, overpopulation could lead to overexploitation of resources, environmental degradation, food shortages, and conflicts over the remaining resources.

Patrick C. McCoy argues that such was the case on Rapa Nui (Easter Island): "In sharp contrast to the first millennium of progressive development that produced Easter Island's world renowned statuary and megalithic architecture, the final 200 years of prehistory were a period of general decadence. Cultural instability is attested to in a wealth of traditions on tribal warfare, which is known to have resulted in famines, the emergence of cannibalism, and the widespread destruction of image ahu...Ecological and

archaeological data suggest man-induced environmental change as an explanation for cultural decadence. The long term cumulative effects of population growth on land and flora are identified with an irreversible process of environmental degradation" ("Easter Island," 159-160).

Of course, McCoy's conclusions, commonplace now in Euroamerican Rapa Nui scholarship, are speculative. From the Polynesian point of view, why would the people have destroyed their own island or themselves, when it was against their traditional values to do so; the land and sea are their parents, which nurture and sustain their well-being and which in turn must be taken care of and protected. Another explanation of the devastation of Rapa Nui could be that some natural disaster--say a long drought--could have caused it. A small island does not have the same ability to recover from such a disaster as a large island or continent might. Once the ecology of the island had been disrupted, by natural disaster and not by the activities of native people, the island could not longer sustain the population or activities that were once carried on. And if the people were trapped on the island because now all the trees had died out and there were none left to build canoes to search for new islands, the conflicts described in oral traditions could have occurred.

Whether the limits on resources were due to population growth and overexploitation of resources or to natural disasters, the oral traditions of Polynesia describe competing chiefs--often two brothers or relatives--fighting over land and power, with the winner taking control of the land, and the loser being killed or forced to leave. The cousins Tangiia and Tutapu fought over the right to rule in Tahiti. Tutapu won and Tangiia left, eventually settling in Rarotonga. Tutapu, known as "the relentless one," continued to pursue Tangiia, until they met again on Rarotonga, and Tangiia slew Tutapu (Te Ariki-Tara-are).

The brothers Pa'ao and Lonopele feuded over some stolen fruits in Ra'iatea, and after each had killed the other's son, Pa'ao left his homeland to settle in Hawai'i.

Today the world's inhabitable lands have been claimed, and the boundaries of nations drawn. While technological advances continue to increase the carrying capacity of island earth and there is still room left for more people,

environmental degradation is already apparent in the destruction of the rainforests, the erosion of farmlands, the overexploitation of ocean fisheries, industrial and agricultural pollution, the growing volume of toxic waste products and sewage, and the loss of biodiversity and human diversity. A monocultural human system for exploiting resources to increase individual profits has expanded over the globe. Individuals and groups still migrate, but if we look at the earth as an island in space (size is relative to the balance between resources and population), then people are just moving from one part of the island to another. There are no new islands to discover and inhabit on the planet. One could adopt the vision of Ben Finney in "One Species, or a Million?": human beings could board spaceships (as Polynesian boarded canoes) and colonize the solar system. But the cost would be enormous, and perhaps our resources would be better spent learning how to conserve resources and control population growth within the limits of the island Earth.

The Spirit of 'Ohana and the Polynesian Voyagers	Map of Polynesia	Polynesian Migrations, Part 1	Polynesian Migrations, Part 2	Plants Brought by Polynesians to Hawai'i	Bibliography: Migrations	
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Home	Search	Archives	Past Education Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)	

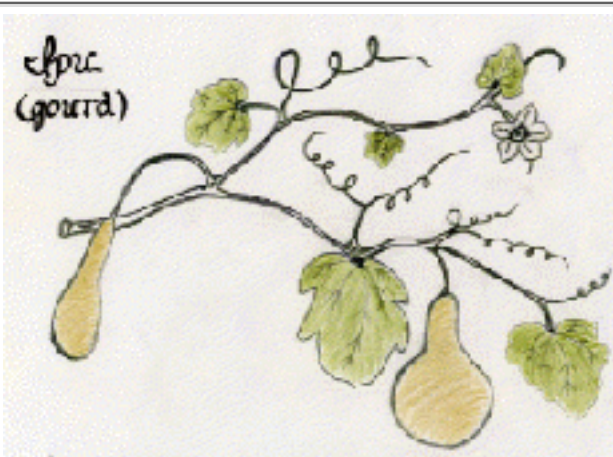


Plants Introduced to Hawai'i by the Ancestors of the Hawaiian People

Dr. Harold St. John and Kuaika Jendrusch

Drawing Below: Ipu (Gourd Plant), drawn by Melanie Lessett

Plants are arranged in botanical order from least evolved to most evolved. Further research might indicate that additional species were brought. Each entry includes the Hawaiian name of the plant, the common English name (if there is one), and the scientific name, followed by the place of origin of the plant, the method of growing it, and its uses. For more information about and illustrations of these plants, visit [24 Canoe Plants of Ancient Hawai'i](#).



1. Ko (Sugar Cane; *Saccharum officinarum*): India; Upper-stalk cutting; Food, Medicine, Religion, etc.
2. 'Ohe (Bamboo; *Schizostachym glaucifolium*): Pacific Islands; Root; Knives, Kapa stamps, etc.
3. Niu (Coconut Palm; *Cocos nucifera*): South Pacific?; Sprouted coconut; Food, Cordage, etc.
4. 'Ape (---; *Alocasia macrorrhiza*): Tropical Asia and Oceania; Tuber; Food in times of famine, etc.
5. Kalo (Taro; *Colocasia antiquorum*): Tropical Asia; Tuber; Main food plant: Hawaiian-Polynesian "Staff of Life"

6. Ki (Ti Plant; *Cordyline terminalis*): Tropical Asia and Australia; Stem cuttings; Food, Medicine, etc.
7. Pia (Polynesian Arrowroot; *Tacca Leontopetaloides*): Malay Archipelago; Tuber; Food, Medicine, etc.
8. Uhi (Yam; *Dioscorea alata*): Asia; Tuber; Food—most important kind of yam
9. Hoi (Biner Yam; *Dioscorea bulbifera*): Tropical Asia; Tuber; Food during famine
10. Pi'a (Five-Leafed Yam; *Dioscorea pentaphylla*): Tropical Asia, Pacific; Tuber; Food during famine. etc.
11. Mai'a (Banana; *Musa paradisiaca*): Cultigen (Obscure Origin); Suckers; Food and its preparation
12. 'Olena (Turmeric; *Curcuma domestica*): Tropical Asia; Root; Dye, Purification. etc.
13. 'Awapuhi (Wild Ginger; *Zingiber Zerumbet*): India; Root; Scenting, Medicine, etc.
14. 'Awa (Kava; *Piper methysticum*): Pacific Islands; Sprouting stem; Relaxing beverage, etc.
15. 'Ulu (Breadfruit; *Artocarpus altilis*): Pacific Islands, probably Guam; Root sprouts (dig up small plants growing from large tree. Leave 6 inches of root or more on each side); Food, Craft, etc.
16. Wauke (Paper Mulberry; *Broussonetia papyrifera*): East Asia; Root sprouts (follow same procedure as above); To make kapa and clothing
17. Pa'ihi (---; *Nasturtium sarmentosum*): Polynesia; Transplant small plant; Food, Medicine.
18. Auhuhu (Fish Poison Plant; *Tephrosia purpurea*): Tropical South Asia and Pacific; Seed; Fish poison, etc.

19. Kukui (Candlenut Tree; *Aleurites moluccana*): Asia, Pacific Islands; Seed or seedling transplant; Lighting, Food, Craft. etc.
20. Hau (Hibiscus; *Hibiscus tiliaceus*): Tropical Pacific and Old World; Stem cutting; To make fire, canoes, medicine, fertilizer, etc.
21. Milo (Portia Tree; *Thespesia populnea*): Coasts of Eastern Tropics; Seed; To make calabashes. etc.
22. Kamani (Alexandrian Laurel; *Calophyllum Inophyllum*): Tropical Asia and Pacific; Seed; Calabashes, Leis, etc.
23. 'Ohi'a 'Ai (Mountain Apple; *Eugenia malaccensis*): Tropical Asia, Oceania; Seed or seedling transplant; Food, Craft. etc.
24. 'Uala (Sweet Potato; *Ipomoea Batatas*): Tropical America; Slips or stem cuttings; Food: vegetable from leaves, starch from tubers
25. Kou (---; *Cordia subcordata*): Africa to Polynesia; Seed; Best wood for calabashes
26. Noni (Indian Mulberry; *Morinda citrifolia*): Asia, Australia, and Pacific Islands; Root sprout, Seed; Medicine, etc.
27. Ipu (Bottle Gourd; *Lagenaria siceraria*): Tropical Asia or Africa; Seed; Containers for food storage, musical instruments, etc.

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Mary Kawena Pukui's

'Olelo No'eau: Hawaiian Proverbs and Poetical Sayings

(Bishop Museum Press 1983)

Selected by Melenani Lessett.

Illustrations by Melenani Lessett and Helene Iverson.

Ke kai lipolipo polihua a Kane (1729). "The dark-blue ocean of Kane." The deep sea out of sight of land.

Ka manu kahea i ka wa'a e holo (1478). "The bird that calls the canoe to sail." Said of the kioea (bristle-thighed curlew), whose early morning call was often a signal to canoes to go fishing or traveling.

Eia no kahi koe o ka moamoa (306). "Here is the only space left, the moamoa (a projection at the stern of the canoe)." Said when offering a small space or seat to someone, when every other space is occupied. (From the story of Pa'ao, who offered the moamoa to Makuaka'umana, a priest, on a voyage from Kahiki to Hawai'i. Makuaka'umana leapt from a cliff and landed on the moamoa; thus, he was able to sail to Hawai'i.)

Ha'ule i ka hope wa'a (489). "Left in the aft of the canoe." Said of one who comes last or is tardy.

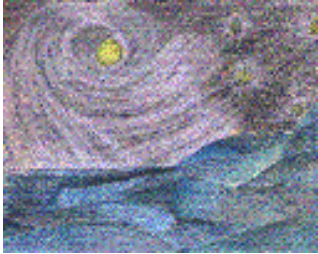
E pane'e ka wa'a oi moe ka 'ale (371). "Set the canoe moving while the billows are at rest." Said by Holowae, a kahuna, to suggest that Kalani'Opu'u return to Hawai'i while there was peace. Later used to stir one to action.

Ha'alele koa wa'a i koa kanaka (398). "The koa canoe has departed, leaving the

warriors behind." Said when a canoe goes off and leaves the people behind.

'Au i ke kai me he manu ala (237). "Cross the sea like a bird." To sail across the sea.

Ola i ke ahe lau makani (2483) "Life is in a gentle breath of wind." Said of a breeze on a hot day.



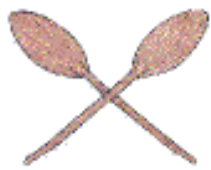
Hu ka makani (1133) "The winds roars." Said of great speed.



Poho pono na pe'a heke a ku ana (2681). "A full sail helped him to arrive." Said of a fast traveler.



Komo mai kau mapuna hoe (1836). "Dip your paddle in." Join in the effort.



Ho'okahi ka 'ilau like ana (1068). "Wield the paddles together." Work together.

E lauhoe mai na wa'a; i ke ka, i ka hoe; i ka hoe, i ke ka; pae aku i ka 'aina (327) "Everybody paddle the canoes together; bail and paddle, paddle and bail, and the shore will be reached." If everybody pitches in, the work is quickly done.

He ma'uka'uka hoe hewa (809). "A person from the uplands, unskilled in paddling."

He po'e ho'opiha wa'a (897) "Canoe fillers." Useless people, like riders in a canoe who do nothing to help.

Ka manu ka'upu halo 'alo o ka moana (1479). "The albatross that observes the ocean." A careful observer.

Ua ho'i ka noio 'au kai i uka, ke 'ino nei ka moana (2787). "The seafaring noddy tern has returned to land, for a storm rages at sea." A weather sign.

Lele ka 'iwa malie kai ko'o (1979). "When the frigate bird flies out to sea, the rough sea will grow calm." A weather sign.



He noio 'a'e 'ale no ke kai loa (844). "A noddy tern that treads over the billows of the distant sea." An expression of admiration for a person outstanding in wisdom and skill.

'A'ohe wa'a ho'ohoa o ka la 'ino (216). "No canoe is defiant on a stormy day."

E ho'i ka wa'a; mai ho'opa'a aku i ka 'ino (286). "Make the canoe go back; don't insist on heading into a storm."

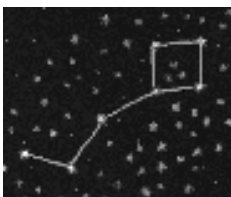
He ho'okele wa'a no ka la 'ino (592). "A steersman for a stormy day." A courageous person.

Kihe ka ihu i ka 'ale (1789). "One who sneezes when the spray from the surf rises at the bow of the canoe." Said of one who braves danger with indifference.

Mai ka ho'okui i ka halawai (2059). "From zenith to horizon." Expression in prayers to the gods, calling them from everywhere.



Ulu o ka la (2870). "The sun grows." Said of the light of sunrise just as the sun's rim touches the horizon. The morning sun is used for navigation to determine the primary direction of east.



O na hoku no na kiu o ka lani (2513). "The stars are the eyes of

heaven." The stars secretly observe all.

E 'ike ka hoku o ka nalu, O hoku 'ula, o hoku lei "Behold the stars of the waves, the red star, the wreath of stars." When the rising and setting stars are near the ocean horizon, they provide clues to direction. [From a chant in the story of Paka'a and Kuapaka'a.]

He hewa i Kapua ka 'auwa'a panana 'ole (1125) "The fleet of canoes without a compass landed at Kapua by mistake." Said of one who is off his course, mentally or otherwise.



Aia ke ola i Kahiki (58) "Life is in Kahiki." Life and prosperity are in the care of the gods [The gods are said to reside in Kahiki.]

He kau auane'i i ka lae 'a'a (677). "Watch out lest the canoe land on a rocky reef."

Pae mai la ka wa'a i ka 'aina (2566). "The canoe has come ashore." Hunger is satisfied; desire fulfilled.

'A'ohe hana a Kauhikoa; ua kau ka wa'a i ke 'aki (139) "Kauhikoa has nothing more to do; his canoe is resting on the block." The work is done.

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Home	Search	Archives	Past Ed Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)	

Hawai'iloa and the Discovery of Hawai'i

Samuel M. Kamakau and Z. Kepelino

Drawing Below: Steering an ancient voyaging canoe, from Peter Buck's *Vikings of the Pacific*

The Discovery and Settlement of Hawai'i

Hawai'i Loa, or Ke Kowa i Hawai'i, was one of the four children of Aniani Ka Lani.¹ The other three were Ki, who

settled in Tahiti, Kana Loa, who settled the Marquesas, and Laa-Kapu. The ocean was called Kai Holo-o-ka-I'a (Ocean where the fish run). Only two islands existed and both were discovered and settled by Hawai'i Loa. The first he named Hawai'i after himself; the second Maui, after his eldest son. (The other islands were created by volcanoes during and after the time of Hawai'i Loa. [See [note 5](#).])



Hawai'i Loa and his brothers were born on the east coast of a land called Ka 'Aina kai melemele a Kane (the land of the yellow or handsome sea of Kane).² Hawai'i Loa was a distinguished man and noted for his fishing excursions which would occupy months, sometimes the whole year, during which time he would roam about the ocean in his big canoe (wa'a), called also an "island" (moku), with his crew and his officers and navigators (poe ho'okele and kilo-hoku).

One time when they had been at sea for a long time, Makali'i, the principal navigator said to Hawai'i Loa, "Let's steer the canoe in the direction of Iao, the Eastern Star, the discoverer of land [Hoku hikina kiu o na 'aina]. There is land to the eastward, and here is a red star, hoku 'ula (Aldebaran), to guide us, and the land is there in the direction of those big stars which resemble a bird." And the red star, situated in the lap of the goats [a constellation], was called Makali'i after the navigator. Some other red stars in the circle of the Pleiades were called the Huhui-a-Makali'i ("Cluster of Makali'i").

So they steered straight onward and arrived at the easternmost island of the

Hawaiian chain.³ They went ashore and found the land fertile and pleasant, filled with 'awa, coconut trees, and so on, and Hawai'i Loa, the chief, gave that land his name. Here they dwelt a long time and when their canoe was filled with vegetable food and fish, they returned to their native country with the intention of returning to Hawai'i-nei, which they preferred to their own country. They had left their wives and children at home; therefore, they returned to get them. When Hawai'i Loa and his men arrived at their own country and among their relatives, they were detained a long time before they set out again for Hawai'i.

At last Hawai'i Loa sailed again, accompanied by his wife and his children. He settled in Hawai'i and gave up all thought of ever returning to his native land. He was accompanied on this voyage by a great crowd of men—steersmen, navigators, shipbuilders, and others.⁴ Hawai'i Loa was chief of all these men. He alone brought his wife and children; all the others came singly, without women, so he was the progenitor of this nation. On their voyage here, the Morning Star (ka Hoku Loa) was the special star they steered by. And Hawai'i Loa called the islands after the names of his children and the stars after his navigators and steersmen. [The island of Maui was called after Hawai'i Loa's first born son. The island of O'ahu was called after Hawai'i Loa's daughter, and her foster parent was Lua, and hence the name O'ahu-a-Lua. Kaua'i was called after Hawai'i Loa's younger son; his wife's name was Waialeale, and they lived on Kaua'i, and the mountain was called after her because there she was buried. And thus other islands and districts were called after the first settlers.]⁵

After Hawai'i Loa had been some time in Hawai'i-nei, he made another voyage to find his brothers to see if they had any children who might become husbands or wives to his own. They left from Lae o Kalae, in Ka'u, and followed the stars Ke Ali'i-o-Kona-i-ka-Lewa [Canopus] and the stars of Hoku-kea o ka Mole Honua ["Star-cross of the bottom of the earth," or Southern Cross] to Tahiti and other islands to the south. On Tahiti, he found his brother Ki who had settled there and called the island after one of his own names. They sailed together southward (i ka mole o ka honua), and found an uninhabited island, which Hawai'i Loa gave his name, and another smaller island, which he named for his daughter O'ahu.

When they had finished their business here, they returned to Hawai'i, to Lae o Kalae, steering by the Hoku-'Iwa stars and the Hoku Poho ka 'Aina. On this return voyage, Hawai'i Loa brought Tu-nui-ai-a-te-Atua, the first born son of his brother Ki, who became the husband of Hawai'i Loa's favorite daughter O'ahu. The couple had a child called Kunuiakea, who was born at Keauhou in Puna, Hawai'i. Puna was a fertile and fine land and it was called Puna by Kunuiakea [Tu-nui-ai-a-te-Atua] after his own birthplace, Puna-Auia, in Tahiti.

Kunuiakea, on both father's and mother's side, became a chief of the very highest rank (kapu loa). From him sprang the race of chiefs here in Hawai'i (welo ali'i) and from Makali'i sprang the race of common people (welo kanaka). The first has been kept separate from the most ancient times, and the second has been kept separate from the time of chaos (mai ka Po mai). But the priestly race (welo kahuna) was one and the same with the race of chiefs from the beginning.[6](#)

Hawai'i Loa's Descendants

Kunuiakea's son Ke Lii Alia, and his grandson Kemilia, were born at Tahiti along with the Aoa, the royal tree; but his great grandson, Ke Lii Ku (Eleelealani), was born on Hawai'i.

Eleelealani was the grandfather of Papa-Nui-Hanau-Moku (w). His wife was called Ka Oupe Ali'i and was a daughter of Kupukupunuu from Ololoimehani (supposed to be either a name for the island of Nu'uhiwa, or of a place on that island). They had a son called Kukalani'ehu, whose wife was Ka Haka-ua-Koko, the sixth descendant from Makali'i, and they two were the parents of Papa-Nui (w).

Papa-Nui-Hanau-Moku (w) first married Wakea, who was the son of Kahiko (k) and Tupu-rana-i-te-hau (w), who was a Tahitian woman. Papa's first child with Wakea was a daughter called Hoohokukalani.

Papa, having quarreled with Wakea on account of their daughter [i.e., Wakea slept with their daughter], went to Tahiti and there she took to Te Rii Fanau for husband and had a son called Te Rii i te Haupoipoi. She afterwards returned to Hawai'i under the name of Huhune and had a son with Waia and

called him Hinanalo. Domestic troubles now made her crazy and she returned to Tahiti where she had another son with Te Ari'i Aumai, who was said to be the fourth generation of the Tahiti chiefs, and she called his name Te Ari'i Taria, and he became chief over that part of Tahiti called Taharu'u.

Because she was the mother of chiefs, both here and in Tahiti, she is called Papa Nui Hanau Moku ["Great Papa, the Mother of Islands"]. She is said to have been a comely, handsome woman, very fair and almost white.⁷

Papa is said to have traveled eight times between Tahiti and Hawai'i, and died in a place called Waieri, in Tahiti, during the time of Nanakelihi the fifth descendant from her and Wakea.

Wakea was a wicked and bad man. He instituted the bad and oppressive kapu, such as that men and women could not eat together; that women could not eat red fish, hogs, fowl or other birds, and some kinds of bananas. These kapu were put on to spite and worry Papa, on account of her growling at and reproaching him for his wickedness. Wakea also departed from the ancient worship and introduced idol worship, and many people followed him, because they were afraid of him.

Other Travels of Hawai'i Loa

Hawai'i Loa was born on the eastern shore of the land of Kapakapaua-a-Kane. One of Hawai'i Loa's grandchildren was called Keaka-i-Lalo (w) whom he married to Te Ari'i Aria, one of his brother Ki's grandchildren, and he placed them at Sawai'i [Samoa?], where they became the ancestors of that people, Sawai'i being then called Hawai'i-ku-lalo [Hawai'i rising downwind].

Afterwards Hawai'i Loa revisited Tahiti and found that his brother Ki had forsaken the religion in which they were brought up, that of Kane, Ku and Lono, and adopted Ku-waha-ilo [maggot-mouthed Ku], the man-eating God (ke akua 'ai kanaka), as his God. After quarreling with his brother on this account, Hawai'i Loa left Tahiti and brought with him Te Ari'i Apa as a husband for Eleeleualani, his mo'opuna (grandchild) From these two was born Kohala (w), a girl, from whom the Kohala people sprang.

Afterwards Hawai'i Loa went again to Tahiti and Hawai'i-ku-lalo (Sawai'i) and held a meeting with those peoples at Tarawao, but finding that they persisted in following after the God Ku-waha-ilo and that they had become addicted to man-eating, he reproved and repudiated them, and passed a law called "he Papa Enaena," forbidding anyone from Hawai'i-Luna (upwind Hawai'i) from ever going to the southern islands, lest they should go astray in their religion and become man-eaters.

When Hawai'i Loa returned from this trip he brought with him Te Ari'i Tino Rua (w) to be a wife to Kunuiakea, and they begat Ke Ali'i Maewa Lani, a son, who was born at Holio in North Kona, Hawai'i, and became the Kona progenitor.

After this Hawai'i Loa made a voyage to the westward, and Mulehu (Hoku Loa) was his guiding star. He landed on the eastern shore of the land of the Lahui-makalilio (the people with the turned up, oblique eyes, i.e., Asians). He traveled over it to the northward and to the westward to the land of Kuahehewa-a-Kane, one of the continents that God created, and thence he returned, by the way he had come, to Hawai'i nei, bringing with him some white men (po'e keokeo kane) and married them to native women (a h o'omoe i ko'onei po'e wahine). On this return voyage the star Iao was his guiding star to Hawai'i.

After this Hawai'i Loa made another voyage to the southern and eastern shore of Kapakapaua-a-Kane and took with him his grandchild Kunuiakea in order to teach him navigation, etc. When they had stayed there long enough they returned and Kunuiakea brought with him "he mau ha'a elua" (two stewards), one called Lehua and the other Nihoa, and they were settled on the two islands which bear their names, as konohiki (land stewards) and put under the charge of Kaua'i, the youngest son of Hawai'i Loa.

When Hawai'i Loa returned from the conference with his brother Ki and his descendants, his wife Hualalai bore him a son who was called Hamakua, and who probably was a bad boy (keiki 'ino'ino), for so his name would indicate. Ten years later, Hualalai died and was buried on the mountain of Hawai'i that has been called after her name ever since.

After Hawai'i Loa was dead and gone, in the time of Kunuiakea, came

Tahitinui from Tahiti and landed at Ka-lae-i-Kahiki (the southwest point of Kaho'olawe, a cape often made by people coming from or going to Tahiti.) Tahiti-nui was a mo'opuna of Ki, Hawai 'i Loa's brother, and he settled on East Maui and died there.

The descendants of Hawai'i Loa and also of Ki (which are one, for they were brothers) peopled nearly all the Polynesian islands. From Ki came the people of Tahiti, Borabora, Huahine, Taha'a, Ra'iatea and Mo'orea [the Society Islands].

From Kanaloa [brother of Hawai'i Loa] were peopled Nukuhiwa, Uapou, Tahuata, Hiwaoa and those other islands [the Marquesas Islands]. Kanaloa married a woman from the man-eating people, Taeohae [Taiohae, on Nukuhiwa], from whom spring those cannibals who live on Nukuhiwa, Fiji, Tarapara, Paumotu [the Tuamotus], and the islands in western Polynesia. So is it reported in the Hawaiian legends and prayers. But the people of Hawai'i and the Tahiti (properly speaking) did never addict themselves to cannibalism.

Notes

This English version of the Hawai'i Loa story is from Fornander, Vol. VI, 278-281. Another version entitled "Hawaii-nui," in Hawaiian and English, appears in Kepelino's Traditions of Hawaii (Honolulu: Bishop Museum, 1932, 74-77). The authenticity of the Hawai'i Loa tradition has been questioned:

"The legend seems to be a summary of statements contained in many other Hawaiian legends and genealogies. At the time it was recorded in writing, many Hawaiian had become Christianized and were familiar with Biblical history. The temptation to interpret certain incidents similar to those in Biblical history as being in fact the Hawaiian rendering of Biblical events seems to have influenced the translators. This unfortunate condition has more or less discredited the ancient legends on which the legend of Hawai'i-loa is based, branding them, in the opinion of many modern students as "doctored accounts, influenced by Christianity" (Cartwright 105)

Both Kamakau and Kepelino, the authors of the tradition of Hawai'i Loa,

were Christian converts. The tradition includes the notion that Hawaiians worshipped one God formed by a trinity of gods (Kane, Ku, and Lono). It also contains an account of the creation of the first man (Kumuhonua) out of clay and the first woman (Lalo Honua) out of the rib of the first man. Kanaloa, angry that he was denied 'awa, rebelled against God and later seduced the first woman, after which the first man and woman broke the law of Kane and fell from grace. The Hawaiian Noah in this tradition is called Nu'u; he survived a flood in a large vessel with a house on it; after the flood subsided, he landed on top of Mauna Kea, etc.

Cartwright points out, however, that "many of the persons mentioned [in the genealogy] are and have been accepted by Hawaiians of chieftain rank as their ancestors." He concludes that the tradition is authentic, though the Hawai'i in the story is actually Ra'iatea (formerly called Hawaiki) rather than the Big Island of Hawai'i. He offers no evidence for this conclusion.

Randie Fong notes "the Hawai'ii Loa portion [of the tradition of Hawai'i Loa] bears no resemblance to any Biblical account. The names, places, settings, and plots give us no reason to question their age and authenticity. Further, Patience Bacon of the Bishop Museum remembers kupuna being interviewed by Tutu Puku'i. The kupuna spoke of Hawai'i Loa as their 'reality,' and this was somewhere in the 1920's and 30's. Mrs. Bacon feels that the tradition is sound" (Unpublished commentary on Hawai'iloa; the name has been used for a Hawaiian voyaging canoe that will retrace in 1995 an early settlement route to Hawai'i from the Marquesas Islands.)

1. The story begins with the genealogy of Hawai'i Loa for many generations, from the first man, Kumu Honua, and his wife Lalo Honua, who lived in a land called Kalana i Hauola, down to Aniani Ka Lani, Hawai'i Loa's father and Ka Mee Nui Hikina, his mother .

2. Kepelino's version: Hawai'i-nui sailed from a land called Kahiki-Honua-Kele.

3. Kepelino's version states that the canoe made landfall at the western end of the archipelago: "First he saw the island of Kaua'i, but he kept on sailing and found O'ahu and then the islands of the Maui group, then, seeing the mountains of Hawai'i, he kept on until he reached that island. There he lived

and named the island after himself. The other islands from Maui to Kaua'i were named for his children and for some who sailed with him. Here are the names of this children: Maui was the eldest, O'ahu yo unger, and Kaua'i the youngest. These names he gave to the three large islands, but the smaller islands were perhaps named for those who accompanied him."

4. Kepelino's version: Hawai'i-nui sailed to Hawai'i with his eight steersmen: Here are their names: Makali'i, a famous steersman and great farmer; Iao; Kahiki-Nui; Hoku 'Ula [perhaps the star Aldebaran]; Maiao; Kiopa'a ["fixed," one name for Polaris, the north star; also called Hokupa'a]; Unulau; Polohilani [perhaps the star Schedir in Cassiopeia]. And because of their skill in observing the stars, each one called the star he observed after his own name. One steersman, Kahiki-Nui, has a land district on Maui named after him.

5. Another passage in Fornander says "When Hawai'i Loa arrived here, there were only the two islands of Hawai'i-Loa and Maui-au-Ali'i; but during his time and close afterwards the volcanoes on Hawai'i and on Maui began their eruptions; and earthquakes and convulsions produced or brought to light the other islands" (279).

6. Earlier in the story we are told that only Hawai'i Loa came with a wife and children so he was "the special progenitor of this nation" (278). Kepelino concludes, "Hawai'i-nui was perhaps a chief or perhaps not; he was a man of high standing (ke kanaka ko'iko'i), as I see it. He had a granddaughter Ku-ka-lani-ehu, who lived in ancient times." A note at the end of the Fornander version states, "In the first age, from Hawai'i Loa to Wakea, the royal authority and prerogative were not very well defined. The chiefs were regarded more in the light of parents and patrons (haku), than as moi and ali'i-kapu, although they enjoyed all the honor and precedence due to their rank. This state of things was considerably altered by Wakea, his priest and successors, yet even so late as the time of Kanipahu, who refused the government, it is evident that the royal authority was not well settled in the olden times ('aole he ano nui o na ali'i i ka wa kahiko loa 'ku) (281).

7. See Kamakau, Tales and Traditions (133-135) for one version of the story of Papa and Wakea. Papa and Wakea are considered by many as the first female and male ancestors of the Hawaiian people: "Wakea, from whom all

Hawaiian genealogies stem as the ancestors of the Hawaiian people, 'both chiefs and commoners,' is regarded as a man in Hawaiian tradition, not as a god as in southern groups [of Polynesia]." (Beckwith 294)

<u>1976: Tahiti</u>	<u>1980: Tahiti</u>	<u>1985-87: Aotearoa (New Zealand)</u>	<u>1992: Rarotonga</u>	<u>1995: Marquesas</u>	<u>1995: West Coast, British Columbia, & Alaska</u>	<u>1999-2000: Rapanui</u>
<u>Voyages</u>	<u>Canoe-Building</u>	<u>Wayfinding</u>	<u>Life on a Canoe</u>	<u>Polynesian Migrations</u>	<u>Proverbs and Traditions</u>	
<u>Home</u>	<u>Search</u>	<u>Archives</u>	<u>Past Education Programs and Materials</u>	<u>On-Line Visuals</u>	<u>Bibliographies (Books and Films)</u>	

Mo'ikeha and Kila

Drawing Below: Landfall in Hawai'i, from Peter Buck's *Vikings of the Pacific*

Mo'ikeha was an ali'i nui (high chief) from Moa'ulanuiakea, Tahiti, where he lived with his wife Kapo. They had a child named La'amaikahiki.[1](#)



Mo'ikeha's Unhappy Affair with Lu'ukia

When 'Olopana and Lu'ukia arrived in Tahiti,[2](#) Mo'ikeha became infatuated with Lu'ukia and soon after took her as his lover. 'Olopana harbored no ill feeling toward Mo'ikeha; in fact, he approved of his friend's affair with his wife. 'Olopana was appointed the highest officer (kuhina nui) of the lands of Tahiti.

At about this time Mua lusted after Lu'ukia, but she discouraged his approaches, even though he pressed his suit with great vigor. When he saw that he was rejected while Mo'ikeha received Lu'ukia's favors, he decided to cause trouble between them and to persuade Lu'ukia to leave Mo'ikeha.

Mo'ikeha was very fond of athletic sports and often joined games such as pahe'e (sliding or skipping a wooden dart for distance) and 'olohu (rolling a stone wheel for distance). At the fields where games were held, people gathered to cheer the winners. Lu 'ukia often heard the commotion and cheering. One day Mua happened to be with Lu'ukia when he heard the cheering and said: "E Lu'ukia, do you hear the cheering at the ali'i's games?"

Lu'ukia answered: "Yes, I hear the cheering."

"I don't think the cheering means well for you. No, Mo'ikeha is publicly defaming you."

Lu'ukia believed this lie and grew angry at Mo'ikeha. She decided not to make love with him anymore and ordered her attendants to bind up her private parts (wahi huna) with cord to prevent him from reaching them.

Lu'ukia was corded from her waist down to mid-thighs, and the ends of the rope were then hidden in this lashing so it couldn't be undone. This lashing, called the "pa'u of Lu'ukia," is used to secure the covers of water-gourds and also to lash together the parts of single- and double-hulled canoes.

After Mo'ikeha had enjoyed himself in the games, he returned home and met Lu'ukia. Mo'ikeha suspected from Lu'ukia's face that something was wrong, so he began to wonder why she was unhappy.

That night, while preparing to sleep, Mo'ikeha was surprised to find Lu'ukia still wearing her pa'u (skirt), which had not been her habit when they were lovers. He didn't say anything, however. He bided his time, intending to find out in good time the reason for Lu'ukia's unusual behavior. On the fourth night Lu'ukia still wore the pa'u to sleep. The next night, Mo'ikeha unfastened the pa'u, and saw the lashing over her private parts.

"Why are you bound up like this?" Mo'ikeha asked.

Lu'ukia refused to speak to him. From evening until midnight Mo'ikeha urged her to tell him the reason for this lashing, but she remained silent. All through the rest of the night Mo'ikeha pondered over this recent change in Lu'ukia. He complained: "I don't understand you. Here we were living happily, and now you won't even speak to me. What have I done to make you bind yourself up like this?"

There was no answer.

"Very well then, since you no longer want me, I'll go to elsewhere."[3](#)

Voyage to Hawai'i

Mo'ikeha directed his foster-son Kamahualele to make ready a double-hulled canoe. "Let's go to Hawai'i," he said. "Here I'm tormented by my love for Lu'ukia; when the ridge-pole of my house Lanikeha disappears below the horizon, I'll no longer think of Ta hiti."

Kamahualele directed the paddlers to get the double-hulled canoe ready. Mo'ikeha planned to take his sisters, Makapu'u and Makaaoa, his two younger brothers, Kumukahi and Ha'eha'e, his priest Mo'okini, and his

prominent men (na kanaka koikoi)--navigators (ho'okele), favorite priests (kahuna punahele), and his lookouts (kiu nana), who would spy out land.

Early one morning at dawn, at the rise of the navigation star (ka hoku ho'okelewa'a; possibly Sirius), Mo'ikeha boarded his double-hulled canoe with his fellow voyagers (hoa holo), and left Tahiti.

From the morning of departure until sunrise when they first beheld Hilo all went well (holo pono). Kamahualele stood up and celebrated their arrival in Hawai'i with a mele:

Behold Hawai'i, an island, a man
A man is Hawai'i
A man is Hawai'i
A child of Kahiki
A royal bud from Kapa'ahu
From Moa'ulanuiakea Kanaloa
A descendant of Kahiko and Kapulanakehau
Born of Papa,
The daughter of Kukalani'ehu and Kahakauakoko
Sprouts of land in a line
Placed alike to the East, to the West
Arranged evenly in a line
Joined to, joined from Holani
Kaialea, the seer, circumnavigated the islands
Left Nukuhiwa behind; landed on Borabora
Kahiko is the source of land
He divided and separated the islands
Severed the fish-line of Kaha'i
Cut by Ku-Kanaloa
Divided up was the lands, the islands
Cut by the sacred bamboo knife of Kanaloa
Of Haumea Manukahikele
Mo'ikeha is the chief who will live there
My chief shall dwell in Hawai'i
Life! Life! Set life free!
Long live the chief, the priest,

Long live the seer, the servant,
They shall dwell quietly in Hawai'i
The grandchildren will sing out on Kaua'i
Kaua'i, the island
Mo'ikeha, the chief.

Arrival in Hawai'i

After the canoe landed at Hilo, Kumukahi and Ha'eha'e were charmed by the 'aina (land) and told Mo'ikeha they wanted to remain there, so Mo'ikeha let them off the canoe.

Soon after, Mo'ikeha set sail from Hilo, passing along the north coast of Hawai'i until he arrived at Kohala. Mo'okini and Kaluawilinau wanted to reside at Kohala, so Mo'ikeha put them ashore there. He sailed on to the east coast of Maui and landed at Hanalei. Honua'ula wanted to reside there, so he was allowed to remain behind. Mo'ikeha sailed on. When he was between Lana'i and Moloka'i, directly off of Kawela, Kamahualele spied a fishing canoe outside Kala'au Point, so he steered Mo'ikeha's canoe there. Arriving at the fishing canoe, he found it belonged to Kakakauhanui, who came there regularly.

When Mo'ikeha saw this large, well-built man, who appeared powerful and fearless, Mo'ikeha befriended him. Mo'ikeha told him: "I'm going to leave you here, but when I find a place for us to live, I'll send someone to bring you to me."

Mo'ikeha and his people continued on their journey. Arriving at O'ahu, Mo'ikeha's sisters Makapu'u and Makaaoa said: "We wish to reside here, where we can see the cloud drifts of Tahiti."

So Makapu'u and Makaaoa were allowed to remain on O'ahu, thus leaving Mo'ikeha, his foster-son Kamahualele, the two paddlers Kapahi and Moanaikaia'iwe, Kipunuiaiakama'u and his companion, and the two lookouts, Kaukaukamunolea and his companion, to continue on the journey.⁴

Marriage on Kaua'i

Mo'ikeha left O'ahu and sailed to Kaua'i, landing at Wailua. It was dark by

the time they arrived, so they did not land, instead, mooring their canoe offshore. Early the next morning the people saw this double-hulled canoe floating offshore with the kapu sticks of a chief aboard. The canoe was brought ashore and the travellers got off. Meanwhile the locals were gathering in a crowd to go surf-riding at Ka-makaiwa. Among them were the two daughters of the ali'i nui of Kaua'i, Ho'oipoikamalanai and Hinauu.

Mo'ikeha and his companions saw the crowd and followed along to take part in the morning exercise. Mo'ikeha was a handsome man with dark reddish hair and a tall, commanding figure.

When Ho'oipoikamalanai and her sister saw Mo'ikeha, they immediately fell in love with him, and they decided to take him for their husband. Mo'ikeha in the meantime was also struck with the beauty and grace of the two sisters, and he, too, fell in love with them and decided to take one of them to be his wife. After enjoying the surf for a time, Ho'oipoikamalanai and her sister returned home and told their father about the new arrival and said: "We wish to take that young chief as a husband for one of us." The father approved.

Orders were issued that Mo'ikeha be brought to the house of the two ali'i women. Mo'ikeha and his company were sent for and brought in the presence of the king. The love of these young people being mutual, Ho'oipoikamalanai and Hinauu took Mo'ikeha to be their husband. Mo'ikeha became ali'i nui of Kaua'i after the death of his father-in-law.

Mo'ikeha had five children with Ho'oipoikamalanai and Hinauu, all boys. The following is the genealogy of that generation: Mo'ikeha and Ho'oipoikamalanai gave birth to Umalehu, Kaialea, and Kila; Mo'ikeha and Hinauu gave birth to Kekaihawewe and Laukapalala.

In the genealogy from which these names are taken, Mo'ikeha's descendants are given down to the reign of Manookalanipo, who became the ancestor of the chiefs of Kaua'i and Ni'ihau. But none of those who know anything about this genealogy can produce a direct line with any degree of accuracy.⁵

Kila, the Chosen One

Mo'ikeha worked to make his two wives and five children happy, giving his

undivided attention to the bringing up of his boys. He thought no more of Lu'ukia, but after a while, he began to feel a yearning desire to see his son La'amaikahiki, his child by his first wife Kapo. So he called his five sons together and said to them: "I'm thinking of sending one of you boys to bring your elder brother to Hawai'i." His boys became greatly excited, each one shouting: "Let me go! Let me go!!"

When Mo'ikeha saw there would be much contention among his sons, he devised a test to determine who should be chosen to go to Tahiti.

He told his sons: "Let each of you bring a ti-leaf canoe and sail it across the river, one after another. The one whose canoe lands between my thighs shall be the one to go and bring your brother here."

Then he took the boys to the river in the order of their birth. He proceeded to the opposite bank of the river and sat down at the edge of the water facing the wind. Meanwhile the boys proceeded to a point right across and upwind from their father. The oldest boy set his canoe down in the water and aimed it toward the desired point, but it missed the mark. The second boy set his canoe down in the water and it, too, missed the mark. The third and fourth boys also took their turns and they too failed to hit the mark. Then Kila, the youngest son, took his canoe and set it down in the water and it sailed directly to his father and passed between his thighs. When his brothers saw that their youngest brother had won, they became very angry and from then on they tried to devise some way of killing him.

Some time after this, Kila's older brothers invited him to go and play at shooting arrows; but their parents knew that the boys had no love for their youngest brother, so their father did not allow Kila to join them. The older brothers pretended to be kind to Kila in every way possible, but their father still refused to allow him to go.

At last, when it was almost time for Kila to undertake his trip to Tahiti to bring La'amaikahiki to Hawai'i, Mo'ikeha gave Kila permission to join his older brothers: "My son, I'm not going to keep you away from your brothers any longer. The journey you are about to undertake may take you away from them forever, so you may accompany them from now until you leave. In the days following the kapu days of the temple, you shall sail for Tahiti."

Kila replied: "You must not permit me to accompany my brothers for I might get killed. I think you ought to provide them with a god so that they will fear the god and in that way they will be prevented from killing me. Then I think it will be safe for me to accompany my brothers."

Mo'ikeha saw the boy's good judgment in the matter. He called his sons together and told them that they must now have a god. The boys would not consent to this. At this Mo'ikeha approved of Kila's discretion and refused to allow the youngest to accompany his brothers on their excursions.[6](#)

Kila's Voyage to Tahiti

Shortly after this Mo'ikeha proceeded to get everything ready for Kila's voyage to Tahiti. Then Mo'ikeha advised him as follows: "When you sail from here, go by way of O'ahu and call on your aunts; they are living on the windward side of O'ahu, facing Mol oka'i. When you call on them, they will recognize you."

After these words of advice, Mo'ikeha picked out the men who were to accompany Kila on this voyage. Kamahualele, Mo'ikeha's foster-son, was appointed as his travelling companion (hoa hele). Kapahi and Moanaikaiaiwā were selected as the paddlers (hoewa'a). Kipunuiiakamau and his companion were selected as navigators (ho'okele) and steermen (kipu, lit. to hold back a canoe with a paddle). In case the canoe was in danger of running aground, Kamahualele would call out: "Kipunuiiakamau, hold on!" Then he and his companion would hold back water and the canoe would come to a stop. (Thus, these two men were named Kipunui-aiakamau.) Kaukaiamunolea and his companion were selected as pilots (kiu, lit. "to scout or spy out").

When Kila was about ready to set sail, two Kaua'i people said they wanted to go with him—Hooholoku and his companion. And upon the expressed wish of Kamahualele, Kila took Kuaiwilu and Kauineno, making ten in this company, with Kila and Kamahualele the total was twelve.

When the men were ready, Mo'ikeha ordered the kahuna kilokilo (who studied the signs in the heavens) to see if his son's journey would be safe. After reading the signs they announced that the journey would be safe. The

kahuna Wanahili was selected as the thirteenth crew member.

At the dawn of the day the kahuna had designated for departure, just at the rising of the navigation star (hoku-ho'okele-wa'a, possibly Sirius), Kila set sail for O'ahu. Arriving off the shore of windward O'ahu where his aunts were living, he hove to in his canoe and called out: "My greetings to you, Makapu'u and Makaaoa."

Makapu'u and Makaaoa replied, "Who are you?"

"I am Kila of the uplands, Kila of the lowlands, Kila-pa-Wahineikamalanai. I am the offspring of Mo'ikeha."

"Is Mo'ikeha still alive then?"

"He is still alive."

"What is he doing?"

"Dwelling in ease on Kaua'i, the sun rising and setting; the surf of Makaiwa breaking unevenly; the kukui blossoms of Puna changing; the waters of Wailua spreading out. He will live and die on Kaua'i."

"What brings you here?"

"I am searching for a chief."

"What chief?"

"La'amaikahiki."

Then Kila left O'ahu and sailed for Kala'au Point where Mo'ikeha's friend Kakakauhanui was living. Kila again called out as he did to his aunts. Kila visited all the people left by Mo'ikeha, from O'ahu to Hawai'i, then proceeded to Tahiti.

The crew first landed at Moa'ulanuiakea-iki where Kupohihi was living, a human rat [a member of the rat clan], one of Mo'ikeha's uncles.

They called at Kupohihi's because they were out of food. Kila called out to his granduncle in the same manner as when he called on his aunts, and the

crew was supplied with food.

Arrival in Tahiti

Arriving in Tahiti, they saw Lanikeha, the royal house (hale ali'i) of Mo'ikeha. After staying there for a few days, they again set sail for Moa'ulanuiakea-nui and landed on the beach. Kila and Kamahualele set out to call on Lu'ukia. When Kila arrived at Lu'ukia's residence, he called out: "My greetings to you, Lu'ukia."

"Who are you?"

"I am Kila of the uplands, Kila of the lowlands, Kila-pa-Wahineikamalanai. I am the offspring of Mo'ikeha."

"Is Mo'ikeha still alive then?"

"He is still alive."

"What is he doing?"

"Dwelling in ease on Kaua'i, the sun rising and setting; the surf of Makaiwa breaking unevenly; the kukui blossoms of Puna changing; the waters of Wailua spreading out. He will live and die on Kaua'i."

"What brings you here?"

"I am searching for a chief."

"What chief?"

"La'amaikahiki."

"Your brother is hidden on the mountain of Kapa'ahu; we haven't seen him."
v After this conversation with Lu'ukia, Kila retired to Lanikeha, Mo'ikeha's residence at Moa'ulanuiakea. Later Kamahualele and Kila looked for La'amaikahiki for many, many days, but couldn't find him. He had been hidden. Finally, Kila gave up and rested.

On the day before the kapu nights, Kila told Kamahualele. "You had better get our double-hulled canoe ready for our return voyage. I've decided to give

up the search. Let's go back and tell Mo'ikeha we couldn't find La'amaikahiki. Perhaps Mo'ikeha will send someone else to continue the search."

Kamahualele proceeded to carry out Kila's orders, but he was not willing to give up the search. He thought it over and went to find Kuhelepolani, an aged kahuna of 'Olopana. He brought her to Kila and said to him: "Let's delay our voyage home for a while to see if this old woman can find the chief for us. She is a kahuna to 'Olopana. Perhaps she can direct us to your brother's secret residence."

Kila was gladdened by the prospects of finding his brother, but he was a stranger to such matters and asked Kamahualele: "What is a kahuna? What can she do?" Kamahualele described the character and rites of the priestess. Then Kila insisted that the kahuna help him perform the rites that would allow him to see La'amaikahiki.

Since Kila was so anxious to find his brother, Kuhelepolani explained to him what he should do. "After tomorrow, you will find La'amaikahiki on the mountain of Kapa'ahu. When we hear the beating of the drum Hawea, the drum which belongs to your father, Mo'ikeha, you must place a human sacrifice on the altar at Lanikeha, your father's heiau; then you will be able to see your brother. The drumbeat is a signal for sacrifice during the kapu nights. Tomorrow night is the night of the strictest kapu (kapu loa), and it has always been so from your father's time."

On the evening of the following day, the drum of La'amaikahiki was heard. Hearing the drum, Kamahualele was ordered to find a person for the sacrifice and to place the corpse on the altar according to the instructions of the aged priestess. During this night, when the drum was heard, Kuhelepolani came to Kila and asked him: "Did you hear the drum? The time has come when you will see your brother. Follow me wherever I go."

All that night and the next day Kila followed the aged kahuna. At evening, when they arrived near the place where La'amaikahiki was living, Kuhelepolani told him: "Let us remain here until we hear the drum again. Then you will enter into the mua (the house where people worship within the temple). When we get to the door of the mua, go in and conceal yourself

in one of the corners; remain in your hiding place until your brother enters the house. Then be watchful; the one who approaches and strikes the drum is La'amaikahiki; after the priests line up and begin the prayer service (ka'i ka 'aha), call out to him."

Kila and Kuhelepolani remained where they were until they heard the beating of the drum. That evening, after the sun had set, they approached the door of the mua and Kila went in and hid himself. When he entered the mua, Kuhelepolani rose and walked away, as it was the law (kanawai) that women were forbidden to join the priests at the kapu houses. Not very long after Kila had entered the mua, La'amaikahiki came in and went and stood before the drum, where he remained awaiting the arrival of the priests. Shortly thereafter the priests entered. One of them offered a blessing (pule), after which they prepared to begin the prayer service.

At this moment Kila came forth and called out: "My greetings to you, La'amaikahiki."

La'amaikahiki. "Who are you?"

"Who are you?"

"I am Kila of the uplands, Kila of the lowlands, Kila-pa-Wahineikamalanai. I am the offspring of Mo'ikeha."

"Is Mo'ikeha still alive then?"

"He is still alive."

"What is he doing?"

"Dwelling in ease on Kaua'i, the sun rising and setting; the surf of Makaiwa breaking unevenly; the kukui blossoms of Puna changing; the waters of Wailua spreading out. He will live and die on Kaua'i."

"What brings you here?"

"I've been sent by our father to come and take you to him as he is very anxious to see all his children together. I've been looking for you since my arrival here, but I was unable to find you; just as I was about to give up the

search and return to Hawai'i, an old woman came to me and told me how to find you."

La'amaikahiki immediately prepared to accompany his brother to Hawai'i, as Mo'ikeha wished. La'amaikahiki took his priests and his god Lonoikaoualii, and set sail for Hawai'i with the men who had come with Kila. When they were approaching Kaua'i, La'amaikahiki began beating his drum. Mo'ikeha heard his drum and ordered everything, the land as well as the house, to be made ready for the reception of the chief La'amaikahiki. Upon the arrival of La'amaikahiki and Kila, the high priest of Kaua'i, Poloahilani took La'amaikahiki and his god Lonoika'ouali'i ("Lono at the Chiefly Supremacy") to the heiau. It is said that La'amaikahiki was the first person to bring a god (akua) to Hawai'i.

La'amaikahiki lived on Kaua'i for a time. Then he moved over to Kahiki-nui on Maui. This place was named for La'amaikahiki's homeland, in honor of him. As the place was too windy, however, La'amaikahiki left for the west coast of the island of Kaho'olawe, where he lived until he finally returned to Tahiti. Because La'amaikahiki lived on Kah'oolawe and set sail for home from that island, the ocean to the west of Kaho'olawe is called Kealaikahiki, "The Road to Tahiti."

After the death of Mo'ikeha, his corpse was taken to the cliffs of Ha'ena where it was deposited. Soon after this Kila assumed the chiefdomship in place of Mo'ikeha, according to the wishes of his late father, his mother and aunt, and his mother's father.⁷

NOTES

This version of the Mo'ikeha story is from Fornander, Vol. IV, pp. 112-128; the story of La'amaikahiki is found on pp. 152-154 of the same volume. Other versions of the Mo'ikeha-Kila-La'amaikahiki story are found in Kamakau's Tales and Traditions (105-110) and Kalakaua's Legends and Myths of Hawaii ("The Triple Marriage of Laa-mai-kahiki," 117-135).

1. For a discussion of the location of Mo'ikeha's homeland in Tahiti, see Rubellite Kawena Johnson's "From the Gills of the Fish: The Tahitian Homeland of Hawaii's Chief Mo'ikeha" in Pacific Studies, Vol. 3, No. 1,

1979, pp. 51-79. Johnson points out that Fornander favored the island of Ra'iatea as the homeland, while Teuira Henry favored the island of Tahiti-nui. Based on an analysis of Tahitian and Hawaiian place names, Johnson argues for Tahiti-nui as Mo'ikeha's homeland, though "not greater Tahiti-nui as [Henry] suggestsÉbut its peninsula to the south" (51).

2. According to one tradition, 'Olopana and Lu'ukia left Waipi'o after a flood (Beckwith 353); See note 3 below: Kalakaua says 'Olopana migrated to Tahiti after a hurricane and flood devastated Waipi'o. A flood as a cause of a migration is found also in the Easter Island tradition of Hotu Matua; though the flood in that tradition seems to refer to the rising of the sea level (Barthel 10).

3. According to another mo'olelo reported by Kamakau, both Mo'ikeha and 'Olopana belonged to Tahiti. Mo'ikeha left Kahiki and came to Hawai'i because he had "opened the food-offering calabash of his older brother 'Olopana and had been caught undoing the c hasty belt of 'Olopana's wife Lu'ukia, the 'aha, or sennit cord, binding called Lu'u-a-na-ko'a-i-ka-moana. He was severely criticized and so he went off to sea" (Kamakau 105).

In the Kalakaua version, both 'Olopana and Mo'ikeha belonged to Hawai'i. They were grandsons of Maweke, a native chief of the Nanaula line and ali'i nui of O'ahu. Maweke had three sonsÑthe eldest, Mulieali'i, became ali'i nui of the western side of O'ahu; Kalehenui was given land in Ko'olau; Keaunui resided in 'Ewa. Mulieali'i had three sonsÑKumuhonua, who became ali'i nui of O'ahu, and 'Olopana and Mo'ikeha, who were given small holdings. The two younger brothers were dissatisfied with their lots on O'ahu and settled in Waipi'o on the Big Island. 'Olopana married Lu'ukia, a granddaughter of Hikapaloa, ali'i of Kohala. Mo'ikeha did not marry while living in Waipi'o; he adopted a son, La'a, a son of Ahukai and a descendent of Paumakua, the famous voyaging chief of east O'ahu, who "visited all foreign lands then known to the Hawaiians" (119).

In the Kalakaua version, 'Olopana and Mo'ikeha left Hawai'i in five canoes after a hurricane and floods devastated Waipi'o. He and his brother sailed south and landed on Ra'iatea, where they took possession of the land. 'Olopana became the ruler and Mo'ikeha his chief adviser. Mo'ikeha's house and heiau were called Lanikeha ("heavenly resting place"Ñpossibly a variant

of Laniakea, the Hawaiian form of the name Ra'iatea?). Mo'ikeha left Ra'iatea to return to Hawai'i after his brother became jealous of his growing prosperity and popularity. A native ali'i named Mua, with ambitions of replacing Mo'ikeha as chief adviser, fueled 'Olopana's jealousy.

4. Some of the names of Mo'ikeha's crew have survived as place names on the islands where they settled: Kumukahi is the easternmost point of Hawai'i; Ha'eha'e is a land division near Kumukahi. Honua'ula is a district of south-central Maui; Makapu'u is the easternmost point of O'ahu.

Kamakau gives the following list of people let off the canoe as it sailed through the Hawaiian Islands from east to west: Moa'ula, who remained at Punalu'u, Hawai'i; Paha'a and Pana'ewa, who remained at Lahaina, Maui; La'amaomao, who remained at Haleolono, Kaulako'i, Moloka'i; Poka'i and Mo'eke, who remained at Wai'anae, O'ahu.

Kalakaua records that Mo'ikeha sailed from the harbor of Opoa on Ra'iatea. The double-hulled canoe was nearly a hundred feet long and the crew was over forty. It included the prophet, poet, and astrologer Kamahualele; the priest Mo'okini; and La'amaomao, the director of the winds.

After an apparently uneventful 2500 miles voyage, Mo'ikeha arrived at Ka'u, where a joyous crowd greeted the canoe and water and provisions were replenished. The canoe then proceeded to Cape Kumukahi and Kohala on Hawai'i, where it was welcomed by the ali'i nui Kaniuhi; then to Honua'ula on Maui. Mo'ikeha was warned by his priest and seer against going to 'Ewa to visit his father Mulieleali'i, so he sailed north around O'ahu, stopping only at Makapu'u and Makaaoa. He landed on Kaua'i, near Kapa'a.

5. Kamakau's Version of Mo'ikeha's Marriage: Mo'ikeha married one woman whose name was both Ho'oipoikamalanai and Hina-'au-lua. Mo'ikeha's three children were Ho'omali'i, named for the skin of 'Olopana; Haulani-nui-ai-akea for the eyes of 'Olopana; and Kila, for Lu'ukia, the wife of 'Olopana.

Kalakaua's Version of Mo'ikeha's Marriage: Mo'ikeha married Ho'oipo after winning the right to do so in a canoe race devised by Puna, the ali'i of Wailua and the father of Ho'oipo. Puna sent a servant with a palaoa (a carved

and consecrated whale-tooth) to the island of Ka'ula (SW of Kaua'i). Nine suitors raced to the island to be the first to bring the whale-tooth back. Mo'ikeha won the race by sailing to Ka'ula with the help of La'amaomao, his director of winds, who had a calabash that contained all the winds of Hawai'i, which he could call forth by chanting their names. In this version, Mo'ikeha had seven sons with Ho'oipo; the third was called Kila.

6. Neither Kamakau nor Kalakaua mention the rivalry of the brothers or the test of the ti-leaf canoes, which is the central incident in the Fornander version. A test involving toy canoes is a motif in Polynesian voyaging traditions. The story of Tafa'i includes a version of this test: the young voyaging hero Tafa'i made a twig canoe that beat the twig canoes of the other boys to shore.

7. The Fornander version of Mo'ikeha continues on with the story of Kila (Vol. IV, 128-152) before telling the story of La'amaikahiki's second visit to Hawai'i.

1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
Home	Search	Archives	Past Education Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)	

Pa'ao and Lonopele

Samuel M. Kamakau and Others

Drawing Below: Stormy seas, from Peter Buck's *Vikings of the Pacific*

Pa'ao was a priest, Makuaka'umana a prophet, Pilika'aiea a chief coming after La'au-ali'i in the genealogy of Hema. They were from Wawau [Borabora] and 'Upolo [Taha'a] and islands to the west. Ka'akoheo was the sea-cliff from which they departed; and Malaia was the mountain ridge in 'Upolo where the grass (mau'u) grew which Pa'ao brought with him to Hawai'i. (A sister of Pa'ao who came to Hawai'i with him was named Na-mau'u-Malaia, or "The grass of Malaia.")



Conflict with Lonopele

Pa'ao left his birthplace because of a quarrel with his older brother Lonopele, who was a kahuna, a man of mana (supernatural power), very intelligent, with knowledge of everything of concern to a kahuna. Both were farmers. Lonopele cultivated his land near the seashore with sweet potato, taro, banana, and other fruitful plants. Once all the fruit was stolen and he believed Pa'ao's son was the thief. He went to his brother and told him, "Your son has stolen all my fruit."

Pa'ao said: "Are you sure my son is the thief?"

Lonopele replied: "I saw him in my field. I didn't see him taking the fruit, but I believe he is guilty."

"If that's so," Paaao replied, "I'll cut open his stomach and find the evidence. But if your fruit is not there, then what?"

Lonopele replied: "What you do is up to you. If you cut open your son's stomach, that's your affair."

Pa'ao answered: "I'll cut open his stomach, and if fruit is found, you are right; if not, you are wrong." Pa'ao caught his son and cut open his stomach. No fruit was found. Then he told Lonopele to look and see.

Lonopele declined: "You're the one who should look into your son's stomach."

Pa'ao was full of grief over of his son's death. He said to his brother: "I'll find a way to kill your son. Then I will leave this land."

Pa'ao ordered his men to build a double-hulled voyaging canoe. His kalaiwa'a (canoe carvers) hollowed out logs, carved the fittings, lashed and rigged the canoe, and painted the canoe black. The canoe was well-made. He placed a kapu on it: no one was to touch it until the lolo sacrifice was offered to insure a safe voyage.[1](#)

The kapu had been established for some time when the son of Lonopele came along and slapped on the sides of the canoes. Pa'ao heard the sound and told his servants to find out who it was. They reported that the son of Lonopele was slapping the sides of the canoe. Pa'ao commanded them to kill the boy, which was done. Then the sacrifice to the canoe was made and the kapu was lifted. Pa'ao took the body and placed it under the supporting block at the stern of the canoe. After a few days Lonopele came to the canoe shed, greatly troubled, trying to find his son who, he feared, was lost.

Lonopele admired the fine finish of the canoe. While looking it over carefully from end to end, he noticed flies buzzing under the stern. He searched and found the corpse of his son and knew the boy had been murdered. He was sick with sorrow for his son and wailed grievously. Crazy with anger against Pa'ao, he said: "You've done a crazy thing, O Pa'ao! You've killed my son. You waited for an opportunity to take his life. Go! Leave this land, for you are an evil man!" With a mournful love song, Lonopele carried his son's corpse away.[2](#)

Voyage to Hawai'i

Pa'ao loaded his canoe with food, water, and supplies for an ocean voyage. The name given his canoe was Kanaloa-a-muia. [Or Ka-nalo-a-muia, "the

swarming of flies."]

Forty paddlers boarded the canoes. Also on board were two stewards (kanaka 'aipu'upu'u); the chief Pilika'aiea and his wife Hina-au-kekele (also called Hina-'au-aku); and Pa'ao's sister Na-mau'u-o-malaia. Pa'ao was the kahuna; Maka'alawa, the kilo-hoku (astronomer and navigator); Holau, the steersman; Pu'ole'ole, the conch shell blower; Nu'u and Holawa, the 'awa chewers. Pa'ao was consecrated for this voyage to find new land (ka holo ana e imi 'aina). When everyone was ready to sail, Pa'ao stood on the canoe while some prophets were standing on the Ka'akoheo cliff. One called to him, saying: "O Pa'ao! Let me go with you!"

Pa'ao asked, "Who are you?"

He replied: "I am a prophet."

"What is your name?"

"Lelekoa'e ("Leaping tropic bird") is my name."

Pa'ao called to him: "Leap onto the canoe."

Lelekoa'e leaped and fell on the stones below and died. Then Pa'ao tested the powers of one prophet after another—Maku'epali, 'Ohuku-pali, Kikaha-pali and so on, but all of them failed and fell to their deaths.

Pa'ao sailed on and was nearly out of sight of land; only one cliff could be seen above the horizon behind him. A prophet stood there and called, "O Pa'ao, Let me go with you!" He called two or three times before Pa'ao heard the voice, a faint whisper in the wind.

When Pa'ao looked back and saw a person standing on the brink of the cliff, he called out, "Who are you?"

The man replied, "A prophet."

"What is your name?"

"Makuaka'umana."

Pa'ao cried out: "The canoe is full, there is but one place left, on the momoa (a projection at the stern)."

"That's my place."

"Then leap!" The prophet flew like a bird, landed on the momoa, and grabbed onto the manu (an upturned piece covering the stern). He called out: " Here I am, where is my place on the canoe?"

"On the pola (platform between the two hulls)."

Thus, the prophecy of Kalaikuahulu concerning the prophet Makuaka'umana was fulfilled:

A fragile-tailed fish am I,
Moving swiftly before the heavens,
Travelling the dark, dark ocean
That roars at Halekumukalani.
I am the man, Makuaka'umana,
The prophet who traveled the islands,
Who circled the Pillars of Kahiki,
Who leapt and sat on Kaulia (a perching place).

When Pa'ao's canoe was out on the ocean, his brother Lonopele tried to sink the canoe. He sent the stormy south winds Konaku, Kona-nui-a-niho, Kona-moe, and Kona-ho'apuku, and the gusty winds, the gales, and the stormy winds of Ho'oilo. But Pa'ao had mats to cover his hulls and keep the water out. While the wind was blowing fiercely with much rain, and the waves ran high, two kinds of fish, the aku and the 'opelu, gathered in the waters and quieted the waves. The Kona storms died down. Because of this help, both these fish were made kapu to the Pa'ao family and their descendants.

Lonopele looked out and saw that Pa'ao had not been destroyed, so he sent the cold northerly windsÑHo'olua, Malualua, Kiu, Waikoloa, and Makanihaunone, but the hulls were covered with mats to keep the water out and did not sink. Lonopele then sent a large bird, Kikaha-'iwaÐina-pali, to defecate on the canoe and sink it. But the mats again protected the canoe.

Pa'ao landed in Puna, Hawai'i and built his first heiau as a temple for his god and named the heiau Aha'ula. It was a luakini heiau (a temple for human sacrifice).

From Puna Pa'ao went to Kohala, landing at Pu'uepa where he built the luakini heiau called Mo'okini. It was thought that Pa'ao came in the time of the high chief La'auali'i, because Pili became the ruling chief of Hawaii after La'auali'i in the genealogy of Hanala'anui. The island of Hawai'i was without a chief, and so a chief was brought from Kahiki.[3](#)

NOTES

This version of the story of Pa'ao has been compiled from Thrum's More Hawaiian Folk Tales (46-52); N.B. Emerson's "Long Voyages of the Ancient Hawaiians"; and Kamakau's Tales and Traditions of the People of Old (3-5; 97-100). Another version of the Pa'ao tradition appears in Laura Green's Folk-tales from Hawai'i (120-124); the story was told in Hawaiian to Mary Kawena Pukui by Mrs. Kanuikaikaina of Hilo, Hawai'i; it was translated by Miss Green.

Mrs. Kanuikaikaina begins: "Two brothers, Pa'ao and Lonopele, were priests of the gods Ku and Lono in 'Upolo, Samoa. Pa'ao was the priest of Ku-ka'ili-moku, who later became the war-god of Kamehameha I, as "Ku-snatcher of islands."

According to Kamakau, Kuka'ilimoku "was made of fine, soft feathers from the forehead of Kiwa'a. Kiwa'a was slain by Wai-kele-nui-a-iku after he had been carried away by the bird. These feathers from its forehead were sacred feathers called Hina-wi-koli'i. They flew to the lap of Namaka-o-kaha'i. These feathers acquired mana and became Kuka'ilimoku" (Kamakau 3). Kuka'ilimoku eventually was passed down through through the ruling chiefs of the island of Hawai'i through Liloa, 'Umi a Liloa, and Keawenui a 'Umi to Kamehameha the First, who conquered and united the islands of Hawai'i. This god demanded human sacrifice. Aha'ula heiau later became known as Waha'ula ("Red Mouth"), perhaps because of the human sacrifices laid there to Kuka'ilimoku.

1. The lolo sacrifice for consecrating and lifting the kapu on a canoe so it

could pass from the carver to the owner involved prayers and offerings to the canoe gods. Malo says pig, red fish, and coconuts were the offering "spread out before the kahuna" (129). Kamakau says the symbolic foods were pig and dog, the "pig symbolizing the 'rooting' ('eku) of the canoe into the open sea and the dog the 'tearing apart' (hae aku) of the billows of the ocean. Sweet potatoes and taro were the vegetable foods" (Works 121-122). The Pukui-Elbert Dictionary (1986) defines lolo as "brains" and explains that it was a religious ceremony "at which the brain of the sacrificed animal was eaten (such ceremonies occurred at a canoe launching, start of journey, completion of instruction)," apparently to signify completion.

2. The Kanuikaikaina version of this tradition gives a slightly different account of the quarrel between the two brothers: "Pa'ao and Lonopele each had a son, and their pranks often led to quarrels between the fathers. One day, Lonopele's son entered the temple and stole a bit of the food placed for the sacrifice. Lonopele accused Pa'ao's son of the theft. A few days later, Lonopele's son stole more of the sacrifice and his father seized Pa'ao's son and had him put to death. Pa'ao was deeply grieved and in his heart he knew that Lonopele's son was at fault. He watched closely and was rewarded by seeing him run out of the temple with a bit of the offering in his hand. Then Pa'ao put Lonopele's son to death and hid his body under a canoe. For days Lonopele looked for his son and when at last he found him, he ordered his younger brother to depart and seek a new home."

3. Emerson writes that Hawai'i island had been without an pure-blooded ali'i for a long time; those that ruled Hawai'i were ali'i maka'ainana (royalty with the blood of commoners intermixed through marriage), or just commoners, maka'ainana. Thus, Pilika'aiea, of pure ali'i blood, became the ruler of the island. Pa'ao became his high priest. He established a strict religious system, introducing to Hawai'i the custom of kapu-o (prostration), the puloulou (a royal insignia marking off a kapu area), and the walled heiau (previously, heiau had been open courtyards.)

The Kanuikaikaina version gives the following ending:

Pa'ao landed at Puna on the island of Hawai'i. There Pa'ao built the temple of Aha-'ula, or "Red-assembly," so named because of the red feather cloaks worn by the god Ku-kaili-moku and the other gods. He left priests here to

care for the temple and to cover the lava rock with soil brought in pandanus baskets from the hill country, to plant rare trees and dig a well, so making an oasis in that desert place.

The priests kindled a fire in the temple grounds, which was consecrated to their gods and kept burning night and day. Whatever man the smoke of that fire fell upon, whether high or low in rank, became a sacrifice to the gods. Hence the name of that temple was changed to Waha-'ula, "Red-mouth," because it devoured men.

Pa'ao went to Paka'alana in the Hamakua district of Hawaii, where he built another temple. Here he left two white stones which were worshipped by the inhabitants of that district, especially by the high chief, Liloa. Pa'ao saw how the chiefs, or ali'i, had sinned by intermarriage with commoners, thus diluting the sacred blood. [The chief of Hawai'i at that time was Kapawa (Fornander, Vol. IV, 22-23).] Pa'ao sailed back to Tahiti and brought a chief and his family from there to restore the ancient rank of chiefs in Hawai'i. This chief was Piliaoao, ancestor of Kamehameha 1st.

[According to Fornander (Vol. IV, 22-23), the chieftainship was first offered to Lonokaeho, who was invited to come to Hawai'i to rule by Makuaka'umana, the singing-priest of Pa'ao's expedition:

O Lono! Lono! Lonokaeho!
 Lonokulani, ali'i of Kauluonana,
 Here are the canoes, come aboard
 Return with us to live in green-backed Hawai'i
 A land discovered in the ocean,
 Thrown up amid the waves
 From the very depths of Kanaloa
 The white coral jagged in the water
 Caught on the hook of the fisherman
 The great fisherman of Kapa'ahu
 The great fisherman of Kapuhe'euanu'u-la
 When the canoes land, come aboard,
 Sail to rule Hawai'i, an island, v Hawai'i is an island,
 Hawai'i is an island
 For Lonokaeho to live on.

E Lono! e Lono e! e Lonokaeho!
 Lonokulani, ali'i o Kauluonana,
 Eia na wa'a, kau mai
 E hoi e noho ia Hawaii'i-kua-uli
 He 'aina loa i ka moana
 I hoea mai loko o ka ale
 I ka halehale Poi pu a Kanaloa
 He koakea i halelo i ka wai
 I lau i ka makau a ka lawa'ia
 A ka lawai'a nui o Kapa'ahu
 A ka lawai'a nui o Kapuhe'euanu'u-la
 A pae na wa'a, kau mai;
 E holo e ai ia Hawaii'i, he moku;
 He moku Hawaii'i
 He moku Hawaii'i
 No Lonokaeho e noho.

Lonokaeho refused the chiefship and proposed Piliaoao (or Pili-Ka'aiea).]

Pa'ao set up Piliaoao as the highest ruler on Hawaii'i and served as his kahuna until Pili's death. Pa'ao's son served the son of Piliaoao, and so on for succeeding generations. Hewahewa, who was high priest in the time of Kamehameha 1st, was a descendant of Pa'ao and in 1819 when King Liholiho broke the tabu, Hewahewa was the first man to apply the torch to the King's temple and reduce his ancestral gods to ashes.

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Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
Home	Search	Archives	Past Education Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)	

Ru and Hina

Teuira Henry

Ru and Hina Explore the Earth

[Told by Pape-au, a Tahitian scholar, in 1824.]

Ru (Transplanter), who raised the sky from the earth, prepared his canoe, Te-apori (The-hull), to circumnavigate the earth with his sister Hina-fa'auru-va'a (Hina-the-canoe-pilot).

As Ru prepared his canoe, he looked around and observed the appearance of the world, and he marked the boundaries in rotation as follows:

The east he called Te-hitia-o-te-ra (The-rising-of-the-sun);

The west Tetooa-o-te-ra (The-setting-of-the-sun);

The south Apato'a;

The north Apato'erau;

The southeast Hitia-i-to'a;

The northeast Hitia-i-to'erau;

The southwest he named Tooa-i-to'a;

The northwest Tooa-i-to'erau.

A strong mat for a sail was tied with cords to a mast at the center of the canoe Te-apori, and Ru and his sister embarked on their voyage. Ru sat astern with his great paddle for steering in sailing and a smaller paddle to use in calms or for playing against the tide in meeting with head winds; Hina sat in the bows of the canoe to watch for land and thus they sailed away.

Ru lay to at night and sailed on in the day time. They sailed east and arrived at Little-Tahiti, Mo'orea struck by the wind, and at Great-Tahiti with Hiti-i-te-ara-piopia (Taiarapu). They sailed around those islands. Ru and his companion sailed on; the islands were all located by them; from south to north, from east to west, they were all located by Ru, the dear valiant one, Ru the great valiant one, Ru who explored the earth, and by Hina-fa'auru-va'a, his sister.

Sacred Canoe Song of Ru and Hina

O depths of the rivers!
O coldness of the rivers!
Little shrimps of the rivers,
Great shrimps of the rivers,
O prawns of the rivers,
O fullness of the rivers!
The waters inland reflecting flowers
That approach and recede!
Let the far-sighted who dwell on land
Arise and see!
Look inland to the settled mountains!
Let the farsighted who dwell on land
Arise and see!
Look over the sea of Te-fatu-moana (The-lord-of-the-ocean)!
Let the far-sighted who dwell on land
Arise and behold Atea above!
Let the far-sighted who dwell on land
Arise and see!
Look below in the presence of Te-tumu,
At the jungles and the rushing streams,
At the fountains of the deep,
At the fountains of the surface,
At the waves of the east,
At the waves of the west,
At the stable nooks, at the burning nooks,
At the great development extending over the eight directions.
Behind was Te-ao-tea-roa, before was the vast ocean!
Ru was astern, Hina was ahead!
And thus Ru sang:
"I am drawing, drawing [thee] to land,
Te-apori, O Te-apori!
I am drawing, drawing thee to land,
Now hold steadily on to Maurua [Maupiti]."

Then cried his sister, Hina,
Upon the foaming waves:
"O Ru! land is looming up,
What land is it ?"

"It is Maurua: let its watchword be,
Great Maurua forever."

Ru sang again:
"I am drawing, drawing thee to land,
Te-apori, O Te-apori!
I am drawing, drawing thee to land,
Now hold steadily on to Porapora."

Then cried his sister, Hina,
Upon the foaming waves
"O Ru! land is looming up,
What land is it ?"

"It is Porapora; let its watchword be,
Porapora the great, the firstborn,
Porapora of the fleet that consumes two ways,
Porapora of the muffled paddle,
Porapora of the pink leaf,
Porapora, the destroyer of fleets."

Ru sang again:
"I am drawing, drawing thee to land,
Te-apori, O Te-apori!
I am drawing, drawing [thee] to land,
Now hold steadily on to Taha'a."

Then cried his sister, Hina
Upon on the foaming waves,
"O Ru! land is looming up,
What land is it ?"
"It is Taha'a, let its watchword be,
Great Taha'a of the peaceful sky."

Ru continued to sing:

"I am drawing, drawing to land,
Te-apori, O Te-apori!
I am drawing [thee] to land,
Now hold steadily on to Havai'i [Ra'iatea]."

Then cried his sister Hina,
Upon the foaming waves:
"O Ru! land is looming up.
What land is it?"

"It is Havai'i, let its watchword be,
Havai'i that towers exceeding in glory,
Great Havai'i when enraged in its beauty!"

The thrush looks seaward into the sky;
Riding upon the surf of 'Arei [in Huahine],
The dear albatross will be left behind!
Ma-uru (Changing-season) the husband, Ma-uru the wife,
Will come indeed forever, O Ru!
Draw it to run, that my sailing canoe may run!
Draw it to the shore, draw it to sea,
Draw it to run, that my sailing canoe may run!
Draw it behind, draw it before,
Draw it to run,
That my sailing canoe may run!"

[This chant tells of a return voyage from Aotearoa (New Zealand) to Havai'i, or Ra'iatea. It was recited in 1886 by Tu-pa-ia, a schoolmaster who learned it from his aged grandfather Ta-taura, a ra'atira (chieftain) of Motu-tapu, Ra'iatea.]

Traditions of Hina

A peninsula called Motu-tapu (Sacred Island), in Ra'iatea, from which Motu-tapu of the mainland derives its name, was the canoe station of Ru and Hina; a passage from there is called Te-ava-o-Hina (The-passage-of-Hina),

by which they went to sea.

Not far inland from Motu-tapu is a place called Tuturaa-haa-a-Hina (Hina's-place-for-beating-bark cloth), where she is said to have made and spread out her tapa. There is the site where once stood her breadfruit tree, the bark of which she used for making ahu pu'upu'u (white tapa); and upon the ground lies a long stone, called Te-hune-'uru-a-Hina (The-heart-of-Hina's-breadfruit) because of its resemblance to that object in giant form. After exploring the earth Hina's love of discovery did not cease. So one evening when the full moon was shining invitingly, being large and half visible at the horizon, she set off in her canoe to make the moon a visit.

On arriving there, she was so pleased with it, that she stepped into it, leaving to the mercy of the sea her canoe, which was never seen again.¹

Thus Hina-i-fa'auru-va'a became Hina-i-aa-i-te-marama (Hina-who-stepped-into-the-moon), as in the moon she ever afterwards remained, though she did not cease to be in sympathy with her brother in his travels on earth and to do good to man. She watched over travelers at night, an office that caused her to be called Hina-nui-te-araara (Great-Hina-the watchwoman). Hina-i-aa-i-te-marama appears in Polynesian folklore generally.

The shadows in the moon were believed to be an ora (banyan) tree from the numerous branches of which Hina obtained bark and made cloth for the gods. In this capacity she was named Hina-tutu-ha'a (Hina-the-cloth-beater), and she presided over sacred cloth beaters on earth, who emulated her artistic skill in that work. On one occasion when Hina was up in the banyan tree, she broke off with her foot a branch for its bark; and as she did so with great force, it fell out into space and ultimately arrived at Opoa, Ra'iatea, where it struck root and was the first tree of its kind ever seen in this world. It is a magnificent tree with a table-shaped trunk forming a pavilion beneath and a plateau above, which are so spacious that from time immemorial people have been wont to spread their mats in those pleasant recesses and assemble to talk and rest.

The clear space in the moon is where the branch once was, and beneath the tree in that locality is where Hina had her home. Her companion there was

an u'upa (green wild pigeon), which dwelt in the tree and lived upon its little figs. Some of these it brought to the earth, propagating the seeds in the following manner: The u'upa had a bunch of the figs in its mouth as it came, and high up in the air it met a great otaha (man-of-war-bird), which strove to seize the figs and claim the credit of bringing the seeds down to the earth; but the u'upa, directed by Hina, held on to its burden and escaped from its pursuer. It then scattered figs upon the earth below, and it was from them that the first ora trees in other lands in Polynesia sprang. Then people finding the bark good for cloth propagated the tree everywhere. But the terrestrial ora fig does not produce seeds; it is propagated by branches.

Invocations in song, without sacrifices, were offered to Hina under the above attributes, and as a relic of the past she is still invoked by Tahitian firewalkers as Hina-te-araara, as is shown in the ceremony of te-umu-ti (the-ti-oven). The belief by the native people up to the present day that she was really an immortalized woman in the moon is considered well founded for the above reasons.

Hina had as contemporary and bosom friend in this world a great chieftainess named Vahine-nui-tahu-ra'i (Great-woman-who-set-fire-to-the-sky), also invoked in the umi-ti ceremony. She was of a benevolent nature and protected her fellow creatures in times of restriction and trouble from the oppression of authoritative men. She had at her command the lightning, which would come at her bidding—a power from which she derived her name. [These traditions of Hina were received in 1824 from Tamera, a priest, and in 1886 from Tupaia of Motu-tapu.]

Tahitian Circuit of Navigation

After Ru and Hina had located lands, Maui and his flotilla sailed again over the ocean, for his king Ama-tai-atea (Outrigger-of-the-expansive-ocean). As he and his people arrived at lands, they built temples conveniently and assigned them to priests. They went to the borders. They went to the east, to the Tuamotus and to Mangareva. They went south, to Tubuai, to Rurutu, to the Parrakeet Islands, Rimatara and Mangaia and on to Rarotonga, to Rimitera, and to Teao-tea-roa (The-long-white-land) of the Maoris [New Zealand]. They went everywhere in these directions. They went west, to

Tutuila, 'Upolu, Savai'i (Samoa); and to Vavau [in Tonga], Atiu, Ahuahu, and Ma'atea (or Makatea, formerly called Papatea). They went north, to the distant Marquesas and to burning 'Aihi (Hawai'i). [Recited in 1854 by Paearu, a Tahitian scholar].

Comparative Folklore-Ru

In the groups near Tahiti the legend of Ru resembles the Tahitian; but farther away only fragments of it appear to exist and in some instances Ru is confounded with other characters.

In New Zealand, Ru was the earthquake god, son of Rangi (Sky) and Papa (Rock). He was never born, but remained in his mother in the center of the earth, and from him came the earthquakes. Another character named Rupe is represented as Maui mua (First Maui), brother of Hina and the other Maui's, and he was the progenitor of the pigeon, which they call rupe, the green mountain pigeon in Tahiti, and double or shadow of Ru. These versions evidently spring from one source.

In confirmation of the statement in the foregoing legend that Ru was a great navigator and discoverer of lands is the tradition of Aitutaki claiming that Ru was the first discoverer and chief of that land. He landed there from Avaiki, Hawai'i or Ra'iatea, probably, on an exploring expedition with about 200 emigrants, including men, women and children, and named the island Araura, signifying that the wind drove them there. His great double canoe was named G'na-pua-riki (Tahitian, Na-pua-ru, Those-small-flowers), and the beams, three in number, which united the vessels, beginning with the foremost one, were named Tane-mai-tai (Tane-from-the-seaward), Te-pou-o-Tangaroa (The-post-of-Taaroa), and Rima-auru (Final-hand).

Finding the island beautiful, with its verdant landscape of hills and plains and its spacious lagoon of coral reef studded with lovely islets forming a safe haven for the landing of canoes, they settled upon it. Ru built near the sea a marae, which is called ma in Aitutaki, and named it Pua-riki (Little-flowers) after his canoe. He also built another inland, which he named Vaikuriri (Water-of-angry-Ku, god of stability), Ku-riri being the name of his tutelar god. He established seven elders (koromatua, Tahitian orometua) as lords of the realm under him.

These emigrants increased to a large number and are called in the Aitutaki genealogy Ati-Ru (Tribe of Ru). There the hero is called Rute-toko-rangi (equivalent to Ru-te-too-rai, Ru-the-raiser-of-the-sky, in the Tahitian story), and teve plants, as in the Tahitian version, are mentioned as those that first supported the sky when it was low down. At a later date more people came to Aitutaki from Avaiki-i-raro (West Hawai'i, or Samoa), in the opposite direction from the Society Islands.

Notes

This tradition of Ru and Hina is from Teuira Henry's Ancient Tahiti, 459-465.

In Hawaiian tradition, Hina travels to the moon not for exploration, but in order to escape the excrement of her children: "The children's excrement has to be carried to the north side of the water hole at Ulaino [in Hana, Maui], and Hina wearies of their constant messing and the tapu involved in the disposition of the excrement. Hence on the night of Hoku (Full moon) she leaps to the moon from a place called Wanaikulani. Her husband leaps to catch her, her leg breaks off in his hand (hence she is called Lono-muku), and there she hangs in the moon to this day" (Beckwith 242; the complete story is found in Thrum, More Hawaiian Folk-tales 69-71).

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Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
Home	Search	Archives	Past Education Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)	

Tangiia and Tutapu

Te Ariki-Tara-are, high priest of Rarotonga; trans. by S.
Percy Smith

When Tangiia was born his grandfather, Ka'u-kura, gave him the name of Rangi. When Tangiia's uncle Pou-vananga-roa learned that his sister Ka'u-ngaki had given birth to a son, he adopted the boy and renamed him Tangiia-nui. The uncle also adopted Tutapu, the son of his other sister Maonga.

Pou-vananga-roa appointed Maono, his eldest son, to be ariki, or head chief, of Tahiti; Tutapu was made an ariki of Iva (Hiva, or the Marquesas); Tangiia was made a tavana, or minor chief, of Tahiti.

Tangiia was unhappy with his appointment, so he seized the insignia of the ariki at the marae of Avarua and drove Maono away to the mountains. The village and its share of kuru ('ulu, or breadfruit) now became his. Tangiia's younger brothers waited for their share of land and power to be distributed to them, but nothing was given.

Dissension also arose between Tangiia and Tutapu over a stream, Vai-iria, a sacred stream of Tangiia's. When Tutapu bathed in this stream, Tangiia attacked him. Tangiia's teeth were broken and the plumes of the people of 'Avaiki were trampled. The two cousins also fought over rights to two sea creatures, the raratea (white-finned shark) and the onu (turtle). Tutapu insisted that when a shark was killed the head belonged to him, while the tail was for Tangiia. Tangiia disagreed, and the two cousins separated-Tutapu returned to Iva, while Tangiia went to Ma'uke [in the Cook Islands] to visit two sisters, Pua-tara and Moe-tuma, the daughters of Tata-uru-ariki and his wife Te Puaranga-uta.

Tangiia arrived in the district of Utaki, where a koutu (sacred meeting place) named Rangi-manuka is located. He looked for the two sisters and found them beating bark cloth. He composed a love song to them [and slept with them] before returning to Tahiti.

In Tahiti, Rakanui, his sister, asked him if he had taken the kuru (breadfruit tribute), not knowing that Tutapu had taken it to Iva. Tangiia got angry and snatched a portion of the turtle from the hand of his sister's husband Maa. An ill-feeling arose between Tangiia and Maa. Rakanui took a canoe name Kai-oi and departed with Maa for the island of Huahine.

Tangiia now dwelt in Tahiti for some years, until he decided to outfit a canoe named Tuna-moe-vai, a name given by his grandfather Ka'ukura. After the canoe was ready, Tangiia named it Taki-pu (later it was renamed Takitumu) and then visited 'Avaiki (Savai'i in Samoa) and many other islands. On his return to Tahiti, he sent Tino-rere to Ma'uke to get his children [by the two sisters Pua-tara and Moe-tuma].

When Tangiia returned to Tahiti from his voyages, he found Tutapu had arrived from Iva to make war and to secure the celebrated weapon named Te Amio-enua from Pou-vananga-roa and the rara-roroa (a tribute of some kind; perhaps human sacrifice, which in Tahiti was called te avae roroa-"the long-legged fish"). But Tangiia refused to give up the weapon and the two "fish." Tutapu then demanded the rara-kuru (breadfruit tribute) and this Tangiia conceded in order to pacify his brother.

But Tutapu was not satisfied and a war broke out. Tutapu and his army retired to Tautira [a district of east Tahiti], and Tangiia and his army went to Puna-auia [a district of west Tahiti]. Tutapu was winning the war, so Tangiia gathered his people, prepared a canoe, and launched it, placing on board all their property, including the gods Tonga-iti, Rongo-ma-Tane, Rua-nuku, Tu, and Tangaroa, along with the chief's seat named Kai-au-unga. Two of the gods had been taken by Tutapu-Rongo-ma-Uenga and Marumamao.

Once his canoe was anchored offshore as a means of escape, Tangiia went to fight with Tutapu again. On a mountain, Tangiia's two children, Pou-te-anuanua and Motoro, were trapped by a fire set by Tutapu's men. Pou-te-anuanua was burned to death. The goddess Taa-kura descended on a southeast wind, placed a cloak over Motoro, and took him to Mangaia [Southern Cook Islands], where he was deified.

After the disappearance of his sons, Tangiia fled to his canoe and for some

time gazed at the burning land and lamented his losses:

Great is my love for my land Tahiti,
That I am leaving,
Great is my love for my sacred meeting place at Pureora,
That I am leaving,
Great is my love for my drinking springs,
Vai-kura-a-mata and Marama-ata-kai,
That I am leaving,
My bathing places, Vai-iria and Vai-te-pai,
That I am leaving,
My own district, Puna-auia and Pape'ete
That I am leaving,
For my mountains, Tikura-marumaru
And Aorangi, that I am leaving,
And for my dear children,
Pou-te-anuanua and Motoro now dead.
Alas! Alas! O my children!
My children O! Alas!
O Pou-te-anuanua! Alas!
O Motoro O! O Motoro!

Two of Tangiia's men were sent back to get a wreath and some red berries and a certain white tapa used at the marae; they also stole the god Ronga-ma-Uenga from Tutapu. To get this god back, Tutapu pursued Tangiia relentlessly over the seas.

Voyages

Tangiia sailed west to 'Avaiki (the ancestral homeland), still lamenting the loss of his children and his home. His chief warrior and navigator was Pai, to whom he gave the name Tei-vao-ariki.

Tangiia arrived in 'Avaiki during ceremonies for the appointment of a chief and the feast of takurua, or presentation of the first fruits to the gods. He told the gods that he left his homeland after the war with Tutapu "over the government, the position of ariki, the fish-tribute, the turtle-tribute, the shark-tribute, the human-tribute, and the weapon Te Amio-enua." The gods

promised to give him mana so that he would not be defeated in battle and to set aside for him a land named Tumu-te-varovaro (the ancient name of Rarotonga), where he would live until his death. Tangiia begged the gods to join his expedition and the following gods consented-Tangaroa and his company; Tu-te-rangi-marama and his company; Tu-tavake; Rua-i-te-kari, Kau-kura, Mumai-io; Rua-te-atonga; Ari; Tupua-nui; Taakura; Kura-akaipo; Tonga-iti; Rangi-puta-rua; Ai-mario; Maru-mamao. Tangiia then begged the gods for all the things connected with the takurua festival, including the musical instruments and the dance postures. They consented.

Tangiia then sailed east from 'Avaiki, stopping at Uea (Wallis Island), Kuporu ('Upolu in Samoa), and Iti (Tahiti). There he met Iro (Hiro) and asked for Iro's son, who would be made chief (ariki) of Tangiia's people since Tangiia's two sons had been killed by Tutapu. Hiro agreed and revealed that his son was on Rapa (Easter Island).[1](#)

Tangiia sailed to Rapa-nui (Easter Island), which name was given to distinguish it from Rapa-iti, an island southeast of Rarotonga. When the canoe arrived at Rapa-nui, they found Iro's son, Taputapuatea, diving for shellfish on the reef. The child was taken on board the canoe, which then proceeded to Mo'orea, looking for Iro, but he was not there.

The canoe then sailed to Huahine. Tangiia met his brother-in-law Maa and his sister Rakanui, who at first threatened to cook him in an oven (imu); but the two were reconciled and Tangiia related to her the story of his war with Tutapu and his voyage to 'Avaiki. Rakanui asked to see a ceremonial dance he brought back from 'Avaiki and he consented.

After the dance was performed, Rakanui tried to persuade Tangiia to remain on Huahine-he on one side of the island, and she on the other side. But he replied, "No! I cannot remain. I must go to Tumu-te-varovaro (Rarotonga), which Tonga-iti has told me of. I am going there to live until I die." Tangiia told his sister of his plan to make Iro's son Taputapuatea ariki of his people. Rakanui was opposed at first, then approved, and new names were given to the boy-Te Ariki-upoko-tini (ruler of many people) and Ta-i-te-ariki. Then Rakanui gave her canoe to Tangiia, saying "Here is a second hull for your canoe." When this canoe, named Kai-oi, was delivered to him, it was taken

to the seashore and joined to Tangiia's canoe to make a purua, or double-hulled canoe. The work was completed by the navigator Tamarua-pai. Then all of Rakanui's property was taken on board, and Rakanui, her husband Maa, and their children joined Tangiia's party. For his work in joining the two canoes, Pai received the name "Purua."

News was received that Tutapu was near; so the expedition left Huahine for Porapora. When it arrived there, the expedition began a ceremony to consecrate Iro's son as ariki, but before the scarlet-feathered belt was girded on, Tutapu arrived.

The expedition left Borabora and sailed for Rangi-atea (Ra'iatea), where Tangiia's canoe and Tutapu's canoe coasted along together. Those on Tutapu's canoe shouted "Give up my god! Give up my god!" [The god Rongo-ma-Uenga, taken from Tutapu in Tahiti.] Then night fell, and a gust of wind arose; the canoes were hidden from each other and went their separate ways.

Tangiia now returned to Iti (Tahiti). On arrival all hands were ordered ashore the better to count the crew and passengers; 200 men were assigned to the katea (the main hull) and the women and children were assigned to the ama (the other hull). Then the expedition visited many islands, even those island toward the rising sun, exulting the fame of the canoe now called Takipu [and later renamed Takitumu]. At an island called Maketu [Ma'uke in the southern Cook Islands; or one of the Tuamotus; or Me'etia in the Society Islands], they met the chief Karika, who hailed from Manu'a Island in Samoa. On sighting a canoe, two of Tangiia men climbed the mast to identify it. They reported, "It is Te Tai-tonga! [another name for Karika], and you will be killed by him!"

"How many men does he have?" asked Tangiia.

"A great many!"

"What should we do?"

"You must give up the rangi-ei (the red feathers) you are wearing on your head" [that is, acknowledge Karika's supremacy].

Soon Karika's vessel drew up to Tangiia's and Karika boarded Tangiia's canoe. Tangiia had already sent below all the able-bodied men, leaving none but slaves, children, and the decrepit on the deck of the vessel, so that Karika might not see how many men he had. Tu-iti and Nukua-ki-roto now urged, "Give up your rangi!" So Tangiia took the red plume from his head and was about to hand it to Karika, when Pou-te-are, who opposed giving the chieftainship to Karika, rushed up and knocked it out of Karika's hand, and climbed up the mast and placed it on his own head. Then the navigator Pai rushed after Pou-te-are and knocked red plume off his head. When it fell down, Pai seized it, and the fighting began. It was like a north wind and a south wind fighting for supremacy. Tangiia's men gained the upper hand, and his canoe began to tow Karika's canoe from Maketu to Maiao. So Karika decided to make peace with Tangiia and gave him his daughter Mokoroa-ki-aitu in marriage. Then the canoes separated.

Tangiia asked Karika, "Where is Rarotonga?"

Pointing, Karika said, "There," and described the course downwind, toward the south (raro-tonga). The vessels now separated, Karika going his way and Tangiia his way. But Tangiia missed his mark and reached the southern ocean where he encountered great waves and currents. Tangiia thought, "This is the 'Tai-rua-koko' [place of monstrous waves]." From there, the vessel turned north and came upon Rarotonga, which was named after Karika's direction to the island. The island remained Tangiia's home until he died.²

Tangiia landed on the east side of the island and after entering the channel through the reef, the crew took the rope named Te Kaa-ki-'avaiki to fasten the canoe to the kaoa, or coral reef, and hence the name of that place is Te Kaoa. He then named the sandy point Te One-poto and going inland, constructed the marae named Te Miromiro to sanctify the land. The marae was dedicated to Tonga-iti; Parau-a-Toi was appointed the purapura, or guardian priest. Tangiia named the channel in the reef Ava-rau or Ava-tapu, being the way to 'Avaiki.

The anchor was then pulled up and the vessel hauled on shore. Here another marae was built; it was named Iti-akaraua and was dedicated to the god

Marumamao. After securing the vessel, the expedition went inland and built the marae named Itianga-te-ra; Kainuku was appointed the priest. On the completion of this marae, the expedition came down to the shore and built a house which was named Mata-enua (Looking for Land); Nukua-ki-roto was appointed guardian. This camp was at Tauna-a-rangi before the party built permanent houses.³

Tane-korea, who was descended from one of the original settlers of Rarotonga, was found inland at Roka with his two daughters named Vai-te-nui and Ata-te-poroa. Tangiia asked Tane, "Are those girls your daughters?"

Tane replied, "They are."

"I will take them as wives for myself." He brought his family to Tau-vae, and dwelt there.

Some time after Tangiia's arrival at Rarotonga, the Samoan chief Karika landed at the reef-opening named E. He built a fort of coral named Are-au and settled there. The food eaten on board Karika's canoe was human flesh, as the following song suggests:

The human-oven of Rua-koroa and Rua-ta

Wherein were cooked the eye-balls,

The dried up eye-balls,

In Karika's oven, rei-iri e!

After he had settled on Rarotonga, Karika went to look for Tangiia and the daughter he had given to Tangiia in marriage. He followed the coast to Avarua, where he heard the sound of conch shells and drums, so he turned inland to Tau-vae, where he found his daughter. He remained there for some time in conversation, then returned seaward, and settled at a place which he named Enua-kura. Before he left, Tangiia gave him a conch shell and a drum. The conch shell was the pu-ura.

Some time after the arrival of Karika at Rarotonga, Tutapu landed at Avarua.

He killed Parau. Two uncles of Tangiia, Ue and Tautenga, came to Tau-vae to tell Tangiia of Tutapu's arrival and of the killing of Parau. Tangiia ordered some food cooked, but the two men refused it, saying they planned to return at once to Tutapu's camp.

"Why are you in such a hurry?"

"For fear we should be seen here."

Tangiia lamented their departure, but they told him, "Don't regret our departure; we shall do our part. You won't be defeated."

Later, these two uncles deceived some of Tutapu's forces into returning to Iva by telling them Tutapu's warriors had all been killed.

Before the fighting began, Tangiia sent his brother Keu and his sister Rakanui to Tahiti to get a prophecy from their father, Pou-vananga-roa, about the outcome of the imminent war. The old blind man instructed them to set up one cluster of pandanus leaves at the bow of their canoe and one at the stern, the one on the bow to stand for Tangiia and the one on the stern to stand for Tutapu; the cluster that fell would foretell the defeat of the man it represented.

On the voyage back to Rarotonga, the pandanus leaves at the stern fell—a sign that Tutapu would be defeated.

The fighting continued until Tangiia's forces (Ngati-Tangiia, Tangiia's tribe, lit., "the offspring of Tangiia") gained the upper hand and drove Tutapu's forces from Avarua to the east end of the island. Many died. Because Karika assisted Tangiia and helped defeat Tutapu, certain functions of government were eventually turned over to him.

At Oro-iti, Tangiia overtook Tutapu and called out to Rongo-ma-Tane: "Let our fishing be successful!" Tutapu struck at Tangiia and cut off the little finger of the left hand. Tangiia sucked the blood into his mouth and blew it out into Tutapu's face, blinding him. Then he struck Tutapu with his toko-toki (a battle axe) and wounded him in the leg, the blow shattering the rock beneath Tutapu's feet. This blow caused the putiki (head ornament?) to fall from Tutapu. Tutapu now fled with two daughters of Tangiia, Te

Raiti-ariki and Puanga-te-rangi, as hostages. After a short distance, his breathe failed, so the place is known as "Oro-iti".

Tangiia pursued Tutapu up a stream. Tutapu's ei, or necklet, named Kaa-tu, fell off. As Tutapu climbed up the course of the stream, he was dripping blood. The place where a spur comes down from a ridge into the main stream is called Ara-eke-toto ("Path of falling blood").

Tutapu called back, "O Tangiia! Let me live!"

"Why should I spare you? Didn't I abandoned my home in Tahiti to you, my relentless pursuer?"

Tutapu now laid down in the water to hide his face from Tangiia's tokotoko (spear or club). Tangiia followed him and seizing his head, turned his face up and scooped out his eyeballs and swallowed them. The gods of the sky called down, "O Tangiia, you are an ariki who eats in haste."

"O my gods, I am indeed a hasty eater! Why did he relentlessly pursue me? My patience is exhausted. I abandoned my home in Tahiti to him and departed without protest over the great ocean. Why should I spare him now?"

Tangiia's daughter Te Raiti-ariki asked for the left eyeball, the light colored one, for Tutapu had one dark and one light-colored eye. The place where this event occurred is about four miles inland from the coast.

They took the body of Tutapu and carried it down to the shore to the district of Aroko, onto the bare rocks at Vai-tangi and Ioi, that is, at Ara-kuo. Here they proceeded to cook the body, but found that it would not cook in that place. It was then taken to Avarua, where they were joined by Karika and his army, who were carrying the god Maru-mamao and some dead bodies. This was the occassion when Karika took possession of this god Maru-mamao, and Tangiia and his forces plundered the rest of Tutapu's property.

When they got to Kiiikii, the god Maru-mamao was uncovered and displayed, and the kiikii, or wreath, was thrown away (hence the name of the place). From that place they went to Avarua again; then to Tauae; then to Kau-ariki-rangi. Here Anu, who was the god Tongaiti, asked Tangiia, "Why

doesn't Tutapu's body cook? Have you lifted the kapu on your child and your elder, Tupa, on account of the one he slew?"

Tangiia replied, "I have not."

"Lift the kapu on your child and your elder; then you will be able to cook the body."

Now Taivananga (a priest) took a rau-kava (kava leaf) and struck the body of Tutapu, uttering the proper karakia (incantation) at the same time. Then he struck Tangiia with the rau-kava and put it in Tangiia's mouth, reciting the karakia. On completion of these proceedings, all was noa, or free from tapu, so men were ordered to collect firewood, which consisted of popo-kuru, popo-ngatae, katiara, and kakava-atua. So these were brought and the body cooked successfully this time, and hence the place was named Taana. The body was taken to the marae named Kura-angi, and there eaten.

After the feast had been consumed, Tangiia assembled all Ngati-Tangiia (his tribe) and addressed the tribe on that same day. This is what was decreed to the priests and all the tribe: "Man is sacred; no man is to be slain; the whole of the land is to be divided up from one side of the island to the other; the people must increase greatly in numbers, so the land might be filled."[4](#)

Then he said, "If a large fleet comes here in peace, let them land; a fleet that comes armed for war, let their heads be cut off with the tokotoko."

Death and Apotheosis

Tangiia eventually died in his house at Pure-ora. After his death his spirit flew up above to the tuputupu (wandering spirits) and there bewailed his body lying below near the sea. When the god Tonga-iti saw the spirit of Tangiia flaming amid the wandering spirits, he told him "Be calm. You will never be able to return to your body, for it is rotten by this time."

The god Tangaroa and Tonga-iti conducted a kava ceremony in which Tangiia's spirit was the ono (tasty food to go with the kava). After Tangaroa prepared the kava and drank it, he seized Tangiia and swallowed him, then spat him out. Tonga-iti did the same, and then Tangiia did the same to both Tangaroa and Tonga-iti.

After this ceremony, the two gods told Tangiia, "Now you possess the mana (power) of a god." The two gods ascended to the sky to convey Tangiia to the presence of Rongo-ma-Tane.

The atua-tini (many gods) asked, "Who is this ariki?"

Tangiia replied, "It is Tangiia-ariki."

Again they asked, "Is this the ariki who worships the gods?"

The answer was "Truly, it is so!"

After this acknowledgment, the atua-tini felt a desire to taste Tangiia and after the straining and drinking of the kava, they all swallowed Tangiia's spirit as ono to the kava. Then he did the same to all of them. After this meal Rongo-ma-Tane said to Tonga-iti and Tangaroa, "Take him away and appoint a purapura (a medium) for Tangiia's spirit, then return." The gods came along and found Ruru, who was engaged in clearing land, and made him a medium for Tangiia's spirit.

Here ends the history of Tangiia, a man who played an important part in Polynesian history and ended by becoming a god. [The narrative traces Tangiia's 27 generations of descendants down to the time when this story was recorded.]

NOTES

This version of the story of Tangiia is from "The History and Traditions of Rarotonga," told in Rarotongan by Te Ariki-Tara-are, the last high priest of Rarotonga; it was translated by S. Percy Smith (Part VI and VII, *Journal of the Polynesian Society*, Vol. 28: 1919, pp. 134-144, 183-197; Parts VIII-XI, Vol. 29: 1920, pp. 1-16, 45-51; 60-65). A shorter version of the history of Tangiia is found in "Genealogies and Historical Notes from Rarotonga," Part I, *Journal of the Polynesian Society*, Vol. 1: 1892, pp. 20-29. A third version of the Tangiia story is given in "Floatsam and Jetsam from the Great Ocean: or, Summary of Early Samoan Voyages and Settlement" written by "a native of Rarotonga" in 1842 and translated by the Rev. John B. Stair, *Journal of*

the Polynesian Society, Vol. 4: 1895, pp. 95-131.

"The History and Traditions of Rarotonga," by Te Ariki-tara-are. begins with the origins of the Polynesian race, somewhere in Indonesia. The original lands are given the names Atia, 'Avaiki-te-varinga, Iti-nui, Papua, Enuakura, 'Avaiki, and Kupu. The parents are named Te Tumu ("The Source") and Papa. The first story is about Maui, a child of Tangaroa and a descendant of Papa. (Journal of the Polynesian Society, Vol. 8: 1899, pp. 61-75).

S. Percy Smith speculates that 20 generations from Te Tumu, Vaitakere was living in Java or Sumatra; and that 35 generations from Te Tumu, Te Iraranga led a migration to the Hawaiian Islands, from Tawhiti-nui (Borneo?), and later settled in either the Lau islands of the Fiji Group, or in Savai'i of the Samoan Group. Ui-te-rangiora, one of the great voyagers, appears 43 generations from Te Tumu. The following events are set in 'Avaiki (Samoa), on the threshold of expansion into the Pacific.

Ui-te-rangiora and the Dispersion of the People of 'Avaiki

Ui-te-rangiora built a celebrated pa'i (sea-going canoe); the timbers of the canoe were human bones. The keel of the canoe was called "Te Ivi-o-Ātea."

Because no bones were long enough for kiato ('iako, or crossbeams connecting the two hulls), a tree named Te Tamoko-o-te-rangi was cut down for the purpose. This tree was kapu to Taa-kura and Ari. When they found out that Ui-te-rangiora had cut down their tree, they waged war against him and many men were killed. But the tree was taken and cut into eight portions and made into drums, tutunga (tapa-beating logs), and boards. One drum was named Taka-enua and was used in the ceremonies at Avarua (in the Samoan or Lau Group) to install a high chief. The tutunga was named Tangi-varovaro.

Ui-te-rangiora completed his vessel and launched it. This was the first pa'i (a canoe made of planks rather than dug out from a single log) and the beginning of the dispersions of the people of 'Avaiki to various islands in the Pacific.

Because of the wars in 'Avaiki, starting with Kuru down to Taa-kura and

Ari, people migrated to the following lands:

'Avaiki-runga ('Avaiki upwind-Tahiti-nui, the Tuamotus, etc.);

Iti-nui, Iti-rai, Iti-anaunau, Iti-takai-kere (Fijian Group, Lau islands);

Tonga-nui, Tonga-ake, Tonga-piritea, Tonga-manga, Tonga-rara, Tonga-anue (Tongan Group);

'Avaiki-raro ('Avaiki-downwind, or Savai'i, the main island of Samoa); Kuporu ('Upolu), Manuka (Manu'a);

Vavau (North Tongan Group);

Niva-ou (Niuafou) and Niu-taputapu (Keppel's island), both north of the Tongan Group.

Ui-te-rangiora's descendants were Makua-ki-te-rangi, Te Rangi, Ata-o-te-rangi, Tara-o-te-rangi, Te Paku-o-te-rangi, Te Uka-o-te-rangi, Uu, Ane, Taipu, Tuna-ariki.

Tuna-ariki battled Tu-ei-puka over Avarua since both claimed it. Tuna-ariki killed Tu-ei-puka, and won the chieftainship. Tuna-ariki was then killed by a pig, which ate him.

After his death, Tu-ei-puka's son Kati-ongia ruled. His descendants were Kapua, Atonga, and Te Aru-tanga-nuku.

The Canoe of Te Aru-tanga-nuku

Te Aru-tanga-nuku wanted a canoe because there was not enough food on 'Upolu (Samoa). His uncles Oro-keu, Oro-i-nano, Oro-taere told him to build one, so they might leave the island.

They prepared their adzes, held a ceremonial feast, and went to cut a tree for a keel. In the mountains, they met a white heron (ruru) and a snake (aa, replaced by an eel in some traditions) fighting.

Oro-keu appeared on the scene. The heron said to him, "O chief! Separate us and end the fight!" The snake said, "O chief! Leave us alone to continue the

fight!" Oro-keu went on his way.

Oro-i-nano appeared on the scene. The heron said to him, "O chief! Separate us and end the fight!" The snake said, "O chief! Leave us alone to continue the fight!" Oro-i-nano went on his way.

Oro-taere appeared on the scene. The heron said to him, "O chief! Separate us and end the fight!" The snake said, "O chief! Leave us alone to continue the fight!" Oro-taere felt sorry for the heron because the heron was his elder brother. He killed the snake with his adze and wept over and healed the wound of the heron.

The heron then asked him, "What is your purpose here?"

"I am going to cut down a tree to make a canoe for the ariki Te Aru-tanga-nuku."

"Go and cut down my tree at Ara-Punga-verevere. I did not tell Oro-keu and Oro-i-nano about the tree because they did not help me against the snake. Those two are probably dead by now."

Oro-taere went and found the tree, a maota-mea. He rough cut it into the shape of a keel and tied the hauling ropes (kaka) to it. Then he left.

Along came Tangaroa-iu-mata. He found the fallen tree. He asked the guardian of the place Rata-i-te-vao (Rata of the forest), "Who has cut down my tree?"

Rata replied, "I don't know." Tangaroa went around asking who had cut down his tree, but no one knew. So he returned to the tree and re-erected it with a chant: "Stand up you maota-mea, be erect, gird on your bark again. Stand there, O you top of the tree! the large and small branches of the tree! Chips and leaves return to your places! Bark, adhere back onto the tree!" When the tree was restored Tangaroa returned home.

When Oro-taere and his crew returned, the tree was standing there, the hauling ropes dangling from it. The only thing missing was a piece of bark, which he had taken down to the sea to remove the kapu from the tree. Oro-taere returned to shore to consecrate his adze again; the kapu on the

adze had been destroyed when he had killed the snake. Then he went back to the mountain with his crew and felled the tree again, stripped the bark from it, tied on the hauling ropes, and dragged the log down to where the priest Atonga lived.

Food was given to the priest. When he was satisfied, he told Te Aru-tanga-nuku's wife Pori-o-kare, "Return and tell the ariki he must build a house. Tomorrow the canoe will be shaped. When the house is finished, let all of 'Upolu be seated there so they may see the log being dragged along by birds."

Aronga then summoned Tupua-ki-Amoa and told him to go to the white heron. "Tell him to tell Pirake-akaruirui-rangi [Pirake: a seabird noted for its soaring] to assemble all the birds and to drag the canoe of the ariki to the house prepared for it. Tupua-ki-Amoa gathered the many birds. At daylight, with the moamoa (a kind of bird) on one side, the Kakia, the Ngoiro, and Katikatika (kinds of birds) on the other side, and the Kati-rori bird reciting a song, the canoe was lifted down to the house.

The canoe had been built at night by Atonga-vaerua (Atonga, the spirit), and his workmen. Iu-mata, Aa-ngu, Na-ora, and Na-oti built one side of the canoe while Tupa, Tupa-ake, Tupa-aki, and Uri-reka built the other side; there were eight builders, Atonga being the ninth. Atonga named the canoe "Taraipo" ("Built in the night"); the birds called it "Te Manu-ka-tere."

When the canoe reached the house of the ariki, the birds returned inland, but Atonga stopped the heron and asked, "Where is there a tree suitable as a rakau-tukava (a weapon) for the ariki?" The heron replied, "At Te Po-amio." Atonga sent Tupua-ki-Amoa to cut down the tree. After a long search, he cut down the tree called Ipi-rere and brought it down to the village. He shaped it and named it "Te Amio-enua" and delivered it to the ariki, who placed it on the canoe. [This is the weapon over which Tangiia and Tutapu fought.] The canoe was named "Te-Pore-o-kare."

[The episode of a tree cut down for a canoe, re-erected by a forest god, then cut down again is also told as part of the tradition of Rata.]

The Voyages of Te Aru-tanga-nuku

Te Aru-tanga-nuku launched his canoe and sailed to Iva (Marquesas). At Iva, the canoe was renamed "Te Orauroa-ki-Iva" ("The Long Voyage to Iva"). From there it went to Rapa-nui (Easter Island) and on to Rapa-iti (Oparo, southeast of Rarotonga), where Irei was left on account of his bad navigation. From there they sailed to 'Avaiki-runga (Tahiti) and all the islands near there. At 'Avaiki-runga the canoe was named "Te Ara-ki-'Avaiki" ("The Way to Tahiti").

The great desire of Te Aru-tanga-nuku was to see all the wonderful things on the ocean which had been discovered and reported by his ancestor Ui-te-rangiora. He saw the rocks growing out of the sea beyond Rapa; the monstrous waves; the female dwelling in those waves, with her hair waving and floating on the surface of the ocean; the frozen sea (tai-uka-a-pia); the deceitful animal on the sea, which dived below the surface (walrus or sea-lion?); a gloomy, dark place, where the sun is not seen; a rock whose summit pierces the sky with steep, bare cliffs, where vegetation does not grow.

Te Ara-tanga-nuku had the following descendants: Te Amaru-ariki; Te Amaru-enua; Te Uenga-ariki; Te Uenga-enua; Kau-tea; Kau-mango; Vai-iti; Ka'u-kura; Pou-vananga-roa-ki-Iva and Ka'u-ngaki. Ka'u-ngaki was Tangiia's mother.

1. Iro, or Hiro as he is known in Tahitian, is a distant relative to Tangiia; they share a common ancestor named Tu-tarangi, who is said to have conquered Fiji. (See "Genealogies and Historical Notes from Rarotonga," Part I, p. 25; and "History and Traditions of Rarotonga," Part VI, pp. 135-143.) See the Tahitian version of the story of Hiro in this collection.

2. Karika was a great navigator born on Manu'a, the easternmost of the Samoa Islands, where he is known as 'Ali'a (the Samoans do not pronounce the k's in his name.)

Another version of the story of Karika is told in "Genealogies and Historical Notes from Rarotonga," Part II, Journal of the Polynesian Society, Vol. 1: 1892, pp. 65-75.

A third version of the meeting between Tangiia and Karika is found in

"Floatsam and Jetsam from the Great Ocean: or, Summary of Early Samoan Voyages and Settlement," written by "a native of Rarotonga" in 1842 and translated by the Rev. John B. Stair, *Journal of the Polynesian Society*, Vol. 4: 1895, pp. 106-107.

3. Tangiia built numerous other marae, houses, and koutu (meeting places) on Rarotonga. For a list of these, see pages 11- 15, *Journal of the Polynesian Society*, Vol. 29: 1920.

4. Compare the reverence for life expressed in Kamehameha's "Law of the Splintered Paddle": On one occasion when Kamehameha 1st was building a heiau (temple) and needed human sacrifices, sometimes as many as ten persons were made victims; for the greater the number sacrificed the greater the power conferred upon the temple.

To secure fresh victims, he started along the coast in a canoe with his retainers. At one place they saw two fishermen walking on the shore. Bidding his retainers remain at a distance, Kamehameha endeavored to capture the men. When they saw they were being pursued both fled. Just as Kamehameha was about to grasp the hindermost, the chief's foot got caught in a fissure of lava and he fell. The man he was after instantly struck him over the head with a paddle. The blow was so hard, the paddle splintered.

"Why don't you kill him?" said his companion.

"Life is sacred to Kane," replied the man, quoting the old saying "Ua kapu ke ola na Kane."

Kamehameha had regained consciousness after the blow and heard what the two men were saying. He knew the man could easily have killed him by running a fish-spear through his body and that neither of the two had recognized him as their chief. The chief was so impressed with the reverence for life shown by the two men that he put an end to human sacrifice and promulgated the famous "Law of the splintered paddle,"-the "Kanawai mamala-hoe,"-which runs, "Let the old men, the old women, and the children travel and sleep by the roadside [in safety]," "E hele ka 'elemakule, a me na luahine, a me na keiki, a moe i ka ala." (Told by Kaluhiokalani; in Green, *Folk-tales from Hawaii* 119.)

<u>1976: Tahiti</u>	<u>1980: Tahiti</u>	<u>1985-87: Aotearoa (New Zealand)</u>	<u>1992: Rarotonga</u>	<u>1995: Marquesas</u>	<u>1995: West Coast, British Columbia, & Alaska</u>	<u>1999-2000: Rapanui</u>
<u>Voyages</u>	<u>Canoe-Building</u>	<u>Wayfinding</u>	<u>Life on a Canoe</u>	<u>Polynesian Migrations</u>	<u>Proverbs and Traditions</u>	
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Hiro

Teuira Henry

At Hiva, Ra'iatea, lived a chief named Ra'a-mau-riri (Sacredness-holding-anger), whose wife was Taetae-fenua (Land-peak), by whom he had four sons, named Mea-e-hi'o-i-mua (Person-to-look-before), Mea-e-hi'o-i-muri (Person-to-look-behind), Mea-e-hui-te-tae (Person-to-reach-sidestroke), and Ti'a-pae-rairai (Stand-on-thin-side). Then his wife died, and Ra'amauriri took to himself a second wife, named Fai-mano-ari'i (A thousand-royal-revelations), who bore him a giant son, named Hiro (Trickster), so named after Hiro, god of thieves, who became his guiding spirit.[1](#)

While yet a young lad, Hiro went to Tahiti and lived at 'Uporu (Ha'apape) with his maternal grandfather, named Ana (Cave), the senior teacher in the school called Tapu-ata-i-te-ra'i (Sacred-cloud-in-the-sky). There Hiro's four brothers had been placed as students, and while he was still too young to join them, he acquired a greater knowledge than they of the chants that he heard by listening from outside. Hiro grew so fast that he was soon the biggest youth in all 'Uporu, and one night he stole up on to the ridgepole of the schoolhouse where his grandfather, who was blind, was teaching, and this he continued to do during six consecutive nights, at the end of which he had absorbed into his person all that was taught in the school. When he was admitted as a student he recited all the chants so well that the teachers were amazed, and his grandfather said that there was nothing more at the school for him to learn. It is said that Hiro's pastime at 'Uporu was to play with sand, which he easily heaped up into hillocks which are still standing along the shore.[2](#)

When he became a man, he inquired of his grandfather what were the requirements of man. His grandfather replied:

"Provide yourself with a home, and marry a wife."

"If I do so," said Hiro, "what must I do with the wife?"

"Cherish and feed and clothe her," was the reply.

"That would be unprofitable," said Hiro,³ and so he went on disapproving of everything that Ana told him a man should do. Then he inquired what tricks man was capable of doing, and when Ana enumerated: lying, deceiving, and thieving.

Hiro exclaimed: "Yes, stealing is good; that is a profitable thing; it will be satisfying to a man."

So Hiro decided to become a thief under the protection of Hiro, god of thieves; and he began by stealing young breadfruit and coconut trees (taking the precaution not to do so from lands close by). He planted these trees on his own grounds.

Hiro was a great pig hunter. Early one morning Hiro told his grandfather that he was going far up inland to a sacred place called Ou-tupuna (Ancestor's-stronghold) for a branch of an 'ava tree named 'Ava-tupu-tahi (Solitary-'ava), famed for its age and immense size. His grandfather cautioned him to be careful not to desecrate the sacred grounds. Hiro went there, and on his arrival, he was greeted by two men, keepers of the premises, named Taru'i-hau (Exceeding-darkness) and Te-rima-'aere (The-hand-in-space). They asked him what his errand was, for, said they, "No man dares enter here." When Hiro told them what he wanted, they refused to allow him to break a branch or to approach the sacred 'ava. They yielded not to his entreaties and finally threatened to take his life if he would not depart.

Much vexed, Hiro struck off some branches from the 'ava tree with his spear but by enchantment the two keepers caused them to reunite and grow again in their places. Hiro also used enchantment, made the tree grow very high, again broke off its branches, which remained upon the ground unaffected by the further invocations of the keepers. Then he pulled the tree up by the roots.

The keepers called to their aid a boar named Mo'iri (Swallow-whole), of prodigious size and possessed by a man-devouring demon, so that it terrorized men who chanced to pass near the place. Soon it came rushing

towards Hiro. He met it with his spear, which he thrust through its open mouth, and killed it, consigning the evil spirit to Po (Darkness). Then the two men stepped forwards with their spears to fall upon Hiro, but he warded off their spears, caught his assailants by the hair, beat their heads together, and killed them.

Hiro tied the two men together by the hair of their heads and placed them thus across his spear, with the great 'ava tree at one end and the pig, Mo'iri, tied by its four legs, at the other. Then he raised his spear upon his shoulders and carried home his burden as though it were nothing. On arriving home late in the afternoon, Hiro found his grandfather sitting beneath a spreading breadfruit tree, and before him he threw down his load upon the ground with three tremendous thuds and a crash.

"What have you there, Hiro?" asked the old man.

"The pig, Mo'iri," was the answer.

"What is it that crashed?" he asked.

"The famous solitary 'ava," said Hiro.

"And what produced the other two heavy sounds?" asked the old man.

"The two men, Tauri-hau and Te-rima-'aere, whom I have slain."

"Aue, aue! (Alas, alas!)" said Ana, sorely mortified. "You have committed a great crime!" But when Hiro explained everything to him his anger ceased.

Hiro buried the two men in his marae, after which he purified himself for domestic work by bathing in the sea. He made an oven in which he baked the great pig and some taro, and then he prepared the 'ava drink by chewing up the roots, according to custom, and in a few moments his work was done; he had filled forty 'umete (wooden trough) with pulp and poured on water and strained out the 'ava juice ready to drink.

The old man was astonished when he was told that forty 'umete of 'ava had been prepared so quickly, and he asked to feel his grandson that he might form an idea of his size. So Hiro sat down while his grandfather stood up,

and although Ana was a man of fine stature he found that his hands could reach up only below Hiro's shoulder blades, which caused him to exclaim: "You are indeed an immense man, and your mouth must hold a great deal more than that of an ordinary person. It is not surprising then that you have masticated all the 'ava so soon."

They feasted on the famous pig and drank freely of the 'ava, which they found very good. Hiro ate three-fourths of the pig and drank thirty 'umete of the 'ava and was only moderately filled; his grandfather was amply satisfied with a hind leg of the pig and two 'umete of 'ava. From this event arose the saying, formerly common in Tahiti and the Tuamotus: "Te pua'a o Mo'iri, e te 'Ava-tupu-tahi" ("The pig Mo'iri and the 'Ava-tupu-tahi").[4](#)

Hiro acquired a great passion for navigation and visiting lands far away. He became skilled in hewing canoes out of solid logs and was the first builder of large canoes with planks sewn together, which he called pahi (ship).[5](#)

A day came when Hiro conceived a strong desire to go and visit his parents in Ra'iatea, and his grandfather agreed to let him go. He built himself a big canoe with a keel and planks sewn together, which was the first of the kind ever made in the Society Islands. He loaded it with many nice things to take as presents to his parents and also a feather cloak and girdle for himself to wear befitting his rank. Astern upon the deck he erected an altar, at which to offer prayers and upon which he placed choice food for the gods. He invited his four half-brothers to accompany him, to which they willingly agreed, and after all the usual ceremonies they launched the canoe and one fine morning in beautiful weather set sail for Ra'iatea.

When they were well out to sea Hiro desired to take a nap, and before doing so he told his brothers that they would probably meet with flocks of birds, which would alight upon their canoe, in which case if they saw a flock of large white birds accompanied by a beautiful red bird they must by no means kill them, as it would be Tane-manu (Bird of the god Tane) and his train. Great trouble would ensue were they to commit so grave an offense against the god Tane. Hiro went to sleep, and soon many birds came soaring overhead. Finally a flock of beautiful white birds with the great elegant red Tane-manu conspicuous among them alighted upon the water, sometimes

flying on to the rigging of the canoe and eating food off the altar, revealing the goodwill of Tane.

Meanwhile, the four brothers were preparing breakfast upon a floor of sand fixed across the stern of the canoe, and with poles and paddles they beat down and killed some of the birds for meat and also struck and stunned Tane-manu, forgetting Hiro's caution in their excitement. Apparently dead, Tane-manu lay unnoticed upon the altar.

Hiro slept on soundly.

When the food was cooked his brothers ate heartily of it, much enjoying the fat flesh of the sacred birds. They set aside a share for Hiro, and when he awoke and sat to eat he found the pieces of bird much more delicate than all other sea birds, and seeing the red bird on the altar he at once knew what had happened and upbraided his brothers, saying that they were thus bringing sure destruction upon them all. Hiro then took Tane-manu, and after handling him tenderly and invoking the god Tane to renew his life, he soon saw the bird revived, whereupon the bird flew away, his head drooping with sorrow at the unkind treatment he had received.

When Tane-manu reached Tane in the sky, Tane said the names of Hiro's brothers, according to their ages; the bird nodded assent at each name, then held up his head as soon as Tane mentioned the name of the one who had stunned him, and thus it was made clear that the evil had happened to the bird while on the canoe.

Again Hiro went to sleep, and then came a strong current in the sea, followed by a tempest, in the midst of which the brothers saw proudly sitting upon the billows the bird Tane-manu sent by the god Tane to preside over the elements. They roused Hiro, who at once ordered the sails to be put down, and shortly afterwards the storm subsided, when they set sail again. So it happened that the same disturbance took place whenever Hiro fell asleep and ended after he awoke. Finally as he again prepared to sleep, he said one more storm worse than all the others would come, and he told his brothers to awaken him as soon as the sea began to show indications of the storm's approach. While Hiro slept the wind changed for the worse and came from all four quarters of the horizon at once. The sea became rough and the

canoe was swamped. When Hiro awoke, he exclaimed to his brothers: "Now we are lost. Why didn't you wake me as I told you to?"

Soon Tane-ma'o (Shark of Tane) came and demanded Hiro's elder brother, and Hiro answered: "Have you no pity? My ship is swamped, my altar is washed away, my goods are all wet-"

"Give me my prey or you shall die also," Tane-ma'o replied, and he seized Mea-e-hi'o-i-mua, and swallowed him whole. Then he swallowed the other three brothers, one after another. Hiro tried to save each, but to no avail. The shark allowed Hiro to kiss the last brother, then carried him away in his jaws.

Hiro then sank down to the bottom of the sea in his capsized canoe, and there he slept. During the night he heard two voices by him saying: "Give! give the canoe to us, Hiro; awake!" Looking around, he asked who these were, asking for his canoe.

"We are those who turn upright capsized canoes," they replied, and so Hiro welcomed them and let them turn up his canoe. He fell asleep again and was awakened by two more persons, saying: "Give, O give!" and when he inquired who they were, they answered, "We are canoe-bailers." And so with Hiro in it, they sent the canoe like a shot up to the surface of the sea and there bailed out the water and disappeared.

It was just daylight when Hiro set sail once more for Ra'iatea, his native isle. [Hiro landed on Ra'iatea and laid out his clothes and gifts to dry. Two forest nymphs stole his feather cloak and feather girdle. Hiro trapped them at their bathing pool and kept them captive until they gave him back his possessions.]

As evening set in, Hiro swore vengeance upon Tane-manu, whom he had resuscitated by invocations to the god Tane. He found that the home where the bird roosted was near by, and as the bird was out at sea still, Hiro dug a hole beneath the roost, made his bed in it, and laid down to rest while waiting for the bird to return.

While yet asleep, Hiro heard a spirit's voice, saying, "Take him, Hiro, Take

him!" and as he awoke, he reached up his long arms and secured Tane-manu tightly in his grasp. But the bird was very strong and struggled hard until he escaped, then took flight up to the first sky, to the second sky, and to the third sky, with Hiro, undaunted, following. Then they descended to earth and alighted on the island of Rurutu, whence the bird swam to Ra'iatea. Hiro swam after him. Because of this swim Hiro had ever after a rank, sodden odor, which was compared to that of coconut husk steeped in water.

On arriving in Ra'iatea, Hiro found the weary bird perched upon a nono tree, his head drooping. Panting for breath, Tane-manu was unable to go farther. When he saw Hiro, he exclaimed: "Let me live, O Hiro, let me live!"

Hiro said that as Tane-manu had been the cause of all his troubles he deserved to die, but he merely banished him. Thus ended the earthly career of the beautiful red bird, Tane-manu, who returned to Tane in his tenth sky, where he ever afterwards remained.[6](#)

At last Hiro went to his parents' abode and there dwelt a long time. Hitherto he had lived a bachelor life, indifferent to the fair sex; but in Ra'iatea he at last conceived a strong attachment for a most beautiful woman named Vai-tu-marie (Clear-still-water), who was the wife of a noted warrior named Tutae (Dung), and he determined to possess her himself. So he made advances to the man, sometimes feigning friendship and again aggravating him to hostility, until one day the warrior raised his spear to strike him, when Hiro caught him by the head and broke his neck. Thus freed of the husband, Hiro took possession of the wife, of whom he became very fond, and by her he had two children, a son, named Marama (Moon), and a daughter, named Pi-ho (Splash-and-shout), and everything went on harmoniously between them until the children had grown up.

It happened one day as Hiro and two artisans, named Topa (Fall) and To-vana'a (Thy-herald), were building a canoe and the wife, Vai-tu-marie, and two companions were talking in a house close by, that the two artisans overheard then discussing the qualities of their husbands, and in an unguarded moment, Vai-tu-marie laughed concerning Hiro's strong odor while the other two women were boasting that it was not so with their husbands. This little episode the men repeated to Hiro, who had not heard it,

and he became very angry and bided his time for revenge upon his wife.

One day while he was alone, sewing on the planks of his canoe, his wife was passing by, and calling her to him he bade her aid him by getting into the canoe and drawing the sennit in while he drew it out. This the wife willingly did, but as she was not accustomed to such work Hiro contrived by jerking the sennit to make it hard for her to guide it, and in a little while she cried:

"O Hiro, my finger is pinched!"

"Which finger?" said he.

"My little finger," she replied. So he released her, and in a little while another finger got pinched and was freed, then another, and another in the same way, until at last her whole hand was caught. Then Hiro tightened the cord around her wrist and would not release his wife in spite of all her cries and entreaties, but taunted her by repeating what she had said and asking her if it was customary for women to depreciate their husbands in the eyes of others.

"O Hiro," exclaimed the poor woman writhing in agony, "I have not depreciated you, I have praised you to all my friends; regard not this passing remark as evil speaking, and let me go."

"No," said Hiro, "I will not let you go; you are tied with sennit, and you will be inclosed in a wall of shifting sand."

Knowing then that he meant to kill her, she said: "O Hiro, remember how you have loved me, witness my agony in this painful position, and consider yourself avenged for all my thoughtlessness. If I die, I shall belong to the gods, but spare my life now, O Hiro, and let me go."

But Hiro got into the canoe and brutally kicked his poor victim to death. Then he dug a shallow grave in the sand beneath the chips of his canoe and there buried her, thinking that no one had witnessed the scene; but a man who was passing by heard her pitiful cries and saw all by peeping into the shed from the outside, at the risk of losing his own life and quite powerless to save hers.

While this tragedy was taking place, their son Marama was out surf riding, which was his favorite diversion. When he returned home, not finding his mother and seeing a mat that she had been making lying with the strands scattered around as if left for a short time, he went to the canoe shed and asked his father where she was. Hiro, fearing his son, replied: "I do not know."

Then feeling impelled by an invisible power, Marama went towards the spot where his mother lay, and moving the sand away he found her calm and beautiful in death. He bore her body away and buried it in sacred ground in her marae, and then he went to a distant point and sat alone on the seaside, mourning deeply for her and refusing to take nourishment or receive comfort from anybody. His father did not dare approach him. As days thus passed, and Marama neither ate nor drank, feeling anxious for him Hiro sent his daughter Pi-ho, to try to console her brother and bring him home, which after great difficulty she at last succeeded in doing. Hiro felt himself condemned in the eyes of his son and avoided falling into his hands by taking frequent long voyages, fearing that he might avenge the death of his mother upon him. But, not being of the fierce nature of his father, Marama did not seek his life. They built a ship together, which they named Hotu-tai-hi (Fruitful-fishing-ground).⁷

Hiro became a great navigator and explorer, and he resolved to build himself a ship for his voyages greater than any that had been seen before. So accompanied by two experts, named Memeru (Fish) and Mata'i-e-ha'a (Wind-for-work), he went to Ra'iatea to look for suitable timber for his work. Preferring hard mountain wood, they explored the ravines and highlands, but did not find suitable trees until they arrived at a beautiful valley named Tu-mata-ri'i (Stand-by-Pleiades), the dominion of King Puna (Source), whose home, named Vae-a-ra'i (Divider-of-the-sky), was high up, nestling in the woods in the recess of the valley. After slyly marking the trees they wanted they returned home. The next thing Hiro had to do was to find access to King Puna's dominion, in order to chop down and take possession of the trees that the King very much coveted.

[Hiro tricked King Puna out of his trees by giving the King's retainers fish to eat. Once the retainers accepted the fish, Puna was obligated to reciprocate

by allowing Hiro to cut down trees. Puna tried to discourage Hiro from cutting down the trees by deprecating them, but Hiro, not to be denied, went and cut them down anyway.]

Within a few days Hiro had cut down all the fine trees that Puna had tried to save by depreciation. He cleared the trunks of their branches and bark and hewed them into shape. Then with strong fau ropes, he and his men drew them down the valley over cliffs and ravines, as if it were merely light work. Thus King Puna was robbed of his fine aha-tea tree, his mara-uri tree, a toi (Alphitonia) tree, and a hauou (pua in Tahitian; *Fagraea berteriana*) tree. Hiro did not spare the trees sacred to the gods around the marae. He cut down a great tamanu (*Callophyllum inophyllum*), stripped the trunk of its branches and bark, split it up for planks for the bows of his canoe, and trimmed the branches for outriggers and crossbeams. He cut down a most sacred miro (*Thespesia populnea*) tree for planks for the after part of his canoe, and he took two tall straight breadfruit trees for planks for the deck houses. Then he went into the woods and cut down straight fau trees (*Hibiscus tiliaceus*) for paddles and for floor planks, and three slim hutu (*Barringtonia asiatica*) trees for masts. After all this depredation, Hiro and his men helped themselves to wood and thatch and reeds and all other material needed for a shed in which to build the canoe and for rollers to place under it, King Puna not daring to oppose them, as Hiro was too powerful and dangerous to vex.

These are the famous artisans who built Hiro's canoe: Hotu (Fruitful), Hiro's own chief artisan, and his assistant Tau-mariari (Rest-upon-waves); and the royal artisan Memeru of Opoa and his friend Ma'i-hae (Fierce-disease)-men unrivaled in skill and energy. Hiro super intended the work, which was according to his modeling.

Amid all the required ceremonies and prayers and good omens, they set to work. On rising ground they erected a great shed thirty fathoms long, six wide, and five fathoms high, facing the sea endwise. The builders had their baskets of axes and adzes of stone, gimlets of coconut and sea shells, and sennit of fine tight strands, prepared and consecrated to the god Tane for this special purpose. Hiro marked out the keel, the knees, the beams, and the planks, and the men cut them into shape. All the material for the work was

carefully sorted and handily placed in the shed, Hiro passing it to the men as they required it.

They set the keel of avai, toi, and mara wood, polished and firmly spliced together with hard spikes of wood secured with sennit, upon rollers in the shed and painted it with red clay mixed with charcoal so as to preserve it from wood borers. Then they fastened the knees onto the keel with spikes and sennit. Holes were bored into the keel and planks at even distances apart, and the men set to work in the following order: Hutu, the chief of Hiro's artisans, worked on the outer side to the right of the canoe, and Tau-mariari, his assistant, worked on the inner side; Memeru, the royal artisan of Opoa, worked on the outer side to the left of the canoe, and his assistant, Ma'i-hae, worked on the inner side. Each couple faced each other, fixing the planks in their places and drawing the sennit in and out in lacing the wood together; and the canoe soon began to assume form, the bows facing the sea. To make work light, they sang.

Te Pehe o Hiro (The Song of Hiro)

What have I, O Tane
 O Tane, god of beauty?
 'Tis sennit!
 'Tis sennit of the host of heaven,
 'Tis sennit for thee O Tane!
 Thread it from inside, it comes outside,
 Thread it from outside, it goes inside.
 Tie it fully, tie it fast.
 This is the fashion of thy sennit,
 O Tane,
 To hold thy canoe,
 That she may go over long waves,
 And over short waves;
 To the near horizon,
 Even to the far-off horizon.
 This sennit of thine, O Tane,
 Let it hold, let it hold!

Every seam and all the little holes in the wood from the keel and upwards

were well caulked with fine coconut-husk fiber and pitched carefully with gum, which Hiro drew from sacred breadfruit trees of the marae, and when all the streaks were on, the canoe was washed out clean and dried well and painted inside and outside with red clay and charcoal. As the hull of the canoe reached almost to the roof, the builders could work no longer within the shed, and so they broke it away. Then the boards of the deck were set upon the beams and fixed in their places with spikes and sennit, and the ama (outrigger) of tamanu wood, which had been well steeped in water to preserve it from borers, was polished with limestone and firmly lashed with sennit on to the left side of the canoe, the upper attachment of wood forming across each end of the canoe a beam, called the 'iato and lashed on to the right side in the same manner as on the left side. This was the song of the outrigger:

This is sennit for lacing on the crossbeams ('iato),
 The sacred sennit of Tane;
 Now lace it on, tighten it to hold.
 Lace it and wind
 The sennit around it.
 What will weaken it,
 What will sever it,
 When it holds with the sacred sennit,
 With thy sacred sennit, O Tane?

Next came the finely carved towering ornaments for a rei mua (neck-in-the-front, the figurehead) and a rei muri (neck-behind, stern ornament), which were fastened on to their respective places, and they were named Rei-fa'apiapi-fare (Necks-filling-up-the-house), because the shed was broken away to allow placing them and finishing the canoe. The two houses, called oa mua and oa muri (fore house and aft house), were set in their places and thatched with fara leaves, after which Hutu, the chief artisan, cut out the holes in the deck and down in the keel, in which he stood the three masts, before mentioned, which had been steeped in water, well seasoned, dried, and polished.

Then the canoe was completed. Hiro dedicated it to Tane, naming it Hohoio (Interloper), in commemoration of the manner in which the material for

building it was obtained from King Puna's land. Finally the day arrived for launching the canoe, and a great multitude assembled to the wonderful sight. The props were removed from the sides of the canoe, and the men held it ready to launch over the rollers. Hotu invoked gods Ta'aroa, Tane, 'Oro, Ra'a, Ro'o, and Moe, to their aid, and soon their presence was felt impelling the canoe. The rollers began to move, and then the canoe went forwards, slowly at first as the men's hands steadied it and then swiftly and well poised as it gracefully descended alone and sat upon the sea, which rose in great rolling waves caused by a wind sent to meet it by the star Ana-mua [Antares in Scorpio], the parent pillar of the sky. The spectators greatly admired Hiro's ship and raised deafening shouts. Then the canoe was made to drink salt water; it was dipped forwards and backwards in the waves of the great moving altar of the gods and thus consecrated to Tane. A marae was made for him in the little house aft of the deck, and the three masts were rigged with ropes and strong mats for sails and long tapa pennants streaming from them.

Within a few days the canoe was loaded with provisions. Great fish baskets were made of bamboo, filled with many kinds of fish, and attached to the outside of the canoe so as to be in the water. Bamboos and gourds were filled with water and stowed away on board, and there were fe'i (bananas), taro, and mahi (fermented breadfruit) in abundance. A bed of sand and stones was made upon the deck, upon which to make a fire for cooking the food, and soon Hiro was ready to go to sea. Hiro was the captain and pilot, and he had other competent seamen, who like him were acquainted with the heavenly bodies and their rising and setting. Women and children also accompanied their husbands and fathers on board, and on one fine day, with a strong favorable wind, they set sail, applauded by many spectators, among whom were prisoners of war (called titi) whose shouts were heard above all others. They saw Hiro's great pahi sail out to sea and disappear beyond the horizon, never again to return to Tahitian shores. Thus ended Hiro's work in his native islands.[8](#)

Hiro prided himself on doing things that other men could not do. At the request of his son, he made fire by friction, using toa for the upper attrition and a stone for the under attrition, instead of pliant wood for both. Then Hiro told his son to wield on a hillside, without missing, an immense heap of

stones of all shapes and sizes, instead of pebbles, in a game of timo, which Hiro was accustomed to doing with his great hands without difficulty. His son complied with the request and succeeded well until he came to the last stone, which as he was about to take it up Hiro kicked away and caused Marama to stumble. This enraged Marama; he struck the hill with his fist and caused a landslide, which left steep, bare rocks. Hence the ever-standing epithet relating to the hill, "Te mou'a ta Marama i po'ara" ("The mountain which Marama hit").

In Taha'a are a number of rocks called Te-uri-a-Hiro (The-dogs-of Hiro). In a valley in Maupiti is a long rock called Te-pahi-o-Hiro (The ship-of-Hiro), one end of which got broken off in a fall from the mountain where it once lay; and on the seaside is a cliff on which are two indentations called Tukurira'a-o-Hiro (Kneeling-prints-of-Hiro). At Porapora is a heap of stones called Te-timora'a-o-Hiro (The-timo-game-of-Hiro); and upon a hill not far from it is a stone that has a metallic ring, called Te-oe-o-Hiro (The-bell-of-Hiro). In Huahine is mentioned a stone said to be a petrified man, who became so for neglecting to signal the arrival of Hiro's ship; and upon a precipice in the strait is a rock called Te-hoe-o-Hiro (The-paddle-of-Hiro).⁹

NOTES

This version of the story of Hiro is from Teuira Henry's *Ancient Tahiti* (Honolulu: Bishop Museum, 1928, pp. 537-552).

The voyaging ali'i Hiro is known throughout Polynesia—in Rarotonga and Aitutaki, his name is Iro; in Aotearoa he is known as Whiro; in Hawai'i, Hilo.

From various genealogies, Hiro has been placed in the twelfth or thirteenth century. Hiro was also the name of the god of thieves in Hiva (the Marquesas); and Whiro was the name of the son of the sky father and earth mother who was an enemy of Tane. The character of the voyager Iro has taken on these aspects—he is both a trickster and a rebel.

An Aitutaki version of Hiro's story was translated by J.T. Large and published in the Journal of the Polynesian Society, Vol. 12, 1908, pp. 133-139.

A Rarotongan version is given in "History and Traditions of Rarotonga," Part XIII, Journal of the Polynesian Society, Vol. 28: 1920, pp. 113-127.

1. In the Aitutaki version, Moe-terauri, the father of Iro, came to Enuakura [land of the red-feathered birds] from 'Avaiki seeking after women. He made love to Akimano-ki-a-tu, a married woman. He first visited her on the two nights of the lunar calendar known as Iro and Oata. When the woman became pregnant Moe-terauri said to her, 'If our child you are about to give birth to turns out to be a boy, I will call him by my two nights of the moon, Iro-nui-ma-Oata.' The woman gave birth to a son, and he was so named accordingly. Iro lived and grew up to manhood at Enuakura. The ariki of the land at that time was Puna, who ruled his people the Ati-Puna.

The identity of the island Enuakura is not clear. In the Aitutaki story, it lies east of Vavau, which could be the northern islands of Tonga; thus Enuakura, could be an island or a place among the Cook Islands, the Society Islands, or the Austral Islands. In the "History and Traditions of Rarotonga," Enuakura seems to be a place name on the island of Vavau (identified as the northern group of Tonga); in a Tahitian tradition, Fenua-'ura is mentioned in connection with the Austral Group, SE of Rarotonga; or it could be a small islet on the reef of Borabora (See the footnote on page 127 in the "History and Traditions of Rarotonga"). Vavau was also the ancient name of Borabora.

According to the Rarotongan tradition, Moe-terauri came from Vavau (the northern islands of Tonga) to 'Upolu (Samoa) to court Akimano, who was the wife of Pou-ariki. He departed for 'Upolu after Akimano became pregnant. He left her with four inheritances for his child: "the weapon called Nio-tamore; a loincloth called Tava-manava, a garment named Au-ma-tuanaki, and a wooden pillow named Te Veri" ("History and Traditions of Rarotonga," Part XIII, Journal of the Polynesian Society, Vol. 28: 1920, p. 115).

2. Rarotongan Version: Iro grew up at 'Upolu (Samoa) with his half brothers,

who were children of Akimano by her husband Pou-ariki. One day, as he played with them, he knocked down his brothers' sand hills, so they beat him to death. He came back to life; this happened three more times.

He secretly learned karakia (incantations or prayers) from two old blind relatives, then took care of the old men, bathing them, cleaning their sleeping house, feeding them, and chewing 'awa for them. "He took the flesh of two coconuts, and squeezed them into the eyes of the blind men," which restored their sights. After Iro revealed to the old men that he was their grandson and he recited the karakia for a ceremony honoring the high-born chief who would supply them with things to eat, the old men placed him in charge of performing the ceremony.

3. Hiro's belief that it would be "unprofitable" to care for a wife foreshadows his brutal murder of his wife later in the story.

4. In the Aitutaki version, Hiro drank the beer called Aremango rather than 'awa: He then went and stole a pig called Taapua, belonging to the Ati-Puna tribe. He cooked it in an imu, and ate the whole pig himself. Then he drank the beer, and under its influence overturned one mountain on top of another. The sign or proof of his handiwork may be seen in the spur or ridge of rocks extending from the top of the mountain to the sea, and it is called to this day 'Iro's Rope,' by which he overturned the mountain. [The hero Tafa'i also slew a boar named Mo'iri. See "Tafa'i" in this collection.]

5. This innovation in canoe building (lashing planks together to form a hull) is attributed in the Rarotongan tradition of Tangiia and Tutapu to Ui-te-rangiora: "Ui-te-rangiora completed his vessel and launched it. This was the first pa'i (a canoe made of planks rather than dug out from a single log) and the beginning of the dispersions of the people of 'Avaiki [the Polynesian homeland] to various islands in the Pacific."

6. The Rarotongan version of Iro's battle with the god Tane: Iro found out from his mother that his father was Moe-tara-uri of Vavau (Tonga). He tricked the owners of a canoe that landed at 'Upolu (Samoa) into going inland to look for their gods, then boarded the canoe, took command of the crew, and sailed to Vavau. When the canoe reached the outer breakers, Iro overcame the waves that threatened to smash the canoe on the reef. Then his

father shouted from shore, "Who is this well-born ariki who is able to overcome the many waves of Vavau?" Iro identified himself, and Moe-tara-uri was overjoyed and appointed Iro as ariki of Vavau.

Iro then voyaged back to 'Upolu to get his brothers and bring them to Vavau. On the way back to Vavau, his brothers killed and tried to cook Take-aitu, a bird of Tane, the god of sailors. When Iro found out what his brothers had done, he demanded the bird, then tried to revive it by replacing with a stone the heart which had been thrown overboard.

The bird recovered enough to fly back to the land of the gods and Tane, but died there. Tane took revenge by sending a hurricane. Iro leapt into the water and held onto the canoe to keep it from capsizing. Tane tricked Iro by calming the seas; when Iro saw the fair weather, he climbed back into the canoe and laid down, planning to sleep from Pipiri (September) to Akaau (December). After Iro was asleep, Tane sent a strong gust of wind that capsized the canoe. When several of Iro's brothers climbed onto the overturned hulls, Tane swept down and cut off their heads and took them to Matai-tonga. After searching the stomach of every fish in the sea for his brothers, Iro went to Matai-tonga. There he found their heads on the altar; he decided to punish Tane.

Tane's wife reported to the god that a man with a centipede mark all glowing on his back was asleep outside. Tane identified the centipede as the mark of Iro. Iro meanwhile had fastened all the openings of the house to entrap Tane, except for the opening in the roof. Tane flew up, but Iro caught him at the third heaven and threatened to throw Tane to his death. Tane pleaded for his life and promised to be Iro's god and to give him "the seven lands and the four islands-Porapora, Taanga, Vaiau, and Moturea Then Iro let Tane go. Iro then went to Tahiti and dwelt on Mo'orea, where he carved a rock into the likeness of a dog. He also fashioned a fishhook to fish for food for the "Pig of Iro."

The Aitutaki version includes the following voyaging episode in which the trickster Iro is tricked: On a voyage from the upwind islands [Tahiti-nui] to the downwind island of Vavau in his canoe named "Tutakeke-nui," Iro was accompanied by a chief named Makeu, who sailed in a canoe named "Tutakeke-iti." This Makeu was a noted thief, his gods being Uri-kovaro and

Mata-tanumi, the deities of thieves. During the voyage, Makeu threw his magic spells over Iro and the people in "Tutakeke-nui," and caused them to fall into a deep sleep; then he transferred Iro and his people and their belongings to "Tutakeke-iti" while Makeu and his people took possession of "Tutakeke-nui" and paddled away with it. Hence arose the saying, "The sleep of Iro on returning from Vavau was (like) falling asleep in winter and awakening in summer."

7. In the Aitutaki version, the reason for Iro's anger at his wife Vai-tu-marie was due to her joking with some women that she enjoyed sleeping with her paramour Taeta more than with Iro. After catching her hand in a canoe lashing, Iro beat her to death with the titia (wooden tool used for lashing) and buried her under the center skid supporting the canoe. His son Tai-marama ran away to the mountains and became a wild man of the woods out of grief for his mother.

8. In the Aitutaki version, the conflict between Iro and Puna is more violent: The Ati-Iro (clan of Iro) took a turtle, which was kapu to the Ati-Puna (clan of Puna). Iro sent his son Tautu to carry a small portion of the turtle to Puna, knowing that his son would be killed in carrying out the mission. Puna's two taunga (priests or wisemen) told Puna, "Do not eat this offering: the rest of the turtle has been consumed by Iro at Motupae." Puna became very angry and killed Tautu, cutting off his head and flinging it on to his rubbish heap of food refuse.

Tautu's spirit debated with Puna over whether Tautu had committed a sin. Puna's wise men cleared Tautu of any wrongdoing since Tautu had not consumed the turtle. Hiro's other son Tai-marama was called to slay the Ati-Puna in revenge for the death of Tautu. Marama told her, "You return and tell Iro to have the canoe Otutai all ready for launching and to get the Ati-Puna to stand at the side of the canoe opposite to the outrigger to assist at the launching while the Ati-Iro will take the outrigger side. Also to have the morning meal before daybreak. I will be there at sunrise."

Pio returned to Iro and delivered Marama's message to him, which Iro arranged to have carefully carried out, and on the following morning at break of day his people were all ready for the fray. They fetched the Ati-Puna and placed them on the katea side of the canoe as directed.

At sunrise Marama arrived; he grasped the stern-piece, while the Ati-Iro took the roaa (outrigger) side, and all was in readiness to launch the canoe. This was the song at the moving of the ancient Maori canoe Otutai--

Solo: Launch the canoe Otutai for Iro-nui
Hand the beater, step the mast, the mast Torutatai.
O, the multitude of Puna are without.

Chorus: O!

Solo: O, the multitude of Iro are within.

Chorus: O!

Solo: Pakiara's black...Pakiara's black...

Chorus: You will die beneath the canoe,
You will be die beneath the canoe.

The Ngati-Puna realized by the insulting burden of the song that they had fallen into a trap, but it was too late. When the canoe was lifted up, Marama overturned it on top of the Ati-Puna. The Ati-Iro had previously hidden their weapons in the bushes nearby, and when the canoe was thrown on to the Ati-Puna, the Ati-Iro seized their spears and slaughtered the Ati-Puna. Only a few of them escaped, fleeing to the ocean in their canoes. The land passed entirely into the hands of the Ati-Iro, hence the name "Marama, the warrior of Enuakura."

9. The Rarotongan version gives the following landmarks associated with Hiro: On the summit of a mountain on Taha'a appears in bold relief the paddle (turned to stone) of Iro's canoe Otutai, the famous vessel itself-now transformed into a rock-reposes at the bottom of the lagoon between Ra'iatea and Taha'a, where it may be seen in calm weather, while the resounding wooden gong of Iro's vessel is represented by a harmonious stone on the small reef-islet Opuia at Porapora not far away.

1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
Home	Search	Archives	Past Education Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)	

Tafa'i

Teuira Henry

Not long after Tahiti was moved away from Ra'iatea,¹ there lived in the district of Mahina (Clear-Gray) in Tahiti-To'erau (North-Tahiti) a fine elegantly formed woman of high rank, whose name was Nona (Of-hushed). She had long carnivorous teeth, and as she had acquired the terrible propensity for cannibalism, which obtained for her the sobriquet of Vahine'ai-ta'ata (Man-eating-woman), her husband, who was high chief of the house named Tahiti-To'erau, forsook her, and she lived alone in her home shaded with coconut trees on her own hereditary land near the sea. There she gave birth to a beautiful little girl, whom she named Hina (Gray) and whom she brought up tenderly, as befitted her rank, concealing from the child the human prey which she procured for herself.

At the foot of the great projecting cliff of Tahara'a (Barrenness), conspicuous for its red clay, is a great cave bordering on the sea, forming a tunnel open at each end, through which pedestrians can pass at low tide so as to save going round the hill, and it is famed to this day as Nona's hiding place, where she waylaid passers-by and slew them to eat, sometimes cooking and sometimes devouring them still warm and bloody.

In the days of Nona, people gradually became very scarce in that region, and homes lay mysteriously desolate. But a handsome young man named Mono'i-here (Favorite-perfumed-oil) had escaped the wily woman, and he had become much attached to her daughter Hina, whose affections he won as she verged to beautiful womanhood. They clandestinely met at a cool sequestered spot, called Oro-fara (Fara-fern), where there is a spring, called Rati (Splash), which watered Hina's bathing pool-still called Te-hopura'a-vai-o-Hina (The bathing pool of Hina)-and close by a cave, which in their time it is said, was not known to exist, as at their bidding it opened and closed in the solid rock.

Protecting the Bay of Matavai (Face-of-water) is a broken line of reefs, called the Chain-of-Light-Rocks (To'a-tea), and there Nona, who was an

expert fisherwoman, frequently went to obtain fish for herself and her child. While she was thus employed the two young people, Mono'i-here and Hina, met, feeling safe and free. Hina had the habit of carrying a basket of food to her lover when he was concealed in the cave, and in approaching him they would exchange the following passwords:

Hina. "Mono'i-here is the man, Hina is the woman!"

Mono'i-here. "Where is your mother, Nona, with long teeth?"

Hina. "She is on the long reef, on the short reef, catching fish for us, my lover. Oh foundation of rock, break open!"

Then the rock would burst open and out would come the lover, and they would pleasantly while the hours away until the time approached for Nona to return home, when Mono'i-here would either return to the cave or go to his home in the distance, as circumstances guided, always cautiously avoiding an encounter with her.

But there came a time when the mother began to miss the food and so wondered how her daughter could consume so much in her absence, and she determined to solve the mystery. So one day, after cooking their usual supply of food, she feigned indisposition and went to bed, then she snored deeply and appeared to be in the soundest sleep. Finally Nona saw her daughter stealthily approach the food, take out choice morsels, place them in a basket, and go noiselessly out. When Nona saw the course girl was taking she took a short cut, halting here and there to keep sight of her, until she turned up into the shady nook; then Nona, arriving before her, ascended into a pua tree, where she could see and hear unobserved. As Nona had never known of the existence of the closed-in cave, she was soon astonished at what she witnessed, and she repeated to herself the passwords, so as to remember them. She kept motionless until the lovers had held their interview and parted, when she quickly descended from the tree and returned to her bed at home, while her unsuspecting daughter leisurely followed and found things there just as she had left them.

The following day, after partaking of food and putting some by, Nona took leave of her child, saying she was going to prepare torches for night-fishing.

But she quickly went to the lovers' haunt, and standing by the cave she spoke, imitating Hina's tone as nearly as she could. But Mono'i-here, detecting the fraud, replied: "You are not Hina; you are Nona the woman with long teeth!"

But she had learned the magical words, and fiendishly said: "Oh foundation of rock, break open!"

Then the cave opened. She entered quickly, seized the hapless young man, and killed and feasted on him. She looked for his heart but could not find it, and leaving his bones and vitals thrown together she left the cave, which closed after her, and she returned to prepare her torches as she had planned.

Meanwhile, Hina went with her basket to the cave and was surprised when no response came to her from within, and as the rock opened at her bidding she encountered the ghastly spectacle in the cave. What remained of Mono'i-here was still warm, and Hina at once sought for and found the heart, which was still pulsating. This she placed next to her own heart and guided by it went home to act.

In the absence of her mother she got the trunk of a banana tree and laid it in her bed to counterfeit her body, and to simulate a head upon her pillow at one end of it she placed an 'a'ano (coconut-water-bottle). Then she covered all up in her tapa sheet and fled in fear from the home of her childhood, until she arrived at the adjoining district of 'Upuru (Ha'apape or Point Venus). Still guided by the pulsating heart of her lost lover, she stopped at the house of a fine young chief, named No'a (Sweet-odor), who was famed for his hairy though handsome person and who with all his household received her cordially, and she was at rest.

When Nona returned home with her torches she prepared supper, and thinking Hina was having a nap in her bed she called her; but no voice came. After calling several times, Nona became enraged and threatened to eat her daughter. But as there was still no response she furiously exclaimed: "Here I come, O Hina; will devour you!"

So saying, she rushed to the bed, laid hold of the banana effigy of her daughter, and bit into it through the sheet, when, to her great surprise, she

found that the girl had outwitted her, and she exclaimed: "Ah, you have escaped!"

Early on the following day, Nona set out to recover her daughter. Ascertaining the course she had taken, Nona went on and on enquiring for Hina until she also arrived at the house of the hairy chief, No'a. When she saw Hina, she made a rush to seize her, but the chief seeing how terror stricken the girl was, and hearing her say that Nona was a savage woman and would kill her, he intercepted Nona's grasp. Then with muscular strength, Nona grappled to strangle him; but he overpowered and strangled her and so ended the life of the famous Nona of the cave of Tahara'a.

In course of time, Hina who married her protector and deliverer, gave birth to a son, who was named Pu-a'a-ri'i-tahi (Cluster-of-first-small-roots).

Another son, named Hema (Deceived), followed and she had no more children. The two boys became fine young men, and they were adepts in surf-riding. One day as they were preparing to go out for their sport, the mother asked the elder son, Pu-a'a-ri'i tahi, to dress her hair. But he did not comply, and she said, "Ah, your wife will not be a woman of distinction."

Then, as Hema came by, she asked him to dress her hair, which he readily did. As he combed out her long glossy locks and braided them, he discovered a louse and taking it out he showed it to her. She said: "Your wife will be a notable woman."

As time went on, Pu-a'a-ri'i-tahi took to himself a wife named Te-'ura (Redness), and she bore him five sons, named, Arihi-nui-apua (Great-enchanted-cord), Ta-oe-a-pua (With-deviation-of-dolphin-head), Orooro-i-pua (Rub-dolphin-head), Te-mata-tui'au-ia-ro'o (The-changing-eye-of fame), and Te-mata-a'a-ra'i (The-eye-that-measured-the sky).

The son Hema obtained a goddess for a wife in the following manner:

One day his mother told him to go in the early morning and dig a hole in the eastern bank of Vai-po'opo'o (Hollow-river) at Ha'apape (Point Venus), in which he must conceal himself, and then he would see a beautiful woman

from the netherlands who would come to a pool close by to bathe. He would find her very strong, and so he must catch her from behind unawares by her hair and before putting her down carry her past four houses in bringing her home.

So at daybreak Hema went and did as directed, and just as the first rays of the sun appeared he completed his hiding place and concealed himself within it. In a little while he saw approaching from an opening in the earth the goddess described. She quietly entered her bathing place, dived and swam in the water, and when she had bathed herself and wrung out her long flowing hair, which covered her graceful form, she stood upon the bank adjusting it close by Hema with her back turned towards him. Then he approached her, quickly twisted some hair around his wrist and thus secured her as she strongly endeavored to escape him. He at last bore her up in his arms and was carrying her homewards when, after passing two houses, she begged to be released. So he let her go, thinking she would walk by his side. But in a moment she sped away and disappeared through the opening in the ground which closed after her.

Hema returned home dejected, and when he told his mother what had happened she told him to go again the following morning for the goddess, taking heed not to release her until they had passed four houses in coming home. He could not eat that day from overanxiety to obtain the beautiful wife, and before daybreak he was again in his hiding place by the river awaiting her return. She came earlier than on the previous day intending to avoid the intruder, and hastily she bathed herself and stood again upon the bank near Hema, who then caught her as before and carried her, struggling to be released, all the way home.

Finding that the people of the upper world had seen her in company with Hema and that they regarded her as his wife and becoming attached to him and all his, she consented to remain with them, and she, a goddess married Hema a mortal man, according to the religious rites of their time. The name she received in this upper world was Hina-tahutahu (Hina-the-magician), because of her supernatural origin and her power to do many wonderful things, such as healing the sick, reading people's thoughts, and foretelling things to happen. She bore Hema two children, Arihi-nui-apua

(Great-enchanted-net-cord) and a giant red-headed ('ehu) child, who was hairy like his grandfather and whose names were Ta-fa'i-'iri-'ura (By-revelation-the-red-skinned), Vai-ta-fa'i (Fixed-by-revelation), and Ta-fa'i-uri-i-tetua-i-Havai'i (By-revelation-piloting-in-the-sea-of-Havai'i), evolutions of appellations that were caused by the development of circumstances, but all of which have resolved themselves in Tahiti and other groups into the name Tafa'i simply.

At an early age Tafa'i showed that he inherited from his mother supernatural powers and that he was in touch with the gods; the elder son was simply an earthly chief and was obscured by his illustrious brother. The early childhood of the two boys was pleasantly spent with their cousins and other children, their chief amusement being top spinning, sailing little canoes in shallow water, light ball playing, and bathing and swimming.

But a time came when they wanted new games. Tafa'i's cousins made balls of clay, which they rolled along the ground, and the first one whose ball cracked in revolving became the loser in the play. So Tafa'i asked his mother how to make solid balls, and she directed him to get fine-grained sand from the sea to mix with the clay and then to dry the balls well before using them. This he did, and when he went to play with them, his cousins cried: "Ah, dear Tafa'i, come and let go yours."

But he answered: "No, the first must be first, and the last must come in last." So they rolled their balls in regular turns until all were cracked but Tafa'i's and he became the winner. So it happened that to the great vexation of the others he always won the game.

Then they took a fancy to the game called totoie (toy canoe), in which was used a stick sharpened at one end, and steadied at the other with a rudder made from the rib of a coconut leaf. The toy was placed on the surface of the waves a little way out in the sea, whence it floated to the shore, and the winner in this amusement was the one whose totoie arrived on shore first. Tafa'i's mother directed him to make his toy of a piece of convolvulus stem, which being very light proved a great success, and again he came out victorious. Then his cousins were so vexed and jealous that they fell upon him and stunned him, so that they thought he was dead, and they buried him in the sand. But his mother, knowing at once what had happened, went to the

spot where he lay apparently lifeless and resuscitated him. But when questioned about the matter, he tried to screen his cousins.

So it happened that as Tafa'i grew up he excelled in everything he did; and that out of spite and jealousy his cousins often used violence upon his person and left him as dead just as often his mother rescued him and restored him to life, and he never complained. At last his father, Hema, becoming aggrieved at the unkind treatment of his son by his nephews, took leave of this world and went down to Po (Darkness) to live.

When Tafa'i was still a youth, his mother imparted to him all her magical powers, which he received by opening his mouth over the crown of her head, and then he felt prompted to do great deeds and to travel, which his mother let him do with suitable men.

At length Tafa'i reached man's estate. A great red man was he, modeled by the gods. He had bright curly auburn hair, his head and shoulders towered above all other tall men in Tahiti, he had penetrating brown eyes, his hands were large and strong, and his fingernails were long and pointed. Whenever he walked his majestic tread left footprints upon the most hardened ground. He became famous throughout the land for his wisdom and skill in all he did. Without tuition he excelled in every art of his time, and his bravery and generosity won for him the respect and love of all in Tahiti, so that he was unanimously elected toa-upo'o-tu (chief-warrior) by all the warrior chiefs contemporary with him.

Tafa'i's first great deed for the good of his country was the cutting of the sinews of this fish, Tahiti, to render it stable, and after accomplishing this he said they must cut the sinews of all the islands around Tahiti, which were detached parts of the fish, and that they must also go on and draw up new land from the sea. So a great double canoe was built, which he named the Anuanua (Rainbow), and valiant navigators and a priest were chosen to accompany him. He himself was the pilot and astronomer. He took his ta'o (an ironwood shoulder spear 12 feet long and pointed on both ends), which no other man in Tahiti could lift, and his paddle, which no one else could wield; and he prepared a great long line of ro'a, attached to an immense wooden fishhook, which was filled with magic at his touch. His men prepared their fishhooks and lines, which he also enchanted, and after the

usual religious ceremonies they set out to sea.

They went northwest to little Tahiti (Mo'orea-the-offshoot), and they thrust their spears into its quivering sinews and made it stable; they went southwest to Maia'o-iti (Little-claw), which had fallen away from Mo'orea, and soon made it stable. They went north of Tahiti and found the islets of Tetiaroa (Standing-afar-off) struggling to rise above the foaming sea. So they threw down their hooks and drew them up one by one. Then with their spears they cut the sinews and fixed the islets in their present positions. They went on eastward and found that Me-tu (Standing-thing; the island of Meti'a) was already fixed in its place. Then Tafa'i said they must go to other regions and fish up land, and they came to the Tai-o-va'ua (Shaven-sea) and there beneath the mighty breakers, found the extensive Tuamotu Archipelago, which they fished up and which ever since has remained as beautiful atolls and islets fringed with beds of coral of all hues and with pearl oysters. To these he added the high Mangarevan group and other hilly islands eastward that were also struggling to rise.

They went on exploring the trackless ocean northward and drawing up islands, which they discovered by observing the sea dancing over them, until at last they perceived a mighty commotion apart from all others, and on approaching it they found the Hawaiian group all huddled close together beneath the surface. Tafa'i first drew up Ai-hi (Bit-in-fishing, now called Hawaii), whose high twin mountains rose from their watery bed and went on rising until they reached an amazing height and were lost among the clouds, and whose shores extended beyond the horizon. Owing to the great volcano perpetually burning, this island was afterward named Havai'i-'a (Burning Havai'i) by the Tahitians to distinguish it from the island of Havai'i to the south. Tafa'i next drew up Maui, which he named Maui after the hero, Maui of eight heads, who detached the sky from the earth. This island also rose to a wonderful height. So they went on until all the islands were drawn up, and then those intrepid navigators went south and returned with people to dwell on the beautiful new land, bringing with them their gods, their chiefs and bread-fruit and other plants.[2](#)

At length the emigrants of the north and their kindred in the south, regretted that they were so widely separated from each other, and Tafa'i, who had

returned home, conceived a plan to remove the Hawaiian islands to the south. He and his seaman prepared strong ropes, and invoking the gods to their aid they attached each island to the canoe. When all was made ready, Tafa'i warned his people to be guarded against breaking the sacredness of the spell that was to pervade their great undertaking. No one must speak or look back when in motion, on pain of displeasing and losing the aid of the gods. The great canoe moved off drawing the ropes, united in one, each man plying his paddle and looking steadily ahead, when soon a magical spell caused the islands to yield and follow in a most orderly manner, and onward they went.

Shouts of applause which the navigators were rejoiced to hear, arose from the land but they swerved not from their purpose and still kept silence. All nature chimed in rejoicing, and above the sound of the steady breeze and rippling sea arose the chorus of people and birds singing, cocks crowing, hens cackling, dogs barking and occasionally pigs grunting, while overhead the sea gulls screeched their contentment. Still the mariners did not look back, nor did they speak, and the islands moved on.

But finally the sound of hula drums and flutes arose, with songs of rejoicing from the people, and this so stirred the hearts of the seamen that all except Tafa'i could no longer contain themselves, and with one common impulse they stood upon their seats and looking back began to dance and sing also, when suddenly the charm was broken, the ropes snapped, and they were forsaken by the gods! As a result of the impetus, before the islands became stationary, Havai'i-'a went forwards and Kaua'i and Ni'ihau backwards, the middle islands remained close together, and detachments from the island coasts formed islets. In vain did the seamen and people offer invocations and oblations to the gods to return, nor did the prayers of Tafa'i, who was blameless, prevail. So they were obliged to abandon the enterprise, and the Hawaiian islands have remained forever an isolated group, standing grandly away in the north.³

The next great thing Tafa'i determined to do was to explore the interior of the earth and recover his father from the region called Po. His mother agreed to show him the road down, and his brother, Arihi-nui-apua, begged to be allowed to accompany him, and no fear of hardship on their way could

dissuade him from his purpose, as he had smittings of conscience for having been one who had caused his father to leave this world.

Hina-tahutahu caused the earth to open for the travellers, who after passing through long tunnels at last came to an open place where they saw a house, which was inhabited by an old blind woman called Uhi (Yam). By this time Arihi-nui-apua, who unlike Tafa'i was merely mortal, became very tired and hungry. So they went quietly into the house, where they found Uhi setting out her food to eat, talking to herself as she did so. She laid together two pieces of breadfruit, two pieces of taro, two packages of pota (taro-top-spinach), two cups of coconut sauce, and two cups of water. Then as she was eating Arihi-nui-apua took one portion of each thing before her and ate also, so that when she felt for more she found nothing and at last exclaimed: "Who is this little maggot that has come here to Po?"

Tafa'i answered: "It is I, Tafa'i."

The old lady said: "Ah, be seated properly."

She took a beautiful thing that was covered with 'ura (red) feathers, which Tafa'i motioned his brother not to touch. This was her fishhook, which was attached to magical cord, and as she threw it out Tafa'i evaded it; but Arihi, fascinated with its beauty, picked it up, and as she pulled it in, caught him under the arm. She drew him to her like a fish, and he drew back with all his might, running in centrifugal motion. Feeling grieved for his brother, Tafa'i exclaimed: "Oh Uhi, set aside your fish lest the great shark approach you! His friend [shark] is in the sea."

There were sharks and whales in the sea and a great octopus in a grotto ornamented with trumpet shells.

But Uhi replied exultingly: "He shall not escape. This is the fishhook Puru-i-te-maumau (Sodden-by-holding-fast), and the line, Shark-in-the-Milky-Way, not that of Hina."

Then Tafa'i seized the line and rescued the prisoner, and the old woman finding her hook loose exclaimed: "Ah! There is a person here by me, can you restore my sight?"

Tafa'i replied: "I can restore it." So saying, he took a coconut and cast it on her eyes, and immediately her sight was restored.

The old woman saw the young men for the first time and expressed her pleasure at seeing them. When she inquired what service she could render them for this great cure Tafa'i asked her to tell them where his father dwelt and what she knew about him. Uhi replied that Hema dwelt farther on in a forest, where the gods heaped their garbage, that they had taken out his eyes and given them as toys to the girls who braided mats for the orators; and that they had filled his eye sockets with excrements of birds. Then she charged two little attendants to accompany the two brothers, who went to rescue the poor man. Finally they arrived at the woody region where Hema was, and quickly snatching him up Tafa'i bore him away in his arms with all the speed that his wide strides could give and before any of the gods were aware of it the three fugitives from the lower regions arrived safely up in this world of light. Tafa'i bathed and clothed and fed the unfortunate Hema, and though blind, Hema was made happy with his wife and children, with whom he then found his brother's family on most friendly terms.

Some years had elapsed after the travels of Tafa'i when the fame reached Tahiti of Te-'ura-i-te-ra'i (Redness-of-the-sky), a beautiful princess in south Havai'i-'a, who was to be obtained as a wife only by some valiant hero. Tafai's cousins, the five sons of Pu-a'a-ri'i-tahi, decided to go as aspirants for her hand, so they prepared a double canoe for that purpose. Tafa'i told his mother that he wished to go also, and so she took a coconut blossom sheath and laid it upon the sea, and it developed into a beautiful single canoe, which they named Niu (Coconut) and which was soon made ready for the voyage. His mother told him that his ancestral shark, Tere-mahia-ma-hiva (Speedy-travelling-with-fleet), would accompany him, and that he should address it as his guardian ancestor, which he agreed to do.

The two canoes set out together. The double one was well manned with seamen, a pilot, and an astronomer; the single one had Tafa'i alone, escorted by the faithful shark, and it soon went far ahead of the other. Finally when the five brothers approached the shores of Havai'i-'a, they saw awaiting them their cousin Tafa'i, who was the first to greet them on landing. The royal family of South Havai'i-'a was soon apprised of the arrival of the young

chiefs who had come to offer themselves to the princess, and they were well received by them.

In the course of a few days the prowess of the young Tahitians was put to the test, and the beautiful young Hawaiian princess was herself chosen to be umpire for them. They were all girded and armed with spears for the encounter. First they were told to pull up by the roots an 'awa tree which was possessed by a demon, and which had caused the death of all who had attempted to disturb it. Each man was to come forward according to his age. Beginning with the eldest, Te-ura-i-terai said: "O Arihi-nui-apua of Tahiti, come and pull up this 'awa, and chew it to drink and intoxicate Hawai'i."

He went forward and thrust his spear in the stump of the tree, which like a living thing immediately darted forth its roots and pierced and killed him. Then came forward the second brother, Ta-oe-a-pua, who met with the same fate, and so it was with the three older brothers, Orooro-i-pua, Te-mata-tauia-ia-ro'o, and Te-mata-a'a-ra'i. Seeing that they were all dead, the princess said to her parents: "That will do perhaps."

But the parents replied that the last man must try. Then it was Tafai'i's turn and the princess said: "O Tafai'i, pause! Tafai'i with red skin, who raised up Hawai'i, born to Hema, my sympathies! Come and pull up this 'awa, and chew it to drink and intoxicate Hawai'i."

The noble red giant advanced undaunted and thrust his spear at arm's length into the stump of the 'awa. As the roots moved forwards to pierce him, he held tight the end of the spear, and they twisted around it like the arms of a devilfish, while he pushed the spear farther and farther into the taproot until the whole plant yielded. He drew it out, raised it still attached to the spear, beat and bruised the roots until they became powerless, and laid it down. Then he turned to his cousins lying lifeless upon the ground, and to the amazement of all the spectators he restored them to life.

Soon the Tahitians were ready to make the drink from the 'awa roots, and as it was customary to have a feast on such an occasion, they asked for a pig and necessary accompaniments. To this the royal family willingly agreed, and the pig they were to have was the renowned Mo'iri (Whole swallower), a monster that swallowed live things whole and whose fame had long ago

reached Tahiti. The slaying of this scourge to humanity was to be the last test of dexterity to which the young men were to be put; and they were to advance again according to their ages. So the young men, girded for the encounter, stood with their spears, and with sennit in their hands to tie the pig. The princess called out: "O Mo'iri, be sennit bound!"

Then rushing out of the woods, amid a cloud of dust which flew up under its heavy tread, came the terrible snorting and grunting monster.

As the first champion dashed forward to catch the feet and throw the pig down, he was swallowed whole, and one after the other of his brothers shared the same fate, their spears making no impression upon the thick hide of the animal. But as Tafa'i advanced, he thrust his spear down into the throat of the pig as it opened its great jaws to swallow him. The pig was slain, and immediately Tafa'i caused it to render up his five cousins, whom he once more restored to life. A great shout of applause rent the air, and Tafa'i was unanimously acknowledged to be the greatest hero that Havai'i-'a had ever seen. The pig was the principal feature of the great feast that followed, and all ate of it. The 'awa that the Tahitians made was pronounced excellent and it rejoiced the hearts of the drinkers.

Finally the time came for the hero of the day to claim his bride. The king and queen looked expectantly at Tafa'i and the princess, who had conceived great admiration for him and was willing to give him her hand. But what was their surprise when in the name of himself and his cousins he bade them all farewell, saying: "Now fare you well. We are returning to our own land."

Then the Hawaiians of the South realized that they had offended the Tahitians by their rigid treatment, and they could not prevail upon their visitors to change their purpose. Soon the Tahitians departed in the same way that they had come.

When they returned home after their fruitless errand, the Tahitians no longer aspired to seeking famed beauties of other lands, but took suitable wives from among their own countrywomen. Tafa'i married a fine young chiefess of North Tahiti, named Hina (Gray), famed for her beautiful raven hair, which when let loose, flowed down in waves to her feet and covered her graceful, majestic form; and their attachment for each other was strong and

lasting.

Tafa'i was prompt to go wherever duty called him in his own land and also in other lands and, as old records everywhere show, was beloved for his goodness and kind, generous deeds. On one occasion when he returned home from a long voyage he found to his great grief that his wife was dead. She had just suddenly died, and her body, still warm, was lying in state upon an altar in the ancestral marae (place of worship), guarded by the priest and elders of the family. Soon, in his sorrow, he determined to contend for her even with the gods! So he inquired of the priest whither her spirit had fled, and he told Tafa'i that it had left their sacred precincts and was now with the spirits of other departed ones at Tataa about twenty miles west of 'Uporu, which was their place of rendezvous on Tahiti before taking flight for Paradise or Hades in Ra'iatea.

Tafa'i lost no time in seizing his great paddle and launching out into the sea his single canoe (Niu); and then he swiftly darted over the smooth water within the friendly reef and arrived at Pa'ea just at dusk, the right time to meet the souls departing. There he found that his wife's spirit had left some time before for Mount Rotui (Soul-despatching) on Mo'orea, whither the spirits went to take their final departure for Te-mehani (The-heat) in Ra'iatea, which was the last place whence they could return to this world.

Onwards he sped across the channel to Mount Rotui, towering steep and high up into the clouds, and soon he was upon its summit. But there too he found that his lost Hina had gone on some time before! With unshakeable purpose, Tafa'i descended the mountain and again took to his canoe, and in the dim light of the waning moon, aided by a favorable breeze, he made his canoe almost fly across the wide channel that separates the windward islands from the leeward group. Then he took the shortest route up to Te-mehani and he did not stop until he arrived at the spot on the mountain plateau where the roads radiated, one to the cliff on the right, called the "Stone of Life," from which spirits ascended to Rohutu-no'ano'a (Paradise-of-sweet-odor), somewhere up in cloudland above the highest mountains of Ra'iatea and the other to the cone on the left, from which they descended down in the yawning crater of Te-mehani, which led to Po (Darkness).

The moon was almost setting and the morning star was heralding the day

when Tafa'i arrived at that place and was met by the god **Tu-ta-horoa** (Stand-to-permit), who guarded the roads. Tafa'i inquired if Hina, his wife, had passed by, and to his great relief the god replied that she had not yet come. But he told Tafa'i to be quick and conceal himself in the bushes in a precipitous nook close by and that he must rest to gain strength for his undertaking to capture her in her flight, as that was the last place whence spirits could be recalled to this world. Breathlessly Tafa'i seated himself in his hiding place, and just as he recovered breath from his late exertions he heard leaves rustling a little way off, and the god told him to be ready, as Hina had just arrived.

Soon Tafa'i perceived the tall, familiar form of his wife with her hair streaming down her back, and as she arrived upon the ridge of the rock by which he stood she drew back as she scented a human being. Just as she was about to ascend into the air to fly to the Stone of Life, where she would have escaped him, he made a desperate leap up onto the ledge and into the air and caught her by her flowing hair with his long fingernails. Hina struggled to be released, as she was intent on going to the happy spirit world, but her husband held her fast, and when **Tu-ta-horoa** told her that her time had not yet come to leave this world she was prevailed upon to remain longer with her husband. So they returned to 'Upuru, and as soon as Hina re-entered her body, which was still well preserved, and opened her mortal eyes, there was great rejoicing in their home and in all the district over the safe return of Tafa'i and his wife from the border of the spirit world.

It is not recorded in Tahiti that Tafa'i ever again went away from his native land, but it is stated that he and his wife lived long and happily together and that to them was born a son whom they named **Vahi-e-roa** (Far-off-place), probably in commemoration of the long voyages of Tafa'i to strange lands.

In the manuscript dictionary by Mr. Orsmond, under the heading of the name Tafa'i are found these words: "A god was Tafa'i of red skin, who raised up Havai'i. Charming is the legend of Tafa'i." In Tahiti his memory is perpetuated in the form of the beautiful club moss (*Lycopodium clavatum*), named **rimarima Tafa'i** (fingers of Tafa'i), which is said to have sprung from his fingers after he left his earthly body and which grows prolifically among the ferns over all the islands; the spores of the plant are called **Maiuu Tafa'i**

(fingernails of Tafa'i), which they are said to resemble.

NOTES

This Tahitian version of the story of Tafa'i is from Teuira Henry's *Ancient Tahiti* (552-565).

The story of Hema and Tafa'i is told throughout Polynesia. He is known as Kaha'i in Hawai'i, Tawhaki in Aotearoa, Tahaki in the Tuamotus, Ta'aki in Rarotonga, and Tafa'i in Samoa. (See Beckwith, pp. 238-258, for summaries of the variants of this tradition.)

In the Hawaiian 'Ulu-Hema genealogy, Hema is said to be the ancestor of Maui chiefs. He was the son of 'Aikanaka ("Man-eater"; cf. Nona, the cannibal grandmother of Hema in the Tahitian version). He was raised in Hana, Maui. A chant tells of his birth and his deeds. After the birth of a son named Kaha'i (Tafa'i), Hema sailed to Kahiki to get the 'ape'ula (red tapa; or apo'ula, wreath of red feathers) for his son. During the voyage, Hema was seized by a bird and died in Kahiki. Kaha'i sailed in search of his father, learned of his death, and returned to Hawai'i (Kamakau 139-143).

1. The story of how the upwind islands of Tahiti Nui move away from Ra'iatea is told in Peter H. Buck's *Vikings of the Pacific*: According to one tradition, Tahiti and the other upwind islands in the Society group were created from the land between the islands of Ra'iatea and Taha'a. The story goes that in preparation for a ceremony for 'Oro, the war-god, kapu were imposed on the the district of Opoa: no cock could crow, no dog bark; no person or pig could leave its dwellings. The wind died off and the sea grew calm. However, a young girl named Tere-he went bathing in a river. The gods drowned her for breaking the kapu. A giant eel swallowed her and was possessed by her soul. The angry eel tore up the land between Ra'iatea and Taha'a and swam to the east, becoming the windward islands of Tahiti; its back fin formed the mountain of Orohena, which dominates the western end of Tahiti. Another fin fell off and became the island of Mo'orea. Other bits of the fish became the islands of Meti'a, Te Tiaroa, and Mai'ao-iti.

Buck interprets this story as meaning that the people who settled the windward islands of Tahiti had fled Ra'iatea because of the tyrannous, oppressive rule of the priests of 'Oro. The drowning of Tere-he may have been an actual event that caused her people to flee.

2. The tradition of Hawai'i-loa by Kepelino and S.M. Kamakau (Fornander, Vol. VI, 266-281) attributes the discovery and settlement of Hawai'i to a mariner named Hawai'i-loa. A second version of the Hawai'iloa tradition is found in Kepelino's Traditions of Hawaii (Honolulu: Bishop Museum, 1932, 74-77) under the title "Hawaii-nui." A discussion of this tradition is found in "The Legend of Hawaii-Loa" by Bruce Cartwright (Journal of the Polynesian Society, Vol. 38: 1929, 105-121).

3. In Hawai'i the story is told of the demi-god Maui's attempt to pull together the islands of Kaua'i and O'ahu-the two major islands that are the farthest apart.) Like Tafa'i, Maui failed because a helper (or his brothers) looked back after being told not to. (For the Maui story, see J. Gilbert. McAllister's Archaeology of Oahu. Honolulu: Bishop Museum, 1933; 126-7; Lyle A. Dickey's "Stories of Wailua, Kauai" in Hawaiian Historical Society, Twentieth-fifth Annual Report, Honolulu, 1917; pp. 17-18; and Thomas Thrum's More Hawaiian Folk Tales, Chicago, 1923; 248-260.

1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
Home	Search	Archives	Past Education Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)	

Rata

Teuira Henry

A prince named Vahi-e-roa (Far-off-place) once lived in Pare, Tahiti To'erau (North Tahiti). His wife was Matamata-taua (Endless-strife), who also inherited the name of the land, Tahiti To'erau as her rightful title because she was high chiefess of the realm.

To these two royal persons was born a son, whose arrival gave them great joy. They named him Rata (Tame).

On the night of his birth, his parents left him in charge of his paternal grandmother, 'Ui-'ura (Red-whetstone). They could not resist the temptation to join in a torchlight fishing party on hearing the joyous singing of the torchlighters on the seashore close by:

Now let my torches be made!

Long, to last the long night.

Torches are there,

Torches to light.

Light my torch,

To light the torch

The god Pi-'a-rire is invoked.

[Pi-'a-rire, "Splash-and-applaud," a god of fishermen].

Vahi-e-roa held a torch in the bow of a canoe, and his wife sat just behind him watching with delight the success of the party and of others in neighboring canoes. But the happy couple had not been out long when the great demon bird Matutu-ta'ota'o (Searcher-in-thick-darkness) cast its shadow over them, as black as the region whence he came. He was chief of an army of demon birds (manu-varua-'ino) of King Puna (Water-spring), who ruled a land called Hiti-marama (Border-of-the-moon), which stood northward from Pitcairn and Elizabeth islands, but has long since disappeared beneath the sea.

Engrossed in fishing, the people did not notice the bird until after it

descended and with one sweep caught up the prince and his wife with its great talons and flew away swiftly to the land of the rising moon.

There the demon bird separated the unfortunate couple; the wife he gave to the spouse of King Puna, whose name was Te-vahine-hua-rei (The-woman-of-inflated-neck). She placed Tahiti To'erau head downwards in the ground, with her shoulders and arms propping her body, and her feet up in the air to serve as a stand from which to hang baskets of food for her majesty. In this painful position the gods kept Tahiti To'erau alive without food. But her poor husband came to an untimely and ignominious death. His head was bitten off and swallowed whole by the demon bird, and his body was cast out to be devoured by the king's fish gods of the sea, the chief of which was a great bivalve named Pahua-tu-tahi (a giant clam), which stood open in mid-ocean to entrap its prey. The other gods of the sea were a shoal of monsters, a great a'u (swordfish), a possessed urua (cavalla fish), and an aiea (consuming ghost) of the mid-ocean rocks.

The sad fate of the prince and his wife was revealed to the priests of Pare by their gods. The good old woman 'Ui'ura took care to conceal the fate of his parents from her grandson, who grew up under her tender care, believing that she was his mother.

Rata led a happy and uneventful life until he became a lad and sought the company of children of his own age, when the sad fate of his parents was revealed to him.

One day he joined a party of boys who were making toy canoes out of purau wood for a race on the sea, and he modelled one out of clay hoping that it would beat the others. He let his canoe dry in the sun and set a rudder to it, but it had no masts while those of his companions were fully rigged. When the race took place, the wooden canoes soon sailed away, leaving far behind the earthen one, which beat sidewise against the wind. When Rata eagerly called out to his canoe to hasten forward and beat the others, his companions tauntingly said: "Do you think your canoe can win when your father's head has been swallowed by a demon bird and your mother serves as a stand for the food of a ferocious queen?"

The lad heard these words, and they weighed upon his mind. He went home

to his grandmother and asked her who his parents were. The old woman replied: "I am your parent." But this answer did not satisfy his inquisitive mind.

"But where is my father?"

"In that post there," the grandmother answered, pointing to the central pillar of their home.

So the boy dug around the post to find his father, until the old woman told him he would cause the house to fall down. Then the lad desperately exclaimed: "Let me see you call forth my father!"

She answered evasively that she was both his father and mother, but this answer did not satisfy him, and he wept bitterly from disappointment.

The following day, Rata went again to play with his companions, and while they made more purau canoes, he made his of bamboo. As they were launching them into the sea, he said to his canoe: "Oh! toy canoe, beat all before you; the tens and the thousands that may follow you!"

Then his canoe went forward and left all the others far behind, which enraged the other boys, and they taunted him: "Your canoe has outrun ours; but is the resting place of your father's spirit sacred when his head has been swallowed by Matutu-ta'ota'o, and your mother serves as a food-stand for the queen Vahine-hue-rei?"

Then Rata, just before so elated at his success, returned home crestfallen and insisted his grandmother tell him about his parent. So she did, after which he manfully inquired: "And how can I go to that land of the rising moon?"

"You would lose your life were you to go there, my child," replied the grandmother. "Your parents are lost there and let that suffice; remain here with me in my old age."

But the lad said resolutely: "How can I go to that land?"

"Make a canoe, and you can sail there."

So it came to pass that Rata received from 'Ui's hands an ancestral axe,

which his father had carefully laid away, and finding it dull the old woman directed him to sharpen it by rubbing its edge upon her back while she chanted these words: "The sacred back of 'Ui-'ura must indeed be rubbed!"

Then the axe was sharpened and filled with magic to aid the stripling in accomplishing the arduous task ahead.

He asked his grandmother where he should go to find a tree suitable for his canoe, and she replied: "In the sacred recess of the god To'a-hiti [Bordering-rock] of jovial face, of the valley. Long, long endures the love for one's parents; sorrow for them cannot easily subside!"

"I agree," said Rata. So early in the morning he took a hearty meal and equipped himself in working attire, which consisted of a strong maro, or loin cloth, and a wreath of leaves to shade his head.

Rata went far up the deep valley, the recess of which was sacred to the inland god, To'a-hiti, and his numerous elves of all sizes. Rata chose a fine tree, which he chopped down with wonderful skill. He had trimmed off the branches and made the trunk ready to hew out when nightfall came. Then he returned home to have supper and rest until the next day.

Rata's grandmother welcomed him home, and while he sat enjoying his supper she inquired whether his errand had been propitious, and he answered enthusiastically that it had. She, being a clairvoyant, replied ambiguously: "The foliage of your tree is standing up," a remark that he did not regard as ominous, as he thought she was referring to the fresh branches lying scattered on the ground, as he had left them.

But when Rata returned to his work the next morning, he was bewildered to find his tree standing erect among the other trees with all its branches and leaves restored, and he could not see upon the ground any trace of his recent work. At length he realized that all his previous day's labor had been undone and that the elves of the valley had restored the tree to its former condition. So he again set to work and felled the tree, and this time he did not cut off the branches but concealed himself among the thickest of them and sat watching for the return of the mysterious beings.

At length Rata heard strange voices up in the air, and before long he saw approaching the tree a host of odd little beings, some stout and others slender. He saw good jovial To'a-hiti with his little muscular canoe artisan, named Ta-va'a (Canoe-hewer), heading the train of merry elves in attendance on him! While they lighted upon the branches, Rata kept still, and soon they sang gently and harmoniously:

Fly hither, fly hither,
 Branches of my tree!
 Come gently, come enraged,
 Fly hither, fly hither!
 Watery sap of my tree,
 Adhesive gum, stand-
 Stand the tree erect!

But Rata held the tree down, so that it could not rise again. Not seeing him, the gods wondered what prevented the tree from rising, and then their artisan, Ta-va'a, said, "Let us drive away the anger of 'Ui," and ran from end to end of the tree. Then they sang gently again:

Fly hither, fly hither!
 Watery sap of my tree,
 Come gently, come enraged!
 Adhesive gum stand-
 Stand the tree erect!

And up went the tree with all the gods upon the branches, while Rata remained still hidden in the foliage. They then adjusted the leaves and were ready to take their departure when Rata gave a shout and shook the branches, which so startled them that they rushed out confusedly, tumbling head first over one another, sideways through the air, not heeding what they were doing, from their surprise at seeing a man intrude upon their sacred ground. Never before had mortal dared to cut a tree from their beautiful forest so high inland!

As soon as order was reestablished and all were again perched up in the tree, Ta-va'a said to Rata: "What is your desire here in this recess of the valley sacred to us?"

Rata answered in brief, faltering words: "I want a canoe!"

"Your person is sacred," replied the artisan, "because of our friendship for your parents, whom we adopted. Yes, Rata, you shall have a canoe! Our dear grandson, long, long endures the love for one's parents, and sorrow for them cannot subside! You furnish us with the tools and the sennit and leave the building of your canoe to us."

Rata was delighted at this promise and readily agreed to furnish all that the artisan desired. So he went home quickly and told his grandmother all that had happened, and she soon aided him in obtaining the things that were required for the making of the canoe. Most of the tools they already had. Moreover, Rata was provided with a present of red feathers and fine girdles and mats as offerings for those gods.

When everything was ready, Rata carried inland all he had gathered and placed everything beside the trunk of the tree he had chosen. Then he returned home with a light heart. His grandmother said, "Now your canoe will soon be done!" They had supper and went to bed.

Towards midnight, as Rata slept, he dreamed about his canoe, and as he dreamed he chanted:

Oh, my eyes are closed!
 My dream is to stand, to be a champion;
 My dream is to demolish,
 Aided by the master in 'ura feathers, Tane,
 This is Tane's evening
 My sleep is amid boards, I am awakened
 By the song of the thrush,
 That sings in the day, sings at night,
 Chirps, and spreads [its wings];
 And the fountains flow in the dream of night.
 It is the gods, O it is the gods
 That excite one in sleep!

"I have been dreaming," said Rata, "about my canoe, and believe it is here on the right side of our house!" So saying, he fell asleep again, and just

before daybreak he had the same dream and chanted in the same strain as before, after which he awoke and said to his grandmother: "Oh, my dream! I have had it again, and I feel certain that my canoe is here, near our door."

The old woman replied: "Take some fara seeds and throw them out to where you think the canoe is, and you cannot mistake the sound that they will make against the side of the canoe if it is there."

So, groping in the dark, he went and got a handful of edible fara seeds from a basket, threw them with force into the dense shade on the right, just outside of the door; and they heard the desired noise of the seeds falling against boards. Highly delighted, the lad went out and felt his canoe to make quite sure it was there, and returning to the house he impatiently waited for dawn to see his canoe.

At length daylight arrived, and Rata and his grandmother went joyously to inspect the canoe. It was beautiful and complete! The seams of the planks were sewn tightly together with sennit and made waterproof with breadfruit gum. A long magical spear for Rata, named "Tevao-roa-ia-Rata" (The-distant-recess-of-Rata), had been placed at the stern of the vessel. The masts and rigging were of the strongest and best quality, and there were strong mats for sails.

To'a-hiti and his band, keeping themselves invisible, were present, ready to help Rata launch the canoe. Unconsciously impelled by them, he went without assistance to draw the canoe into the sea, not far off, and it moved as if by magic, and was soon in deep water. But it had yet to be baptized, or made to drink. Not knowing this, Rata was surprised to see it sink below the surface of the sea, and rise again full of water. Then he exclaimed to his grandmother: "This is a bad canoe, it sinks for no reason!"

The grandmother replied: "Tow the canoe in and dedicate it to To'a-hiti."

"How shall I dedicate it?"

"In these words," said the old woman:

Go, go and encounter! Go, go upheld
By To'a-hiti of jovial face,

And rise!
 And rise up bows
 Of Tua-a-Rata [Company-of-Rata]!

So Rata did as she told him, after which he desired to know what should be done next, and his grandmother directed him to make a cooking place of sand upon the deck and to take plenty of food and water and store them in the canoe for the voyage, while she braided him a round basket of fara leaves lined with soft tapa, in which to receive his father's head.

Rata prepared the food and placed it into the canoe and put the basket carefully away in the marae that he had made in the canoe. Then he said to his grandmother: "I shall now see if you are right in all you have instructed me to do, my dear grandmother."

He again launched the vessel with invisible help and chanted thus, with his eyes looking steadfastly ahead:

To Motu-tapu ["Sacred-island"]
 I shall smite, smite, smite
 With warrior's blows, with deep feeling!

When Rata looked up at his canoe as it lay well balanced upon the water, he perceived the elves there also, and Ta-va'a was sitting at the bow as a guide for the voyage. To'a-hiti had returned home to the mountains, to reappear in the canoe when needed.

They set sail, and were soon caught by a good breeze. Then Rata looked back upon the shore and bade farewell to his grandmother, and they wept for each other.

As the land grew distant, he took leave of it in the following strain:

Oh my land standing forth!
 Hide thy face
 Be lost, lost [to view] in the voyage.
 Let me be lost in launching away from land,
 With the marae;
 Let my land standing out be lost!

Hide thy face as I bid farewell;
And bid me conceal,
Hide my feelings as I say adieu,
Say adieu to the woods of my land
Till by and by.

Then Rata looked out to sea; the land disappeared behind him. For days and nights he smoothly sailed on the broad ocean, and early one clear morning he saw at the horizon, a thick shoal of monster fish, and thought it was land, but Ta-va'a said it was not land, but that foes were approaching him. So Rata went to the bow of the canoe and stood with his spear to meet them. Soon the fish came rushing forward, intending to load down the canoe and make it sink; but the lad dexterously struck all those that sprang up and killed and scattered the greater part of the shoal, which soon disappeared. Then Rata presented to the gods guiding him the fish that he had killed, after which all partook of the flesh.

They were sailing on their course when the great a'u (swordfish), came into sight, and Rata mistook it for land; but Ta-va'a said it was not land, but another foe. So Rata stood prepared again for battle, and when the monster approached the side of the canoe, intending to pierce it, he killed it with his spear and presented the body to the elves as before. Thus that demon was exterminated and his flesh eaten by all.

They sailed on, and they met the great urua (cavalla fish), which looked like land, but Ta-va'a told Rata it was the cavalla fish sent by King Puna to kill him. The fish darted forward to carry away Rata, but he stood ready and as soon as it approached him, he thrust his spear into its throat and killed it; and it was also eaten by all

Next they met the great Pahua-tu-tahi (a giant clam), which appeared like a mountain looming up from the sea. But Ta-va'a said, "It is not land; it is the giant clam," and Rata prepared for the inevitable encounter, as his vessel was being drawn up into it.

The clam had opened its great valves and was sucking in the waves upon which the canoe, Tua-a-Rata, was sailing. The lad stood at the bow with his spear, and as soon as they reached the center of the clam he pierced it

through its vital part, severing its flesh from the shell, so that it could not close upon him. He presented the clam to his spirit company to annihilate, and as soon as the canoe was safely away, the dead clam sank into the deep sea.

Soon afterwards, the sun was obscured and the sky was darkened by the great, black, spreading wings of Matutu-ta'ota'o, the terrible demon bird that had carried away Rata's parents and swallowed his father's head!

Rata, standing at the helm, said rain was coming; but Ta-va'a replied: "No! It is not rain, it is the bird, Matutu-ta'ota'o, coming to devour you and sink your canoe in this deep ocean. Be strong!"

"I am ready," said the lad, and he ran to the bows; not finding his position good there, he went to the middle of the canoe; but seeing that the masts and rigging were in his way, he ran to the helm and stood upon the outer side. Not finding that suitable, he stepped onto the steering paddle, which was attached to the canoe, and there stood so that the water came up to his waist. Then he said: "This is a good place, O Ta-va'a, hold firm the helm and guide our canoe."

The god artisan took good hold of the paddle Rata stood on and steered steadily as the canoe sailed on. He also held the round basket in readiness for Rata, who chanted:

The front pillar [of heaven], the front pillar,
 The back pillar, the back pillar,
 The middle pillar, the middle pillar,
 Would that they were overturned!
 Let darkness descend,
 While Rata stands behind
 Upon that helm, upon that helm.
 But he will come in contact,
 But he will come in contact,
 Far-soaring bird, with energy, energy,
 Bird far-soaring, far-soaring,
 Of musical, musical darkness,
 A bird, far-soaring!

Rata was exulting in his good position, and soon the great bird approached the canoe and with a trumpet-like voice cried out: "Come hither, my friend!"

After poising itself overhead it was descending to snatch up Rata, when Rata shouted to Ta-va'a: "Submerge me in the water!"

Immediately the great paddle was lowered beneath the waves; and while the bird extended his broad wings watching for Rata to rise again, the lad darted his spear up out of the sea and broke off the bird's right wing, which fell into the water beside him. Rata picked it up and presented it to To'a-hiti of jovial face, who stood it up as a great sail for the canoe.

The bird screeched fiercely and hovered one-sidedly over Rata, who was plunged again by Ta-va'a beneath the waves. It could not guide itself flying, and in trying to descend upon Rata, it spun around and fell. Rata quickly broke off the other wing with his spear and guided the body into the canoe. So the terrible monster was disabled and captured by the young son whose parents it had cruelly snatched away. Rata leaped up onto the canoe, took the basket from the hands of Ta-va'a, and placed it over the beak of the bird, which rendered up the head of his father still sound. As he was receiving it he wept and said sobbing:

Roll out here, roll out here, oh!
Here is the safe receptacle, oh!
Here is the safe receptacle, oh!

Then he reverently placed the basket and its sacred contents in the marae. He slew the bird and presented it to the presiding gods, so that Matutu-ta'ota'o was no more in this world; his wicked spirit was banished to **Po** (Darkness) to dwell forever with evil spirits there.

Rata and the gods set up the bird's second wing as a sail also. They plucked off all the shining black feathers of the bird, which were immense, and fastened them over the masts, sails, and ropes of the canoe, so that none of the rigging could be seen. Ta-va'a still guided the canoe.

Night came as they sailed steadily on with gentle breezes and calm sea, and early in the morning they perceived land ahead. It was the desired goal, the

dreaded island of Hiti-marama! So Rata hid himself away, and the gods made themselves invisible as they entered the haven.

They sailed into a smooth and spacious lagoon, the mirror of the rising moon, surrounded with shores of white sand and gently rising ground covered with verdure, above which waved the graceful leaves of coconut trees. In the center of the land was one solitary, cone-shaped mountain, which was white with the blossoms of the waving 'a'eho cane, from which it derived its name, Mou'a-pua-'a'eho (Mountain-of-the-'a'eho-blossom).

At its base was an abyss, dark and fathomless, extending down to the netherlands, the home of Matutu-ta'ota'o and his innumerable army of demons, which was visited occasionally only by Puna, the giant half-demon king of the island. In different directions gushed forth from the mountain bright, clear springs of pure water, spreading out into mirror-like pools, which the inhabitants frequented.

Soon all the people of the various villages gathered around their king to enquire of him what that strange monstrous thing swimming in their sea could be. No canoe of that dimension, called a pahi, had ever entered that port before. Such a thing was only known to the people in their songs and legends. But the great wings with the sails and the general effect of the black feathers covering all, with no visible person moving on board, baffled all alike, and the king answered: "It is a god from the deep become visible to us because of the calm clearness of the atmosphere."

The canoe was guided towards the shore where all the throng had gathered. Near shore, Ta-va'a told Rata to come out of his hiding place and take the helm, while he, still invisible, took his post at his side to instruct him what to do in the coming encounter; all the elves also remained invisible.

As soon as the people saw the lad at the helm and the wooden hull and paddles, they exclaimed: "It is a canoe! It is a canoe!"

King Puna said to two of his attendant chiefs Tupa-uta and Tupa-tai (Inland-crab and Shore-crab): "Something wrong has happened; our great bird Matutu-ta'ota'o has been killed, and those are his feathers that we see decorating that canoe! Go and cause it to get stranded out on the rocks, so

that the waves may dash it to pieces when the wind rises."

All were astonished to see that a boy had slain the bird. So the chiefs went to the shore, and pretended to aid Rata in steering among the rocks to the landing place, not knowing that he was guided by a spirit. When they said, "Steer to the right," the spirit told Rata, "To the left"; when they said "To the left," the spirit said, "To the right."

So Rata arrived safely in the haven, and all the spectators were amazed at his skill in navigation. But they wondered still more when they saw Rata descend from his canoe with his axe, and after obtaining permission, go to chop rollers, which he carried manfully and laid upon the sand in proper order for drawing his canoe up on to the shore. They said to one another: "Surely that lad will not undertake to drag up his canoe alone!"

But very soon they saw him go down into the sea and draw the canoe with ease, swim into shallow water, and then push it from behind over the rollers high onto the shore. He stopped when he arrived at a shady place, and then went into the canoe and rested. Some of the people befriended him, brought him food, and wished to take him home; but he preferred living in his canoe, and so there he remained.

No one dared question Rata about himself, his family, or his land, for they had never seen a boy so strong, and they began to fear him as a god. But King Puna, planning anew to put an end to him, ordered a great house to be built not far from the canoe and placed the house at Rata's disposal.

So all the warriors of the land quickly built a royal house for Rata, and when it was finished the king sent his daughter, Tie-maofe (Handsome-stem), a beautiful young girl, to invite him to take possession of it. Rata, being told by the spirits what to do, accepted, and taking his spear with him, he was conducted by the princess into the spacious house, which was nicely furnished with beds and mats and everything for his comfort. He also found a feast prepared for him. The princess Tiemaofe and other young people were told to entertain and amuse the young stranger until late at night, when they were all to pretend to go to sleep. Then when they saw he had fallen into a sound sleep, they were to leave him.

So the young people kept up their amusements until very late, and at last, when all were resting and Rata appeared fast asleep, the others approached him and tried to rouse him. But as they found that he did not stir, they concluded that he was exhausted from his late labors and could not be awakened, so it was the right moment to leave him alone.

The princess admired the brave lad and felt herself growing attached to him, and casting a lingering look upon his handsome face and form in repose, in the light of candle-nut tapers, she exclaimed: "Oh, what a comely youth you are to die!"

Reluctantly she went her way with her companions to her home, as an obedient daughter.

But Rata was not asleep, and he quietly awaited his assailants, who were not long in coming. He soon heard men come, saw them tie up the doors with strong cords, and set fire to the thatch, the flames completely encircling the house. Now was the moment for Rata to act. He took his long spear, Te-va'o-roa-ia-Rata, planted it in the ground against a middle post, climbed to the upper thatch, and made an opening through which he went, drawing his spear with him. So while King Puna and all his people were exulting over the rising flames that were to consume Rata, he quietly slipped on to a spreading branch of the great tree that shaded his canoe and part of the house. From the tree he climbed down into his canoe unhurt.

The tree was badly burned, and the canoe was scorched by the heat. Rata was kept busy extinguishing sparks of fire that kept falling around him. The house gradually became a great, burning mass; and Puna and his people, listening in vain for the cries of the lad, concluded that he was sleeping too soundly to be awakened by the crackling of the conflagration. At length the structure fell in and was soon leveled to the ground, but still no cry! On seeing the beams in blazing piles where Rata had last been seen sleeping, they exclaimed: "Ah, it is well, our evil genius is dead."

The king said the canoe was now his property.

So when it was daylight the people went to take possession of the canoe in the king's name; but to their great surprise they saw the lad Rata quietly

sitting there, and they stood abashed and soon went away one by one to their own houses. Then the king said to his daughter: "You must have been sleeping yourself, for Rata is alive and safe in his canoe."

Now it was Rata's turn to employ deceits upon the people of Hiti-marama.

One evening Rata saw the two chiefs Tupa-uta and Tupa-tai, who had tried to wreck his canoe the day he arrived in their port, preparing torches to go land-crab hunting, and so he also provided himself a torch and a basket. When they left, he followed them a little in the rear, so that they might not recognize him in the dark. They crossed the belt of land to the outer shore of the island. Soon the men began to pick up crabs and pluck off their legs, leaving one on each as they placed them in their baskets. Rata called out: "How many legs are you leaving on your crabs ?"

"One," they answered. Then Rata broke little sticks to imitate the sound of crab legs breaking and said: "I am leaving one on mine, too."

Sometimes when he inquired, they replied that they were leaving two legs on, and then he said that he was also leaving two, as he went on breaking little sticks. At last, the men's baskets were filled, and they turned to go homeward, Rata following as before.

But as the torches had run out and it was late, the men decided to camp out for the night in a fishing hut on the beach in a bay leading into the king's village; and Rata said: "I shall sleep here with you."

They all hung their baskets up on a fara tree close by and settled down for the night.

When the men fell asleep, Rata went out, tore holes in the bottom of their baskets, and let all their crabs fall into his basket, which was empty; and without being perceived, he returned to the hut and slept till morning.

At dawn all three awoke and went out to get their crabs. But the two chiefs were surprised to find their crabs gone, and great holes torn in their baskets. Rata pretended to be as much surprised as they, and looking into his basket of crabs said: "That's strange; here are mine, all safe!"

And the others answered: "Oh yes, you still have yours," without detecting the fraud. They returned empty handed to King Puna's house, while Rata carried away all the crabs for himself to eat in his canoe.

Another day, Tupa-uta and Tupa-tai were preparing to go out fishing, and when Rata asked permission to go with them, they agreed . He made himself a fishhook out of a shell and obtained a very long line, which he put into his basket, and they all set out.

They paddled their canoe out into the open sea until the land was so distant that they could no longer discern the reeds upon the cone-shaped mountain; and they at last arrived at an extensive rocky shoal, covered with seaweed and teeming with fishes. Here and there towered great black crags high above the sea-the haunts of aquatic birds. There was also a yawning cavern, the home of King Puna's sea gods. Then they dropped anchor, and when Tupa-uta was preparing his hook for fish, Rata looked at it and said: "You will hook a shark, but it will get away." And to Tupa-tai he said: "You will hook an urua [cavalla fish]; but it will break your hook and escape."

The shark and the urua soon bit the bait of the respective fishermen, and Rata's predictions were fulfilled.

Then he threw out his hook, and the friendly gods that all the time had been with him took possession of it. For some seemingly unaccountable reason, the hook went out along the surface of the sea, extending the line with it and travelled thus for miles, until it arrived somewhere on the mainland, and there it held fast. Rata sat in the middle of the canoe, letting out his line, and as it went against the man in the bow, he exchanged places with him; and at last, when the hook caught, he drew in the line, which was held fast, and instead of his prize coming to him, the canoe was being drawn forcibly by it. So the anchor was pulled up, and the canoe rushed through the water toward the land at an amazing speed.

They soon saw the sea breaking upon the barrier reef along the shore and the reeds upon the mountain waving to and fro, and then they neared the passage and went on into the lagoon, the hook still drawing them, until they reached a shady nook that was a favorite resort of fowls and birds. There they saw the line being drawn by a large fat white rooster! It was King Puna's sacred

rooster that had swallowed the hook, impelled by Rata's Tahitian spirits. They caused the rooster to be caught with the hook so that he might die and no longer crow at night to announce the approach of day to the King or serve him as an augur. When Rata saw this, he took the fowl as his lawful property to his canoe and cooked it for supper.

So time went on, and Rata, who had his father's head carefully put away with his god on the marae in his canoe, had not yet gained access to the king's house, where his mother was being so cruelly used as a foodstand for the queen. Revenge he must take for the cruel treatment of his parents, and so he devised a plan.

Stealing up to the mountain cavern one day, he broke open the small entrance and let in the rays of the sun, which startled the great army of the bird Matutu-ta'ota'o. While he was opening their stronghold, some hideous bats and other winged monsters attacked him, but he soon killed them. Other monsters descended beyond the reach of man, whence they never again dared return to face the sun.

Before this deed was discovered, Rata sailed out of the lagoon, ostensibly leaving the island for good. Two days he remained out of sight, after which time the Tahitian gods caused a strong wind to blow, making the sea high. Then Rata sailed at midnight into the bay of the outer shore, where he once went crab hunting. From there, accompanied by Ta-va'a, he crossed over to King Puna's house. They found the king shivering with cold under a thick covering of tapa and saying: "This storm is good! Now Rata will die at sea."

The lad and the god stood on either side of Puna. After a little while, on seeing them, Puna observed that it was very cold, thinking they were some of his retainers, and never suspecting that the wind was sent for Rata's benefit. King Puna grew colder and colder, and said to Rata and Ta-va'a, who were still standing by him: "O, people here! O, people here, I am suffering from a fever."

Then he fell into a deep stupor, unable to descry anything about him, and all of his household were sound asleep, likewise stupefied by the gods from Tahiti. Rata and Ta-va'a took a rope and noosed the king, bound his feet together with a rope rendered strong by enchantment, and tied them to a long

stone column. This stone tapered from the ends towards the middle, from frequent use in attaching to it men destined to be slain for the king's table, which lay upon the grass-covered floor not far from the great ogre's bed. Owing to its shape the stone was named Papa-'ari'ari (Stone-tapering-towards-the-middle).

Soon after this, day began to dawn, and the king became restless in his slumbers. Perceiving that he was a prisoner, as in a dream, he snapped the noose from around his neck with his hands and with a tremendous jerk he drew in his feet and broke the tapering stone in two. Bewildered from his feverish sleep, with rage he roused himself and endeavored to stand up to detach his feet from the entanglement, when immediately Rata speared him through the body and Ta-va'a struck him in the neck, so that he fell down dead, unperceived by his still slumbering wife and daughter and other inmates of the house.

Rata then went to his mother, whose inverted body he now discerned in the twilight, and dug around her head with his spear to release her. Soon he held her in his arms and was removing the dirt from her face, when she, quite blind, supposing that her hour had come to be killed and cooked for the king, accommodatingly said in a low, soft voice: "You will have to wash off the dirt from me before you eat me!"

Freely weeping, Rata answered, "I am your son Rata"; but his mother did not believe him. She answered that it was not possible for anyone to approach the dreaded land of Hiti-marama, and she enumerated all the denizens that guarded its shores, not having heard that they had been slain by her valiant son. Still more affected, Rata wept aloud and chanted:

There was no pity shown indeed!
Moving, moving here,
Creeping, creeping here,
I came and struck,
O, Tahiti-to'erau!
There was no pity shown indeed;
Moving, moving here,
Your son has come!

Then the poor mother knew indeed that this was her son, and they embraced each other and wept.

Soon Rata took his mother to bathe in the royal bathing-pool close by and arrayed her in royal tapa from the slain king's wardrobe. Still unobserved by the populace whom Rata's gods caused to sleep heavily, he carried her in his arms, and Ta-va'a, assisted by other elves, bore away the dazed widow queen and daughter of Puna to the canoe, which was in waiting by the shore. They went out of the harbor long before any of the inhabitants of the land had time to molest them.

Then the wind and sea rose fiercely over the island, which soon became submerged and sank forever, even the mountain peak, into unknown depths. [On the old charts of the Tuamotu Islands, a group of five islets encircled by a reef, marked "Minerva" and lying northeast of the Gambiers, has entirely disappeared and so quietly that it was only missed in 1880 by the French ship-of-war "Alert" which sought for it carefully in its course among the islands. That little group was the farthest east of all the Tuamotus, and the land Hitimarama of former days could not have stood far from it.]

Out to the fishing shoal (before mentioned), the Tahitians went. They found the great cavern under shelving rocks within which were King Puna's demon monsters of the sea, to whom he had been accustomed to offer invocations and sacrifices. The cavern they closed in with rocks, while numerous fiendish fish guardians assaulted them. These they annihilated, and the priest committed their souls to the region below, to rejoin the king and his people of the sunken island of Hitimarama.

So Rata returned triumphantly home as a great hero, though still a mere lad. He never forgot the kindness of the elves of the mountains, tried friends, whom he occasionally visited and who manifested much interest in all that concerned him. Rata's grandmother, 'Ui-'ura rejoiced to meet him once more, and all at home wept with both joy and sorrow over his recovered mother, who was hopelessly blind. All his former companions who once heaped contempt upon him came forward respectfully to greet him because he had redeemed the honor of his household and saved their land from the great ogre black bird and its rapacious army of demons.

The widowed queen and her beautiful daughter were kindly received into the home of Rata. They soon adapted themselves to the ways of his people, though they ever mourned for King Puna and their beautiful land and race, now known only in folklore. The two mothers and grandmother became attached to one another and lived happily together. The head of Rata's father, which was possessed with his spirit, was dried carefully, wrapped in sweet-scented tapa, and kept in the house as a family oracle, according to the custom of ancient times. Rata became the happy husband of Princess Tie-maofe, who was beloved of all the people of North Tahiti for her amiable qualities. By this marriage all past grievances of the two families were wiped away, and the young people commenced life with an unclouded future.

So Rata's canoe had fulfilled the destiny for which it was named by the elves of the forest, Va'a-i-ama (Canoe-that-burned), though it still retained the name 'Ui-'ura had given it, Tua-a-Rata (Company of Rata). The names Va'a-i-ama, Va'ai-a, and Va'a-i-'ura-all meaning the same-are found in the genealogy of the Pomare family to commemorate the famous canoe.

After these exploits, which rendered Rata famous in Tahiti, it is stated in one story that he went away to explore unknown regions and never returned to Tahiti, and that for ages afterwards navigators saw in the bright hazy distance, when far out at sea, the giant Rata with his spirit ancestors sailing in his canoe, which they could never overtake. According to another story, once Hiro saw Rata in his canoe with some other navigators being spun around towards the center of a whirlpool. (Generally known to ancient Polynesian voyagers, these whirlpools may have been caused by shoals long since sunken.) From this predicament Hiro drew them out, and in gratitude for this deliverance, Rata gave Hiro the canoe, which was named by its new possessor Va'a-i-hutia-mai (Canoe-that-was-drawn-back).

NOTES

This Tuamotuan version of Rata is from Teuira Henry's *Ancient Tahiti* (495-512); the story was obtained in 1893 "by Mrs. Walker from the scholar Taroï." A Tahitian version of the story is found on pages 468-495 of Henry's

book. The story of Vahieroa and Rata continue the tradition of Hema and Tafa'i, told in the previous story. (Vahieroa is the son of Tafa'i.)

Hawaiian versions of the traditions of Hema, Kaha'i (Tafa'i), Wahieloa (Vahieroa), and Laka (Rata) are told in chants in S.M. Kamakau's Tales and Traditions of the People of Old (138-147). The Hawaiian traditions are summarized in Beckwith. Beckwith also summarizes accounts of these Pan-Polynesian heroes from various islands-Aotearoa (New Zealand); Rarotonga, Aitutaki, and Mangaia; (Cook Islands); Hiva (Marquesas Islands); Vaituipu (Ellice Islands), Pukapuka, Samoa, and Tonga.(238-275). The traditions are discussed in Henry (512-515; 565-575).

1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
Home	Search	Archives	Past Education Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)	

Ru

Timi Koro, Trans. by Drury Low

About twenty-eight generations ago our people lived on Tubuaki,¹ an island far to the east and north of Aitutaki [Southern Cook Islands]. The island was fertile and fishing was good, but during dry seasons food was scarce, and long-continued peace resulted in the island becoming over-crowded. The name of the ariki has been forgotten; he was a strong man but slow to anger. Among his people was a powerful young man named Ru, who was the chief navigator of the island, and always steered the canoes when visits were made to neighbouring islands. For generations his family had been navigators. Although not of royal blood, Ru was a man of good standing. He was a peace-loving man, but ambitious of becoming a leader, and viewed with concern the quickly-increasing population of the island.

Moved by a quarrel over headship of his clan, Ru began to make plans. He decided to build a large seaworthy canoe and call together his friends and relations to try to persuade enough of them to join him in searching for an uninhabited island somewhere toward the setting sun. He felt sure he would find land there and become a great chief. So Ru called together his four younger brothers-Taiteraiva, Taiteravaru, Ruatakina, and Verituamaroa-and asked them to go with him. At first the brothers were afraid and would not agree, saying, "Why leave our present home where life is carefree and happy, to die at sea?"

Ru replied, "That is woman's talk. I know the ways of the sea. I know the winds and the currents. Fear not, and I will take you to a larger and better land than this."

In the end the brothers agreed to go, saying, "If we live, we live; if we die, we die."

Ru now proposed to his four wives, Te Papa-kura, Ruiaau, Kipapa-eitara, and Ararau-enua, that they should leave their island. Being only recently married, and having as yet borne no children, they were afraid and answered,

"We are afraid that we shall all be drowned at sea. Why leave our friends and relatives just to perish at sea?"

Ru replied, "I might have known that you women would prefer to stay at home and see your future children hungry. Don't you know that I hold the sea and its ways in my hand, and the heavens are my chart? Listen to me, my wives, I am going, together with my four younger brothers. Join us and all will be well. Stay at home and you stay alone in disgrace."

After hastily taking council together, the four wives agreed to go, saying, "O Ru, we will go. If we die, we die; if we live, we live."

Ru replied, "My wives, you are worthy of a great husband. Now go into all the settlements and pick from the royal families twenty tapairu (good-looking young virgins), fit mothers for a new and strong race."

Going into the settlements his wives called out, "Who are the virgins of royal blood who would like to join our party?"

"For what purpose?" they were asked.

"We are going with our husband, Ru, and his four brothers to seek a new land."

Twenty suitable young women were soon chosen from those who wished to go. Unlike Ru's brothers and wives they raised no objections to the journey. Their names were as follows: Vaine-pururangi, Maine-teaoroa, Vovoaru, Arakitera, Te Aroitau, Te Nonoioiva, Tutunoa, Vaine-moana, Upoko-ara, Patapairu, Pau, Tuonoariki, Te Paku-oavaiki, Ruanoo, Arekaonga, Kava, Maine-pirouru, Tutapuiva, Pakiara, and Maine-pururangi. These twenty women, chosen for virtue, strength, and good looks, were brought before Ru who asked them, "Do you agree to go with us in search of a new land and home? We may be many days at sea, but will certainly find a home to suit us."

All together they answered him, "Yes, we wish to go."

A search was then made for two large tamanu trees suitable for a canoe for the voyage. The making of this canoe was a lengthy process. for the trees

had to be felled and hewn out with stone adzes. When finished to Ru's satisfaction, the two hulls were hauled down to the beach and lashed together with no platform between them. This type of canoe was called "unurua." The day was spent in feasting and rejoicing. Ru named the canoe Ngapuariki (The two ariki, or supreme chiefs). It is not known whether this name was given on account of the ariki of the island and Ru, or whether it referred to the two hulls lashed together. After the launching, each brother and virgin was ordered to cut a strong paddle for use on the voyage. These paddles took three days to make, and when completed, they were examined by Ru.

Some further days were spent training for the coming voyage. The canoe and the mat-sails were tested, and much time was spent handling and paddling the canoe until the crew were proficient. For two days friends and relatives assisted in gathering enough food for the voyage. Taro, puraka (pig), kuru (breadfruit), and a large supply of water were put on board. All record of how the water was carried has been lost. Some say it was carried in coconuts.

The next morning, the wind being favourable, Ru decided to set sail. The whole island came to say farewell to the twenty-nine voyagers. The reef was cleared, the sails were hoisted, and the canoe was headed toward the west, Ru taking the steering oar, and his brother Verituamaroa standing at the bow as pilot. Though conditions were favorable for the first two days, the women were sick as soon as the canoe was out of sight of the land. On the third day heavy clouds banked up, the wind, which had changed round, now blew strongly from the west, and the sea was so rough that the women and men had to take turns bailing the canoe; she was riding heavily owing to the hulls being new and deeply laden. As the wind grew stronger and the sea became rougher, Verituamaroa grew frightened and advised Ru to turn back and run for home before the wind. But Ru heartened them by saying that it was only a passing squall. Soon they were all pleading with him to turn back, but he answered, "Listen, my brothers, my wives, and all you virgins: I, Ru, know all the secrets of the sea. I hold the sea in my hand, and will bring you all through safely. Don't be afraid. Put down the sail and paddle the canoe head into the seas. Soon the worst will be over. Oe te vaka, oe te vaka."

As soon as the sails were lowered, the canoe began to lose way and huge waves broke over her keeping all busy bailing. Through all the noise and wailing, Ru could be heard laughing and encouraging his crew the night through. When morning broke, even Ru was a little afraid for a terrific sea was running. So tired were his people that it was almost impossible to keep the canoe head on to the sea. Again and again they begged Ru to turn back, but still he kept on. At last one of the brothers persuaded him to pray to Tangaroa for help, and this is what he said:

Tangaroa, supreme above,
 Tangaroa, supreme below,
 Sweep away these angry clouds,
 So that Ru's people can reach the land.

[Tangaroa i te Titi,
 Tangaroa i te Tata
 Eu eu ake ana te rangi,
 Kia tae atu te tere o Ru ki uta i te enua.]

Soon the wind began to abate, and the sea grew calmer. Ru's brothers, noting the change, persuaded him to pray again. It was not long before the sun came out and the wind swung round to the right quarter. The water was bailed out, the sails were set, and the canoe was put on a westerly course. Favourable weather continued for the next two days. Each night Ru checked his course by a star. On the third afternoon after the storm Verituamaroa, who was still at the bow of the canoe, cried out that he could see land ahead. Some thought that he might be deceived by a bank of clouds, but soon the voyagers could see breakers on a reef. All now gazed eagerly at the new land. After a search, a suitable passage was found, the sails were taken down, and the women were ordered to paddle the canoe in. Night was coming on, but there was a full moon (ootu). Half way through the passage the canoe was stranded on a coral patch, and all had to get out to haul her off. As they pulled, they sang a song asking for the waves to come and float the canoe. The song is still sung today by the old people when they launch their canoe.

The canoe still stuck fast and it was impossible to move it, so the brothers were sent to a small island nearby to cut down some ara (pandanus trees) for

rollers. The canoe came off the rocks with a rush, and Veri who was near the bows was crushed underneath as the canoe passed right over him. The others ran to help him but he was dead. They carried his body to the canoe, which was now inside the lagoon, and they wailed as they did so. After dragging the canoe over a sand-bank, they paddled to a small island about two miles from the mainland where they decided to spend the night. Because of Veri's death, the voyagers got little sleep that night.

Early next morning, before they started, Ru called his crew together and named the places they had so far touched at; the passage he named Ootu-te-po, meaning "the night of the full moon"; the rocks on which the canoe grounded he called Popo-ara, referring to the timber used as rollers; the small island from which the timber had been cut was named Ootu, while the one on which they had spent the night was called Uritua-o-Ru. The brothers took exception to Ru adding his own name to the latter, but he answered, "You have no say in the naming of these places. I am the eldest son and will name the places as I think fit."

The canoe set out for the mainland, the women paddling, but progress was slow owing to the shallow water. Even when everybody was out of the canoe it was found necessary to send the women on ahead to dig a channel with their paddles. The task was a difficult one, and as they were already tired Ru was compelled to give them several rests before the canoe was once more in deep water. Once more the brothers were offended because Ru named the water Tai-moana-o-Ru, and the big island to which he was bringing them Utataki-enua-o-Ru-ki-te-moana, meaning "a land searched for and found upon the sea by Ru."² They assured Ru that had they known this would happen they would never have left their land.

As they paddled for the mainland they kept time to a song about the voyage of Ru's canoe Ngapuariki from Hawaiki to Aitutaki:

Ngapuariki te vaka o Ru
 Tei tere mai mei Avaiki e
 Ko Ngapuariki te vaka o Ru
 Tei tere mai mei Avaiki e
 I tere tu mai ki konei

Ki Utataki-enua
Na te vaka o Ru-enua i katiri mai
To tatou enua.

This song, which is known as Ru's Canoe-song, is still sung today.

The canoe was hidden in a small creek on the mainland, and the name given to the place was Maitai. The creek was named Vai-tiare ("the water of tiare flowers"). Leaving the others behind Ru climbed a hill nearby looking for a suitable place to build a new home. After they had buried Veri, they marked off a marae which they named Te Autapu. A marae is a place marked off with stones to be used for all meetings and for praying to their gods. The setting up of a marae by a chief was usually done with much ceremony, but as Ru was not of the royal family, the ceremony of dedicating Te Autapu was not elaborate. Near the marae they built their first houses. Finding the island uninhabited, Ru divided it among the twenty virgins, as they were of royal blood and consequently had first claim to the land. Ru told them that they were as mats on the floor, as other canoes were bound to come sooner or later bringing men with them. On these mats the men would sleep, and from them this new land would be populated. As the island appeared to be shaped like a big fish he named the end on which they landed Te Upoko-o-te-enua (The head of the land), the middle Tuenua (The belly), and the end Nuku-manini.

After they had been some time on the island, Ru's four wives bore children. Ararau-enua bore the first one, a boy, which Ru named Ararau-enua-o-Ru-ki-te-moana, meaning "Ru looking for land on the sea." Te Papa-kura had a baby boy who was named Te-upoko-o-te-enua, meaning "The head of the land." Ruiaau's baby girl was named Araau, and the fourth, a baby boy, was named Tupa.

Some time later Ru's brothers came to him and asked him to help them build a big canoe, saying that they wanted to go and look for new islands. At first Ru would not agree to this, but when they promised to return he decided to help them. When finished, the canoe was named Te Rito-o-araura (The best of Ututaki-enua). A large supply of food and water was placed on board and when they were ready to sail, Ru asked them to tell him why they really wished to leave this land.

"Ru, the night we arrived here," they said, "our youngest brother was killed on the reef. You have named nothing here after him to keep his name in our memories. You have named nothing after us. You have taken all the power into your own hands. You have given all the land to the women and none to us. This land is yours, and so we are going to seek a fresh land for ourselves."

Ru realized his mistake too late. He pleaded with them to return. They promised that either they or their children would return. Then the canoe set sail for the open sea, where an argument took place as to the course they should set. Two were in favour of returning to their old home, but Taiteraiva, the eldest, pointed out that if they reached that land they would be no better off and would not be men of rank. They decided to go south. Little is known of the voyage except that the first land they sighted was New Zealand. Off the coast of New Zealand they struck bad weather and suffered much from cold. It is believed that they landed near Tauranga and proceeded inland to Rotorua, where they were well received and kindly treated by the natives they found living there. It is claimed in Aitutaki that Taiteraiva named Rotorua, naming it so on account of the lake reminding them of the lagoon at Ututaki-enua, which was known as Rototai (roto = lake; tai, ta'i, or tahi = first; rua = second).

The brothers married women belonging to the ruling families and thus became men of rank and standing. It is believed that their descendants are to be found among the Ngati Arawa [the Arawa clan] today. The three brothers never returned to Ututaki-enua, but it is claimed here that a canoe came later from New Zealand bringing their sons or grandsons, who settled here, and it was from them that the story of the voyage of the Te Rito-o-araura was learnt. Their names and the name of their canoe have been lost.

The places named by Ru still have the same names today, with the exception of the name of the island, which is supposed to have been changed by the first Ra'iatean missionaries to whom the word Ututaki sounded as Aitutaki. Ru's marae can still be seen, and the passage, the coral patch upon which the canoe grounded, the sand-banks, and the small islands, are exactly as described in the story.

All the mataipo (district chiefs) today can trace their descent back to the

twenty royal virgins who came with Ru, but the ariki trace their descent back to an ariki, or chief, named Ruatapu who came later in the third canoe to arrive on the island.

NOTES

The story of Ru was recorded by Drury Low from the words of Timi Koro, of Ureia settlement, who died at Aitutaki on November 3, 1933. Timi Koro was tumu korero of Aitutaki. This traditional account was published in *Journal of the Polynesian Society*, Vol. 43, 1934, pp. 17-24.

1. An island called Tubuai lies southeast of Aitutaki in the Australs. An island named Tubuai-manu lies E by N of Aitutaki", just west of Mo'orea in Tahiti Nui (Society Islands); it is perhaps to this second Tubuai that the storyteller names as the home island of Ru. However, Peter H. Buck says that Ru came from Havai'i (Ra'iatea), which is located 500 miles E by N of Aitutaki (101).

2. The island to which Ru sailed is now called Aitutaki. Te Rangi Hiroa (Peter H. Buck) interprets the original name in another way: "[The name] Utataki-enua-o-Ru-ki-te-moana was derived from utauta, a cargo, and taki, to lead. It refers to Ru leading the valuable human cargo over the sea. Another name given to the island is Ararau-enua-o-Ru-ki-te-moana. 'Ararau' is 'to search for land at sea with a canoe,' and the name applied to the island refers to Ru's search on the ocean. The first name was shortened to Aitutaki, and the second to Araura. 'Araura' should be spelt 'Arahura,' and it is difficult to see how it is connected with 'ararau.' The meaning of 'ararau' is significant of a period when many voyages of discovery were undertaken." (*The Material Culture of the Cook Islands*, Honolulu: Bishop Museum, 1927, p. xix).

1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
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<u>Voyages</u>	<u>Canoe-Building</u>	<u>Wayfinding</u>	<u>Life on a Canoe</u>	<u>Polynesian Migrations</u>	<u>Proverbs and Traditions</u>
<u>Home</u>	<u>Search</u>	<u>Archives</u>	<u>Past Education Programs and Materials</u>	<u>On-Line Visuals</u>	<u>Bibliographies (Books and Films)</u>

Te Erui Ariki

Timi Koro, Trans. by Drury Low

About twenty-six generations ago, on the island of Kuporu (Taha'a) in a group called 'Avaiki (Tahiti Nui), far to the north and east of Aitutaki, lived a young Maori ariki named Te Erui. He was the eldest son of the ariki, or supreme chief, of Kuporu. This island was not large, but it had a big lagoon, and the fishing there was good. This island was noted for its canoes, and the people of the island were in the habit of making voyages in them to other islands, some of which were close at hand, while others took some days to reach. Sometimes they stayed away on these visits for months at a time.

On all these voyages the young ariki Te Erui was the leader, and always took the steering-paddle of the leading canoe. On Kuporu he was recognized as the best of all the young canoe-men. He was strong and fearless, and skilled in the art of canoe-making.

On the island of Kuporu in normal seasons food was plentiful, but the island was becoming over-populated owing to a long reign of wise chiefs, who had put down all tribal fighting and had forbidden their young men to go raiding in their canoes to other islands. Soon after returning home from a long visit to a distant island, Te Erui asked permission of his father to build a new double-canoe for a long voyage to the south and west in search of new islands, as for many years there had been rumors of uninhabited land in that quarter. At first his father would not listen to this, fearing to lose his son, as well as doubting the existence of any such islands.

But as time went on and his son persisted, he at last gave his consent. But he made Te Erui promise to spend a specified number of days at sea in search of land, and to return to Kuporu if he failed to find land within the time limit.

If, on the other hand, he discovered a suitable uninhabited island, he was to return when rested to Kuporu and take back with him as many of his own people as could live on the new island. The ariki pointed out that Kuporu was already over-populated, and should a long drought occur, life would be

hard for them. Te Erui readily promised to do all his father asked.

During the next few days a start was made on the new double-hulled canoe; two large tamanu trees were chosen as suitable for making the hulls. The felling of these two trees took over two weeks; it was done by heating stones and placing the red hot stones around the trunk of the tree at ground level; when the stones got cold they were replaced with fresh hot ones. The wood thus weakened, the trees were felled with stone adzes. The day the last tree fell was given over to resting and feasting, and the following day the shaping of the hulls began. All the men on the island skilled in canoe-making helped out. The work took over half a year. When at last the work were completed, all the island turned out and helped drag the logs down to the lagoon-side. Masts and sails were now made. This done, the canoe was tried out in the lagoon. Te Erui took the steering paddle and was pleased with her sailing and handling. He named his new canoe Viripo-moetakauri, and one of the masts he named Tuterangimarama; this class of double-canoe was called katea.

A meeting of all the island was then called by the old ariki to arrange for the gathering of food for the coming voyage. At this meeting the taunga (wise man) of the tribe warned Te Erui against starting on his voyage. Te Erui would not heed this warning, saying that it was he who was to steer the canoe and that he was not afraid. His father was also against his leaving. In vain they tried to persuade Te Erui to put off his voyage till later, but Te Erui would not listen and was in a hurry to be gone. Food was gathered and prepared-dried fish and dried paua (shell fish), kuru (bread fruit), taro, coconuts, and puraka (pig). The water was stored in bamboos, gourds, and also in coconuts.

When the provisions was ready, another meeting was called, and at this meeting Te Erui was made a high chief. He chose the men to go with him as his crew, among them his three younger brothers whose names were Matareka, Tavi, and Tava. The crew were all chosen for their strength and courage, as well as for their skill as canoe-men. Next morning the food and water were carefully stowed in the canoe, and the crew said farewells to all friends and relatives. The old ariki was overcome with grief. He told them all to remember their promises and not to disgrace him.

Sails were now set and the canoe headed for the passage; this passed, sails were trimmed and the canoe went before the wind, Te Erui took the steering paddle, and Matareka went up to the bow to act as pilot. The first day at sea the wind was strong and fair, and the canoe made good way, but in the night the wind grew stronger. When morning dawned the sun rose red and threatening, the sky was overcast, and the sea grew very rough. All morning the wind increased and the seas grew in size; by midday a gale was blowing. In the afternoon the wind increased even more, and the sea was still rougher. Fearing a hurricane, Te Erui's brothers begged him to turn back before it was too late, but Te Erui would not agree, saying the canoe could weather the storm. Te Erui sailed on. Then late in the afternoon, a sudden gust of wind carried away one mast, and tore both sails. Te Erui now tried to save as much as possible of what was left of his sails. One broken mast was saved and lashed to the canoe, which was then brought head on into the wind. An attempt was made to paddle the canoe back to Kuporu. All night the brothers paddled, keeping the canoe head on to the seas. When morning dawned, the wind and sea began to diminish.

About mid-day the brothers commenced repairing the sails. The broken mast was lashed together again; short as it was, it served for the sail that was left. As darkness set in the sail was once more hoisted and the canoe started homeward. All night the brothers took turns at steering and sleeping. The morning dawned clear and the wind veered a little, enabling the canoe to make better headway. Seven days and nights were spent in this way, but as the weather was fine, Te Erui was sure of making landfall. On the eighth morning land was sighted, and they were soon close enough to discern that it was Kuporu. Late that afternoon the canoe was once more safely through the passage and soon reached the shore where all the people, having seen it approaching, had been waiting for some time.

The chief was overjoyed at seeing his sons again, and the canoe was quickly brought ashore. The four brothers were taken home and fed and made much of. Then a meeting of all the leading people was called. The taunga's advice was sought, and he was asked why the canoe had met such bad weather and had been nearly lost. He told them that it was on account of the name Te Erui had given the canoe; the name of the masts were also wrong. The old ariki was very much against his sons going to sea again, but said that if they

insisted he would have another new canoe made for them, hoping in this way to keep them with him for some time. Te Erui, however, would not agree, saying that his canoe had proven itself to be a good, strong sailing vessel. In this the taunga sided with Te Erui, saying that if he renamed the canoe and masts, the canoe would be safe and they would meet with no more bad weather at sea. Te Erui agreed, and the old ariki had to be satisfied.

Next morning everybody went to the beach where the taunga renamed the two hulls Rangi-pai-uta and Rangi-pai-tai; the two masts he named Tanaroa and Rongo after the two gods; the fore-stay for the mast he named Ikumanavenave-mua and the back-stay he named Ikumanavenave-muri; the wooden bailer he named Auaumarorenge, and the sail he named Ra. Three days were spent on the island while new sails were made and a new mast fitted. After the canoe was repaired, a new supply of food and water placed on board.

As before, all were there to see the voyagers depart. Again the four brothers took their places. Once more on reaching the sea, Te Erui took the steering paddle, and Matareka acted as pilot. This time the canoe met fair winds and good weather and the sea was smooth. Nine days and nights were spent at sea but early on the morning of the tenth day, land was sighted a little to the westward of the canoe. The course was altered to bring the land ahead. Late in the afternoon the canoe was close in to the reef and a number of small islands were seen, also a large lagoon, and a little further on the mainland. Te Erui kept the canoe close in to the reef, telling Matareka, who was acting pilot, to keep a good look out for a suitable passage into the lagoon, as he did not want to spend the night at sea.

Shortly after this, smoke was noticed coming from the island, though at first Te Erui and his brothers had thought the land uninhabited. The canoe sailed on round the island until they came to the northwest side where a good passage was noticed. Here Te Erui had the sails taken in and as these were being lowered, he and his brothers saw two men who appeared to be fishing on the reef. The canoe was paddled toward the passage, and was soon safe inside the lagoon.

One of the men fishing on the reef came over close to the canoe. He was Tupa, a son of Ru. Te Erui asked his permission to go ashore, but Tupa

began to threaten Te Erui and refused to allow him to land. He told Te Erui that beyond was the open sea and he must turn his canoe about and go back and look for a land for himself. This made Te Erui very angry and he shouted, "You do not know to whom you are talking. I am Te Erui, an ariki from 'Avaiki and a toa (warrior)." With that he leapt out of his canoe, which was still in shallow water near the reef, and taking hold of Tupa quickly killed him.

Just inside the passage they met the other fisherman, and again Te Erui asked permission to go ashore. This man's name was Mokoroa. He also told them that he was a son of Ru, who owned the island, and that Te Erui and his brothers could not go ashore but must turn back and again put to sea and go in search of a land for themselves. This made Te Erui very angry, and to Mokoroa he shouted, "Don't you know that I am Te Erui, an ariki from 'Avaiki and a famous toa." Then he jumped out of the canoe and killed Mokoroa also. When Mokoroa was dead Te Erui ripped out his stomach, and throwing the entrails into the harbor or passage, named the place Ngakau ("Entrails"). He then tore out Mokoroa's tongue and threw it into the other side of the passage which he named Arero ("Tongue"). Taking Mokoroa's body in the canoe, they paddled in towards shore, but Te Erui soon stopped the canoe, and cutting off one of Mokoroa's legs, threw it into the lagoon. He named this place Te Turio-Mokoroa. To this day these names are still known and used.

Again the crew paddled toward shore and the place where they landed Te Erui named Kakeu-te-rangi. That night the brothers slept on the beach close to the canoe, fearing that they might be surprised and set upon for the killing of Tupa and Mokoroa.

Next morning on going a little way inland, Te Erui and his brothers could see no signs of people, houses, or clearings. They quickly set to work to get some food-crabs and shellfish from the lagoon.

After a meal, Te Erui and his brothers began to make Te Erui's marae. A suitable place was chosen on a high piece of land close by. This work was called "au te marae," or "marking off a piece of land." As a rule the land was marked off with stones, and many of the bigger marae were paved with flat stones. These marae were used as places for praying to their gods, and for all

important meetings, such as those conducted before wars, or battles, or fighting. Sometimes when a near relative was killed in battle, the enemy who had killed him would be a marked man. If this man were later killed by the victim's friends and family, his head would be brought to the marae, and there eaten by them as a sign of their anger, and also with the idea of giving them added power and strength in future battles. The brothers completed the marae that day, and Te Erui named it Kakeu-te-rangi, which name it still bears.

That night the party returned to the beach and slept near their canoe. On the second morning they arose early, gathered some food, and made a hasty meal. Just as they were finishing it, a man was seen approaching from the beach. He came close and called out, telling them that he was a son of Ru, whose island this was, and asking who they were and whence they came.

Te Erui replied, "I am Te Erui, an ariki from 'Avaiki and a famous toa. With me are my three brothers-Matareka, Tavi, and Tava-also men strong in battle." Here Te Erui pointed to the canoe and said, "This is our canoe called Rangi-pai-ta, Rangi-pai-uta, and in it we came from our home in Kuporu, where our father is chief of all."

To this Ru's son answered, "I am named Utataki-enua-o-Ru-ki-te-moana and I am Ru's first born son." He then told them that he had come at his father's request to take Te Erui and his brothers to Ru, who had heard of their arrival and waited for them at his house some distance away.

Te Erui told him to lead the way, and they would follow.

A short distance along the beach they turned off into the bush and soon arrived in sight of Ru's home, which was built atop a small hill. Here the brothers met Ru with his four wives, and two daughters named Araau and Pitoroa. The brothers were quick to notice the absence of men, while there were many women. Ru made them welcome and had food placed before them. After the meal, Ru asked them who they were and whence they came. Te Erui answered him and in turn questioned Ru. Ru told them who he was, saying that he and his four brothers, named Taiteraiva, Taiteravaru, Rutakina, and Virituamaroa; his four wives, named Te Papa-kura, Ruiaau, Kipapa-eitara, Ararau-enua; and twenty virgins had arrived in a canoe

named Nga-puariki from Tubuaki. Ru said, "I have only three sons, the first-born named Utataki-enua-o-Ru-ki-te-moana, the second Tupa, and the third Mokoroa."

Te Erui replied, "You have only one son left. Two days ago Tupa and Mokoroa refused to allow us to come ashore, so I killed them."

On hearing this, Ru and his wives were very much upset and Ru said, "If only I were your age, or if my brothers were still with me on the island, it would go hard with you and your brothers."

Te Erui laughed: "Leave fighting and talk of fighting to younger and stronger men. I have yet to meet my equal in battle."

Realizing that he was no match for the younger and stronger man, and that the island was big, and the women were in need of men, Ru decided not to seek revenge. Te Erui and his brothers stayed that night with Ru, but early next morning returned to the marae Kakeu-te-rangi and started to build their new homes nearby.

They remained at this place only about three months. After they chose a much more suitable site, they moved to it. Te Erui built a new marae and named it Aurupe-te-rangi, as it is still known today.

Having completed the marae, they started to build a small settlement at a place which Te Erui called Ureia, still known as such. Here Te Erui lived until the new houses were built and then to his two brothers Tavi and Tava he gave the new settlement, while he and Matareka moved to another place about a mile to the south. This was situated on higher ground and nearer to Ru's settlement. Here he built another marae which he named Reureu-i-te-mata-o-Te Erui-ariki, meaning "This represents the eyes of Te Erui ariki."

Soon after this, Te Erui took as his wife Ru's daughter Pitoroa, who was very beautiful, and about the same time each of his three brothers married one of the royal virgins brought to Aitutaki by Ru.

By his wife Pitoroa, Te Erui had one child, a boy whom he named Taruia. Te Erui was now ariki of the island. As Ru was not of royal family, he was

content to let Te Erui become ariki and do all the work. When Taruia had grown into a big boy and was old enough to go out fishing, his grandfather, Ru, slowly sickened and died. At his death the whole island was overcome with sorrow, as Ru was very much loved. His four wives were still alive.

When Taruia had grown into a young man, his father Te Erui was taken ill and died very suddenly, and on his death Taruia was made ariki. By this time the population of the island was increasing. All Te Erui's brothers had large families. For the first few years of Taruia's chieftainship things were quiet and peaceful, Taruia himself being a strong, quiet man.

One day word was brought to Taruia that another canoe had landed on the eastern side of the island, and only one man had come in it. Taruia asked who he was and whence he had come, but could learn very little about him beyond the fact that he was a young man, very tall, powerful, and handsome. He was living in a settlement named Vaitupa on the other side of the island.

Some years later one of Taruia's people came running to him one day with a canoe made of coconut leaves, which he had picked up as it was sailing along in the lagoon close to the beach. He had never before seen anything like it. Taruia took it from him and examined it carefully, questioning the finder as to where it had come from. When given all the particulars, Taruia told those gathered about him that it was a sign that on the island was another ariki. "This," he said, "is a sign from one ariki to another. Considering where it was found and the direction of the wind, it must have come from Ruatea. Go there quickly and if you find a strange man, bring him to me."

The man at once set off and when he reached Ruatea, he found a strange man sitting down close to the beach. He told the stranger that he had been sent to bring him to Taruia and they returned together. Taruia then asked the stranger who he was, whence he came, and what he was doing on the island.

He replied, "I am Ruatapu, an ariki from Taputapuatea on the island of Ra'iatea. I am on a voyage to visit new islands."

This pleased Taruia, who insisted upon Ruatapu making his home with him, saying that the two ariki should live together. Taruia then called for food for

Ruatapu, who agreed to live with Taruia.

[Ruatapu eventually usurped the rule of Utataki-enua-o-Ru (Aitutaki) from Taruia after tricking Taruia into leaving for Rarotonga. Taruia gathered a number of Rarotongan warriors and sailed back to Utataki-enua-o-Ru, but was defeated in battle and driven away by Ruatapu and his supporters. (See the story of Ruatapu for an account of these events.)]

The few of Taruia's followers who were left with him in his canoe then ceased fighting, and Taruia headed his canoe northward. They sailed on, eventually reaching an island named Mangarongaro (Penrhyn, about 600 miles north of Aitutaki). This voyage, even with good weather all the way, took nearly three weeks, and they arrived there very weak and exhausted for want of food. The passage they sailed through from the sea into the lagoon Taruia named after himself, Taruia-ariki, still known by that name to-day.

On reaching the shore Taruia and his followers were welcomed by the people of Mangarongaro and were kindly treated. Here they remained. Taruia took as a wife a woman named Rakoa by whom he had a child, a boy named Ruatitau, who, when he became a man married a woman named Toua. Two children were born to them, the first a boy named Uaapu, the second a boy named Roaina.

When Uaapu grew up, he had a canoe built for himself and when it was finished, he had it loaded with food and water. He then set out alone for the land of his fathers, Utataki-enua-o-Ru. He struck good weather during part of the voyage, good winds and smooth seas, but when about halfway he ran into heavy rain squalls which lasted two days. Fifteen days Uaapu spent at sea before reaching Utataki-enua-o-Ru. On his arrival he was met by a number of people, and when he told them who he was and where he had come from, he was made welcome by his own relatives and taken to live with them in the settlement of Reureute-mata-o-Te Erui. Here he was treated as one of themselves. Not yet was he given any rank of standing or importance owing to his being of mixed blood.

Soon after arriving, Uaapu took as a wife, a woman named Auariki, and they had a son whom they named Uri. He, in turn, when he grew to manhood, married a woman named Utiki. They had a son whom they named Ranginui.

Now Ranginui's mother, Utiki, was of the royal family, and at her death it was decided to make Ranginui ariki of Reureu as he was really of the royal family on both sides. After many meetings and much talk Ranginui was eventually elected Te Urukura-ariki, he being the first of that line to be so elected. At the present time the family are still ariki (supreme chiefs or chiefesses) of Reureu, a woman, Teurukura-ariki, being the head of her race today. (The marae made by Te Erui and named by him Reureu-i-te-mata-o-Te Erui-ariki was very well made, and can still easily be traced. Some of the stone seats are also still to be seen.)

NOTES

The story of Te Erui Ariki was recorded by Drury Low from the words of Timi Koro (See notes to the story of Ru.). This account of Te Erui Ariki was published in Journal of the Polynesian Society, Vol. 43, 1934, pp. 72-84. Another account is found in "The First Inhabitants of Aitutaki" by John Pakoti (translated by Henry Nicholas), in Journal of the Polynesian Society, Vol. 4, 1895, pp. 66-67.

1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
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Ruatapu

Timi Koro, Trans. by Drury Low

Twenty-seven or twenty-eight generations ago on an island called Taputapuatea [Ra'iatea or Havai'i], which is far to the north and east of Ututaki Enea [Aitutaki], lived a young chief of royal blood named Ruatapu. He was the only son of Uanuku Rakeiora, an ariki or high chief of that island. From boyhood Ruatapu had been fond of canoes, and he had made many short voyages to neighboring islands. Ruatapu grew up to be a tall, strong, and handsome young man. While still young he decided to build a canoe to search for a new island where he could become ariki. To this end he approached his father, Uanuku, who at last gave his consent.

With the help of others skilled in canoe work, Ruatapu made a new canoe out of a tamanu tree and when it was at last finished he named it Te Kare-roa-i-tai (Sea Foam) and lost no time in stocking it with food and water. Early one morning he sailed alone from Taputapuatea in search of new lands. Keeping his canoe running before the prevailing southeast tradewinds he made Rarotonga eight or nine days later. He landed at a small harbor named Avarau where he was met by some of the inhabitants who welcomed and fed him.

The first man he met was named Potiki-taua, the chief of the village of Avana-nui where they were. Ruatapu asked, "Who is the chief of the island?" Potiki-taua told him it was Tangiia.

Ruatapu also asked if there were many people living on the island, and was told that the island was full of people.

Ruatapu settled down at Avana-nui, and shortly after took as wife a woman named Uanuku-kaiatia. They had a male child and named him Tamaiva. When the child was about four years old Ruatapu, who had grown tired of Rarotonga, decided to leave the island. So once again he put to sea alone in search of other islands.

After spending many days and nights at sea he sighted a large island. On

reaching the shore the first person he met was a woman. Ruatapu asked her the name of the island, how many people were living there, and also the name of the ariki. The woman replied that the island was called Tonga-tapu, that the ariki's name was Kaukura, and that the island was full of people. Ruatapu also asked the woman her name and was told that it was Tapotu-ki-Tonga. Ruatapu made up his mind that as the people already had an ariki, this island was no place for him to stay at, so he asked the woman if he could stay with her a few days in order to rest before continuing his journey. Tapotu-ki-Tonga agreed and took him to her house and fed him. Ruatapu grew fond of Tapotu-ki-Tonga and stayed on. They had a child which they named Moenau ("Sleeping together").

While Moenau was still very young Ruatapu decided to move on, but first he sent his son Moenau to Rarotonga with his grandfather, a noted canoe voyager named Rangiura. Ruatapu told Rangiura that on arrival at Rarotonga he was to place Moenau with his half-brother Tamaiva, son of Ruatapu's Rarotongan wife. To this, his wife Tapotu-ki-Tonga agreed. Rangiura built a new canoe for the voyage and when it was finished he named it Pouara. Ruatapu told Rangiura that he would find Uanuku-kaiatia, the mother of Tamaiva, living in the settlement of Matavera. Soon after this Rangiura and his grandson sailed from Tonga-tapu and later arrived safely at Rarotonga.

During the voyage Moenau had been very much afraid, and on getting close to the reef at Rarotonga begged Rangiura to take him quickly ashore or else he would die. As the sea broke heavily on the reef, Rangiura wanted to take time to find a suitable passage to make a landing, but fearing that Moenau might die if not landed at once, he tried to shoot the reef. The canoe was upset and smashed, and Moenau was swept some distance away by the waves. Rangiura swam after him and brought him safely ashore, then went after the broken canoe and brought it ashore. The place where the canoe capsized he named Vaenga ("The place where we parted"); the place where they landed he named Pouara after his canoe.

Rangiura asked some people who had come to the beach where Tamaiva, son of Ruatapu, was to be found. A man named Anga offered to take Rangiura and Moenau to him. On meeting Tamaiva and his mother, Rangiura explained who he was and said that it was Ruatapu's wish that

Moenau should live with them in Rarotonga. This did not please Tamaiva or his mother, who were jealous of Moenau. They asked where Ruatapu was. On being told that he was at Tonga-tapu, they told Rangiura they did not want to take charge of Moenau and that he had better take Moenau away to some other islands called Ngaputoru, referring to 'Atiu, Ma'uke, and Miti'aro, where they said Moenau would become a man of rank and also have plenty of flying-fish to eat.

Rangiura and Moenau were very much angered on hearing this, and Rangiura decided that as soon as they had rested and he had repaired his canoe or obtained another, they would continue on to Ngaputoru as he would not leave Moenau where the boy was not wanted.

Five days later, after resting and repairing the canoe, Rangiura and Moenau left Rarotonga for Ngaputoru. This time they struck very bad weather at sea. Weak and exhausted, Rangiura at last reached Ma'uke, but when trying to reach shore, he was killed on the reef. Moenau, however, was rescued by the people of Ma'uke, taken ashore, and well treated.

Some years later when he had grown into a strong, young man Moenau married a Ma'uke woman named Te Kaumarokura. A son was born whom they named Te Aukura-ariki-ki-Mauketau.

Moenau, who had by this time grown into a very big and powerful man, was very proud of his size and strength and also of the fact that he was a son of Ruatapu. He would seldom go fishing, but would go down to the beach and meet the canoes coming in from fishing. He would then help himself to any fish he fancied, often taking all the fish from one canoe and leaving the owner to go home hungry without any fish for his family. This made the Ma'uke men very angry but for a long time they suffered in silence, being afraid of Moenau's size and strength.

At last they met secretly and planned to kill him. Two of the strongest fighting men were asked to ambush Moenau and kill him with spears; but they would not agree, saying that Moenau was more than a match for any six men on the island, and would surely kill them. In the end they decided to try to kill him by using what they called "kaa natipui," a fine rope or cord made out of coconut-fibre, their plan being to catch Moenau unprepared.

On the day chosen for the deed Tara-te-kui, one of the two men, who was a very good fisherman, went out fishing; the other toa chosen, named Tara-te-kurapo, was to stay ashore and prepare the trap. Tara-te-kui was to stay out fishing until after sunset, then come quickly ashore to the spot agreed upon.

After Tara-te-kurapo was sure Tara-te-kui had caught enough fish, he went to Moenau's house and told him that Tara-te-kui was just coming in from fishing and had made a good catch. Moenau started for the beach at once and Tara-te-kurapo went with him. When they reached the canoe, it was dark and Tara-te-kui was just beginning a meal of taro and fish. This was all part of their plot. Tara-te-kui had the rope snare all set where he intended Moenau to sit down.

Tara-te-kui invited both Moenau and Tara-te-kurapo to sit down and have some food with him before Moenau took some fish home. This pleased Moenau, who readily sat down where Tara-te-kui placed his food. As soon as he commenced to eat Tara-te-kui and Tara-te-kurapo each took an end of the snare and pulled it tight. Moenau was caught by the testicles and was soon overpowered and killed with spears hidden close by. The two men dragged his body to a cave nearby and threw it in. Then they took their fish and went home.

Next morning they told the people of Ma'uke that they had killed Moenau. This greatly pleased the Ma'uke people, who had feared Moenau and were glad to be rid of him and his fish-stealing ways. At the time of Moenau's death, his son Te Aukura-ariki-ki-Mauketau was about four years old. Moenau's wife grieved over the killing of Moenau, and for a long time it was thought that she would die. Tara-te-kui and Tara-te-kurapo were very sorry for her and the child. They looked after her like a sister and took fish to her each week.

All these years Ruatapu had waited on Tonga-tapu for Rangiuri to bring him word of the safe arrival of Moenau at Rarotonga. He feared that both Rangiura and Moenau were dead and he decided to follow them to Rarotonga to see if they were there. He reached Rarotonga safely and on finding his son Tamaiva, asked where his younger brother Moenau was.

Tamaiva replied, "He came here but I and my mother told Rangiuiri to take him on to Ngaputoru so that he would be sure of having plenty of flying-fish to eat." On hearing this Ruatapu was angered and shouted, "Well, I am sure you sent him to his death. I sent him to you to be cared for and now he is dead."

Ruatapu sailed at once from Rarotonga, leaving his son Tamaiva behind. He soon sighted Ma'uke and passed the reef and landed on the beach. He noticed a number of children playing near the landing place, one of whom was very like Moenau as Ruatapu remembered him. Calling the child to him he asked his name and who his father was. The boy said he was called Te Kura-ariki-ki-Mauketau, and that his father's name was Moenau. Ruatapu asked for Moenau, and on being told that he was dead, lamented.

Later he asked the boy if his mother were still alive and where she was to be found. The boy replied that his mother, Te Kaumarokura, still lived. Ruatapu asked to be taken to her, and when they reached the house, he met Moenau's wife and also found there Tara-te-kui and Tara-te-kurapo.

Ruatapu asked Te Kaumarokura if she was the wife of Moenau and she replied, "Yes." He also asked her where Moenau was and she told him that he was dead. Ruatapu asked her if the two men were her new husbands. Te Kaumarokura said that they were not, but that they were relatives and like fathers to her and her child.

She then asked Ruatapu what had brought him to Ma'uke and he said that he had come in search of his son Moenau. She said that he had come too late-Moenau was dead. Ruatapu asked her how many children Moenau had. Te Kaumarokura answered that he had only one son, Te Aukura-ariki-ki-Mauketau, who was standing beside him. Te Kaumarokura then asked Ruatapu how long he intended staying in Ma'uke, and he said he would decide the next day. Te Kaumarokura, Tara-te-kui, and Tara-te-kurapo prepared food for Ruatapu, and after he had eaten he soon fell asleep.

Tara-te-kui, Tara-te-kurapo, and Moenau's wife talked quietly together, and the two men said that they were afraid of Ruatapu who, they said, must be either a powerful ariki or else a god, as never before had they seen a man

like him. They asked her if she did not feel sorry for them and begged that she would not tell Ruatapu that they had killed Moenau. Te Kaumarokura promised, saying that they were now more to her than brothers.

Early next morning Ruatapu arose and his first questions were "How did Moenau die? Was he killed in fighting and, if so, who killed him?" Moenau's wife answered that Moenau had not been killed in fighting but had fallen into a cave or hole in the Makatea. Ruatapu told her that he had supposed Moenau had been killed fighting; but if her answer was true, he could not avenge his death.

Ruatapu then told Te Kaumarokura that he would not remain long in Ma'uke but asked to be allowed to take Moenau's son with him. To this Te Kaumarokura would not agree, saying that she had already lost Moenau and that if she were to lose the boy, she would die. Ruatapu then asked Moenau's son if he would not like to go with him, but Te Aukura-ariki-ki-Mauketau replied that on the island where his father had died, there also would he die. Ruatapu then said to the mother and son that they were right; for if he were to take the boy away, Moenau's name would be forgotten in Ma'uke.

All the people of Ma'uke had heard that Ruatapu, the father of Moenau, had arrived looking for his son, and when they saw him, they were very much afraid lest he should hear how Moenau had died. But no word of the truth reached Ruatapu and he left Ma'uke three days later.

After clearing the reef Ruatapu met some fishing canoes. A man in one of the canoes hailed him and asked why he was leaving so soon. Ruatapu replied that as Moenau was dead and as he had seen his son's wife and child, there was nothing more to stay for. The fisherman then asked Ruatapu if he knew how Moenau had died. Ruatapu replied that he had met his death by falling into a cave. The man then told Ruatapu the truth about Moenau. Ruatapu asked who had killed his son, and he was told "The two men living in the house with Te Kaumarokura, Tara-te-kui and Tara-te-kurapo." Ruatapu replied, "It is now too late. They have lied to me. Had I known this while I was ashore, I would have killed both Tara-te-kui and Tara-te-kurapo, but I have parted from them in peace and cannot return now."

On the following evening Ruatapu reached 'Atiu and went ashore. As it was

nearly dark when he landed no one saw him and he had to find his own way to the place where the people of 'Atiu were living. He was taken into a house and fed. In the morning he rose early and asked who the ariki was and where he lived. Ruatapu was told that the ariki was Renga; Ruatapu was then taken to meet him. Renga appeared pleased to meet Ruatapu, and fed him and made him welcome, insisting upon Ruatapu staying with him.

Renga told Ruatapu that all the people of 'Atiu had for a long time been at work trying to make a canoe-passage through the reef at a small natural passage called Taunganui. He said that the work was hard and very slow. Renga asked Ruatapu if he would help them, and perhaps show them a better and quicker way. Ruatapu agreed to this and for the next few days was busy helping Renga and his people to improve the Taunganui passage.

Ruatapu found the work hard and there was very little food to eat, so he complained to Renga that he and all the others were hungry, and he asked Renga to see that they received more food each day. Renga replied by asking where the food would come from. He explained that they had been working so long at the passage that nearly all the food on the island had been eaten up. After hearing this, Ruatapu decided to cut short his stay on 'Atiu.

Two days later, having secured sufficient food from Renga to continue his voyage, Ruatapu left 'Atiu. As a parting gift Renga gave him some coconuts and two kinds of small birds, one kind named kura, and the other moo; he also gave Ruatapu some roots of a sweet-smelling flower called tiare maori. Three days later Ruatapu sighted two fairly large islands, both sharing one lagoon and surrounded by a reef. He decided to land and rest before going any farther. He found that the passage through the reef was a very bad one, but he reached shore safely. Because of the large number of tavake (boatswain birds) nesting there he named these islands Manu-enua. Ruatapu found both islands to be uninhabited.

Ruatapu spent four days resting on Manu-enua and collecting food to continue his voyage. He freed the birds given to him by Renga, planted one coconut-tree which he named Tuiorongo, and also planted the tiare maori roots to which he gave the name of Aravaine ("Looking for a woman").

Again Ruatapu put to sea, steering WNW. Two days later he sighted a high

hill and soon afterwards was able to see what appeared to be a large island nearly ahead of him. On approaching he could distinguish a number of small islands in the same lagoon, which he entered a little before dark through a small passage named Kopuaonu. He went ashore and spent that night on a small island named Oaka.

Early next morning Ruatapu rose and as he was on his way to his canoe he found a large unga (hermit crab). This he killed and ate and named the place where he had found it Kai-unga. Near this place he planted his last tiare maori root and this he named Ngaevaeva-i-te-inai-te-upoko-o-Tapotu-ki-Tongatapu ("The grey hairs of his wife Tapotu in Tongatapu"). This tiare maori tree can be seen to this day and is by far the largest of its kind in the Cook Islands.

Ruatapu then sailed over to the mainland, and the place where he landed he named Maitai ("The place where he rested"). Going a short way inland from there he named the place Paengamanui ("Where the visitor landed"). Going still further inland he commenced to build his marae which he named Aumatangi ("Sheltered from the winds").

The place where Ruatapu had landed was near the settlement of Vaitupa; it was then a very small settlement. The people there made Ruatapu welcome and took him to their homes. Ruatapu asked the name of the island and was told that it was Ututaki-enua-o-Ru (now called Aitutaki). He also asked the name of their ariki and was told that he was called Taruia.

Ruatapu settled among the people of Vaitupa and took as a wife a woman named Tutunoa. By her he had four children, the first a boy named Kirikava, the second also a boy whom they named Te Urutupui, the third a girl named Tongirau, and the fourth a boy named Touketa.

Ruatapu was now happy living among his people. When the eldest boy was old enough he asked Ruatapu to teach him all the different ways of fishing. Ruatapu told him that the best and quickest way to catch fish was by making two kinds of fishing-nets, one a long one for catching big fish, and the other a short net on two sticks; this net could easily be handled by two men. (This kind of net is a very good one for catching fish in small passages along the reef.)

Ruatapu asked Kirikava which of the two kinds he would like made. Kirikava said that he wanted the big one to catch big fish as he did not want to catch little fish. Ruatapu then collected a large quantity of the bark of the au (hibiscus) tree and soaked in the sea for four days, after which he had it all brought ashore, dressed, cleaned, and hung up to dry. Treated in this way it is called kiriau and will last at least a year before rotting.

Then Ruatapu called the people of Vaitupa together and began to teach them how to make both the long net and the short one called tuturuua. These nets took a long time to make as the people were only learners; they were the first two nets ever seen on the island, and Ruatapu had to teach them all how to make them. The small net was finished first, and Ruatapu gave it to his second son Te Urutupui, making him the owner of it. Some days later Kirikava's net was completed. At last the day came when both nets were taken out for the first time. Ruatapu divided the men of the settlement into two parties, one for each net.

On the first day out both nets had very big catches. Te Urutupui's fish were all small ones, while Kirikava's net had caught big fish and also two turtles. Kirikava divided among those who had been of his party all the fish his net had caught; he did not give any to Ruatapu. Te Urutupui first picked the finest fish out of his catch and sent them along to Ruatapu; the rest of the catch he then divided among those who had been of his party.

Ruatapu was very pleased that Te Urutupui had not forgotten him and had shown his gratitude in this way. With Kirikava, on the other hand, Ruatapu was very angry. He went to Kirikava and told him what his brother had done; by acting thus, not only had he shown his gratitude to his father, but had also made sure that in the future, the net would always be successful. Such was the Maori custom.

Some days later both nets were taken out again and both had big catches. Again the second son gave the pick of his catch to his father while Kirikava, as before, gave none. This second slight made Ruatapu angrier still. He went to Kirikava and asked him how his net had prospered. Kirikava told him they had had a very good catch, including some very fine-eating fish. Ruatapu then asked for his share, and why the Maori custom of taping the net had

not been followed as the younger brother had done. At the same time he told Kirikava that he, Ruatapu, was ariki in his own island. Kirikava replied that he was master of his own net, and that as Ruatapu was an ariki, he, being the eldest son, must also be an ariki. Ruatapu then said that Kirikava was no longer a son of his and that he had better leave his father's house and go and be an ariki, but that he would not be an ariki for long.

Kirikava left his father's house and went to live in another house close by. He made for himself a marae which he named Aputu. Soon after this he took as wife a woman named Te Nonoioiva. They had a son whom they named Maeva-rangi. Ruatapu's three other children still lived with their father but about this time Te Urutupui took as wife a woman named Vaine-puarangi. [Te Nonoioiva and Vaine-puarangi had come to Aitutaki with Ru.]

Ever since he had quarrelled with Kirikava, Ruatapu had grown to depend more and more upon his second son, and he no longer thought of Kirikava as a son. After Te Urutupui had taken a wife Ruatapu called him and told him that now that Te Urutupui had a woman of his own, Ruatapu intended to give him his canoe called Tueu-moana (sea-foam), so named for her sailing qualities and the way in which she threw the seas aside. He told Te Urutupui, "Take your wife and go to Manu-enua. These islands are mine. I found them. I had intended to send your eldest brother there to go and reign as ariki, but now you are to go in his place. Now the islands are yours, and you and your wife must try and fill them with children."

A few days later Te Urutupui and his wife left for Manu-enua (now known as Manuae or Hervey) in the canoe Tueu-moana. It took them three days to find Manu-enua; they had a rough journey, and the landing was even worse owing to a big sea running on the reef. They landed on the smaller of the two islands. The following morning they went first of all to look for the tiare maori and the coconut tree planted there by Ruatapu when he discovered the lands. Both the flowers and the coconut had grown well. Te Urutupui and his wife soon moved over to the larger island, and liking it better, decided to live there. This land they named Te Au-o-Tepui. There they lived and found life easy, as fish was very plentiful.

Two years later another canoe arrived bringing only one man named Rongovei. His canoe was named Tane-maitai ("Tane of the seas"). Te

Urutupui welcomed and fed him. Soon they became very good friends. Te Urutupui proposed that Rongovei should go over to Ututaki-enua-o-Ru to get a woman for himself and to return to Manu-enua and rule there as ariki as there was room for many more people on both islands. Rongovei agreed and taking his directions from Te Urutupui set out in his canoe Tane-maitai. He made a fast trip over, and landed at the large passage named Ruaikakau (at a settlement called Reureu-te-matao-Te Erui). There he stayed for a few days and took two women as wives, one named Tiapara and the other Punangaatua. He then visited Ruatapu and gave him news of his son and his son's wife.

Soon after this Rongovei and his two wives departed for Manu-enua. Having good winds and weather, they reached the island on the evening of the second day. Te Ututupui met them and there he installed Rongovei as ariki of Manu-enua. This done, he and his wife sailed across the lagoon to their own island.

In the meantime, owing to the trouble with his son Kirikava, Ruatapu left his marae and the settlement of Vaitupa and moved inland towards the highest point of Ututaki-enua-o-Ru. When he reached this place he sat down under a large utu tree, and the place where he rested he named Te-utu-marama ("The tree with a good view"). After resting for a short time he went a little farther.

Hearing that Ruatapu had left, Kirikava set out in pursuit of his father. On catching up with him, Kirikava begged him not to desert them, but to return with him and to forget the trouble between them, saying that it was now a thing of the past; he had seen his mistake and would cause no more trouble. Ruatapu told Kirikava to return whence he had come and he himself would go in search of a new home.

Kirikava still urged his father to return with him. Ruatapu replied angrily that if his son did not leave him, his son would be food for his spear and axe.

Kirikava replied, "All right, my father, if it pleases you to kill your son, do so. I won't try to stop you." On hearing these words, Ruatapu was overcome and began to weep. Later Ruatapu gave to this place the name Te Rua-toke ("The hole the axe made"). Ruatapu asked Kirikava to sit down and talk things over with him. He said, "Here you and I will make two lines of stones

that will remain forever to mark the spot where we settled our troubles." (To this day the two lines of black stones set end on end in the ground may be seen, certainly the work of human hands.)

Ruatapu then told Kirikava to go back to the house at Vaitupa where his brother and sister were and to live with them there, concluding, "If I become ariki of all this island I won't forget you, my son." Kirikava returned home as his father had said.

Ruatapu continued on till he reached a settlement named Anainga. Here he met a number of people all going in one direction carrying food. He asked them where they were going and what they were doing. The people told him that they were taking food to their ariki, Taruia. On hearing this Ruatapu sat down to think things over. He decided to try to make himself ariki of the island in place of Taruia.

In the meantime he would stay where he was and make a kopae (a small model of a canoe made out of coconut leaves with coconut-leaves as sails, and the ribs of coconut leaves as masts). When completed he took the kopae down to the lagoon and set its rudder so that it would sail along in a straight line close in to the shore. About a mile away from the place where Ruatapu had set it adrift it was seen by one of Taruia's men, who, never before having seen anything like it, chased and caught it. He immediately ran with it to Taruia.

As soon as Taruia took hold of it he turned to the man who had brought it and asked where he had found it. He was told that it was in the lagoon close in to the shore. Taruia then told all the people standing around him that this was an akairo (sign) that on the island there was another ariki of high rank, and that from the direction of the wind he must be somewhere about a place called Te Upoko-enua. He sent some of his people to search for this ariki and told them to bring him back when they had found him, so that he, Taruia, might find out who this ariki was and what he was doing on the island.

When they reached Te Upoko-enua, the people found a stranger sitting on the sand down by the lagoon. They went up to him and asked him who he was. Ruatapu told them that he was Ruatapu from Taputapuatea and that he

had left his island long ago to go visiting other islands. They told Ruatapu that they had been sent by their ariki, Taruia, in order to find him and take him to Taruia. This pleased Ruatapu.

On meeting Taruia, Ruatapu was again asked who he was and what he was doing on the island. He replied as before, which pleased Taruia, who then fed Ruatapu and insisted upon his staying with him. Ruatapu agreed. Some days later Ruatapu asked Taruia to guess what he was thinking about (tuku piri). Taruia asked what Ruatapu had on his mind, and Ruatapu told him that he was thinking out a way to stop Vai-reirei, a small creek close by, from running into the sea. Taruia agreed that each of them in turn should have a try at damming this creek and so stop the water from running to waste. Taruia was to try first.

During the next few days Taruia tried many different ways of stopping the creek, but failed. Then came Ruatapu's turn and on the second day he succeeded in damming up the creek with carefully selected stones properly spaced. Thus Ruatapu won the first test of skill between the two ariki, and Ruatapu was sure in his own mind that it was only a matter of time till he should become ariki of the island.

A few days later he told Taruia, "I've thought up another contest of skill."

Taruia replied, "I've never met a man like you always wanting contests."

Ruatapu said, "Let's see who can build a new canoe faster. When the canoes are finished, we can go together to visit other islands."

Taruia replied, "Why go and see them? They are all the same, and no better than this."

This made Ruatapu laugh, and he told Taruia that there were many bigger and better islands than Aitutaki. He knew, having seen many of them. At this Taruia appeared interested, and when Ruatapu told him that on many of the other islands, the women were very light-skinned, in fact some nearly white, with light-colored hair, and that on Taruia's island the women were dark and ugly, Taruia was eager to go and would not rest until the canoes were begun. This was also to be a test of skill for the two ariki to see whose canoe should

be finished first. In this also Ruatapu proved the better man and when his canoe was finished, he named it Te Atua-apaipai ("The gods will take his canoe where he wants to go").

Then Ruatapu took his canoe down to the lagoon-side and told Taruia that he was leaving in the morning for Rarotonga. Taruia asked him not to be in a hurry as his canoe was nearly finished and they could then go together. At first Ruatapu would not agree, saying that he would go first and that on arriving in Rarotonga would call out to Taruia to come to him. Afterwards he agreed to wait until the next day to give Taruia time to finish his canoe.

The following day Ruatapu put to sea about two hours ahead of Taruia and when about ten miles away from land, he purposely capsized his canoe, knowing that Taruia would shortly come along, see him, and approach to find out what was the matter. Close to where Ruatapu upset his canoe was a small island called Maina-ina-ra, and the place where he upset his canoe was called Raukuru-vaka.

He was not long in the sea before he saw Taruia's canoe sailing along. Seeing Ruatapu's canoe overturned, Taruia came close by, Ruatapu called out to him, "My friend, come and help me right my canoe."

Taruia laughed and said, "My friend I told you to wait so that we might go together, but you replied that you would be waiting for me in Rarotonga. Now I am going on alone and when I reach Rarotonga, I'll call for you." Again Ruatapu asked Taruia to come and help, and again Taruia laughed at him and sailed away.

As soon as Taruia was out of sight, Ruatapu quickly righted his canoe, bailed out the water, and returned to Aitutaki, laughing to himself over how easily he had got rid of Taruia. As soon as Ruatapu got ashore, he went to Taruia's house.

In the morning he called a meeting of all Taruia's people and told the mataipo (district chiefs) that soon after leaving land, he had had bad luck and his canoe capsized. He did not know how Taruia had fared or whether Taruia was alive or dead. After talking among themselves for a few days, some of Taruia's enemies suggested that as they did not know if Taruia was still

alive, it would be a good thing to make Ruatapu their ariki before he too went away and left them. This was soon agreed to and three days later Ruatapu was elected ariki of Ututaki-enua-o-Ru, and Taruia's people soon forgot Taruia.

In the meantime Taruia arrived in Rarotonga where he was made much of. He waited there for some time for Ruatapu to arrive, and when Ruatapu failed to appear, he began to realize that he had been tricked and that he was no longer an ariki. He was afraid to return to Ututaki-enua-o-Ru by himself, so he went among his new friends and invited a number of the strong young men to build canoes and go back with him to see his island and be his guests there. He did not tell them that he was afraid of what he would find on his return.

He was successful in gathering a party which included a number of good fighting men. When all was ready, they started out for Ututaki-enua-o-Ru. When they arrived off the reef, they were seen by the people from the shore, who went and told Ruatapu that there were some canoes approaching the island.

Ruatapu went down to the beach, and as soon as he saw the canoes approaching, knew it was Taruia returning home. He went back and called his people quickly together telling them it was Taruia returning with a war-party to fight them. He proposed that they should go out and meet them and give them battle, and to this they agreed.

Quickly getting their canoes together they were soon outside the lagoon and, headed by Ruatapu, met the approaching canoes off the main passage called Ruaikakau. Taruia's party was soon beaten off. They had not expected to fight, much less to fight at sea. Taruia seeing his party getting the worst of the fight, and hoping yet to win his people back again, came in close to them and standing up in his canoe, shouted out, "This is I, Taruia, your ariki who went to Rarotonga."

Ruatapu, who was fighting his way close to Taruia's canoe, stood up and answered, "Taruia, ariki who went to Rarotonga, I have taken your rule from you."

On hearing this the few of Taruia's party who were left gave up fighting and headed their canoes north, eventually reaching an island called Mangarongaro (now called Penrhyn). Although they had good weather all the way it took nearly three weeks, and when they arrived off the reef at Mangarongaro they were very weak for want of food. They went ashore at a small harbor which Taruia named, after himself, Taruia. (To this day the descendants of Taruia are still to be found at Mangarongaro.)

As soon as Taruia's party had been beaten off, Ruatapu returned ashore and went to the Paepae-o-ronga, the house of the ariki. The following day, remembering his promise to Kirikava, his eldest son. Ruatapu felt that now that he was firmly established upon the island, it was time to fulfil his promise to Kirikava; so he sent a party to bring his son to Paepae-o-ronga. On Kirikava's arrival Ruatapu told him, "As I am now ariki of the island and becoming a very old man, I want you to stay and live with me."

Soon after this a canoe arrived from Taputapuatea bringing news of a young and famous fighting-man, one well skilled in the art of fighting and wrestling. This man's name was Tuotakura and he lived on the island of Tahiti. So far he had met and defeated in single combat all the young toa (warriors) from the other islands. On hearing this, Kirikava was anxious to go and meet Tuotakura. He begged Ruatapu's permission to allow him to make a voyage to Tahiti. At first Ruatapu would not agree to this saying that while Kirikava was a very tall and powerful man, he was not skilled enough to meet a famous toa like Tuotakura. He said, "My son, had you listened to me and let me finish your training, you could have challenged any toa."

Ruatapu himself would have liked to meet this newcomer, but his fighting days were over. Kirikava, however, persisted, and at last Ruatapu gave his permission. Ruatapu and his people then set to work on a large canoe to take Kirikava and his party to Tahiti. As soon as the canoe was finished the party lost no time in setting out for Tahiti, and on arriving there Kirikava arranged a test of strength and skill with Tuotakura.

On the day that Kirikava and his party arrived at Tahiti, Tuotakura had arranged to meet three other young toa from neighboring islands. Kirikava watched all these contests and could easily see that Tuotakura was far too good for the others.

Two days later Kirikava's turn came and before meeting Tuotakura, Kirikava told his people that he was afraid Tuotakura would prove too good for him. Kirikava was offered his choice of fighting with spears or wrestling. From what Kirikava had seen of the previous contests he decided that his best chance lay in wrestling. Tuotakura readily agreed and in a very short time he had Kirikava on the ground.

Then Tuotakura offered Kirikava another chance, which Kirikava refused as he was quite satisfied that Tuotakura was by far the younger and stronger man, and also the more skilful. The next day Kirikava and his party left Tahiti. On arriving home they went ashore very much ashamed. Ruatapu asked Kirikava how he came to be beaten. Kirikava said that Tuotakura was a younger, taller, and stronger man than himself, and also a more skillful and better man in every way.

On hearing this Ruatapu broke down and said, "If only Tuotakura had been born forty or fifty years earlier, I would have gone and met him. In my time I never met the man I could not beat and beat easily, but I am now too old and must suffer this defeat."

The defeat of Kirikava appeared to affect Ruatapu deeply as from this time it was plainly seen that Ruatapu was slowly dying of old age. When he realized that he was dying, he called Kirikava and all his people before him and told them that he had but a short time to live, and that when he was dead, Kirikava was to be made ariki in his stead.

Soon after this he died, and for many days his people grieved for him. After a short period Kirikava was made ariki.

Kirikava still smarted from his defeat by Tuotakura and dreamed of revenge. That he should have his revenge appeared likely. His sister Tongirau, who had married a man named Te Araroa, had a son named Te Aunui-o-ota. This boy had grown very quickly and at a very early age was much taller and stronger than any of the other boys and had beaten them all in trials of skill and fighting.

When Te Aunui-o-ota had been a very small boy Ruatapu had spent all his spare time in teaching him the art of using the spear and wrestling. The older

men all picked him as the coming toa of the island. Kirikava insisted on having him taught and trained with the idea of sending him to Tahiti to meet Tuotakura. Te Aunui-o-ota when still a very young man stood well over six feet and was very broad and exceedingly strong. He could easily defeat at one time any three strong men on the island.

One day when he was a little over twenty years old, his mother called him and said, "My son, we are still living in shame and disgrace."

When Te Aunui-o-ota asked her why, he was told that his uncle Kirikava had once gone to Tahiti to meet a famous young toa named Tuotakura and had been badly beaten. On returning home he had been laughed at by his people and had since been living in shame.

The next day Te Aunui-o-ota went to visit his uncle and asked if it were true that he had been beaten in Tahiti by Tuotakura.

His uncle replied, "My son, it is true, but who told you?"

Te Aunui-o-ota replied, "My mother."

Te Aunui-o-ota then asked permission of his uncle to go to Tahiti to meet Tuotakura. Kirikava agreed and no time was lost in getting a canoe and crew ready for Te Aunui-o-ota. When all was prepared, they set sail.

On arriving at Tahiti, Te Aunui-o-ota rested for six days and then challenged Tuotakura to a trial of strength and skill. Of the two men Te Aunui-o-ota was by far the younger and bigger, but Tuotakura was still in the prime of life and was also a very skillful and cunning fighter.

On the day of the contest Te Aunui-o-ota proved the stronger and better man and soon had Tuotakura crying for mercy. Twice they met and twice Tuotakura had to admit defeat. When Te Aunui-o-ota had defeated the champion, he made up and sang this akateni: "Kirikava ke te au poatu ia natangi, Kirikava ki te taki puputu ki Tahiti te tua takura ka ei taku rima." Soon after this Te Aunui-o-ota left Tahiti for his own island and on his return was feasted and made much of. (To this day this akateni is still sung.)

Soon after Kirikava was made ariki, his son, Maeva-rangi, married a woman

named Te Kura-i-oneroa. A child was born to them, whom they named Maeva-kura. This boy, when grown to manhood, married Puriterei. They had a daughter whom they named Maine-maraerua.

On the death of Kirikava his grandson Maeva-kura was made ariki. When Maine-maraerua was still a young girl, she went to Rarotonga with a visiting-party. There she married a man named Tamaiva; this man was very handsome and news of his good looks had already reached Ututaki-enua; it was on this account that Maine-maraerua had gone to Rarotonga. At first Tamaiva did not want Maine-maraerua so she married a man named Te Iimatetapua. They had a child, a boy named Marouna.

During Maeva-kura's rule there came to Ututaki-enua many canoes bringing people whom the people of Ututaki-enua named Aitu. These people came in large numbers and soon caused trouble. Maeva-kura grew afraid of them and for safety's sake left his home and went to live at a place called Te Rangi-Atea.

Maeva now feared for his life and decided to send a canoe secretly to Rarotonga to find out if his daughter had married and whether she had sons grown up and powerful enough to come to his assistance; and if she had, she should send a party back to Ututaki-enua-o-Ru in the canoe that carried Maeva-kura's message to Rarotonga. The name of the head man of the party was Tuoarangi.

On Tuoarangi's arrival in Rarotonga, he found that Maine-maraerua had a grown son called Marouna, who was then about eighteen years of age. Tuoarangi told Maine-maraerua that Ututaki-enua-o-Ru was overrun with Aitu; that fearing for his life, Maeva-kura had gone to live at Te Rangi-Atea; and that if she had a child old enough, she should send him over before it was too late.

Maine-maraerua quickly agreed to send Marouna and a party to Maeva-kura's assistance. Marouna asked his mother to give him time to make a canoe for the voyage, but his mother replied that if he took the time to make a canoe, he would find, on his arrival at Ututaki-enua, only his grandfather's bones rotting at Te Rangi-Atea. The mother told Marouna to go down to the settlement and there to pull one feather out of the hat he was

wearing as the sign that he was a grandson of an ariki and to demand a canoe belonging to a man named Angainui.

Marouna did as he was instructed and went to Angainui, gave him the feather from his hat, and demanded the man's canoe. Angainui agreed to let him have the canoe, stipulating only that Marouna should take the canoe to his own home that same day, and that he should not alter the name of the canoe, Te Mata-o-tekoviri.

The next day was spent by Marouna and his relatives in collecting food and water for the coming voyage. This done, Marouna chose six good canoe men to go with him and help sail the canoe. The following day Marouna and his party put to sea, his mother telling him to go straight to Ututaki-enua. But when clear of land, Marouna decided to go first to 'Atiu in order to get a number of good fighting men to go with him to help rid Ututaki-enua of the enemy.

The canoe soon reached 'Atiu and there Marouna went ashore and was taken to visit the famous toa of 'Atiu, Uta. Uta told Marouna to go to another part of the island called Maoake to call on a young and very powerful toa named Taraapaitoa, as he himself was growing old and was no longer strong enough to lead a war-party. Uta told Marouna where Taraapaitoa's house was to be found, and also said that the house was close to a large li tree; on reaching this tree Marouna was to take particular notice of its leaves; if the leaves on the tree were rustling in the wind Marouna was on no account to go any closer, but if the leaves were still then Marouna was to go inside the house. There he would find Taraapaitoa asleep. Marouna must then quickly and quietly gather up all Taraapaitoa's spears and axes, tie them in a bundle, and take them some distance away and bury them.

Marouna went to Maoake, and finding the leaves of the tree still went into the house and there, as described, found Taraapaitoa asleep. Quickly he gathered the axes and spears and hid them. Then he wakened Taraapaitoa who immediately felt for his weapons, and, finding them gone, decided to talk to Marouna. He asked Marouna to be seated and Marouna explained that he had not come looking for trouble but for help. Taraapaitoa listened to all that Marouna had to say and then agreed to go with him. Marouna asked Taraapaitoa to get a few more strong toa to go with them, but Taraapaitoa

laughed and said that there was no man on 'Atiu equal to him in battle and he did not want to fight with weaker men.

The next day Marouna and Taraapaitoa left 'Atiu. From 'Atiu they went to Miti'aro to see another toa named Taratekui whom Taraapaitoa said was Miti'aro's best fighting man. On arriving at Miti'aro, Marouna approached Taratekui, told him of his trouble, and asked his help. Taratekui agreed to go and they spent that night in feasting and dancing.

Next morning Marouna and his party left for Ma'uke. There Taraapaitoa told Marouna to ask for a man named Taratekurapa who was Ma'uke's best fighting man. Here again Marouna was successful and Taratekurapa joined the party.

The next morning they set out for Mangaia but this time the canoe struck bad weather and it took them three days to reach Mangaia. On going ashore Marouna lost no time in making known what he had come for. He asked the Mangaia people the name of their best fighting man, and was told his name was Ue. Marouna found Ue and again told his troubles and asked him to go with them to Ututaki-enua-o-Ru. Ue agreed to go if the Mangaia people would allow him to go. Permission being granted, Ue told Marouna that living on the island was another strong toa named Kavau from the island of Niue.

Ue asked Marouna to get permission from the Mangaia people to take Kavau with them. At first the people would not agree, saying that Kavau must remain to look after the island until Ue returned, but later in the night they all agreed that Kavau should go with Marouna. The following day Marouna and his party again put to sea, but before they left their canoe was decorated by the women with rau ti para, and also renamed Rau-ti-para-ki-auau.

The canoe was then headed for Ututaki-enua-o-Ru. In the late afternoon of the third day when they were close to the island, they overtook another smaller canoe, also making for the island. There were two men in it whom Marouna questioned as to their destination and their names. They told Marouna they were looking for their father whom they thought might be on Ututaki-enua-o-Ru; they were brothers, the elder named Koroki-matangi, and the younger Koroki-vananga; their father's name was Tavake.

Marouna asked them to join his party and help clear the island of the Aitu. They agreed, telling Marouna and his party to go on ashore and they would wait outside near the passage and deal with anyone who attempted to escape by canoe. Marouna and his party landed about midnight. Everyone on shore was asleep, so no one saw them land. They anchored their canoe out in deep water at a place called Vaiora.

Marouna said that as they had all had a long hard day and were tired, they had better sleep in the canoe till daylight, then go ashore and start killing the Aitu. Taraapaitoa thought that they should all go ashore at once and take the Aitu by surprise. But Marouna would not agree, arguing back that they had better get some sleep in order to be fresh in the morning.

Taraapaitoa left the others sleeping in the canoe and went ashore. Finding the village where the people were sleeping, he went quietly into the houses and felt about until he found the heads of the sleeping people. The heads he quietly lifted up. When he felt a small fine head, he left it, but when he found a big heavy head he lingered knowing it must belong to a strong man. He was tempted to kill the men but was afraid of killing friends, mistaking them for enemies, so he went back to the canoe where the others were still asleep and snoring.

He wakened them and told them to come ashore and also told them what he had been doing. At this Marouna and the others were ashamed and all agreed to accompany him ashore. They took their canoe into a small creek named Tangaro and there sunk the canoe, so that it was safely out of sight. They named this place Vai-veu.

Tuoarangi then led them to where he had left Maeva-kura living. They waited outside his house and called out to him. After calling softly several times they wakened Maeva-kura who sang out that night was not the time for fighting, to go home and wait for daylight and then fight.

Marouna then called out, "It is I, your grandson Marouna."

Maeva-kura replied, "Marouna is on Rarotonga, and who could bring him here?"

Marouna replied, "Did you not send Tuoarangi to fetch me?"

Maeva-kura answered, "Yes, I did."

Then Marouna said, "This is I, your grandson."

Then Maeva-kura opened the door and Marouna and his people entered; on meeting his grandson Maeva-kura wept.

Maeva-kura then called the women of the house to bring food for Marouna and his people; this food was mai, which is made out of fermented breadfruit, and also some coconuts. After they had eaten, Marouna asked why Maeva-kura had sent to Rarotonga for him. Maeva-kura replied that the island was full of Aitu (people from other islands) who had been steadily arriving in canoes. He was no longer ariki of the island, and had had to leave his own house and come to live where they now found him. He knew it would be only a short time before the Aitu killed him and that was why they had found the house barricaded up. He was in fear of his life each night.

Marouna then told Maeva-kura not to worry anymore, as he would take charge of the island and soon clear it of Aitu. The young man explained also that all the men of his party were famous toa from other islands; these had all come to help kill the Aitu.

A short council of war was then held and it was decided to wait another hour until daylight before commencing to fight the Aitu. Again Taraapaitoa disagreed, thinking it better to catch the Aitu still asleep and make sure that none escaped. Marouna said that in the dark it would be very easy to kill friends and suggested a short sleep so that they might be strong for the killing. Taraapaitoa had to agree, but he himself scorned sleep, saying that the thought of killing was sleep enough for him, and that it was only women who required sleep before work was to be done. Marouna and the others snatched a short sleep while Taraapaitoa kept watch.

At daybreak he wakened them, none too gently, as he was angry at having already lost valuable time. Led by Tuoarangi and Mama, they began in the houses nearest, and as fast as Tuoarangi pointed out the Aitu, they were given a chance to fight but none of them proved a match for Marouna's party

of toa. Taraapaitoa soon proved his worth and was by far the strongest and best fighter. He was very fierce and appeared tireless; no man was found who could give him battle. In many cases he tackled lone-handed a house in which there were three and four Aitu. Taking them altogether he would very soon kill them, all the time shouting out akateni; Taraapaitoa seemed to glory in killing.

For four days the fighting went on and on the fifth day, search as they would, they could not find another Aitu man on the mainland. Led by Taraapaitoa, the party now took canoes and went to search the small islands in the lagoon. Two men were supposed to have escaped during the fighting to a small island named Motu-rakau.

When they reached this island they could see plainly the footprints of one man who must have landed on the beach; this man, Tangaroa-iku-reo, was soon found and killed. They then returned to the mainland and told Marouna that all the Aitu were now killed. The next two days were spent in dancing, feasting, and rejoicing in the defeat of the Aitu.

Marouna composed the following akateni: "Marouna i te titi, Marouna ie te tata, Marouna ie te tapuni enua, e varu taua a Marouna." This was a song of victory singing his own praises because he had cleared the island of its enemies. Shortly after this Marouna gave to each of the toa who had come to his assistance a large piece of land; to Ue he gave a large piece of land at Vaipae; to Taraapaitoa, the champion of all toa, he gave another and larger piece, also at Vaipae, called Ngaitikaura; Kavau was given a piece of land called Nukunoni; Taratekui and Taratekurapo were each given a piece of land at a place called Vaiorea. It was Marouna's idea to try and persuade these toa to remain on the island and thus breed a race of toa, men strong in battle.

The island now settled down to a period of peace. On the death of Maeva-kura, Marouna was made ariki; he proved himself a wise ruler and kept the island free from wars and tribal fighting. At his death his son, Te Tapu-o-ronga, was made ariki.

Te Tapu-o-ronga had three wives. His first wife was named Te Urei; their first child was a boy whom they named Te Rangi-o-Tangaroa. By his second

wife, Katapu-kite-marae, the first child was also a boy, whom they named Nga Ariki-tokoa. The first child of Marouna's third wife, Pureupoko, was also a boy named Te Ariki-vao. On the death of Te Tapu-o-ronga, these three sons all became ariki. Te Rangi-o-Tangaroa was elected as Vairuarangi; Nga Ariki-tokoa was elected Tamatoa; Te Ariki-vao was elected Te Urukura. (To the present day the descendants of these people have been rulers of Ututaki-enua-o-Ru and still carry or use the same names. The name of the island is now Aitutaki having been changed by the early missionaries from Ra'iatea, to whom the name Ututaki sounded like Aitutaki.)

NOTES

The story of Ruatapu was recorded and translated by Drury Low from the words of Timi Koro, tumu korero of Aitutaki. The translation appeared in Journal of the Polynesian Society, Vol. 43, 1934, pp. 171-186 and 258-266. The name of Ruatapu's canoe was Te Kare-roa-i-tai. Other versions of the Ruatapu story can be found in S. Percy Smith's History of the Taranaki Coast (pp. 80-84); John Pakoti's "First Inhabitants of Aitutaki" in Journal of the Polynesian Society, Vol. 4, 1895, pp .67-70;.and J.T. Large (translator) "Ruatapu-A Celebrated Maori Ancestor and his Cook Island Descendants," in Journal of the Polynesian Society, Vol. 15, 1906, pp. 209-219.

1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
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Aka and Pepe-iu: Two Voyaging Stories from Hiva (the Marquesas Islands)

Collected by E.S. Craighill Handy

Illustration: Turtle Petroglyph from Hatiheu, Nukuhiva, Marquesas



"[The people of Hiva] knew perhaps thirty or forty real and mythical islands in the ocean space around them" (Denig 14).

After the settlement of the islands by voyagers from the west, the people of Hiva continued to voyage, among their own islands, and between the islands of Hiva and other groups. Handy gives the following motives for leaving one's home island: "expulsion in war, famine, . . . a spirit of adventure and restlessness, and revelations of omens which led the people to set out on definitely organized expeditions for

exploration" (Native Culture 19).

Oral traditions of voyaging also indicate the following economic motives: to obtain materials not available on one's home island, such as red bird feathers or high quality adze stone; or to bring plants, animals, or people from one island to another. The people of Hiva also travelled in canoes among their islands of Hiva to make war, to obtain human sacrifices from other tribes, or to take revenge for an attack. Trading among the islands of Hiva took place because each island had a special product or two that people on other islands desired: "Nukuhiva...produced the best eka, the turmeric root used to make a saffron-scented cosmetic with which they covered their bodies. Fatuhiva in the south produced the best carved bowls for use in feasts and ceremonies" (Denig 48). The people of Nukuhiva went to the uninhabited island of Eiao to get basalt for making stone adzes, and the people of Hiva Oa would go to Nukuhiva to trade for the adzes; Ua Huka was noted for its poi pounders; Ua Pou for its porpoise-tooth crowns (Handy Native Culture 23). Porter reports that the people of Nuku Hiva also went annually to Eiao, to the northwest, to get the red tail feathers of the tropic bird (Handy 20).

[Two traditional voyaging stories--"Aka's Voyage for Red Feathers" and "Pepeiu"--are included below.]

Voyages of Exploration

The people of Hiva left their islands in search of other lands (He fenua 'imi, "land seeking"; Hawaiian: 'imi honua). Porter reports: "The grandfather of Gattnaewa sailed with four large canoes in search of land, taking with him a large stock of provisions and water, together with a quantity of hogs, poultry, and young plants. He was accompanied by several families and has never been heard of since he sailed" (quoted in Handy Native Culture 19).

Porter also says he heard that "more than eight hundred men, women and children" departed from the islands of Hiva in search of land. One group ended up on Roberts' Island (Eiao, NW of Nukuhiva). A few days after the canoes depart on these voyages of exploration, "the priests come lurking to the houses of the inhabitants of the valley, whence they sail, and in a squeaking affected voice, inform [the inhabitants] that [the voyagers] have found a land abounding in breadfruit, hogs, coconuts, everything that can be desired, and invite others to follow them, pointing out the direction to sail, in order to fall in with this desirable spot. New canoes are constructed, and new adventurers commit themselves to the ocean, never to return" (quoted in Handy Native Culture 20).

According to one oral tradition, a large double-hulled canoe named Kaahua from a tribe called Tuoo under the chief Te-heiva voyaged east from Puamau on the northeast coast of Hiva Oa and landed at a land called Tefiti. Kaahua had several houses built on its deck and "carried a great quantity of breadfruit paste." Its

gunnels were so high, the crew had "to climb up the sides from the bottom to pour the bilge water out." Some of the crew stayed in Tefiti, while others returned to Puamau (Handy Native Culture 131).

Flight after Defeat in War

Two oral traditions recall flight by canoes from Hiva to the Tuamotus after defeat in war. In the first case, the Fiti Nui tribe of Hiva Oa fled for Tahuata on bamboo rafts. The wind blew them south to the Tuamotus. In the second case, after losing a battle, the people of Hana Pa'a Oa on the north coast of Hiva Oa left on rafts and ended up on Takaroa in the Tuamotus (Handy Native Culture 20-21).

David Porter reports: "Tema Tippe and his whole tribe, about two years since, had many large double canoes constructed for the purpose of abandoning their valley and proceeding in search of other islands, under the apprehension that they would be driven off their land by other tribes. But peace took place, the canoes were taken to pieces, and are now carefully deposited in a house, constructed for the purpose, where they may be kept in a state of preservation to guard against future contingencies" (quoted in Handy Native Culture 19).

TWO VOYAGING STORIES FROM THE ISLES OF HIVA

Aka's Voyage for Red Feathers

[The story of Aka is from E.S. Craighill. Handy's Marquesan Legends (Honolulu: Bishop Museum 1930, 130-131). The story is from Puamau on the island of Hiva Oa.]

A man named Aka wished to get feathers to make a feather headdress for his daughter. Aka was not a chief. He gathered a crew for his canoe and told his relatives to prepare food for the voyage. He then looked about for some one to guide him, and finally selected two boys. He chose them because he had seen that, when the children were sailing boats, the boats of these two boys always went straight to the desired place.

They set out, and after they had gone a little way, the boys said to Aka, "There is land ahead. What land is it?"

"It is Motani," replied Aka.

"What can be gotten there?" inquired the boys.

"Meie (a species of herb used for perfume)," replied Aka. "I have been there before and gathered the herb for my daughter."

After they had sailed on for a long time, the boys said again, "There is land ahead. What land is it?"

"It is Moutona," said Aka.

"What can be gotten there?" asked the boys.

Aka replied, "Mouomatito no te tahia (a species of grass which was plaited and used in a game played by girls). I have been there before and gathered the grass for my daughter."

By this time the boys were anxious to go back, for the birds Aka wanted to get were tapu to their families.

They sailed on for a long time and again there was the same questioning. The boys said, "There is land ahead. What land is it?"

Aka replied, "It is Kau kau o meia."

"What can be gotten there?" the boys asked.

"Pehe no te tahi (string figures)," Aka said. "I have been there before and gotten the pehe." (According to the informant Aka had landed there on a previous voyage, made cord from the fiber of banana stumps, and learned or invented pehe. This is another story.)

They sailed on as before, and again the boys said, "There is land ahead. What is that land?"

"It is Oautona (Aotona or Rarotonga)," Aka replied.

The boys asked, "What can be gotten there?"

"Huukua (red bird feathers)," Aka replied. "We will land there."

The place, which they first sighted, was the place where the birds were, but the boys said, "We must go over to the other side of the island or we shall be heard."

The island was really uninhabited, but the boys did not want Aka to land where the birds were, because the birds were tapu to them. When the voyagers had beached the canoe, the boys ran away from the others and went to the valley, in which the birds lived. They built a house there, which had a hole in the top but was closed on the sides. They then got in the house and scraped coconut meat. When they had a pile of scraped coconut, they kindled fire by rubbing two sticks together, and threw the coconut on the fire. The birds smelled the burning coconut and came flying in from all directions to see what it was. They circled about, and then plunged down through the hole in the roof. When the house was almost full, the boys closed the hole in the roof. One of the boys then went to Aka and told him to come on with him. Aka entered the house and picked the feathers from the living birds, letting them go after they were picked. They could not fly, because they had no wing feathers. When Aka had enough feathers, he divided them among his crew for payment. Then they sailed home.

NOTES

Fuller, more detailed variants of this story of Aka's voyage to Aotona [Rarotonga] are found in Von den Steinem's Marquesan Myths, translated by Marta Langridge:

At the death feast for the chief Puakauooa in Ta'aoa (a valley on the southern coast of Hiva Oa), Aka and other heroes looked for flowers and fruits to make garlands for the women at the feast. They found tiare (gardenia), pua (flower), koute (hibiscus), puanetae, faa (pandanus fruit), hinano (pandanus flower), inou (a kind of lilac), katiu (a small cucumber), and hukou (a fruit); but Aka wasn't satisfied with these flowers because they wilted in the hot sun.

His two sons-in-law, Utunui and Pepeu, tell him: "Kula (red feathers) make the best ornaments."

When Aka asked, "Where can we get kula?" the two sons-in-law replied, "In Aotona; our father Mahaitivi knows how to get there." Then Utunui and Pepeu went to their father's house at Poitopa [above Aotona on Hiva Oa] and asked him for directions. The father told them the voyage is long and difficult and they must prepare lots of food--raw and cooked ma (fermented breadfruit), coconuts, raw and cooked taro, raw and cooked kape (dry land taro).

The father and two sons argued over how long the voyage would take; the father saying seven months, and Utunui twelve. Utunui recited the twelve months: Pohe, Iti, Aoa-Manu, Mataiki, Ehua, Uaua, Uahaa-metao, Takuua, Veo, Nana, Tuhua, Napea. (These are names of the stars or constellations that served as guides to the months and seasons of breadfruit; in the Isles of Hiva, as in Hawai'i, the names of the stars and months and their order vary considerably according to different informants.)

The father then explained that in Aotona, the voyagers would find the birds Matakia and Vaefati, who were his inoa ("name friends; those with whom one has exchanged names, so that each has claim to the wife and property of the other).

The two boys returned to Aka and told him to build and provision a canoe as directed by their father had told them, and find paddlers. 140 men are found to man the double-hulled canoe and the voyagers leave. The first island they saw was Mohutane (a small island south of Hiva Oa). Utunui asked the inhabitants what they use to make garlands. "Meie bark," was the reply. Aka said, "No good."

Then they arrive at Fatu Hiva (south of Mohutane). Utunui asked the inhabitants what they use to make garlands. "Auona, a fragrant bouquet" is the reply. Aka said, "Not for my daughter. It wilts in the sun."

The canoe landed at the following islands of the Hiva group and learned what the people of each island used for garlands:

Tahuata (north of Fatuiva): garlands are made from Kiita (?);

Fatu Huka (north of Hiva Oa): garlands are made from feathers from the gannet and cape pigeon.

Ua Huka (northwest of Fauuku): garlands are made from tiare (gardenia)

Ua Pou (southwest of Ua Huka): garlands are made from pua (flower)

Nuku Hiva (north of Ua Pou): garlands are made from red eka (a dye)

Eiao (northwest of Nuku Hiva): garlands are made from fao blossoms.

None of the isles of Hiva had the red feathers Aka and his sons-in-law were seeking. From Eiao, the canoe travelled west onto the open ocean. The star Iti appeared, "the star of the heavy sea, the star of the wind." (This star marks the approach of the stormy months of the southern hemisphere winter, which begins in May.)

The star Iti said, "Whose canoe?"

Pepeu and Utunui said, "It belongs to us."

Iti said, "Who are you?"

They responded: We are Pepeu and Utunui, Mahaitivi's boys. We are going to Aotona."

The stars said, "Go on," and they travelled on.

(Four more stars appear--Tuhua, Takuua, Veo, Mahina--and the same dialogue takes place.)

The voyage was so long, food and water ran out. One hundred of the paddlers died; forty men remained. The voyagers finally reached Fitinui, then Aotona. The chief Feafea welcomed them. After a night's rest, they built a house using coconut leaves lashing it together with hau bark cordage. They erected the posts, put up the crossbeam and rafters, arranged the coconut leaves, then thatched the roof with grass. They laid stakes along the wall and made a door. The next morning the men picked, peeled and grated coconut; then grated it and roasted it inside the house. The smell attracted a large flock of kula bird.

Two odd-looking birds approached to see if anyone is in the house--Matakika, a bird with an ulcerous face; Vaekoki, a lame bird; Then two birds came and mated. In each case no one in the house laughed, so each bird went back and reported the house was deserted.

When the flock entered the house, Aka shut the door, and his men caught the birds and plucked their red feathers, filling 40 baskets for the forty survivors; Aka told them to fill 100 more for the children and the wives of the 100 men who had died; so the men filled the remaining 100 baskets. Then they let the birds go.

The next morning, the men prepared food for the voyage home, loaded the canoe with the food and the

baskets of feathers, and departed. They paddled for a long time, as long as the period of a large breadfruit harvest, then landed at Ta'aoa (on Hiva Oa, their home island). The women on land saw that only a few men were returning; they lamented the men who were missing. Aka brought the baskets ashore and gave them to the women whose husbands had not survived.

Then Aka went to his house with his wife and daughter and two sons-in-law. The next day, Aka and his wife made a girdle of kula feathers for their daughter, the wife of both Utunui and Pepeu. Utunui and Pepeu kept their baskets of feathers. Fao came down and bought Utunui's and Pepeu's feathers and made a garland for himself. Others made the feathers into garlands, head ornaments (paekua) and girdles for women and men.

[According to Rarotongan oral tradition, a red-feathered bird called the kura once lived on Rarotonga island. It was associated with summer: "Summer comes, the kura is flying about." The kura became extinct after guns were introduced to the islands by Westerners.]

A red-feathered bird called a kula was also known in historical times in Fiji. Its red feathers were valued for ornamenting mats and headdresses. The feathers were traded with the Tongans, who then traded them with the Samoans. In the Society Islands Captain Cook traded red feathers he had obtained in Tonga.]

Pepe-iu

[NOTE: The story of Pepeiu is from Taiohae, Nukuhiva. It appears in E.S. Craighill Handy's Marquesan Legends (Honolulu: Bishop Museum 1930); pp. 127-129.]

Toni [a tau'a, or inspirational priest] lived at Taiohae; Te-pua-i-mohui, a fisherman, was his son; Pepe-iu was his daughter. When the son went fishing, the daughter remained up in the valley with her father. Three times when Te-pua-i-mohui returned from fishing, he gave none of his catch to his father and sister. The next time the young man went fishing, Toni dressed Pepe-iu in all her finery, anointed her head and body, and sent her to the seashore to await the return of the fishermen, along with the other people who had come for fish. Everyone marvelled at Pepe-iu's beauty.

When her brother returned he said, "Who is that pootu--that fine looking girl." They told him it was his sister. "Come and get your fish," he called to her.

Pepe-iu waded out in the shallow water with a basket. As Te-pua-i-mohui filled his sister's basket with mullet, he told the other men to paddle out. Pepe-iu was lured to follow the canoe out into deep water. When Pepe-iu came into deep water these fish began thrashing about, tearing the girl's flesh. She ran to the shore and returned to her father, weeping and covered with wounds and blood. Toni asked her what had happened, and the girl recounted the story of her brother's mistreatment of her.

For three days Toni anointed his daughter every day. After the third day at midnight, he told Pepe-iu to take a handsome loin cloth and other ornaments. They went to the seashore, where there was a double canoe called Na-humu-o-Taka-oa. When the crew Toni told the girl to get into her canoe.

"But these are fish," said Pepe-iu.

"Never mind," replied her father, "this is your canoe."

When they put the canoe in the sea the two humu wriggled. "Now you will go to Aotoka (Rarotonga). When you have gone three or four days you will come to a land which says 'A-o, a-o, a-o, a-o.' That will be Aomeika (Ao, low; meika, banana; perhaps the island of Tubuai). You will pass by that land. You will sail on eight days longer and come to a land which says, "Tup-ti, tup-ti, tup-ti, tup-ti." That is Aotoka."

The humu went off with the girl. They passed Aomeika and Oahuaa as Toni had told them to do.

Finally, eight days after they had passed Oahuaa, Pepe-iu heard "Tup-ti, tup-ti, tup-ti, tup-ti, tup-ti."

"This is my Aotoka," said the girl.

"Long Humu, Short Humu, let us go up inland." Pepe-iu took her finery and the humu and carried them up into the temple named Aavehie. (This is also the name of a temple at Taiohae.)

Pepe-iu came to the bathing basin. The chief came, found her in his pool and claimed her as his woman. At that time the women of Aotoka did not know how to bear children. When a woman was with child, her abdomen was cut open to release the child and the woman died. Taro was their only food; they had no breadfruit. They ate their food raw, not knowing how to cook. Pepe-iu taught them how to do all these things.

Pepe-iu became pregnant and said to Tau-me-tini, "We will have to have breadfruit to feed the child. You must go to Hooumi and bring back some to plant." (According to my informant all the breadfruit were formerly in Hooumi, a valley on the southeast end of Nuku Hiva. There were no breadfruit trees in Taiohae.)

Now Tau-me-tini was a younger son. He had only two hundred and eighty men under him. Ohe-popo was his older brother; on his half of the island he had twenty-eight hundred men. Ohe-popo went to Hooumi before his younger brother was ready and brought back many branches of the breadfruit tree. These grew rapidly at first, and then died. [Breadfruit will grow only from young root stocks, or shoots.]

Pepe-iu instructed Tau-me-tini to make a canoe. This was finished in three moons.

She also instructed him to carry seven amakiko (kernels of candlenuts mounted on the midrib of a coconut leaf, the native house lamp). These were to be used to keep awake the woman who owned the breadfruit trees until she was so sleepy that she could keep awake no longer.

Tau-me-tini arrived at Hooumi. For six successive nights he burned his amakiko, one each night. On the seventh night the woman fell into a heavy sleep. Tau-me-tini and his men, following Pepe-iu's advice, filled their canoe with roots and young sprouts of breadfruit. They were gone when the woman woke up. Tau-me-tini planted the roots on his side of Aotoka. The breadfruit trees grew and bore fruit.

The older brother, Ohe-popo, angered by his own lack of success with the breadfruit and at his younger brother's success, attacked Tau-me-tini and drove him with his woman and his two sons into the mountains. They had no food and sent their two sons down to steal some breadfruit. The trees were guarded by two tuhuka, named Otu-puou-hooa and Ima-poka-haoa. These men caught the older of the boys up in a tree and carried him to the feast place. The boy was asked why he was stealing the chief's fruit. "For my mother," he said. "We have no food."

The two tuhuka then fell into an argument, one desiring to kill, the other to save, the boy. Finally he was brought to the chief who ordered an oven built on the feast place. Then the chief strangled, cooked, and ate the boy. Meanwhile Pepe-iu knew what was happening, so she told Tau-me-tini to go to Nukuhiva again, using the humu of Taka-oa as his canoe. She taught him her genealogy.

Tau-me-tini came back to Taiohae on the humu and recited the genealogy to Pepe-iu's people, thus identifying himself, and told of their unhappy plight. Toni, who was a tau'a (priest), had gone to Hakamoui, on the island of Ua Pou. Tau-me-tini went seeking him but when he reached Hakamoui, Toni had gone on before him to the next valley. So they went from valley to valley until at last, when they had made the complete circuit of the island, Tau-me-tini came up with the elusive inspirational priest.

Tau-me-tini and Toni built the canoe Tia-te-ani for the expedition to Aotoka. Six other war canoes went with them with two hundred and eighty warriors in each. Toni's power (mana) supplied their food: on the first day out, they speared and captured a great skate. So it was with other fish every day.

In Aotoka, Pepe-iu saw one day a man's skull lying in the sand, moving from side to side—she knew by this

sign that her father was coming. When they arrived at Aotoka, the tuhuka who had recommended that Pepe-iu's son be killed when he was caught in the breadfruit tree, came out in the water, seized Tau-me-tini's canoe and attempted to pull it ashore. They caught him, dragged him out to sea, and cut off his head. The head was given to Pepe-iu's other son to wear on his loin cloth. (The wearing of heads or parts of heads of slain enemies on the loin cloth was the custom in war times.) Pepe-iu's people joined forces with Tau-me-tini's and attacked and defeated the warriors of the older brother, Ohe-popo, whom Tau-me-tini killed.

Marquesas Geography	Marquesas Today	Marquesan Language	Marquesan Settlement	Archaeology	Land	Religion	Society	Warfare	Canoes	Voyaging	Western Contacts	Bibliography
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Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions
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Kupe

Te Matorohanga, recorded by H.T. Whatahoro, and translated by S. Percy Smith

Kupe was a great chief of Hawaiki (Tahiti), whose father was from Rarotonga, and whose mother was from Rangiatea (Ra'iatea), where her father lived. These were the three islands over which Kupe's mana (power) extended.

One day Kupe's fishermen went out with lines and hooks to their traditional fishing grounds. After a long time without any bites, the fishermen hauled up their lines and discovered that the bait had been taken. They put on fresh bait and lowered their hooks again, but the bait was taken again and again until all of it gone. They returned to shore and reported their lack of success to Kupe.

After a time, on another day, the fishermen went out again; the result was the same; their bait was taken from their hooks, and they returned home without a single fish. The fishermen reported their ill-luck again, and much discussion took place as to the cause of it. They finally decided to lay the matter before the priests (tohunga). The priests said that if the people planned to go fishing again, the lines and hooks should be blessed.

When morning came, the people decided to go fishing again, so the lines and hooks were brought to the priests, who said the proper prayers (karakia) over them. Then the canoes put out to sea. The fishermen now discovered numerous octopi were taking the bait from their lines; they also saw the great octopus of Muturangi floating on the surface of the sea. They realized Muturangi was causing the trouble and fearing him, they all returned to shore.

On arriving they reported what they had seen to Kupe; so Kupe went to Muturangi, who lived at Kahu-kaka, and told him, "O sir! You are the cause of our ill luck!"

Muturangi replied, "I know nothing about your problem."

Kupe then said, "Restrain your great octopus; do not let it go to sea. The canoes plan to go out fishing again tomorrow."

Then Kupe returned to his home at Pakaroa and told his people to prepare for fishing the next day, as food was getting scarce. The next morning the fishermen of Pakaroa went out, but the bait was taken again; the great octopus had not altered its conduct. The fishermen returned and reported that the octopus of Muturangi was still there. Kupe again went to the priests. He described the problem and asked the priests what should be done. They replied that they were not powerful enough to overcome the action of the octopus, so Kupe should ask Muturangi himself to stop its doings.

Kupe said, "I intend to slay Muturangi."

The priests replied, "Even if you slay Muturangi, the octopus will still retain its power; it would be better to kill the octopus instead."

Kupe then went to the house of Muturangi, and again complained of the evil conduct of the octopus; "I come to ask you to restrain your pet, or I will kill it."

Muturangi replied, "I will not allow my pet to be killed. The sea is its home; the people are wrong in going there to fish."

"If you will not restrain your pet, I intend to kill it."

"You will fail."

"So be it."

Kupe then returned to Pakaroa, and said to his people, "Prepare my canoe for sea." So the canoe Matahorua was carefully prepared-the washboards at the bow were lashed on; two endpieces were put in place, one at the stern, one at the bow; and two stone anchors were brought from his grandfather, Ue-tupuke, who had charge of them. One of these anchors was a tatara-a-punga (coral) from Maungaroa, a mountain in Rarotonga,¹ and the other was a puwai-kura, a reddish stone like kiripaka (flint) or mata-waiapa

(obsidian) from Rangiatea.

After the anchors were placed on board, Kupe went out to slay the octopus. On arrival at the fishing ground named Whakapuaka, the lines were let down. They were hauled up before reaching the bottom, and then it was seen the bait had been eaten. The octopi followed the lines to the surface, where Kupe and the sixty men of the canoe Matahorua began to slaughter them. They continued to do so till night fell, while the great octopus of Muturangi was all the time waiting a little beyond. The body of this octopus was eighteen feet long, while its feelers were thirty feet long when stretched out. Its eyes were the size of the papaua-raupara (a thin, flat shellfish, like the pearl oyster).

After the slaughter had continued for a very long time, Peka-hourangi, one of the principal priests said, "Stop killing the octopi; if you could succeed in killing Muturangi's great octopus, the others would all disappear, for he brings them here, and Muturangi is inciting them by means of incantations (tuata) to take your bait from the hooks. The fishermen therefore ceased slaying the smaller octopi and turned their attention to Muturangi's octopus. But when the canoes tried to approach the monster, it made off to the deep sea. It was now night, so Kupe returned to shore, while Ngake (or Ngahue) followed the great octopus out to sea in his canoe, Tawhiri-rangi. On arrival ashore Kupe said to his men, "Put plenty of provisions on board our canoe, for we will follow this monster until we kill him." The crew did as they were told.

On learning of Kupe's proposal, Hine-i-te-aparangi, his wife, and her daughters, urged Kupe to remain and let his men pursue the octopus, lest he be overtaken by storms at sea and drowned. Kupe was annoyed at this and said, "Stop your wailing; you have prophesied ill luck to me (waitohutia), and it will end perhaps in my death. You must all board the canoe, so there may be one death for us all, and not me alone while you remain lamenting in safety ashore." So his wife and five children consented to accompany Kupe and were with him when he discovered Aotearoa.

Matahorua was now launched and the voyagers departed. There were seventy-two people on board. After a time they reached

Tuahiwi-nui-o-Hinemoana,² where Kupe overtook Ngake and asked, "Have you seen the octopus?"

Ngake replied, "There! You can see him reddening (mura-haare) on the ripples of the sea." Kupe looked, and it was so. They tried to approach the monster, but to no avail; the octopus only went on faster, directing his course toward this undiscovered island of Aotearoa.

Kupe said to Ngake, "The octopus is headed for some land apparently; by following it we shall be led to a strange country."

Not long after this, an island was seen in the far distance, like a cloud on the horizon, toward which the octopus made straight. As the octopus drew near to Muri-whenua (the North Cape of North Island), it turned south along the East Coast. Kupe now said to Ngake, "Follow our fish; I will land here to rest and then come after you. If the octopus should stop anywhere, let it remain there until I come."

So Ngake continued on in pursuit, while Kupe went on from the North Cape to Hokianga and stayed a while. In the course of his wanderings there in search of food, he came to a place where there was some soft clay (uku-whenua) into which his feet sank and left holes, as did the feet of his dog Tauaru. The clay eventually turned into rock, and both Kupe's and his dog's footsteps are to be seen there to this day. When Kupe and his children departed from Hokianga, they left the dogs behind because the dogs had wandered off into the forest to hunt birds. The dogs returned to the beach and howled; Kupe heard them, but he used a prayer to prevent them following, and they were at once turned into stone. [Two rocks at the mouth of the Whirinaki river, Hokianga, are still pointed out as Kupe's dogs. Another account of these dogs is that Kupe decided to leave them there as guardians for the land, and he carved out of stone a male and female dog to represent them.]

After a long stay at Hokianga, Kupe sailed after Ngake and found him at Rangi-whakaoma (Castle Point), where Ngake was awaiting him. Ngake informed Kupe that the octopus of Maturangi was there within a cave giving birth to offspring. Kupe proceeded to the cave and broke it open, which caused the octopus to flee in the night towards the south. Kupe and Ngake

then gave chase and came to Te Kawakawa (Cape Palliser, the southern point of North Island). This name was given by Kupe because one of his daughters here made a wreath of kawakawa leaves, and the name has ever since remained in memory of it. At this place is a kahawai spring where Kupe kept as provisions the fish of that name.

Near here the sail of the canoe Matahorua was broken, and Kupe, Ngake, and their friends proceeded to make another for the foremast. Kupe said to Ngake, "Which is the best kind of sail, yours or mine?" Hine-waihua, the wife of Ngake, "Ah! Your parent's sail is the best; it can be made quicker; he has the dexterous hand for that kind of work." So they set to work and continued on to daylight, all hands helping to make the sail-Kupe, his elder relatives, and younger brethren. When daylight came, the sail was to be seen hanging up on the cliff, which caused Ngake to say, "I am beaten by my friend." [This enigmatic comment can be explained by the tradition that a competition in sail-making had taken place between Kupe and Ngake.[3](#)]

Near that spot is also a bathing place of Kupe's daughters, one of whom, Makaro, was menstruating at the time, so the water remains red to this day. There also is a heap of stone, from the top of which Kupe recited his prayer to draw fish up for his daughters, among others, the hapuku, which ordinarily lives in deep water. He was gazing (matakitaki) on the multitude of fish; then raising his eyes, he saw beyond the sea the mountains of the South Island, the snows on Tapuae-nuku ("The lookers-on") in the sun. Hine-uira, one of his daughters, asked Kupe what he was gazing at. He replied, "I was looking at the shoals of fish coming in; when I lifted up my eyes, I beheld an island lying there."

Hine-uira said, "Let the name of these stones be Matakitaki" ("Gazing"), which remains to this day.

After this they started in pursuit of the octopus, going on to the mouth of Te Whanganui-a-Tara (Port Nicholson), on the west side of which their canoes landed. Here Kupe went for a bath, and afterwards stretched himself out on a rock to dry himself in the sun, where he scratched himself, hence that place was ever after called "Te Aroaro o Kupe" (i.e., "Te Ure-o-Kupe," "The penis of Kupe"-the rock on Barrett's Reef at the entrance of Wellington Harbor).

From there, after going to Hataitai (Miramar Peninsula) they went on to Owhariu (Ohariu, west of Wellington, on Cook Strait) where the sails of Matahorua were hung up to dry, hence the name of that place. (Owhariu means "to turn aside.")

The two islands in Te Whanganui-a-Tara, named Matiu (Some's Island) and Makaro (Ward's Island), were named after two of Kupe's daughters to commemorate their visit to these islands. (The two islands are in Wellington Harbor.) Kupe approved of the names. When they arrived at Te Rimu-rapa (Sinclair's Head), they proceeded to gather paua (Haliotis), shellfish, and other kinds of seafood, and there dried them, as provisions for their voyage. Then they got some large seaweed, and made receptacles for these provisions, so that the food would not be spoiled by dampness. Hence that place was named Rimu-rapa ("seaweed flattened"; bull-kelp is still used as bags for preserving birds, especially mutton birds.)[4](#)

They found Te Rimu-rapa a very disagreeable place because of the wind, so proceeded north to Porirua Harbor, where Mata-horua was anchored. Here, on the east side of the harbor, near the mouth, Kupe saw a stone which he at once desired as an anchor for the canoe; it was a kowhatu-hukatai (a white stone, probably volcanic). His daughters also had the same wish because of its excellence.[5](#) The new anchor was named Hukatai (also Hukamoa).

Ngake now said to Kupe it was time they went after their enemy. So they left and went to Mana Island, where Kupe left his wife and his daughters for a while. Mohuia, one of Kupe's daughters said, "Let this name, Mana, be retained for this island, in remembrance of our power and daring (mana) in crossing the ocean. Kupe gave his consent to this naming, saying, "Yes! it is well, Mana shall be its name."

After leaving his family there, Kupe and Ngake made a straight course for Te Wai-pouamu (South Island), and when they drew near it, they saw the octopus of Muturangi approaching their canoes. The two canoes of Kupe and Ngake separated to allow the octopus to pass between them, which it did, the head rushing forward drawing its tentacles behind, which spread out even beyond the canoes. From head to the end of its tentacles, it was two hundred and forty feet long, while the body was twenty four feet wide. Tohirangi

stood up in the center of Kupe's canoe with a long spear and lunged at the monster. He speared it twice, and when it felt the pain, it stretched out its tentacles to break the spear of Ngake, who was using his spear from the other canoe. The two spears crossed, and the tentacles of the octopus seized hold of the gunwale of Ngake's canoe, Tawhiri-kura, from bow to stern, which so frightened the men on board that the canoe was nearly upset. Then the tentacles seized hold of Kupe's canoe, and Kupe took his axe named Ranga-tu-whenua and began chopping off the tentacles; but the octopus would not let go. Kupe then shouted to Po-heuea, "Throw the bunch of calabashes at the head of the octopus!" This was done, and the monster, thinking perhaps that it was a man, let go the canoe, and encircled the calabashes with all his tentacles. Then with his axe Ranga-tu-whenua, Kupe made a fierce downward blow (paoa) at the head of the monster and smashed in its eyes. And so died this great sea creature, the "Wheke-o-Muturangi."

Now from this incident came the name of the South Island Ara-paoa, from Kupe's paoa, or downward blow, on the head of the octopus. The rocks Nga-whatu ("The Brothers" in Cook Strait) became tapu, for that is the place where the Wheke-o-Mururangi was laid to rest. An incantation (karakia) was said to conceal the octopus lest Muturangi should come in search of his pet and revive it. Immediately after the incantation ended, swirling currents began around the rocks, so that no canoe could land there. The name of these rocks, Nga-whatu, refers to the eyes (whatu) of the octopus, and the spot has remained tapu ever since. When canoes cross the Straits to or from Ara-paoa, the priests say, "Do not look on Nga-whatu; cover the eyes with a shade, lest, looking, a gale of wind comes on and the canoes will be capsized." This is the rule even to this day.

Now the above story explains why Kupe, Ngake, and their companions crossed the wide ocean and discovered this country of Aotea-roa.⁶ How great was the mana (power, ability, prestige, etc.) of Kupe to accomplish this undertaking! Hence it was that his daughters wished to emphasize this mana by naming the island on which they stayed Mana, in honor of their father Kupe. The name of Porirua harbor is derived from the fact that the voyagers left their old anchor there and replaced it with a new one named Huka-moa (or Huka-tai). ("Pori" refers to the exchange of one anchor for another.)

Now after these events Kupe proceeded to the southern island to determine its resources, and to see whether or not any people were living there; he also intended to do the same as regards to the northern island. He went down the west coast of the southern island until he reached Arahura River (a few miles north of Hokitika, a town on the west coast). He gave the river that name because he went to search out whether any people were to be found there. [Ara-hura, "the way opened up"].

Kupe was the first man to discover the valuable pounamu, or green stone, in Aotearoa. The first specimen he saw was that kind called inanga, so named because it was seen in a river together with many inanga, or white-bait, which he proceeded to net. When Hine-te-uira-i-waho stretched forth her hand into the water to get a stone as a sinker for the bottom of the net, the one she got was quite different from any she had seen before, and so it was called inanga.⁷

Kupe's canoes then proceeded farther to the south, and finally reached the tail-end of the southern island, where Kupe said to Hine-waihua, the wife of Ngake, "O Hua! Leave your pets here to dwell at this end of the island, for behold there are no men here." So the seals and the penguins were left to guard that end of Arapaoa, which is now called "Te Wai-pounamu." It is well known that the proper salutation to the people of the South Island is "Welcome ye people of Arapaoa"-and Ngati-Tahu of the South Island welcomes us by saying, "Welcome ye people of the sunrise." Nowhere did Kupe or Ngake see any people on either the southern or northern island.

On Kupe's return to the northern island he went by way of the west coast to Hokianga. When he was off Whanganui he saw a very fine bay there,⁸ and so decided to land to inspect it. On entering the bay, the canoes landed on the west side and stayed a while. This place at the mouth of Whanganui, he named Kaihau-o-Kupe ("Kupe's wind-eating"), because it was very windy while they were there.

Kupe paddled up the Whanganui River to see if any people lived there; he went as far as Kau-arapawa, so called by him because his servant tried to swim the river there to obtain some korau, or wild cabbage, and was drowned, for the river was in flood. So Pawa was drowned, and his name

was applied to that place. (Kau-arapawa is about fifteen miles above the town of Whanganui.) Kupe heard some voices there, but as soon as he found these voices were only from birds (weka, kokako and tiwaiwaka), he returned to the mouth of the river, and then went on to Patea, where he planted some karaka seed of the species called oturu.⁹ While at Patea he tested the soil by smelling it, and found it to be para-umu-a rich black soil-and sweet-scented.

When Hine-te-ura, Kupe's daughter, arrived at Hokianga, she said to him, "O Sir! let us take possession of this land," to which both Kupe and Ngake consented. Then a feast (hakari) was made by his daughters at a place between Te Kerikeri and Whangaroa. At the end of the feast, Kupe, Ngake, and all their people proceeded to place the land under tapu ("uruuru whenua"; usually refers to "placating local gods"), prior to their return to Rarotonga, Rangiatea and Hawaiki. The stone of the uruuru-tapu is at the head waters of Hokianga, and is named Tama-haere, sometimes called Toka-haere; it is still very tapu. The feast was held at the place usually called Tarata-rotorua, where certain natural pillars of rock are said to have been the posts that held up the food at the feast. Hokianga means "Returning" in reference to the place from which Kupe left the island to return home.

Now, it must be clearly understood there were no people anywhere on these islands-not a single one. And Kupe left only his two dogs, named Tauaru, the male, and Hurunui, the female; none of their party remained here; everyone returned to Rarotonga.

After Kupe and Ngake returned to Rarotonga they went on to Rangiatea (Ra'iatea) and from thence to Hawaiki (Tahiti, though other sources say that Hawaiki was the ancient name of Ra'iatea). They reported their discovery: "There is a distant land, cloud-capped, with plenty of moisture, and a sweet-scented soil. It is situated at "Tiritiri-o-te moana" ("The vast space of ocean"?). When the people heard of the newly discovered lands, they desired to come here because a great number of quarrels had arisen among themselves in their homeland.

When Kupe reached Rangiatea, Nga-Toto (or Toto) asked him, "O Kupe!

What does the land you have discovered look like? Is it raupapa (flat land) or tua-rangaranga (undulating?) Is the soil one-tai (sandy), or one-matua (rich, fertile)?"

Kupe replied, "In the center part are mountain ranges (tuatua); the spurs that come down to the sea are sheltered, and plains open out on both the east and west coasts. On the southern island, the ranges that come down to the sea on the west coast, have pakihi (flats, usually grassy) opening out here and there. The east coast is fertile and fine to look on. The soil is good, it is one-paraumu (rich, black soil); in some places it is one-papa-tihore, (i.e., subject to land slides), but the growth of plants is healthy and vigorous."

Other people asked, "O Kupe! What do the seas and the streams contain?" He replied, "There are fish both in the sea and inland; paua (*Haliotis*), mussels, and cockles thrive along the shores of the ocean."

Others asked, "What is the course the canoe should steer, O Kupe?" To which he replied, "Let it be to the right of the setting sun, or the moon, or Venus. Go during Orongo-nui (summer), in the month of Tatauuru-ora [November] when food is plenty." [10](#)

Turi then asked, "Which is the very best part of the land?" Kupe replied, "Leave the course in the current of Pareweranui (the strong south wind); there is a place of much 'fruit of the land' (i.e., birds, fish, and so on). (The narrative is obscure here, but we know that Kupe directed Turi to come to Patea River on the west coast of the north island).

Others asked, "Did you see any people on the land?" Kupe replied, "I saw no one; what I did see was a kokako, a tiwaiwaka, and a weka (i.e., birds), whistling away in the gullies; kokako was ko-ing on the ridges, and tiwaiwaka was flitting about before my face." [11](#)

Now Kupe and Ngake stayed a long time at Rangiatea and then went on to Hawaiki (Tahiti). They went there at the request of Ruawharo (a son of Hau, a nephew of Kupe who came to New Zealand in the Takitimu, says the Scribe). Ruawharo came to ask them to go to Hawaiki in order that the people living there might hear their account of the new land discovered by them at Tiritiri-o-te-moana.

On leaving Hawaiki they returned to Rangiatea where Kupe found Turi, who had married Rongorongo, the daughter of Toto (Sometimes called Nga-Toto). Turi did not sail for the newly discovered island at the time Kupe returned from his voyage, as is sometimes claimed; Turi was dwelling at Rangiatea, having fled from Hawaiki because he had committed adultery with Korahi, the wife of Taurangi-tahi. She was the elder sister of Moana-waiwai, the second wife of Tomo-whare. (This statement bears out what I learnt in Tahiti, with this difference, that Turi fled from Hitia'a on the east coast of Tahiti because of the jealousy of one of his wives; he went to Rai'atea.) Korahi was a wahine-kahurangi [or ariki], whose husband was Ao-marama.

Turi was followed to Rangiatea by those who wanted to kill him, but he fled. The reason, however, that he fled to this country (New Zealand) was the killing of Awe-potiki.[12](#)

When Kupe and Turi met, the latter asked, "Where is the best part of the island according to what you saw?" Kupe replied, "The west coast. There is my karaka-huarua (i.e., the karaka-oturu, planted by Kupe; see note 9). It is growing at the mouth of a river opening to the west, facing the southwest wind (uru o Tahu-makaka-nui). You will see a certain snow-clad mountain standing near the sea (Taranaki, or Mount Egmont). Direct your canoe to Tahu-para-wera-nui (to the south of this mountain) and you will see the best place to settle."

Turi now said to his wife and said, "O Wife! If you had a canoe, we could go to this unoccupied land and make a home there."

Rongorongo replied, "Who would want to live in a lonely place like that?"

But Turi did not cease to dwell on the idea of migration, constantly talking about it. At last Rongorongo spoke to her father Toto about it. Toto replied, "It is well; here is a canoe." And so a canoe was given to Rongorongo to give to Turi. Toto said to Turi, "When you depart, and after you have arrived at Tiritiri-o-te-whenua on the ocean-if you find the land is bountiful, come back and fetch us all together with your brothers-in-law." Turi consented.

Rongorongo was pregnant with her first born at that time. So Turi did not

start for a long time, not until his three children were born-Turanga-i-mua, Taneroa and Tonga-potiki. When he was ready to go, Turi said to Kupe, "O Kupe! Let us both go to the land you have told us about." But Kupe replied, "Kupe will not return."[13](#)

It must be clearly understood: Kupe and Turi did not meet at sea or anywhere else, but only at Rangiatea. The stories of other meetings are false [i.e., tahora, not told in the Whare-wananga].

Shortly after Kupe returned from Hawaiki to Rangiatea, Rongorongo's first child was born, and Kupe said, "Let the name of the child be Turanga-i-mua; to signify my being the first to stand on Aotea-roa." (Turanga, "standing"; i mua, "ahead"). Now for the first time the name Aotea-roa given by Kupe to the islands he discovered became known. Nga-Toto said, "O Turi! Let that also be a name for the canoe of our daughter." Kupe said, "It is well," and so the name "Aotea" was given to Rongorongo's canoe, replacing the old one.[14](#)

NOTES

This version of the story of Kupe was published in Journal of the Polynesian Society, Vol. 4, 1913, pp. 118-133. It is "Part II. Te Kawae-raro, or 'Things Terrestrial'" of The Lore of the Whare-wananga, told by Te Matorohanga, recorded by H.T. Whatahoro, and translated by S. Percy Smith. The story begins, "The Sage of the whare-wananga said to the assembled people in 1861, 'I will commence my narration by starting from the period of Kupe.' Whare-wananga are houses of sacred learning.

From Smith's Notes: "There is a strong probability that there existed two men by the name of Kupe. [See Journal of the Polynesian Society, Vol. 16, 1907, pp. 155-173 for a discussion.] I do not propose to inflict on our readers a further series of long genealogical tables, for it is only to those who are engaged in such studies that have any interest in them-all important as they are for historical purposes, for without them we could never arrive at any dates whatever in Polynesian Prehistory, and without dates history is useless. [Only to Westerners; the Polynesians counted by generations of people

rather than by numbers of years.-D.K.] Suffice it to say, that with all the number of tables of Kupe's genealogy before me, I find they group themselves into two divisions:

"One series has a mean of thirty-nine generation, or say, the year 925 A.D.; another of twenty-four generations, or say, the year 1300.

"We will for the moment turn our attention to the approximate date of 925, and endeavour to learn something of the localities and doings of the people at that period. From my book *Hawaiki*, it will be learnt that this was the period when the second great extension of Polynesian voyages commenced, the headquarters of the Tonga-hiti branch (which includes Maoris, Rarotongans, and Tahitians, etc.) was in Fiji, but Tahiti had at that time already received the first installment of its population. During the two centuries subsequent to 950, voyages were very frequent to all parts of the Pacific—from Hawai'i to New Zealand, from Indonesia to Easter Island. This may be seen at a glance by referring to *Hawaiki* (3rd edition, p. 171), where a long list of islands discovered or visited at this time is shown, as derived from the Rarotonga records. Among these islands is *Avaiki-tautau*, which the Rarotongan learned men hold to be New Zealand.

"Whether Kupe was one of this band of navigators, it is impossible to say with certainty; but probability seems to point to his being identical with *Te Aratanga-nuku*, the famous Rarotongan voyager, who flourished, according to the Rarotongan tables, thirty-seven generations ago, and therefore only two generations after the date we have assigned to the first Kupe. [For the story of *Te Aratanga-nuku*, see the notes to "*Tangiia and Tutapu*" in this collection.]

"With regard to the second Kupe, we shall hear a great deal about him as this narrative progresses; and, as I hold, the two men have frequently been confused. Twenty-four generations back from the year 1900 will bring us to the year 1300, or two generations before the great migration of "*The Fleet*" sailed from Tahiti for New Zealand, and thus his various conversations with *Turi* of the *Aotea* canoe, who came at the same time as the *Fleet* will be explained. What seems to me, however, as a strong proof of there having been a former Kupe is the fact that *Toi-te-huatahi* who lived several generations before the second Kupe, actually made use of Kupe's sailing

directions to find his way to New Zealand.

"We shall also see that in Toi's time, the original Tangata-whenua, who are said to have arrived after the discovery of New Zealand by Kupe, had had time to so increase from the crews of a few canoes that their occupation of the country extended from Taranaki along the West Coast as far as the North Cape, and along the East Coast as far as O-potiki in the Bay of Plenty; and, even allowing for exaggerations, they were very numerous indeed. They could not have thus become so numerous if the country had been discovered by the second Kupe; and must have been here ages before Toi arrived. It is repeatedly said in the accounts of Kupe's voyages that he found no living man in these islands, though as the story says, he frequently searched for signs of human habitation.

"We must bear in mind then, that this narrative (to my mind at least) has confused the doings of the two Kupes. It has occurred to me that the second Kupe, while he did come to New Zealand to search for a certain man named Tuputupu-whenua (as some accounts say), did not do more than sail along the West Coast of the North Island, and did not explore the South Island at all. This would agree with some of the narratives. The Sage's account takes his hero all round both islands.

"I will leave the reader to draw his own conclusions as to the story of the "Wheke-a-Muturangi"; and merely remind him that it has been pointed out that the probable inducement to Kupe to undertake the long voyage from Tahiti to New Zealand, was the flight of the Kohoperoa, or long-tailed Cuckoo, which an observant people like the Maori, on seeing this bird coming year after year from the Southwest, and well knowing that it was a land bird, would immediately conclude that land of considerable size lay in that direction."

[See Elsdon Best, *The Maori* (1924, pp. 40-56) and Peter Buck, *Vikings of the Sunrise* (1938, pp. 277-283) for descriptions of the various migrations from Hawaiki to Aotearoa. The general sequence of migration dates and events include the following:

About 40 generations before 1900 (around 900 A.D.), Kupe and Ngake (Ngahue) discovered large, uninhabited islands to the south and named them

Aotearoa. They returned to Hawaiki with their crews, leaving behind only two dogs.

After this time, other people arrived in three canoes-Kahutara, Taikoria, and Okoki, having been swept away from their homeland while they were on a fishing expedition. The canoes made landfall on the Taranaki Coast (west side of the North Island) and the people stayed there. They are the Tangata-whenua ("people of the land") referred to by Smith above; Best says they were called Pakiwhara or Mouriuri by the Maori, who settled Aotearoa later.

About 28 generations from 1900 (around 1200 A.D.) a number of canoes were blown out beyond the sight of land during an offshore canoe race in Hawaiki. Toi, the grandfather of Whatonga, one of the men lost, went in search of him in a canoe called Te Paepae-ki-Rarotonga. Toi landed at Samoa and Rarotonga in search of his grandson. He then made the Chatham Islands (400 miles east of Aotearoa) and finally landed and settled at Whakatane on Bay of Plenty (on the east coast of North Island). Meanwhile, Whatonga, his grandson, had made his way back to Hawaiki and, learning that his grandfather had gone in search of him, left in search of his grandfather. Whatonga's canoe was named Kurahaupo ("Lunar halo") since the ariki of Hawaiki told him to send a lunar halo as a sign of his successful search. Whatonga stopped in Rarotonga, then made landfall at North Cape on Aotearoa. He travelled down the west coast, learned that Toi, his grandfather, was at Whakatane, and finally met up with Toi and settled there.

Around the same time that Whatonga came to Aotearoa in Kurahaupo, Manaia also arrived in the canoe Tokomaru. He had fought with Nuku in Hawaiki and had fled after having lost the war. Nuku pursued him in three canoes (Te Houama, Waimate, and Tangi-apakura) to avenge the death of a brother. Manaia and Nuku fought a sea battle in Raukawa (Cook Strait); after a stormy night at sea (the storm was caused by the magic of Manaia), the two parties landed and made peace. Manaia proceeded to Taranaki on the west coast and settled there; Nuku returned to Hawaiki.

About 24 generations from 1900 (around 1300 A.D.), more conflicts in Hawaiki led to the migration of more canoes to Aotearoa. The names of the

chiefs and canoes that came to Aotearoa in the heke ("Great Fleet") are recorded in tradition:

Hoturoa came in Tainui
 Tama-te-kapua came in Arawa
 Toroa came in Mataatua
 Tamatea came in Takitumu
 Porou-rangi came in Horouta
 Turi came in Aotea

Peter Buck writes: "The newcomers came in conflict with the first settlers and with the descendants of Toi. After many wars, the earlier settlers were absorbed into the more dominant groups of the later comers. The Maori people are grouped into tribes, which trace their descent and take their names from ancestors who came in the various canoes of the fourteenth century migration" (278-9). Buck's mother traced her ancestry to those arriving on the Tokomaru canoe.]

1. From Smith's Notes: "I don't know of a Maungaroa in Rarotonga. Maunganui is a beautifully wooded mountain just behind Tereora school at the north-west end of Rarotonga island."
2. From Smith's Notes: "The great ridge of Hine-moana (Lady of the Ocean) I take to be an expression for the deep, wide ocean-perhaps midway of the voyage, where the trade wind is met by the prevailing westerly winds."
3. From Smith's Notes: "There is some portion of the narrative apparently left out here by the scribe, for we learn from other sources that it was a trial of skill between Kupe and Ngake as to who should first complete a sail-hence Ngake's words."

[The story of this contest is told in "Chapter III. Kupe-the Navigator" in "The History and Traditions of the Taranaki Coast," Journal of the Polynesian Society, Vol. 16, 1907; p. 156: "The name of two triangular patches of light-coloured cliff showing against the green vegetation a few miles to the west of Cape Palliser is called Nga-ra-o-Kupe, The sails of Kupe. The story connected with this is that Kupe and his companion Ngake were camped here on one occassion, when a contention arose as to who

could succeed in first completing a canoe sail (ra). So each started to work in the evening to make a sail; Kupe finished his a little after midnight, whilst Ngake did not complete his until dawn. Thus Kupe won. The sails were then hung up against the cliffs, 'and may be seen there to this day' says my informant." This account of the tradition of Kupe lists 27 place names associated with him, and explains the significance of each name. Some of the explanations differ from the explanations given in the version of the story of Kupe in this collection.]

4. From Smith's Notes: "My informant tells me that kelp was used for carrying freshwater on their voyages as well. It was turned inside out with sticks, and formed waterproof bags of considerable size for carrying water. At night these bags were trailed overboard with a stone attached to keep the water deliciously cool."

5. From Smith's Notes: "The anchor brought from Maungaroa in Rarotonga was left at Porirua. This stone anchor is now in the Dominion Museum, Wellington."

6. Other versions of the Kupe story give different reasons for Kupe's voyage which led to the discovery of Aotearoa. In "Hau and Wairaka: The Adventures of Kupe and his Relatives" (Journal of the Polynesian Society, Vol. 36: 1927, p. 264), Elsdon Best writes: "Now Kupe's task was the pursuit and slaying of Wheke, the octopus. The origin of that striving of Kupe against Wheke was that Wheke had killed Punaraku, the daughter of Kupe, who went to bathe at the Wai o Rongo, a place on Rarotonga, when the subject of Muturangi [i.e., the Wheke] carried her off to Taiwhetuki [the house of death]. Such was the cause of the anger of Kupe and his relatives, such was the reason why he engaged in the pursuit. The octopus of Muturangi perished at Tuahiwi nui o Moko, in the expanse of Raukawa (Cook Strait), where it was bewitched by Kupe and his nephew, Mahakiroa, as it was going spouting across the sea."

The story collected by Sir George Grey (Legends of Aotearoa, 1988, originally published in 1855 as Polynesian Mythology and Ancient Traditional History of the New Zealand Race) says Kupe left Rarotonga after he had stolen the wife of Hoturapa: "to escape the vengeance of the relations of Hoturapa, he fled away with her on the ocean in her canoe

Matahorua and discovered the islands of New Zealand; they coasted entirely round the islands without finding any inhabitants" (129). Kupe encountered a great squid, which he named "Te Wheke a Muturangi," near Castle Point in Raukawa and slew it in the Tory Channel.

In the version collected by Grey, as in the version told by Te Matorohanga and translated by Percy Smith, Kupe returned to Hawaiki and directed Turi to the newly discovered islands of Aotearoa.

7. From Smith's Notes: "It is sometimes falsely said that pounamu can be found on the northern island. It cannot. This pounamu is the whatu-kaiponu of this land ("the treasured, coveted stone"), and it is so called as a much desired property for the kahurangi (high-class chieftainess, usually the first-born daughter of aristocratic parents) and for the high-born chiefs-no low-born person is entitled to use it."

8. From Smith's Notes: "This agrees with local tradition, to the effect that in former times the sea came up to the present town of Whanganui and formed a deep bay, which has since been filled up by the river."

9. From Smith's Notes: "The karaka-oturu is described to me as like the ordinary karaka (*Corynocarpus levigata*), but with smaller leaves and berries and fewer of them, with a low growth. There are some trees of the same species growing at Nuhaka, Hawkes Bay, the seed of which is said to have been brought here by the Kura-haupo canoe, under Whatonga. If this karaka at Patea bore a few fruit on the west side of the tree it denoted a lean year-if on the east, or inland side, it meant a prolific year for all cultivated foods. The Rev. T. G. Hammond, who knows Patea and its history better than any man, does not recognize this tree. It is also related of Turi, who commanded the Aotea canoe, and who settled down at Patea, that he brought the karaka tree with him."

10. From Smith's Notes: "The sun sets about S.W. by W. in the end of November in New Zealand, and that is almost the exact course from Rarotonga, which was always the starting point for Polynesian migrations to Aotearoa."

[A more accurate direction would be to the left of the setting sun. The

famous tradition of the best season for sailing to Aotearoa being when the Pohutukawa trees are in bloom (i.e., November) appears, among other places, in "The Emigration of Turi" in Sir George Grey's *Legends of Aotearoa* (Hamilton, NZ: Silver Fern Books, 1988, originally published in 1855 as *Polynesian Mythology and Ancient Traditional History of the New Zealand Race*, p. 135). Aside from the fact that in late spring, food would begin to be available and crops could be planted, Ben Finney gives another important reason for sailing from east Polynesia to Aotearoa during this season: "there are periods during the late spring and summer (roughly November to February) when high pressure systems dominate the approaches to Aotearoa rather than low pressure ones, bringing warm, easterly winds along their northern flanks" ("Voyaging into Polynesia's Past" in *From Sea to Space*, Palmerston North, NZ: Massey University, 1992, p. 38). These are the best winds for sailing the route; the Polynesian Voyaging Society's canoe *Hokule'a* sailed this traditional migration route in 1986 in the right season, late spring; the Pohutukawa trees were in bloom, prompting Maori Hector Busby, who is leading a revival of Maori canoe building, sailing, and navigation, to note that when he was a young boy, his elders told him "when those flowers [Pohutukawa] bloom is the time our ancestors came here from Hawaiki" (Finney 43).

[There are several versions of the directions given by Kupe. In the story collected by Grey, Kupe deceives Turi by telling him "keep ever steering to the eastward, where the sun rises" (131); in "Hau and Wairaka: The Adventures of Kupe and his Relatives," collected by Elsdon Best (*Journal of the Polynesian Society*, Vol. 36, 1927), Kupe's directions are reported as "Let [the vessel's prow] be directed to the left of the rising sun and until it is well up the heavens, and so continue until the Pleiades rise above the ocean surge, that you may reach land" (266). How Turi got to Aotearoa from central Polynesia with these wrong directions is not clear. Smith argues that the original Kupe came from Samoa or Fiji, and sailed east to central Polynesia using these directions ("Chapter III. Kupe-the Navigator" in "The History and Traditions of the Taranaki Coast," *Journal of the Polynesian Society*, Vol. 16, 1907; p. 171).

[In "Te Kauwae-raro" (*Journal of the Polynesian Society*, Vol. 23, 1914) Kupe's directions are given as "Leave the Sun, the Moon, and Venus on the

right hand, a little southwesterly, lay the bows" (209). This direction is the most accurate (i.e., left of the setting sun at the southern hemisphere summer solstice, or SW by W; the positions of the sun, moon, and Venus change over time, so information about seasons and years of travel is needed for directions using these celestial bodies).

[Another tradition mentions Rehua (which is usually identified as Antares in the constellation Scorpio) as the guiding star to Aotearoa. ("Chapter III. Kupe-the Navigator" in "The History and Traditions of the Taranaki Coast," Journal of the Polynesian Society, Vol. 16, 1907; p. 164). This star rises and sets in the same general direction as the sun in November-December.]

11. From Smith's Notes: "A question was here asked of the Sage, 'Some say that Kupe's daughters and others remained here, as also some from Ngake's canoe.' The Sage replied, 'No one remained here. Kupe and Ngake returned with all their wives, children and friends.'

"Another question was asked, 'O Sir! how is it then that some of us descend from Kupe and his children? [i.e., the children left in Aotearoa by Kupe?]' To this the Sage replied, 'There is no reliance to be placed on (some) genealogies, because, in different cases they state two, three, or four generations before the migration took place to Aotea-roa.' (That is, explains the Scribe, the migration of Toi, who flourished thirty-one generations ago, and of his grandson Whatonga and others.) At that time his descendants had all married. His sons had married before he came to Aotea-roa.' (The sage's answer is so important, and at the same time somewhat obscure, that I give it in the original. 'Ka mea mai ia, kaore he tikanga mo nga whakapapa, no te mea; e rua rawa nga whakatipuranga, e toru o etehi, e wha o etehi, katahi auo ka haere mai te heke nui tonu ki Aotea-roa nei. Kati, kua moemoe noa atu ona uri i te tane i tena wa; nga mea kane kua moe wahine i taua wa i mua atu i te haerenga mai o Kupe ki Aotea-roa nei.') [Smith's note is not clear on this point. The sage seems to be saying that Kupe's children were all married and had children in Hawaiki before the migrations to New Zealand began, the first one being by Toi and his followers.-D.K.]

12. From Smith's Notes: "Potikiroroa, a young relation of Turi's, was killed by Uenuku, an ariki of Hawaiki, because the little boy fell down at the doorway of Uenuku's house while delivering Uenuku's share of a

burnt-offering to the gods. The falling was considered an unlucky omen. In retaliation, Turi killed Uenuku's son Awepotiki (Hawepoitiki), ate the corpse, and baked the heart and sent it as a food offering to Uenuku, who consumed it. Uenuku was told what he had eaten and swore revenge, but before Uenuku could take revenge, Turi fled to Aotearoa."

13. One version of Kupe's answer to Turi's question is a question: E hoki Kupe? "Will Kupe return?"; "Kupe will not return" doesn't have the emotional ambiguity of the question.

14. For a version of the story of Turi's migration to Aotearoa, see Sir George Grey's Legends of Aotearoa (Hamilton, NZ: Silver Fern Books, 1988, originally published in 1855 as Polynesian Mythology and Ancient Traditional History of the New Zealand Race, pp. 126-137).

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Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
Home	Search	Archives	Past Education Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)	

Hotu Matua

[This story of Hotu Matua is summarized from a version published in Thomas S. Barthel's *The Eighth Land: The Polynesian Settlement of Easter Island* (Honolulu: University of Hawaii 1978; originally published in German in 1974). The story is much more detailed than here presented; see the publication for the complete text. Other versions are found in W.J. Thomson's "Te Pito Te Henua, or Easter Island" in *Report of the United States National Museum* 1889 (Washington D.C.: 1891, pp. 447-552); Katherine Routledge's *The Mystery of Easter Island* (London: 1919; pp. 277-280); and Alfred Metraux's *Ethnology of Easter Island* (Honolulu: Bishop Museum Press, 1971, pp. 55-75; originally published in 1940).

According to the Barthel account, the ancestors of the natives of Te Pito O Te Kainga ("A Little Piece of Land", later called Rapa Nui by other Polynesians and Easter Island by Europeans) came from two places known as Marae Renga and Marae Tohio in a land called Maori ("Land of the Native People"), or Hiva ("Black"; perhaps a reference to the basalt of volcanic islands, perhaps Mangareva; Hiva was a Polynesian name for the Marquesas Islands).]

In Hiva, Hau Maka had a dream in which his spirit traveled to a far country, looking for a new residence for his king Hotu.¹ His spirit arrived at three small islands (Motu Nui, Motu Iti, Motu Kao-kao) and a big hole (the volcanic crater of Rano Kau) on the southwest corner of Te Pito O Te Kainga. The spirit traveled counter-clockwise around the island, naming twenty-eight places including Anakena (an anchorage on the north coast of the island and future residence of the king); Papa o Pea (where young princes would be raised), and Ahu Akapu (where the abdicated king would live). When Hau Maka awoke he told his brother Hua Tava about the dream. The island was the eighth, or last, island in the dim twilight of the rising sun. He named the island "Te Pito O Te Kainga A Hau Maka" ("The Little Piece of Land of Hau Maka"). Hua Tava told his brother to tell king Hotu Matua of the new land.

After hearing about the dream, Hotu Matua ordered Hau Maka to send some

young men to explore the island. Hotu Matua told his two sons Ira (the first born) and Raparenga, and Hua Tava's five sons-Kuukuu, Ringiringi, Nonoma, Uure, and Makoi-to build a canoe and search for the island of Hau Maka's dream. He gave them the directions to the island:

i lunga (upwind; i.e., southeastly, into the southeast tradewinds)
e tau (it juts out)
e revareva ro a (as a permanent contour)
i roto i te raa (in the midst of the [rising] sun)

He told them that there were three islets and a big hole, also a long and beautiful road. So the seven men left in a canoe stocked with yams, sweet potatoes, bananas, and other foods. The canoe was named Oraora-ngaru ("Saved from the waves"), or Te Oraora-miro ("The pieces of milo wood lashed together"). They left on the 25th day of Vaitu Nui (April) and arrived on the 1st day of Maro (June), a voyage of five weeks.² The explorers found the three islets and the big hole. They sailed on to Hanga Te Pau, where they landed. Makoi was placed in charge of marking and naming the land. Kuukuu was placed in charge of farming. On the tenth day of Maro (June), they climbed the slopes of Rano Kau. Kuukuu planted the yams.

On the fifth day of Anakena (July), the explorers began to go around the island counterclock-wise, starting with the south coast. They followed the footsteps of Hau Maka's dream soul and named the places as Hau Maka had named them. When fish swarmed near shore at Hanga-o-honu (Bay of Turtles, on the north coast), they caught the fish with their hands and tossed them ashore. They cooked and ate the fish there.

When they were near Anakena, Ira saw a turtle and tried to lift it, but it was too heavy for him; Raparenga tried and failed. Kuukuu tried and lifted the turtle off the ground, but it struck him and broke his spine. The turtle, which was a spirit (kuhane), swam back to Hiva. Kuukuu was taken to a nearby cave on the plain of Oromanga. He begged the others not to leave him, but his companions departed after piling six stones outside the cave to take their places and to keep Kuukuu company. Kuukuu died in the cave.

The explorers went to the west side of the island and discovered a surfing spot. They rode a wave to the right and called the place where they landed

Hanga Roa; they rode a wave to the left and landed at Apina Iti. They rode a third wave in and landed by Hanga O Rio. They caught more waves, then went ashore and rested in a cave at Pu Pakakina.

Ira sent the other explorers surfing so he and his brother Raparenga could secretly place some stone figures Ira had brought from Hiva. While the others were surfing, Ira set up three stone figures with necklaces of mother-of-pearl shell. The shining necklaces could be seen from the ocean: the shells of Ruhi Hepii when a surfer rode a wave to the right, the shells of Pu when a surfer rode the wave to the left, and the shells of Hinariru when the surfer went straight ahead.

Ira sent Makoi around the island to name places with names from the homeland of Hiva. [Sixty place names are given.] After this was done, Ira taught Makoi string figures and the secret content of the figures.

A man named Nga Tavake, who had preceded the explorers onto the island, then appeared, and the six explorers told him, "This is a bad land, for when we planted yams, grass grew up instead." Then they all went to the yam plantation planted by Kuukuu and weeded it.

Ira taught the secret of the shells necklaces and directions to his brother Raparenga; Uure overheard their conversation and tricked Ira into giving the secret to his brother Makoi.

Ira, Raparenga, Uure, Nonoma, and Ringiringi left Te Pito O Te Kainga on the twenty-fifth day of Tangaora Uri (October) to return to Hiva. Makoi remained on Te Pito O Te Kainga. As the canoe left, Makoi chanted the directions back to the island: "There are eight islands. Te Pito O Te Kainga is the eighth. Once it has been lost, it cannot be found again! Ruhi to the right, Pu to the left, necklace around the figure of Hinariru at Papa O Rae straight ahead!"[3](#)

King Hotu Matua ruled Hiva after his father Matua. During Matua's reign, a group of people called the Hanau Eepe came and took one side of the island from the Hanau Momoko, the people whom Matua ruled. Then the Hanau Eepe tried to move the border to gain more territory. They were captured and imprisoned. In the meantime, Matua told his son Hotu Matua to launch a

canoe and immigrate to Te Pito O Te Kainga because a rising tide was destroying their land.

Hotu ordered his assistants Teke and Oti to get plants and animals to take with them on their voyage. The two men gathered banana shoots, taro seedlings, sugarcane, yam, sweet potatoes, hau trees, paper mulberry trees, sandalwood trees, toromiro trees, ferns, rushes, yellow roots, tavari plants, moss, and ngaoho plants, along with birds, pigs, and chickens.

Matua reminded Hotu to take along flies as well, since the number of human beings depended on the number of flies. He told Hotu to take the Hanau Eepe prisoners as well to farm the land.

Hotu then ordered his master canoe builder Nuku Kehu to launch the double-hulled canoe that had been built for the voyage. The canoe sailed on the second day of Hora Nui (September) and arrived at the southwest corner of Te Pito O Te Kainga on the fifteenth day of Tangaroa Uri (October)-a six-week voyage.

In the morning, when the explorers awoke [earlier it was said the explorers had returned to Hiva], two canoes were seen approaching the southwestern tip of the island, off Motu Nui. The canoes were bound together into a double canoe, but as they came near the land the lashings which united them were cut. One boat named "Oteka" carried Hotu Matua and his wife, Vakai-a-hiva; the other boat, named "Oua," carried Hineriru and his wife, Ava Rei Pua.[4](#)

Raparenga signaled with leaves to the voyagers the following message: "The land is bad; yams won't grow because of the weeds." Hotu Matua told Tuki to signal back that Hiva was also a bad land, as the rising tide of the ocean was ruining it. Raparenga then signaled to the voyagers that if they sailed to the right (east), they should stay way out or they would be pushed into the cliffs.

The two canoes traveled in different directions around the island. Hotu Matua went around the southern and eastern coasts of the island. Five fishing grounds were established through the mana of a man named Honga. Hineriru went around the western and northern coasts of the island; nine

fishing grounds were established through the mana of Teke, who had been transferred to that canoe. Hotu wanted to be the first to reach Anakena (an anchorage on the north side of the island, where the royal residence would be established). When he saw the other vessel approaching, he ordered a spell chanted, which made his own boat go fast and Hineriru's go slow. Two more fishing grounds were established near Anakena.

The canoe of Hotu Matua landed first at the cove. A son named Tuu Maheke was born there to Vakai and Hotu Matua. Hineriru was a man of intelligence, and wrote rongō-rongō (native script) on paper he brought with him. Among those who came in the canoes was the ariki (chief) Tuu Ko Ihu, the maker of the wooden images; two of his sons and two grandsons have given their names to four subdivisions of the Miru clan.

On the other canoe, a daughter named Ava Rei Pua Poki was born to Hineriru and Ava Rei Pua (identified as a queen, perhaps the younger sister Hotu Matua). Vaka, "the master in charge of tying the umbilical cord," performed the rite for Tuu Maheke and then for Ava Rei Pua Poki. The canoes were then brought ashore and taken apart so the wood could be used to make houses. After Nuku Keku (the master canoe builder) finished the houses, seedlings were distributed to the settlers. Then Hotu Matua told Teke to take the Hanau Eepe and settle them in a suitable place where they would farm the land. Teke took them to Poike, on the southeastern end of the island, and told them "Settle here, work, and keep peace among yourselves!" Iko ("Insect") was installed as the king of the Hanau Eepe.

Among Hotu Matua's company there was a concealed passenger whose name was Oroī; he was an enemy of Hotu, who had killed some of Hotu's children in Hiva, and had hidden himself on board the migration canoe. He got on shore at Anakena without anyone having guessed at his presence.

One day the five children of a man named Roro went to bathe at Ovahe (a small cove east of Anakena), and as they lay on a rock in the sea, Oroī came from behind and killed them by thrusting a lobster spine up their anuses and pulling out their intestines.⁵

When the children did not return, the father said to the mother, "Where are the children?"

The mother said, "On the rock."

But when Roro went to look, the rock was covered with water, for it was high tide; by and by when the water went down, he saw the five children were dead.

Roro then told Hotu Matua: "Oroi, that bad man, is here, for he has killed my children.

Now Hotu Matua went to see his adopted daughter Veri Hina, who was married and who lived at Mahatua (past Ovahe on the north coast). Oroi put a noose in his path and tried to catch his foot in it, but Hotu avoided it by stepping to one side.

When he had finished his visit to his adopted daughter, he said to her and her husband, "Follow me and watch above me. If the sooty terns circle high above me, I will live; if the terns dive down on me, I have been killed." As he returned, he saw that the noose was still on the path, and he knew his enemy was hidden behind the rock. Terns circled high above him. This time Hotu Matua intentionally stepped on the noose and fell, and when Oroi came at him with a bone knife, he killed Oroi with a spell-"Spin! Spin! Fall down! Fall down! Die!" Then he called to his adopted daughter and son-in-law to see that Oroi was dead. When, however, they put the corpse in the oven to cook it, it came to life again, so they had to take it over to the other side of the island to an ahu called Oroi, and there the corpse cooked quite satisfactorily, and they ate it.

Hotu Matua lived in Oromanga, in a house called Hare Tupa Tuu. One day when Hotu's first born son Tuu Maheke was fifteen, Rovi, his food preparer, went to catch eel as a side dish (inaki) for sweet potatoes; he stayed away overnight. Tuu Maheke's mother had gone to dig up and cook the sweet potatoes for him. Tuu Maheke began to cry. After a while Hotu Matua got a headache and shouted, "Be quiet, you bastard! You crybaby!" Then he left. When Vakai came home, she noticed the swollen eyes of her son and asked why he was crying. He told her what his father had shouted at him. After cooking the sweet potatoes for her son, Vakai went to the house of Hotu Matu and told him "Tuu Maheke is not a bastard! You are a bastard! Your

real father was Tai A Mahia! Kokiri Tuu Hongohongo was your foster father." Hotu Matua replied, "Why didn't you tell me this back in Hiva, our homeland?"

Hotu Matua moved a short distance away and built a house called Hare Pu Rangi. A month later, Vakai came to live with him. They conceived another boy, named Miru. Hotu moved again and built a house called Hare Moa Viviri; Vakai followed him. Another boy was born, named Tuu A Hotu Iti; then another son was born, named Hotu Iti A Hotu. Hotu moved again, to Hare Moa Tataka, and Vakai followed. Another son was born, named Tuu Rano Kau.

After the last son was born, Hotu and Vakai moved to Te Ngao o Te Honu. Vakai died. Her corpse was carried to Akahanga and buried there. Hotu Matua moved here and there until finally settling at Akahanga. After a year he moved to Rano Kau, where he lived on the south side of the crater, opposite Orongo. His last task was to fit two stones together. Then he went into his house and laid down. His children came and received his final blessings. Then he arose and went to Orongo to announce his death. He looked in the direction of his homeland, Hiva, and called out to his guardian spirits Kuihi and Kuaha: "Let the voice of the rooster of Ariana crow softly. The stem with many roots (i.e., himself) is entering!" Then he fell down and died.

His children carried him on a litter to Akahanga, where he was buried in Hare o Ava. Later his eldest son, Tuu Maheke, cut off the head, dried and cleaned it, painted it yellow, wrapped it in tapa, and hid it in a stone crevice. A man named Ure Honu found the skull while weeding his banana plantation. A rat (Hotu Matua's spirit) had led him to the hole where the skull was hidden.

When Ure Honu built a new house at Vai Mata, he hung the skull in it. At the feast for the new house, King Tuu Ko Ihu saw the skull and exclaimed: "Here are the teeth that ate turtles and pigs in Hiva!" He stole the skull and buried it under a stone near his house. Ure Honu discovered the theft; his foster son told him who had stolen it. Angry, Ure Honu gathered his men and went to the King's house. They tore down a wall looking for the skull, but found nothing. They searched outside, digging up the ground. The king

was sitting on the stone under which the skull was buried. Ure Honu's men lifted the king off the stone, looked under it, and found the skull. Ure Honu was satisfied and took the skull back home.

NOTES

1. Hau Maka had tattooed Hotu, and had "received from him in return a present of mother-of-pearl which had been given to Hotu's father by an individual called Tuhu-patoea. Tuhu had seen that the men who went down to get pearls were eaten by a big fish, so he invented a net by which the precious shell could be obtained without risk, and the pearl so procured he had presented to his chief, Ko Riri." (Routledge 277-8). Routledge gives a different reason for the migration: on Hiva, at the death of the chief Ko Riu-i-ka-atea, "a struggle for supremacy arose between his two sons, Ko Te Ira-kaatea and Hotu Matua, in which Hotu was defeated" (277).
2. During May, in the southern hemisphere winter, westerlies blow 32-33 percent of the time, allowing sailing canoes to travel in an easterly direction. (See Ben Finney's "Voyaging and Isolation in Rapa Nui Prehistory.")
3. According to Barthel, the ornaments may represent star bearings back to the homeland. Or the figures could be markings used for backsighting when leaving the islands; or markings used as alignments for safe entry into the bay (96).
4. These two groups later came into conflict; "the short ears," descended from Hotu Matua and Vakai-a-hiva, settled the western end of the island; "the long ears," descended from Hineriru and Ava Rei Pua, settled the eastern end of the island (Routledge 281).
5. This unusual method of killing was used in the Marquesas Islands (See E.S.C. Handy's work on the Marquesas.)

<u>1976: Tahiti</u>	<u>1980: Tahiti</u>	<u>1985-87: Aotearoa (New Zealand)</u>	<u>1992: Rarotonga</u>	<u>1995: Marquesas</u>	<u>1995: West Coast, British Columbia, & Alaska</u>	<u>1999-2000: Rapanui</u>
<u>Voyages</u>	<u>Canoe-Building</u>	<u>Wayfinding</u>	<u>Life on a Canoe</u>	<u>Polynesian Migrations</u>	<u>Proverbs and Traditions</u>	
<u>Home</u>	<u>Search</u>	<u>Archives</u>	<u>Past Education Programs and Materials</u>	<u>On-Line Visuals</u>	<u>Bibliographies (Books and Films)</u>	



HOKULE`A II by Herb Kawainui Kane



[▲ HOME PAGE](#)

[◀ BACK ONE](#)

About the ...



The Polynesian Voyaging Society is a non-profit research and educational corporation.

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Our Vision

Hawai'i, our special island home, is a place where the land and sea are cared, and people and communities are healthy and safe.

Our Mission

With a legacy of ocean exploration as its foundation, the Polynesian Voyaging Society reaffirms our commitment to undertake voyages of discovery; respect and learn from our heritage and culture; and strengthen learning which integrates voyaging experiences into quality education. We are committed to nurturing communities and the leadership therein which values learning and sharing knowledge in order to foster living well on islands.

Our Guiding Values

Guided by our vision and shared values, we come together as an 'ohana and community. Our core values are:

Aloha: To love

Malama: To care for

'Imi 'Ike: To seek knowledge

Lokomaika'i: To share with each other

Na'au Pono: To nurture a deep sense of justice

Olakino Maika'i: To live healthy

Our Goals

To fulfill its mission, Malama Hawai'i has adopted goals in three areas: voyaging, education, and community partnerships.

Goal 1. Voyaging: Carry out voyaging programs to research and perpetuate voyaging traditions and values.

Goal 2. Education: Develop educational programs that strengthen self-esteem and pride in our history and heritage and increase caring, respect, and responsibility among individuals, families, and communities in sustaining the well-being of our special island home.

Goal 3. Community Partnerships: Share ideas and information and bring together organizations and people in cooperative efforts, with a common vision and values, to contribute to a healthy, safe future for Hawai'i.

Our Guiding Process

The following describes the process that the Polynesian Voyaging Society has used to carry out successful voyages over the past 18 years. This planning, problem-solving, and decision-making process is taught in Malama Hawai'i education programs, and is used in establishing a basis for cooperative efforts in the community:

Vision and Values -- Before beginning any project there must be a clear vision of the destination, and a strong commitment to reaching that

destination. Our values steer our actions.

Planning--Once our destination and values are clear, then planning must begin to determine what information needs to be gathered, what tasks need to be accomplished, and who will be responsible for these tasks.

Building Community -- In order to succeed at any large project there must be a community of people who support the vision and are willing to take responsibility for working toward it.

Preparation -- Much preparation is needed for a safe voyage. The kind of preparation is determined in the planning phase. To prepare for a voyage we dry-dock the canoe to insure it is seaworthy, train the crew and navigator, and study the wind and weather patterns of regions where we plan to sail.

Risk-Taking -- There comes a point when we must let go of the lines and set sail. In every voyage there is risk, but by being well prepared we do our best to minimize the risk.

Arrival -- When we reach our destination, we celebrate our accomplishments and recognize the hard work of the community of people that supported the vision. We also take the opportunity to reflect on what we learned and experienced during the process of reaching our destination.

Sharing -- Through education we share the lessons, experiences, and achievements of a voyage with students and the larger community, thus perpetuating what is valuable to us in what we have done.

History of the Polynesian Voyaging Society: 1973 - 1998

The Polynesian Voyaging Society (PVS) was established in 1973-by Dr. Ben Finney, an anthropologist from California, Herb Kane, a Hawaiian artist; and Tommy Holmes, a man who loved the sea--to show that the ancient Polynesians could have the purposefully settle the Polynesian Triangle in double-hulled, voyaging canoes using non-instrument navigation. The Society's first project was to [construct a replica of an ancient voyaging canoe](#). On March 8th, 1975 this replica, Hokule'a, the first

voyaging canoe to be built in Hawai'i in more than 600 years, was launched.

On May 1st, 1976 **Hokule'a** left Hawai'i on [her maiden voyage to Tahiti](#), attempting to retrace this traditional migratory route. Navigated without instruments by Micronesian navigator, Mau Piailug, the canoe arrived 33 days later in Papeete, Tahiti, to a crowd of more than 17,000-over half of the island had turned out to greet the canoe. What had begun as a scientific experiment to prove a theory about the settlement of Polynesia, had touched a deep root of cultural pride in Polynesian people.

After the voyage Mau returned to Micronesia, and with him went the knowledge of the traditional art of wayfinding. But Mau had ignited a strong interest in many members of the Voyaging Society to continue sailing and learning about navigation. In 1978 in response to this interest, **Hokule'a** again left for Tahiti. Six hours into the voyage, in the middle of the night, **Hokule'a** capsized between O'ahu and Lana'i. In an heroic effort, Eddie Aikau, one of Hawai'i's most experienced ocean men left on a surf board to get help for his fellow crew members. He was never seen again. Eddie's loss was a painful experience, but it raised the standards of preparation and safety to a new level; since 1978 not a single crew member has been lost at sea.

Recognizing that it was unprepared to conduct a long voyage, PVS turned to Mau and asked him to teach them about sailing and navigation. Mau agreed, and for the next two years he helped prepare the members of the Voyaging Society for the enormous task of sailing and navigating a deep sea voyage. [In 1980](#) a crew from Hawai'i successfully sailed **Hokule'a** to Tahiti and back to Hawai'i, but this time the canoe was guided by one of Mau's students, Nainoa Thompson, the first Hawaiian to navigate a voyaging canoe in more than 600 years.

[From 1985-87](#), **Hokule'a** sailed more than 16,000 miles of traditional migratory routes from Hawai'i to Tahiti, Rarotonga (Cook Islands), Aotearoa (New Zealand), Tonga and Samoa-the Voyage of Rediscovery. This voyage demonstrated that it was possible to navigate these routes without instruments, and that contrary to popular theories, it was possible for traditional voyaging canoes to sail against the prevailing winds, by taking advantage of seasonal wind shifts. **Hokule'a's** voyages to date had

demonstrated that the ancient Polynesians could have intentionally settled the Polynesian Triangle -- an area of 10 million square miles, the largest nation on Earth -- one of the greatest feats of exploration in human history. But while scientific research was the impetus for these initial voyages, the recovery and perpetuation of Polynesian voyaging and navigation traditions became the main emphasis. The voyages of **Hokule'a** inspired pride among Polynesians for their history and heritage, and sparked a revival of interest in canoe building, sailing, and navigation.

In 1990 in recognition of the impact of voyaging on the revival of Hawaiian culture, the Native Hawaiian Culture and Arts Program, an organization working to strengthen the Hawaiian community based on its common history and heritage, contracted PVS to construct a double-hulled, voyaging canoe made entirely of natural materials. [A 9-month search of the Island of Hawai'i's koa forests resulted in nothing-not a single koa tree large enough or healthy enough for the hulls of a voyaging canoe was found.](#) The ancient Hawaiians built hundreds of voyaging canoes from koa trees, but in 1990, given the decline of Hawai's native forests, we were unable to build even one. This taught the Voyaging Society a powerful lesson: the health of our culture is strongly tied to the health of our environment. Fortunately for the project, there was another historical source of wood for canoes-drift logs from the Pacific Northwest. In an extraordinary act of kindness, the native people of Southeast Alaska gave two, 400-year old, spruce logs to the Society to build a voyaging canoe. The effort brought together community groups, organizations, and countless individuals who contributed more than 500,000 hours to build and sail the canoe. [The canoe, named Hawai'iloa, was completed under the leadership of Wright Bowman, Jr.](#) Launched in 1993, Hawai'iloa, represented a new level of community involvement in voyaging, a new appreciation for Hawai'i's environment, and the start of a deep friendship with the native peoples of Southeast Alaska.

[In 1992](#) **Hokule'a** made its fourth voyage to the South Pacific, sailing to Rarotonga for the Sixth Pacific Arts Festival, part of which celebrated the revival of canoe building and traditional navigation. New canoes were being built in Aotearoa, Rarotonga and Tahiti, and with help from PVS, new navigators were being trained for the next voyage: from the Marquesas

Islands, the ancestral home of the first Hawaiians, to Hawai'i. [In 1995](#) six canoes--**Hokule'a**, Hawai'iloa, and Makali'i from Hawai'i, Te 'Aurere from Aotearoa, and Takitumu and Te 'Au Tonga from Rarotonga--left the Marquesas Islands for Hawai'i. Five of the six canoes were navigated using only traditional methods, and all six arrived safely in Hawai'i.

Both the 1992 and 1995 voyages emphasized education, an important tool essential to sharing the experiences and values of voyaging with a larger audience. In addition to training new navigators and voyagers, PVS reached out to thousands of school children in the Department of Education through a long-distance education program. During the voyage students tracked the canoe on nautical charts, learned about their Pacific world, and used the canoe and its limited supply of food, water, and space, to explore issues of survival, sustainability, and teamwork. On the 1992 return voyage PVS educational programs reached as far as the Space Shuttle, as Shuttle crew member Lacy Veach, a Hawai'i native, participated in conversations about sustainability and exploration with the canoe and Hawai'i classrooms. In addition to these programs, PVS also began navigation and sailing courses at the University of Hawai'i and Windward Community College.

Within days of arriving in Hawai'i after the 1995 voyage, [Hokule'a and Hawai'iloa were shipped to Seattle](#). Hokule'a sailed south along the West Coast, reaching thousands of people who no longer lived in Hawai'i, but longed to share in the canoe's legacy. Hawai'iloa sailed north to thank the native peoples of Southeast Alaska for their gift of spruce trees. This was an opportunity for PVS to give back to them, but at each stop the canoe and crew were overwhelmed with gifts and kindness. These native people were responding to the fact that, like them, the Hawaiians were working to recover their native traditions. This Northwest Voyage taught PVS a great deal about another culture's efforts to renew its traditions, and about their determination to care for natural resources, in order to build a healthy future for their people.

In 1999, the Voyaging Society closed the Polynesian Triangle by [sailing to the remote island of Rapa Nui](#).

In the wake of her accomplishments, Hokule'a has helped to renew the pride

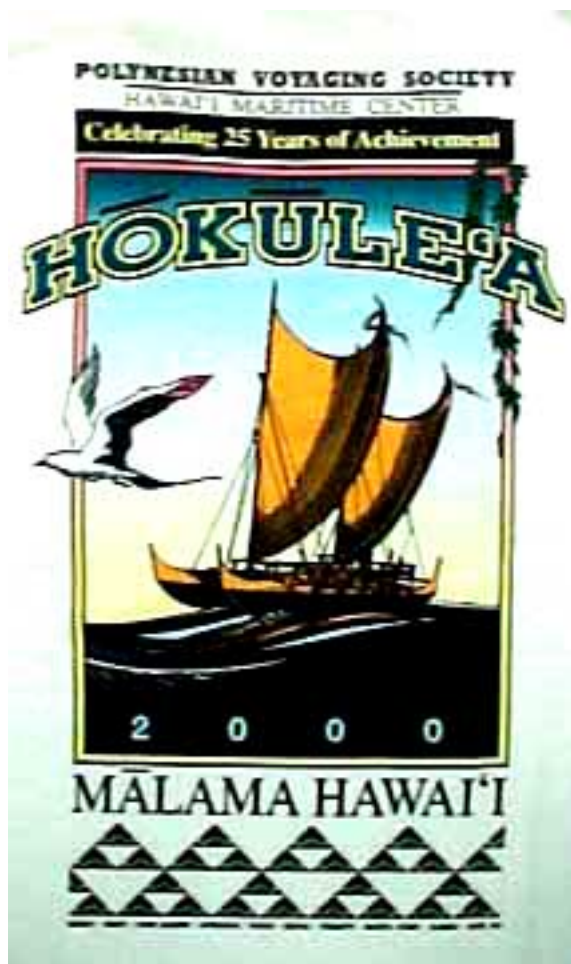
that Hawaiian people have for their culture and heritage. In turn this has made a contribution to raising the self-esteem of Hawaiian people. Recognizing that self-esteem and health are inextricably linked, a cooperative effort emerged in 1996 between The Queen's Health Systems and the Polynesian Voyaging Society, called **Malama Hawai'i**- "Caring for Hawai'i." Native Hawaiians have the worst health and socioeconomic indicators of any ethnic group in Hawai'i, and for years Queen's has been working to improve these statistics. **Malama Hawai'i's** first project was the 1996-97 Statewide Sail, a 10-month, 2,000 mile journey, in which more than 25,000 school children and community members visited or sailed on **Hokule'a**. The Sail was an effort to "connect" with Hawaiian communities, in order to find ways to support efforts to improve their health. What **Malama Hawai'i** found was cultural renewal taking place within these communities. Every community that **Hokule'a** visited celebrated its strengths with pride, and did not define itself by negative statistics. The Statewide Sail helped **Malama Hawai'i** to understand that the lives of the next generation of Hawaiians are already being shaped by this spirit of cultural renewal, and because of it we believe that in the future they will not be burdened with the same negative health and socio-economic statistics of the past.

What began in 1973 as a scientific experiment to build a replica of a traditional voyaging canoe for a one-time sail to Tahiti, became an important catalyst for a generation of cultural renewal and a symbol of the richness of Hawaiian culture and of a seafaring heritage which links together all of the peoples of Polynesia. No one could have imagined that by the end of the century, **Hokule'a** will have sailed more than 100,000 miles reaching every corner in the Polynesian Triangle, and the West Coast of the United States. In 1973 there were no Polynesian voyaging canoes; today there are six with others under construction. In 1973 there was only one deep-sea navigator that PVS knew of; today there are nine, with several more in training, along with 135 experienced deep-sea sailors in Hawai'i alone-ensuring that the Hawaiian people will never again lose their traditions of voyaging and navigation. Over the last 25 years, the family of the voyaging canoe has grown to more than 525,000 men, women and children who have participated in PVS programs of education, training, research and dialogue.

<u>1976: Tahiti</u>	<u>1980: Tahiti</u>	<u>1985-87: Aotearoa (New Zealand)</u>	<u>1992: Rarotonga</u>	<u>1995: Marquesas</u>	<u>1995: West Coast, British Columbia, & Alaska</u>	<u>1999-2000: Rapanui</u>
<u>Voyages</u>	<u>Canoe-Building</u>	<u>Wayfinding</u>	<u>Life on a Canoe</u>	<u>Polynesian Migrations</u>	<u>Proverbs and Traditions</u>	
<u>Home</u>	<u>Search</u>	<u>Archives</u>	<u>Past Education Programs and Materials</u>	<u>On-Line Visuals</u>	<u>Bibliographies (Books and Films)</u>	

Polynesian Voyaging Society Short Sleeve T-Shirts

(Adult Sizes: \$ 15.00; Kids Sizes: \$10.00.
Indicate Quantity in the Blank after Each Size)



Design 1: Four-Color Design on White (Above)
(Photos: [Design on the Back](#); [Design on the Front](#))

- Small: Not Available
- Medium: Not Available
- Large: _____
- X-Large: Not Available
- XX-Large: Not Available

Design 2: Brown Design on Tan

(Photos: [Design on the Front](#); [Close Up of the Design](#))

- Small: Not Available
- Medium: Not Available
- Large: _____
- X-Large: _____
- XX-Large: Not Available

Design 3: Teal Design on Heather Grey

(Photos: [Design on the Front and Back](#))

- Small: Not Available
- Medium: Not Available
- Large: _____
- X-Large: _____
- XX-Large: Not Available

Kid Sizes

(Photos: [Design on the Front](#); [Close Up of the Design](#))

- Small (6-8): _____
- Medium (10-12): _____
- Large (14-16): _____

Choose one of the following four easy ways to order:

1. **Mail:** Print out, fill out and mail the order form below with your check or VISA or Mastercard Number, Expiration Date, and Signature to:

T-Shirts
Polynesian Voyaging Society
191 Ala Moana Blvd. Pier 7
Honolulu, Hawai'i 96813

2. **Phone:** Call the PVS office at (808) 536-8405 to order using VISA or Mastercard.

3. **Print, fill out, and FAX** the order form to (808) 536-1519 (with VISA or Mastercard number, expiration date, and signature).

4. **E-mail:** click on pvs@lava.net, then copy and paste or type necessary parts of the order form into the e-mail message box. Include design(s), size(s), quantity(ies), total amount of payment (with shipping and handling), VISA or Mastercard number + expiration date, and shipping address; then click on "Send."

\$ _____	Total for Adult Sizes (Number of shirts x \$15)
\$ _____	Total for Kid Sizes (Number of shirts x \$10)
\$ _____	Shipping and Handling: \$3 per shirt; for more than three shirts, \$1 for each additional shirt after the first three. (Rates for United States orders only. For International orders, call or e-mail the PVS office for a shipping quote.)

<p>Total Amount of the Order:</p> <p>\$ _____</p>	<p>Total: Add first three lines. Make your check payable to: "Polynesian Voyaging Society." If you are faxing or calling your order in, please provide a VISA or Mastercard Number:</p> <hr/> <p>(Circle one: VISA or Mastercard); the expiration date of the card: _____; and the 3-digit code number located on the back of your card in the signature box, after the credit card number: _____. Sign here for mail and FAX orders:</p> <hr/>
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Please Ship My Order To:

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Donation Form

Join Hokule'a and the Polynesian Voyaging Society on its Sail to the Future.

The Polynesian Voyaging Society is a not-for-profit scientific and educational organization. Donations are tax-deductible.

Yes, I will make a donation to the Polynesian Voyaging Society for its education programs.

- Holokahiki (Sailor).....\$50 +
- Uli (Steersperson).....\$100 +
- Kalai wa`a (Canoe maker).....\$250 +
- Ho`okele wa`a (Navigator).....\$500 +
- Kilo hoku (Astronomer).....\$1,000 +
- Ali'i Holomoana (Voyaging Chief).....\$5,000 +

Name: _____

Address: _____

City: _____

State: _____ Zip: _____

Country: _____

Phone: (_____) _____

E-MAIL (If Available): _____

Amount: \$ _____

Please print out and mail this form with your check to:

Polynesian Voyaging Society
Pier 7, 191 Ala Moana Blvd.
Honolulu, HI 96813

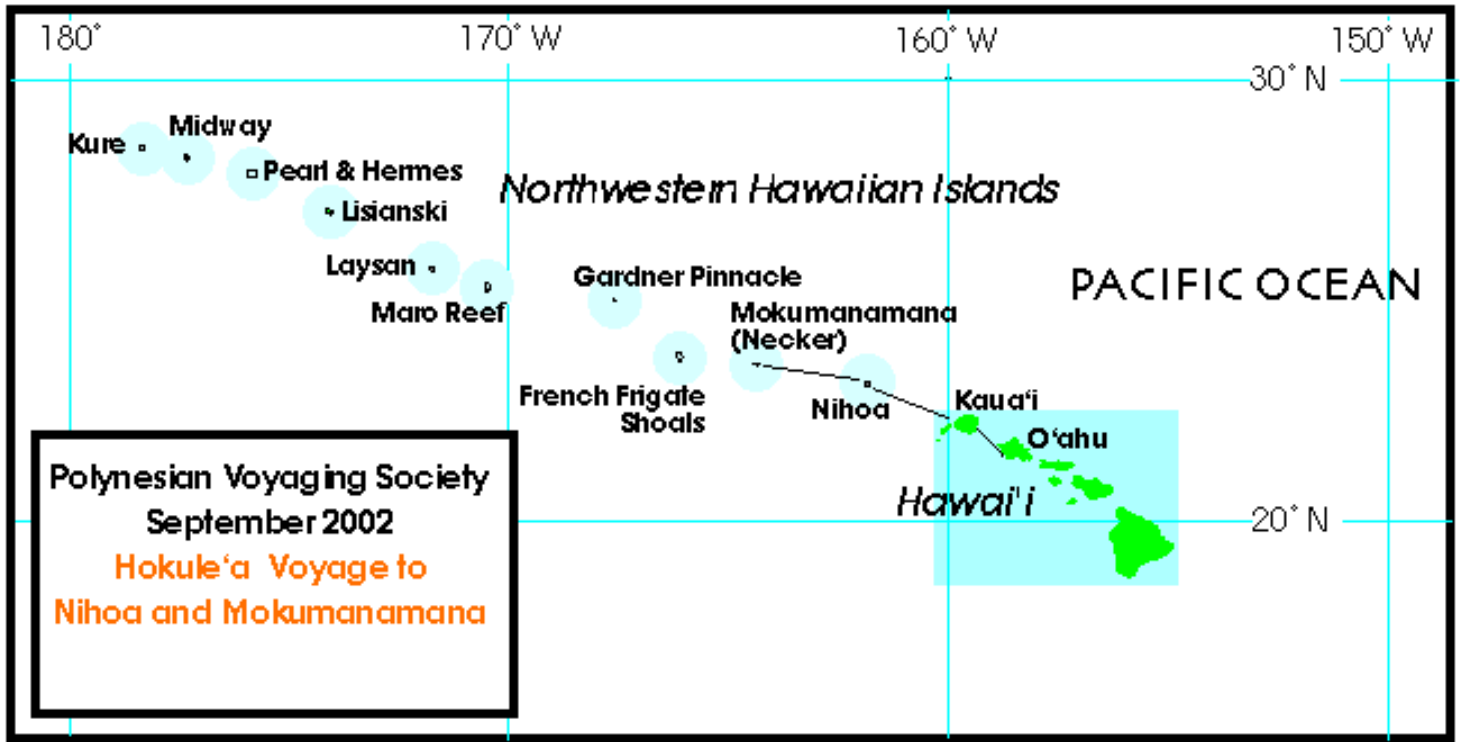
You may also make a donation through VISA or Mastercard by calling (808) 536-8405 or by mailing this form to the above address or by faxing it to (808) 536-1519, with your VISA or Mastercard Number:

_____ (Circle one: VISA or Mastercard)
and the expiration date of the card: _____.

Sign here for credit card donations by mail or FAX:

_____.

Home	Search	Educational Resources	Past Ed Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)
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Hokule'a Dry Dock: "It takes an ahupua'a to launch a canoe." In preparation for upcoming voyaging, Hokule'a was in dry dock at Pier 60 (Friends of Hokule'a and Hawai'iloa Workshop on Sand Island) from Dec 7, 2001 to Dec. 23, 2002. The project Coordinator was Navigator Bruce Blankenfeld; the on-site manager was crew member Russell Amimoto.

January 31, 2002 Update / Ka'iulani Murphy: During a marine survey of Hokule'a dry rot was found in the hull. Workers have been repairing the the dry rot. Both manu have been removed and will also be patched inside. Because of the extensive work to repair this problem, we expect to be in dry dock until July. During the first eight weeks of dry dock, 753 volunteer hours have been logged on the canoe, not including the individuals and groups who have taken parts of the canoe to work on independently at other sites. With the recent heavy rains, dry dock hasn't been so dry and work was cancelled because the work site was under several inches of water. Volunteers should call the office when it is raining heavily.

Support from Ke'ehi Marine Center (KMC): One of the businesses supporting the dry dock of Hokule'a is Ke'ehi Marine Center, a marina and a boatyard facility on Sand Island for both commercial and pleasure boats. The boatyard has a max capacity of 15-16 boats, from small sailing boats to big long line fishing vessels. On Dec 7 2001 boatyard donated its time and services to haul out Hokule'a for drydock. In the past, KMC has helped PVS generously by hauling out Hokule'a and donating space in the boatyard for dry dock. Before 1999-2000 Rapa Nui voyage, Hokule'a was out for 3 months at KMC and before the 2000-2001 statewide it was there for 3 weeks.

Yoshi Muraoka, the administrative director at KMC, was born in Japan, grew up in New York, went to college in San Diego, moved to Hawai'i, and worked downtown as an accountant (CPA). When asked why KMC donates it services, he said they realize the importance and value of the canoe to the community. Yoshi says they will continue to support PVS, doing anything

they can to help. The crew at Ke'ehi Marine includes Frank Gibert operations manager, Paul Cobb-Adams, Jim Leveille, and Carlos Lopez. Modrel Keju, originally from the Marshall Islands, works in the office and enjoys meeting the variety of people that come through the facility.

Feb. 28, 2002 Update / Ka'iulani Murphy: After 12 weeks of dry dock, we've logged a total of about 1120 hours of volunteer work on Hokule'a. (not including individuals who have canoe parts at another workshop.) Thanks to our many volunteers, we are putting on the last few coats of varnish on the railings, 'iako and other parts of the canoe. We will be getting ready to lash these pieces of the canoe back together. This week dry rot repairs on the port hull will be getting a final coat of fiberglass. Mahalo nui to numerous school groups who have come to help malama Hokule'a. New Hawaiian culture-based charter schools such as Hakipu'u Learning Center, Halau Lokahi and Halau Ku Mana have dedicated at least a day a week to work at dry dock. Students from Wai'anae High School, Ocean Learning Academy, Kamehameha, Punahou, 'Iolani, Windward Community College, and St. Mary's College of California have also come to help on the canoe. Japanese students in a waterman seminar here on O'ahu commit one day a week of their six-week program to work on Hokule'a. Individual volunteers have also been an enormous help. Mahalo to our committed volunteers Katherine Fuller, Ann-Marie Mizuno, and Starr Johnson who have spent day after day working on the canoe. We wouldn't be where we are today without the help of all our volunteers whose time and efforts are greatly appreciated.

May 30, 2002 Update / by Ka'iulani Murphy: We are nearing the end of May and 6 months of Hokule'a being out of the water. Over 2,000 hours of volunteer work have been logged on-site within that time. In addition to the regular work schedule, help is needed on Wednesday evenings at 6:00 to lash parts of the canoe. Russell Amimoto and Keao Meyer are working on dry rot repairs in the starboard hull as well as the manu ihu, with help from Jerry Ongais, Jay Dowsett, and Kevin San Miguel. Jerry Ongais is currently raising the inboard rails as well. With all the repair work that is being done and the continued support of volunteers, the canoe will be ready to launch at the end of July. Mahalo Nui Loa to all the volunteers who are helping to take care of Hokule'a!

Sept. 9 , 2002 Update / Ka'iulani Murphy: Hokule'a is now expected to be in dry dock until December due to the extensive dry rot repairs. The outer side of the starboard hull has been repaired and re-glassed, and is nearly ready to be lashed and painted. Russell has recently completed the inside of the starboard manu ihu and will begin work inside of the hull compartments. Dry rot will be removed from these compartments where food and water are stored during voyages. A big mahalo to those who continue to support this enormous project and to all the new faces that have shown an interest to kokua. Lashing on Wednesday nights at 6:00 is continuing and volunteers are encouraged to come down to learn and help.

Oct. 30 , 2002 Update / Ka'iulani Murphy: Two months remaining in drydock and volunteers are needed to continue with big lashings and start putting Hokule'a back together again. Currently we are working on lashings Monday and Wednesday nights at 6 pm as well as on Saturdays. Help is appreciated on these days especially--and mahalo to all who have been dedicating their time and energy to the canoe. Both manu ihu are back on Hokule'a and a beautiful new coat of paint covers the completed dry rot repairs.

Dec. 23 , 2002: Hokule'a was placed back into the ocean at the Ke'ehi Marine Center and towed to the Marine Education Center/Honolulu Community College, where she was blessed.

















































They visit and work with scientists at the Hawai'i Institute of Marine Biology at Moku o Lo'e. They study the weather in preparation for sailing and learn about navigation by the stars.

To earn their high school diplomas, students complete on-line coursework in Math, English, Social Studies, Science, and electives. The interdisciplinary, standards-based curriculum was developed by DOE e-school teachers and a team from PVS and SOEST.

Through their studies, we hope that students in OLA will gain a deep appreciation for Hawai'i and its resources and learn how to protect and preserve their surroundings

In addition to encouraging active stewardship, students completing the two-year Ocean Learning Academy program will have many options open to them, including pursuing university degrees or careers in marine related industries. The first class of 10 students entered the program in fall 2001. For more information, contact OLA coordintaor [Malia Chow](#).

Myron Bennett "Pinky" Thompson (1924-2001):

A Life of Service

"What is constantly on my mind," Pinky told a reporter in 1984, "whether I'm on a plane headed for Washington D.C. or at a canoe practice is 'How can I do more to influence the process that will affect the future of our Hawaiian people?' "

Pinky was a social worker, a land use planner, state administrator under Governor Burns, a trustee of the Bishop Estate, president of the Polynesian Voyaging society, and one of the founders of Alu Like and Papa Ola Lokahi - among many other achievements. Throughout his career he was guided by the wisdom of his ancestors, finding in his Hawaiian heritage ancient values with modern day applications.

The importance of family was nurtured at an early age by Pinky's parents who took in 'at-risk foster children.' "I grew up living with kids who were less fortunate," Pinky explained, "and we became close. I felt their pain. I wanted to find a way to help and that began my process of entering into social work."

Pride of ancestry was the centerpiece of Pinky's strategy for the renewal of Hawaiian health and spirit. As State Administrator, he helped publish a textbook exploring Hawaiian culture and as Director of the Queen Liliuokalani Trust he helped create a book entitled "Nana I Ke Kumu - Look to the Source" - to show how traditional cultural practices, such as ho'oponopono, are resilient ways of achieving health and pride today. As the Polynesian Voyaging Society's president, he guided Hokule'a's voyages throughout the vast Pacific to reunite an ancient ohana and ignite pride among Pacific peoples everywhere. "Hokule'a sails to remind all Hawaiians of their powerful heritage as a seafaring people," Pinky said. "The more we learn about our ancestors - the more we regain our pride as a strong people - the more we will be able to move forward with confidence and discipline."

All his life, Pinky followed the Hawaiian precept of 'Imi 'Ike - seeking knowledge. In 1963, for example, he worked with Bishop Museum's Dr. Alan Howard in a three-year study of a uniquely Hawaiian understanding of community. At KSBE he guided research to improve the condition of Native Hawaiians, and in 1981, he was chairman of the Native Hawaiian Education Commission which examined federal and state educational programs for Hawaiian youth and recommended improvements.

Caring for the environment - the spirit of malama - was another guiding value. As head of Hawai'i's Land Use Commission, Pinky wrote an article showing how the new law had roots in the ancient Hawaiian tradition of living in harmony with the 'aina. At KSBE, he developed programs for reforesting estate land, involving schoolchildren in the process. And in 1995, he envisioned the Voyaging Society's Malama Hawai'i program to increase environmental awareness.

To carry out his vision for a healthy and vigorous Hawai'i, Pinky created partnerships - a wide-ranging 'ohana of people and resources. In 1974 he joined with Hawai'i's congressional delegation to assure that Hawaiians were included in federal programs funded for Native Americans. "Pinky's testimony before congressional committees was moving in its sincerity and demanded federal action," remembers Senator Daniel K. Inouye. "He became the catalyst for many federal programs.

The delegation was pleased to follow his lead." As trustee, he wove together the resources of KSBE with those of state and federal government to reach Native Hawaiians with an array of nurturing programs. Pinky believed in Lokomaika'i - sharing. In 1974, when he became a KSBE Trustee, "Šwe looked around and saw that, although the Hawaiian children in Kamehameha were doing well, the vast majority of Native Hawaiian children were in public schools and they were not doing well," Pinky recalled. His careful study of Bernice Pauahi Bishop's will revealed that her intent was to benefit all the children of Hawaiian ancestry, including those in public schools, so he began extending the Estate's programs throughout the state.

Ten years later, KSBE had expanded from a single focus--serving about 2700 students in grades K-12 on its Kapalama campus - to an organization

with three educational units - campus, extension and research - which offered more than 35 separate programs affecting more than 40,000 individuals annually. It was a promising beginning that continued to unfold under his guidance.

Pinky's vision for a healthy Hawaiian people was holistic - encompassing a concept of education and caring that began at birth. His training in early childhood development convinced him that the first three years of a child's life were critical to a deep sense of self worth. To foster that, Pinky helped create KSBE's numerous center-based pre-schools, and was instrumental in obtaining federal funding for parent-infant education and traveling preschools throughout the state.

Pinky took risks - constantly seeking new ways to help Hawaiians. One example was KEEP - the Kamehameha Schools Early Education Project. "The program is based," Pinky explained, "on the concept that children of Native Hawaiian ancestry often learn better from each other than from adults." KEEP classrooms were flexible and interactive - designed with multiple stations where students learned by actively participating with each other and their teachers.

Although Pinky was especially concerned for the welfare of Native Hawaiians - his aloha for all people transcended divisiveness. Voyaging aboard Hokule'a is one example of his belief in human unity. "Our canoes have been envisioned, maintained, and sailed by all of Hawai'i's people," he often said, "regardless of race or religion. We must remember that we are all one people."

Pinky's vision of Olakino Maika'i - living a healthy life - united mind, body and spirit. One transcendent moment in his life occurred just before he jumped off for the Normandy invasion when a Catholic chaplain helped him rediscover his ancestral spirituality. "He asked us to call the supreme powers of our families and our personal beliefs to join us that night," Pinky recalled. "From that moment on I found comfort in my Akua and my 'Aumakua as well as in God."

To improve the mental and physical health of Hawaiians, Pinky helped found Papa Ola Lokahi in 1988. Continuing and refining his concept of

partnerships, POL became an umbrella organization to unite care-giving institutions throughout Hawaii. Not surprisingly, one goal was to preserve traditional healing practices. Pinky expressed his abiding belief in a "helping hand" - not a "hand out" - in the organization's mission statement: "...to assist Hawaiian natives who are committed to achieving their potential in caring for themselves, their families and communities."

As president of PVS, Pinky's vision united past, present and future by reaffirming that traditional Polynesian values applied universally across time and space. "Before our ancestors set out to find a new island," he explained, "they had to have a vision of that island over the horizon. They made a plan for achieving that vision. They prepared themselves physically and mentally and were willing to experiment, to try new things. They took risks. And on the voyage they bound each other with aloha so they could together overcome the risks and achieve their vision. You find these same values throughout the world - seeking, planning, experimenting, taking risks and the importance caring for each other."

"The same principles that we used in the past," he often said, "are the ones that we use today and that we will use into the future. No matter what culture we are, or what race, these are values that work for us all."

Sam Low January 1, 2002

Archives: History and Traditions



Voyaging (1975-2000): Past voyages sponsored by the Polynesian Voyaging Society, from the first triumphant voyage of Hokule'a to Tahiti in 1976, to the amazing voyage to Rapa Nui in 1999.

Canoe Building : The building of the voyaging canoes Hokule'a (1973-1975) and Hawai'iloa (1990-1993); the ancient art of canoe-building.

Wayfinding (Non-instrument Navigation): The art of wayfinding as it was practiced by ancient Tahitians and Hawaiians, as well as how it is practiced today during its modern revival.

Life on a Canoe: What it's like to live for a month on board a replica of an ancient voyaging canoe.

Polynesian Migrations: How Polynesia was settled; Map of Polynesia.

Hawaiian Proverbs and Polynesian Traditions of Voyaging: Proverbs related to voyaging, with illustrations by Melanie Lessett and Helene Iverson; stories of legendary Hawaiian and Polynesian voyagers.

1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
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Home	Search	Archives	Past Education Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)
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Hokule'a's Millenium Statewide Sail, 2000-2001

"Our Islands, Our Canoe"

In fall 2000 and spring 2001, Hokule'a toured the islands of Hawai'i to celebrate her 25 years of voyaging and to bring hands-on learning experiences to students and their families and communities.

- [schedule of stops](#)
- [map of the stops](#)

Kaua'i (Sept. 22-Oct. 28): Reports and Photos

[The Sail to Kaua'i, September 22, 2000 / Captain Dennis Chun](#)



[Hokule'a Tours at Nawiliwili, Kaua'i, September 25-October 1, 2000 / Captain Dennis Chun](#)

[Hokule'a Tours at 'Ele'ele \(Port Allen\), Kaua'i, October 1-14, 2000 / Captain Dennis Chun](#)

[Hokule'a Tours on Kaua'i, Kaua'i Report / Malama Hawai'i Education Intern Kaliko Amona](#)

[Hokule'a Tours at Hanalei, Kaua'i, October 22-27, 2000 / Captain Dennis Chun](#)

Hawai'i (Oct. 30-Dec. 6): Reports and Photos

Update: Hokule'a arrived safely in Hilo, Hawai'i, on Monday evening, Oct. 30. She left Maunaloa Bay, O'ahu, on Saturday, October 28 at 11 p.m. under Captain Clay Bertelmann. The route took Hokule'a south of Lana'i and to Kawaihae before she continued around the north side of the Big Island to Hilo. (Local News: On Nov. 2, Hilo was deluged with over 2 feet of rain in 24 hours.)

[Hokule'a Tours at Hilo, Hawai'i, Oct. 31-Nov. 10, 2000 / Kaliko Amona, Malama Hawai'i Education Intern](#)



Photos from Hilo: (1) [Boogie Kalama, Desmond Antone, and Kainoa Lee play music on the way to Hawai'i from O'ahu.](#); (2) [A local school group gets a good look at Hokule'a just before the heavy rain begins](#); (3) [Desmond Antone leads the tour of Kamehameha fourth graders](#); (4) [Kamehameha fourth graders cheer around the steering paddle.](#)

[Voyage to Miloli'i, Thoughts on PVS Education Programs; Nov. 18-20, 2000 / Navigator Chad Baybayan](#)

[Report and Photos from Keauhou](#); posted Dec. 1, 2000.

Lana'i (Jan. 20-26): Report

[Lana'i Report](#) by Kaliko Amona, Malama Hawai'i Education Intern; posted Feb. 16, 2001.

Maui (Jan. 27-Feb. 11): Reports and Photos

[Report from Maui](#); posted Feb. 14, 2001. As reported in The Maui Times, Jan. 30, 2001, by Lydee Ritchie.



Photos from Maui (by Lydee Ritchie); posted Feb. 14, 2001: (1) [Hokule'a offshore of Kihei](#); (2) [Captain Snake Ah Hee and Navigator Chad Baybayan with chanters](#); (3) [Kalei chants to the canoe](#); (4) [Kumu Hokulani Holt-Padilla and several other student chanters were also present to greet Hokule'a](#); (5) [A coconut for Hokule'a](#); (6) [A group](#)

[of well-wishers](#); (7) [Group Shot: Captain Snake Ah Hee and Navigator Chad Baybayan with chanters](#); (8) [Abraham "Snake" Ah Hee at left receives a proclamation from Mayor James "Kimo" Apana who declared the year 2001 as "The Year of the Hokule`a" at a welcoming dinner attended by 150 people for the Hokule`a crew members at Ma`alaea Harbor Village. The Village's General Partner Michael Spalding, at right, offered the showroom for additional Hokule`a exhibits and "talk-story" presentations.](#); (9) [Maui Students Enjoy Their Visit to Hokule'a.](#)

[Mayor Proclaims 2001 Year of the Hokule'a](#); posted Feb. 15, 2001; by Lydee Ritchie.

Moloka'i (Feb. 25-Mar. 18): Report and Photos



[Report](#) (posted 5/05/2001) and [Photos](#) (posted 3/15/2001) from Molokai: (1) [Hokule'a greeted by a Rainbow over Moloka'i](#); (2) [A Lei for Hokule'a](#); (3) [Kids getting ready to board Hokule'a](#); (4) [Talking Story about Hokule'a](#); (5) [Sunset: Getting ready for night watch aboard the canoe](#); (6) [Moloka'i Co-coordinator Mel Paoa and wife Donna, with Kaliko, talk story at night](#); (7) [Sharing food at the potluck](#); (8) [Up early to catch the moonset](#); (9) [Moloka'i Co-coordinator Penny Martin talking story with the kids](#); (10) [Education Intern Kaliko, assisted by Stef, talks about Malama Hawai'i, taking care of our islands](#); (11) [The kids respond excitedly with questions](#); (12) [Rhonda talks about healthy foods](#); (13) [The kids look at an alien species: the snake, which if introduced, could decimate Hawai'i's native birds](#); (14) [The kids display a miconia leaf; this alien species is overrunning Hawai'i's native forests.](#)

O'ahu (Jan. 9-Jan 19; Mar. 25-May 20): Photos



[Photos](#) (posted 5/07/2001): (1) [Hokule'a docked at Hale'iwa, O'ahu](#); (2) [School Children Visit the Canoe](#); (3) [Students learn navigation from PVS navigator Shantell Ching](#); (4) [Students from Mililani Mauka Work the Steering Paddle](#); (5) [Hokule'a Heads into Wai'anae](#)

[Boat Harbor](#); (6) [Hokule'a at Wai'anae Boat Harbor](#).

Home	Search	Archives	Past Education Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)
----------------------	------------------------	--------------------------	---	---------------------------------	--

What We've Learned...



Hokule'a was launched a quarter of a century ago, on March 8, 1975, at Kualoa Regional Park in Kane'ohe Bay. The last 25 years of exploration, recovery of Polynesian voyaging traditions, and work with communities across the Pacific has taught the Voyaging Society the importance of the following ten themes (Click on each highlighted theme for a story, anecdote or quote illustrating it.)

<p><u>Vision</u>-- Given the enormous changes that our islands face in the 21st century, we must form a collective vision of what we want our future to look like, and how we will reach that vision.</p>	<p><u>Our Sacred Earth</u>--Balancing human needs and nature was one of the greatest accomplishments of the Hawaiian people, and recreating this balance in modern times is one of our greatest challenges.</p>
<p><u>Exploration</u>--Exploring and learning about the world around us are essential to finding solutions to the difficult issues facing us today.</p>	<p><u>Our History & Heritage, Our Traditions & Culture</u>--These precious inheritances define who we are, where we come from, and why we should be proud.</p>
<p><u>Our Pacific 'Ohana</u>--One of humanity's greatest needs is to feel a sense of kinship with other people, and establish caring relationships with one another.</p>	<p><u>Our 'Opio and Kupuna</u>--We recognize the vital importance of early childhood care and education, and the need to treat our elders with respect and dignity.</p>
<p><u>Family</u>--From healthy families come healthy communities.</p>	<p><u>Education</u>--The key to perpetuating values and culture and preparing ourselves to face the challenges of the future.</p>
<p><u>The Health & Education of Our First People</u>--Hawaiian culture and values are vital to shaping a healthy future for Hawai'i.</p>	<p><u>Our Special Multi-ethnic Community and Culture</u>--Hawai'i's contribution to global peace.</p>

All of these themes are about our relationship to nature and to one another. As we approach the 21st century it is critical, now more than ever, that we learn to live well on islands, caring and respecting each other and all living

things. The Polynesian Voyaging Society believes that we need to stay focused on these ten themes in order to contribute to a healthy future for these islands.

<u>Home</u>	<u>Search</u>	<u>Archives</u>	<u>Past Education Programs and Materials</u>	<u>On-Line Visuals</u>	<u>Bibliographies (Books and Films)</u>
-----------------------------	-------------------------------	---------------------------------	--	--	---

Related Websites

[Bishop Museum's "Hawai'iloa, Ka 'Imi 'Ike, Seeker of Knowledge Exhibit"](#): The building of *Hawai'iloa*; the recovery of traditional voyaging arts; the 1995 voyage to Nukuhiva and back.

[Traditional Navigation in the Western Pacific](#). A website by the University of Pennsylvania Museum of Archaeology and Anthropology. Information and diagrams about traditional navigation as practiced in Micronesia. Photos of Mau Piailug and Micronesian canoes. Written by Stephen Thomas and Ward Goodenough.

[Hawaiian Voyaging Website](#) constructed by students from Aiea, King Kaumualii, Moanalua, and Waimalu Elementary Schools as an entry for ThinkQuest Jr. 1999.

Home	Search	Archives	Past Education Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)
----------------------	------------------------	--------------------------	---	---------------------------------	--

Where We Are Going...



Malama Hawai'i

The task for the Voyaging Society in the new Millenium is to find a new context in which our voyaging heritage and our canoes play a vital role in education to build a bridge between the values of the past and the needs of the future. We want to develop educational programs and partnerships under the banner of Malama Hawai'i that will examine how our people survived for so long on such small islands. Malama Hawai'i will look back at where we've come from, where we are today, where we're going. It's about learning and stewardship. It's about caring for the ocean, our coastlines, our coral reefs, our precious islands.

A Vision for the Future: As a community organization we are attempting to unite the Hawaiian cultural concept of voyaging with building healthy and sustainable communities through a statewide education program. The Polynesian Voyaing Society seeks to take the mystique of Hokule'a and the science and adventure of voyaging to stimulate interest and attention. Then, through educational and community-based programs such as the Statewide Sail, teach the lessons of building, navigating, exploring and discovery learned through the tradition of deep sea voyaging.

Malama Hawai'i: Malama Hawai'i is a joint effort of individuals and organizations across the State, including the Polynesian Voyaging Society, working together to take care of Hawai'i. A good example of such an effort is the [Reforestation Ka'ana Project in West Moloka'i](#).

[Home](#)

[Search](#)

[Archives](#)

[Past Education
Programs and
Materials](#)

[On-Line
Visuals](#)

[Bibliographies
\(Books and
Films\)](#)

PVS Newsletter / Kau (Summer) 1998

Restoring Hokule'a

In May of 1997, after a nine-month long State-wide Voyage, the Polynesian Voyaging Society began considering a voyage to Rapa Nui as its next major voyaging project. The question was asked, "Was **Hokule'a** seaworthy enough to make such a voyage-one that would take the canoe 2700 miles upwind from Hawai'i and over 10,000 miles?"

Executive director Nainoa Thompson sought the advice of a marine surveyor, who inspected the canoe and told him, "**Hokule'a** is getting old and you might want to consider that this canoe has sailed all it can. I cannot certify the canoe to sail more than 25 nautical miles from the main islands of Hawai'i."

Nainoa's response was "No, we can't allow that, the symbolism of this canoe is too powerful to allow it to be tied up some place. We have absolutely got to figure out what needs to be repaired and how to repair it."

So **Hokule'a** went into drydock for eight months, and when she came out in May, 1998, Nainoa noted: "Now the surveyor has sent in a report saying that **Hokule'a** is structurally stronger than when she was launched 23 years ago. That's the result of an awful lot of care on the part of a whole bunch of people. That drydock period was about renewal."

To strengthen the canoe, the inside of the hulls were fiberglassed; the lashings on the railings and port-side 'iako were redone by five Micronesians led by Mau's son Sesario Sewralur; a new forward mast step was added.

To lighten the canoe, one of the double 'iako in the middle of the canoe was removed, along with four of five stern spreaders, two navigator platforms from each side, and some waterlogged foam from one of the manu; a thinner pale wai was made and smaller high efficiency solar panels replaced the older, heavier ones. In all, around 4000 pounds was removed. Nainoa explains: "We had to get **Hokule'a** to sail closer to the wind for the trip to Rapa Nui; which lies 2700 miles upwind from Hawai'i. She's lighter now, and will sail higher into the wind." The work was done at Pier 60, where PVS leased space from the Friends of **Hokule'a** and Hawai'iloa.

Volunteers included students from PVS high school and college voyaging programs, as well as community groups across the state. The work was supervised by Bruce Blankenfeld. In May of 1998, students from WCC and UH Manoa Hawaiian Studies program took **Hokule'a** on its first sea trial to Moloka'i and back. The canoe performed beautifully in 25 knot winds, riding buoyantly over swells.

The canoe is now ready for the voyage to Rapa Nui, scheduled for the June 1999-January 2000. The journey will take the canoe to the Marquesas, Mangareva, Rapa Nui, the Australs, Tahiti, Rangiroa and back to Hawai'i.

To get upwind from Mangareva and find a target as small as Rapa Nui, the navigators will have to play wind shifts and use a zigzagging search strategy as they approach the island. Sail plans for the

voyage are currently under construction.



Hokule'a Coming Out of Drydock

Center for Marine Sciences

In the summer of 1998, in partnership with the Department of Education and the Hawai'i Institute of Marine Biology (HIMB), University of Hawai'i at Manoa, the Polynesian Voyaging Society conducted a 5-week program in Marine Science for 25 students from across the state. In addition to covering the standard DOE Marine Science curriculum, the program had some special goals. It was designed to

- be challenging and relevant to important issues concerning Hawai'i's future;
- use the ocean and the voyaging canoe as classrooms;
- integrate school work with hand-on experiences and applications to actual places and communities in Hawai'i;
- involve the families and communities of the students and contribute to their well-being;
- explore what makes Hawai'i special and discover ways of preserving that specialness.

The following account of the program by participant Kau'i Kaho'onei , a junior at Nanakuli High School, appeared in the *West Coast Chronicle* (September 1998):

From June 21st to July 25th the SPEBE (Summer Program for the Enhancement of Basic Education) Marine Science program joined up with the Polynesian Voyaging Society (PVS) to help teach students about marine life and navigation. Consisting of 25 juniors and seniors from various parts of the state, this program turned out to be a great success.

The first week was spent at Poka'i Bay going through the West side Jr. Lifeguard program. With instructors Matt Miller, Darryl Terukina, and District IV, the students were able to learn life guarding skills. For example, they learned different rescue techniques, underwater escapes, First Aid and CPR, and what to do to help save someone's life. Special guests Brian Keaulana, Danny Kim, Kainoa McGee, and Mark Cunningham helped out as well.

Within the week students learned the parts of a canoe and tactics of sailing using Wai'anae's very own Eala. "This week was extremely important since most of their time would be spent in the water. The students needed to be water safe," says Dennis Kawaharada, Assistant Director of the SPEBE Marine Science program.

For the next couple of weeks the students studied hard at Moku o Lo'e (Coconut Island) about marine life. Though everyone reported it to be stressful, all of them agreed to have greatly benefited from this experience. They learned to identify fish and coral, about the electromagnetic force in sharks, the effects of human impact in the ocean. Amongst the several projects they did, the teenagers were able to compare two different reefs through a series of transecting. This also gave them a chance to consider marine biology as a career.



SPEBE Students Paddling Out into Maunalua Bay to Transect a Reef

Under the direction of master navigator, Nainoa Thompson, and PVS instructors, Pi'ikea Miller, and Kamaki Worthington, the fourth week was filled with fun sailing and camping activities. The group did a series of five separate sails along the leeward coast and south end of O'ahu on the Hokule'a. The first sail began at Honolulu Harbor heading to Maunalua Bay in Hawaii Kai. From that point they sailed to the Ala Wai Harbor, then to Poka'i Bay, on to Keawa'ula, and then back to Poka'i Bay. The students could all feel the love for Hokule'a by the people among the many communities, especially into anti out of Poka'i Bay and Keawa'ula. The people looked stoked to see this great voyaging masterpiece. "It felt like only the privileged belonged on the canoe, because everyone stopped what they were doing and just stood still and watched us," mentioned Ceiva Boon, one of the SPEBE students.

During these voyages the teens learned about the wind and ocean currents, how to sail and tack in the wind, how to tie different types of knots, and most of all, the importance of teamwork. It taught them how to navigate the old Hawaiian way- with only the stars, moon, and certain land-marks.

While the canoe was anchored in Maunalua Bay and Poka'i Bay they also had the opportunity to sleep on board over night.

The students then took a three-day trip to Moloka'i during the final week. While camping at Mo'omomi Beach Park, they learned of ancient cultural sites, native endangered plants, as well as how ancient Hawaiians used pohaku to draw petroglyphs and make konane boards. Their activities also included hikes to the Kalaupapa look out and up the Halawa 'auwai to help rebuild a dam.



SPEBE Students above Halawa Valley; author Kaho'onei is kneeling on the left.

The five weeks came to an end with a pa'ina at Kaiser High School. The SPEBE Marine Science teens used this time to share the mana'o they gained from the program with their family and friends. There was much reminiscing throughout the night by the new SPEBE "family." Along with earning a high school science credit, students also received a certificate of completion and, all but one, were certified as lifeguards and CPR rescuers. Nainoa Thompson gave an emotional speech that night saying, "You will always preserve the things you love for your future kids to have." And everyone in the room was in total agreement; we need to "Malama i ka 'aina a me ke kai."

Much Mahalo goes out to Dennis Kawaharada, Nainoa Thompson, Pi'ikea Miller, Dennis Gouveia, Kamaki Worthington, Aunty Kau, all the interns and everyone else who helped out. Thanks to you all the ocean was truly our classroom!

PVS wishes to thank all who helped out with the SPEBE Program Kamaki Kanahale and Kauila Clark for welcoming the students to Wai'anae; Dennis Gouveia, Mel Pu'u, Brian Keaulana, and the Westside Hawaiian Lifeguard 'Ohana for sharing their knowledge of the Wai'anae Coast; Glenn Pang, City and County Life Guard for running the lifeguarding certification program; Gordon Grau, Malia Chow, and Greta Aeby of the HIMB for the marine biology curriculum; Sam Gon of the Nature Conservancy for his talk on ahupua'a; Paul Reppun and the Waiahole farmers; 'Aulani Wilhelm, Dave Gulko, and Joanne Kushima of the DLNR; Matt Poepoe and Kekama for teaching the students about Mo'omomi; Les of Halawa, Moloka'i; Patty Lee and Rick Lumpkin of the School of Ocean and Earth Sciences and Technology (SOEST), UH Manoa; Kamuela Chun, Director of the Native Hawaiian Programs for the Community Colleges, who taught the students a name chant for Hokule'a; Lilikala Kame'eleihiwa for allowing us to use a classroom at the Center

for Hawaiian Studies; interns and PVS crew members Russell Amimoto, Shantell Ching, Rob Griffin, Terry Hee, Camille Kalama, Heather Mendez, Kaiulani Murphy, Sarah Parker, Ryan Wong; dorm managers Michelle Kapana-Baird and Gordon Mau, and many others who helped to enhance the education of the students. They were appreciated by all.

Some student comments:

"This program has taught me so much-stars, oceanography, teamwork-the ocean has truly been my classroom this summer."

"The only way to learn anything is to just go out and do it yourself and that's what we did. Everything was totally hands on and even though it was tough, it was the best!"

"I look at things differently now. I look at the ocean and I don't just see a body of water, I see a magical place.I gained a lot of knowledge that I'm able to take with me to the future. And the funny thing is that I had fun doing it. I wanted to learn, I was eager to learn. I recall hearing words like "ohhhh" and "wow." We were interested. Learning was something that we wanted to do. It's not like school where you learn something and forget it a week later. It's something you'll always remember because you're able to apply it to life."

"Helping out the communities we visited made me feel good; we let adults know that there are some kids who care and want to help."

"I came to the program for the science part but I found myself enjoying the other aspects of it more. This helped me to get a broader view and more respect and appreciation of our oceans. On a scale of 1-10, I give it a perfect 10."

"The whole experience had a lasting effect on me. During the first week of life-guarding, we were doing board relays and there was someone who was still finishing when everyone else was done. I know that person was probably shame knowing all eyes were on her. Without hesitation, the whole group got up and joined her in the water. As we finished all together I knew that we had already begun to think of each as family."

"The mixture of science and culture made me even more aware of why Hawai'i is so unique and why we need to do all we can to protect and preserve it. I have made so many friends. The mixture of personalities and values was a challenge worth overcoming to make these lasting friendships. This program and summer will always last in my heart and memories. This truly was the best summer I ever had!"

A Gift from the Northwest

On March 14, 1998, the Sealaska Corporation presented the Polynesian Voyaging Society with a 14-foot tall Alaskan red cedar house post at a ceremony on the grounds of the Bishop Museum. The gift commemorates the bond that has developed between the native peoples of Southeastern Alaska and Hawai'i.

From 1991-1993, the hulls of the voyaging canoe Hawai'iloa were built from Sitka spruce logs donated to the Polynesian Voyaging Society by Sealaska Corporation. In honor of that generous

gift, Hawai'iloa traveled throughout Southeast Alaska in the summer of 1995. Strong friendships were forged during that voyage-friendships symbolized by this house post.

Traditionally, a house post is raised at the entrance of a dwelling to identify the occupants.

The new house post will be temporarily placed at the Bishop Museum; plans call for permanent placement in a halau for voyaging canoes at a site somewhere on O'ahu. An identical house post will be raised in Juneau this summer.

Both house posts were carved by Nathan Jackson, a world-renown Tlingit wood-artist from Ketchikan. It was Jackson's late uncle, Judson Brown, who helped foster the connections between Hawai'i and Aaska. Jackson was on hand at the presentation ceremonies.



Aloha, Wrighto

On August 18, 1997, at the age of 53, kahuna kalai wa'a Wright Bowman, Jr. passed away during an single-car auto accident on the Big Island. "Wrighto" or "Bo," as he was affectionately known, was one of the master canoe builders of Hawai'i. Tommy Holmes, in his book "The Hawaiian Canoe," noted Wrighto, with Sonny Bradley, "developed and modified tools that have revolutionized canoe building." In addition to carving numerous six-man racing canoes from koa logs, he took on the monumental task of building the 57-foot Hawai'iloa, the first double-hulled voyaging canoe carved from logs in since the time of the Kamehamehas. During this project, designed to help recover and perpetuate canoe-building traditions in Hawai'i he introduced many young people to the art of canoe building, generously sharing his knowledge with anyone who was willing to learn. Hawai'iloa was launched in 1993 and sailed to the Marquesas Islands via Tahiti, and back to Hawai'i, in 1995. The following is a tribute to "Wrighto" by friends Wally and Keali'ipu'aimoku Froiseth.



Wrighto with Carlos Andrade, a former Student; Photo by Anne Kapulani Landgraf

Memories and Thoughts of Our Friend Wright Bowman, Jr.

He was a friend to everyone he associated with. "Wrighto," as we called him, loved to create things. He was a master of woodworking and canoe building. He could cut down koa trees, haul the logs, carve the hulls, and do the finishing work.

Working with him showed us he was also a jack of all trades, including welding, rigging, and so on. With the truck he drove for his work at Gaspro, filled with his tools, he could fix just about anything that needed fixing.

One of his greatest attributes was getting along with people and treating everyone with respect. He was open to everyone and listened to and considered ideas from anyone, no matter who they were.

He was a hard worker and would take on a challenge that most of us would be afraid to start. It was a joy to work with him because he was a doer, not a talker, and a true leader. Everyone who ever worked with Wrighto came away feeling they had helped and contributed something to his projects.

After the day's work was done and time to relax came, we all have fond memories of talking with Wrighto about ideas or plans for the next job or another project.

His positive attitude, energy, and enthusiasm motivated others to want to work with him and be a part of his projects.

Emotion wells up in us just thinking of all the enjoyment, satisfaction, and accomplishments we have known from our association with Wrighto. He inspired many of the young men and women who came down to the canoe to help and learn.

Wrighto, our thoughts will always be with you. We are thankful to have known you and are better because of it.



Statewide Sail: *Hokule'a* Anchored Off Kaluapapa, 1997

Joining Islands: 1996-97 Statewide Voyage

In ancient times the demi-god Maui tried to pull together the islands of Hawai'i to make them one big island. When his brothers disobeyed his command not to look back, the islands broke free and drifted apart.

From Sept. 23, 1996, to July 19, 1997, *Hokule'a* brought the islands together again, in spirit. It visited all the islands of the chain, except Ni'ihau. The ten-month sail covered two-thousand miles. Community response to the Statewide Sail was overwhelming--during the 10 month voyage, more than 30,000 school children and community members from 30 different communities participated by working to support or touring the canoe. Community people from each island were trained as crew members, and with great excitement helped to sail the canoe to their home islands. Each community organized activities for the canoe's visit that reflected their own unique interests and special character. Every community greeted *Hokule'a* and her crew as family and cared for them with great pride. Mahalo nui loa to all who helped make the statewide voyage a success.

Canoe Coordinators were Dennis Chun, Kaua'i; Nainoa Thompson and Bruce Blankenfeld, O'ahu; Penny Martin and Mel Pa'oa, Moloka'i; Clay Bertelmann, Moku o Hawai'i; JoAnne and Leon Sterling, Maui; and Sol Kaho'ohalahala, Lana'i.



Hokule'a on the North Side of Moloka'i 1997



Hokule'a Landing at Hana, Maui, 1997, Photo by Monte Costa

The voyage was conducted by the Polynesian Voyaging Society, the Queen's Health Systems, the Bishop Museum, and the Hawai'i Maritime Center.

Hokule'a is currently in dry dock near Pier 60 on Sand Island. Volunteers are welcomed to help work on the canoe. Call the PVS office for more information.



Shantell Ching, PVS, and Community Volunteers Ferrying Students Out to *Hokule'a* at Kahana Bay, 1997



John Koa, Kamaki Worthington, Nainoa Thompson, Richard Spillner, Ian Thompson off Makua, O'ahu, 1997



Hokule'a goes into drydock near Pier 60, 1997

Project Ho'olokahi: Inspired Learning

In the Spring 1997, the Polynesian Voyaging Society completed the third

year of a project funded by the Hawai'i Community Foundation to develop an ocean education program with the Department of Education. Project Ho'olokahi aims to integrate cultural and environmental learning on land and at sea and to bring students, family, and community together around the shared value of Malama Hawai'i; caring for our special island home. The program culminates with a voyage around O'ahu on Eala, a canoe owned by the Wai'anae Hawaiian Civic Club.



Wai'anae Students Steering *Eala*; photo by Monte Costa

Students were asked, anonymously, "Did you Benefit from Project Ho'olokahi? If so, How?"

Student 1: *Yes, I did benefit from this program very much! It taught me a lot about who I am and how important it is to know about my ancestors and what my heritage is all about. The most lasting effect that I'll have is the time spent on the E'ala and making that sail from Kualoa to Kahana. It was very awesome! What I will take with me in the future is the importance of the aina (land) that we live on, and how we Hawaiians are nothing without it. And how ohana (family) is important. Mostly how to perpetuate our heritage in language and our everyday lives. And especially learning about how the first Hawaiians used the stars to navigate.*

Student 2: *I learned so much about the stars, the tides, preparation of the canoe, plotting routes, chants, and a whole bunch of arts and crafts. This*

program gave me a chance to meet new people and it taught me to have a greater respect and appreciation for everything. I think the part of the program that will have the lasting effect on me is the actual sail and everything that I was taught. The sail because it was a once in a life time thing and it was simply amazing. It gave me a chance to better my social and communication skills with my crew (team). All the information that I learned will also have a lasting effect on me because it was so interesting. Till this day, I still go outside at night and review the stars. I think I could take a lot of these skills with me in my future. Things like communication skills, respect, team working abilities and many more. This program has even encouraged me to possibly study this in college.

Student 3: *I think the entire program had a lasting effect on me. I believe that I benefited from the entire program. It has given me cultural awareness. It has taught me what growing up in the Hawaiian way and being Hawaiian was and is all about. It has given me direction in my life and has taught me how to focus on a goal and follow it through, by making sail plans and actually getting to our destinations. It has taught me about effective decision making and weighing out all my options before committing to a decision. This is my second year in the program and I feel that it has helped me to decide what course of study I am going to take in college. I have decided to take up Marine Biology. Being in this program has taught me a lot about how the ocean swells and currents work. It has also taught me how important our oceans are to us and our future. I will take with me the decision making skills, knowledge of the ocean and stars, the cultural awareness and most of all the wonderful memories the program has given me.*



Seniors at the Closing Ceremony of Project Ho'olokahi, Poka'i Bay, Wai'anae; Photo by Monte Costa

POLYNESIAN
VOYAGING SOCIETY

Newsletter--Ho'oilolo 1997

Malama Hawai'i / Caring for Hawai'i 1996-97 Statewide Voyage



Crew Training for the Statewide Sail Began, Summer 1996

On September 12, 1996, Hokule'a sailed to Kaua'i, with veteran Kaua'i crew member Dennis Chun serving as captain, and an all-Kaua'i crew.

The voyage was the beginning of a statewide voyage by Hokule'a conducted by the Polynesian Voyaging Society, the Queen's Health Systems, the Bishop Museum, and the Hawai'i Maritime Center. The theme of the voyage is Malama Hawai'i--"Caring for Hawai'i." The mission of the participating groups is "to facilitate the building of community-initiated programs and activities which will contribute to a safe, healthy Hawai'i, where cultures thrive and people are productive and secure."

The canoe remained on Kaua'i until November 10, with stops in Nawiliwili, 'Ele'ele (Port Allen), and Hanalei. It was first time in over twenty years that Hokule'a spent an extended period time on Kaua'i. The Kaua'i visit was spearheaded by Na Kalai Wa'a o Kaua'i, a new voyaging group formed by veteran crew members Dennis Chun, John Kruse, and Dr. Pat Aiu. The visit brought together many cultural groups and health care providers, which supported the Hokule'a visit and which began to look at the connection between culture and health, and ways to improve the health of the community, particularly the Hawaiian community. Supporting groups included Wilcox Hospital, Ho'ola Lahui, Mokihana Festivals, Kaua'i Taro Festivals, Aloha Festivals, the Garden Island Cano e Racing Association, the Queen Lili'uokalani Children's Center, Kaua'i Community College Hawaiians Studies, and Kaua'i Rural Health Association.

Dennis Chun summarized the impact of the Hokule'a visit on Kaua'i: "There was an incredible outpouring of interest in Hokule'a and what this canoe means. What stood out was the various ways in which people took meaning from the canoe and incorporated this into their own lives. Some viewed the canoe from its accomplishments and took pride in what the ancients were able to accomplish. While others envisioned the cultural and social aspects of voyaging that enabled Polynesians to venture forth on the ocean. Still others investigated the academic areas of traditional voyaging and marveled at the knowledge and skills that were developed during those times. Whatever the perspective that one chose, there was always the interest, pride, and desire to personalize the canoe within one's own life."

Over 5,000 students and 3,000 community members visited the canoe. About 20 select Kaua'i residents were able to sail and learn voyaging and navigation, while another 75 had at least one opportunity to sail. The newly formed Na Kalai Wa'a o Kaua'i hopes t he visit will inspire the community to support the building of a voyaging canoe for the island.

On January 11, the O'ahu segment of the statewide voyage began, with the Hakipu'u 'Ohana and other members of the Ko'olaupoko district of O'ahu sailing Hokule'a from the Hawai'i Maritime Center to Maunalua Bay on a training sail. On January 26-27, the 'Oh ana will sail the canoe around Makapu'u to Kane'ohe Bay, and anchor at Hakipu'u for three weeks of canoe activities, including community sails, star observations, and canoe tours for elementary and intermediate schoolchildren. The tours will teach about n avigation, geography, provisioning, and sailing while emphasizing values such as 'Imi 'Ike (Seeking Knowledge), Malama (Taking Care), Laulima (Working Together), Lokomaika'i (Sharing), and Olakino Maika'i (Living Healthily) as keys to a successful, safe v oyage. Windward Community College's voyaging class is planning to build a star compass at Kualoa Regional Park in order to teach younger students and the community about the ancient Polynesian method of navigating by the stars.



Pu'ohala Immersion School 4th Graders Check Out Hokule'a's Hold



Pu'ohala Immersion School 4th Grade Girls

On February 14-15, the canoe will be moored at Moku o Lo'e (Coconut Island), where the Hawai'i Institute of Marine Biology will host it and conduct marine education activities for schoolchildren (Friday) and the general public (Saturday).

On Feb. 17 Hokule'a will sail to Kahana Bay for a welcome ceremony by the Ko'olauloa District (Ka'a'awa to Waimea Bay). Canoe tours for schoolchildren and community sails will be conducted on the 18th and 19th.

Hokule'a will arrive at Poka'i Bay on Feb. 22 for a week-and-a-half stay. The canoe will depart from Wai'anae on March 7. Captains and coordinators for the O'ahu legs are Bruce Blankenfeld, Kimo Lyman, Gordon Pi'ianai'a, and Nainoa Thompson.

Hokule'a will continue its statewide voyage by sailing to Moloka'i on Mar. 8 with a Moloka'i crew and continue on to the Big Island on March 22. Before the voyage ends in mid-June, the canoe will also visit Hana (April 4-5), Kailua-Kona, Miloli'i and Hilo (April 7-24), Kaho'olawe (Apr. 26), Lana'i (Apr. 28-May 2, June 1-12), Kahului (May 10-30), and Waimanalo (June 14). Neighbor island coordinators for the statewide sail are Mel Paoa and Penny Martin, Moloka'i; Sol Kaho'ohalahala, Lana'i; Clay Bertelmann and 'Onohi Paishon, Moku o Hawai'i; and Leon and Jo-Anne Sterling, Maui.

Dear Hōkūle'a staff and crew

I heavily enjoyed the tour you gave me and my fellow fifth graders. I would also like to thank you for putting together such nice little games.

I learned that sailing a canoe is not as simple as it sounds and looks. I learned to choose items carefully when sailing for a long period of time. I also learned different directions in Hawaiian.

Your grateful barman,
Pelle Robinson.



Young Voyagers on the Canoe Tour



[▲ HOME PAGE](#)

[◀ BACK ONE](#)

POLYNESIAN VOYAGING SOCIETY

Newsletter--Ho'oilo 1997

Project Ho'olokahi: High School Voyaging Program, 1997



Wai'anae High School Students Saw Whales Off Hale'iwa, Spring 1996

In partnership with the Department of Education and in conjunction with the statewide sail of Hokule'a, PVS is conducting high school voyaging programs with the voyaging canoe Eala. Project Ho'olokahi aims to integrate cultural and environmental learning on land and at sea and to bring students, family, and community together around the shared value of Malama Hawai'i--caring for our special island home.

Voyaging Training Camps, February 3-14, Kualoa Regional Park: Five groups of

students will participate in two-day camps to learn the sailing dynamics of a Polynesian canoe and the basics of navigation by the stars as well as how to sail Eala and plan their round the island sail. Participating high schools: Castle, Hana (Maui), Kailua, Wai'anae, and Waipahu.

Voyaging Around O'ahu I, March 16-22. Sixty select students from four high schools-Castle, Kailua, Wai'anae, and Waipahu-will camp together for a week at Kualoa (Mar. 16-Mar. 20) and at Poka'i Bay in Wai'anae (Mar. 20-Mar. 22). Teams of students will sail Eala around O'ahu, ending in Wai'anae on Mar. 22; students who remain in camp will engage in environmental and cultural learning activities, such as reef walks, valley hikes, lo'i (taro patch) restoration, and fishpond visits.

Voyaging Around O'ahu II, April 5-12. Forty students from Wai'anae High School's Marine Science Learning Center will sail around O'ahu in teams, anchoring and camping at various sites around the island. Camp sites will include Ke'ehi Lagoon, Maunalua Bay, Moku o Lo'e (Coconut Island), Kualoa, Kahana, Hale'iwa, and Makaha.

Project Ho'olokahi is supported by a grant from the Hawai'i Community Foundation.



[▲ HOME PAGE](#)

[◀ BACK ONE](#)

POLYNESIAN VOYAGING SOCIETY

Newsletter--Ho'oilolo 1996

EXPLORATION LEARNING CENTER LAUNCHED



On January 21, 1996, a canoe site among the ironwood trees on the beach at Hakipu'u, was dedicated and blessed. The site, next to Kualoa Regional Park on Kane'ohe Bay, O'ahu, was developed through a partnership between PVS and the Hakipu'u 'Ohana and Kualoa Ranch. It will house six-man sailing canoes and paddling canoes used in PVS's Exploration Learning Center. The double-hulled canoe *Eala*, used by PVS for coastal voyaging, is moored at He'eia Kea Pier, Kane'ohe.

Kane'ohe Bay has been selected as the primary site for the Exploration Learning Center on O'ahu because of its safe conditions for teaching sailing (a well protected bay with a barrier reef) and its rich cultural, scientific, educational, and community resources. To make use of these resources, PVS is developing education programs which integrate science and culture, and which require students to apply classroom learning to real life challenges and experiences.

The purpose of the Center is to excite and challenge students to learn about, respect, and care for the land, sea, and people of Hawai'i and to contribute to the Vision and Mission of PVS. Programs are designed to:

- develop a love of learning, exploring and making discoveries
- increase cultural and environmental awareness, knowledge, and understanding
- develop physical and emotional health
- develop goal-oriented planning, decision-making, and problem-solving skills.

Students from [UH Manoa's Center for Hawaiian Studies and Windward Community College](#), and [Wai'anae High School](#) participated in the ELC during the Spring of 1996. Wai'anae Hawaiian Civic Club, Hui Nalu, and Loch Eggers donated sailing canoes for the program. The program is supported by the Hawai'i Community Foundation and Queen's Health Systems.



Exploration Learning Center: Vision, Mission, Goals and Guiding Values

Vision

A healthy, productive, safe Hawai'i and planet Earth.

Mission

In partnership with other groups, PVS is committed to developing and conducting model educational programs using voyaging to excite and challenge students and their communities to learn about, respect, and care for their natural and social environment.

Goals

Develop and conduct a voyaging program that prepares students to take responsibility for themselves, their community, and their environment.

Forge partnerships with cultural and scientific organizations, government agencies, and community

groups to develop and maintain healthy, productive, safe communities.

Guiding Hawaiian Values

- *Malama Hawai'i*: to care for/take care of Hawai'i's land, sea, and people
- *'Imi 'Ike*: to seek knowledge
- *Lokomaika'i*: to share with each other
- *Malama Pono*: to take care of each other
- *Na'au Pono*: to be fair and just
- *Olakino Maika'i*: to live healthily



[▲ HOME PAGE](#)

[◀ BACK ONE](#)

Closing the Triangle: A Quest for Rapa Nui



Polynesian Voyaging Society

Education Packet, 1999-2000

Table of Contents

[Letter of Introduction](#) / Navigator Nainoa Thompson

Section I. History and Heritage

[History and Heritage](#)

[Virtual Voyage and Research and Action Projects](#)

[How to Track Hokule'a](#)

Section II. Vision and Exploration

[Vision and Exploration](#)

[Exploring the Night Sky: How to Find Navigation Stars](#)

[Star Charts for Hawai'i, October 1999 \(Evenings\) and January 2000](#)

[\(Pre-Dawn and Evening\)](#)

Section III. Our Sacred Earth

[Our Sacred Earth](#)

[Malama Hawai'i Projects](#)

Section IV. Resources

[Resources for Teachers](#)

Closing the Triangle: A Quest for Rapa Nui



Polynesian Voyaging Society

Virtual Voyaging / Research and Action Projects

Students sign on as crew members and organize a virtual voyage aboard **Hokule'a**; they can follow the Polynesian Voyaging Society voyage to Rapa Nui (June 1999 - January 2000) via the PVS web-site or, in Hawai'i, via occasional television, newspaper and radio reports.

Telling the Story of the Voyage

Students imagine they are crew members on an ancient canoe and recreate in writing how Polynesian conducted their voyages of exploration and settlement of the Pacific centuries ago; or they write as modern travelers learning about the world of the open ocean and about peoples and cultures of the islands the canoe visits. As virtual crew members on the voyage, they write postcards, letters, or journals (daily or weekly) and, if they are writing on a computer connected to the internet, e-mail them to friends, family members, classmates, or students at other schools. These postcards, letters, or journal entries, brief, yet informative and perhaps imaginative and entertaining, will help spread the story of the voyage across the globe. Digital photos downloaded from an associated website may be attached to the e-mail as well.

The writing could include elements of fiction, with students creating scenarios on the canoe. (Such a fictional voyage could be set in ancient or modern times: What is daily life like? What sorts of cooperation or conflicts might be experienced on a 30-day voyage? What would be the consequences of conflicts? What sorts of hardships might be experienced? How would conflicts or hardships be resolved or overcome? etc. Scenarios could be used to explore ethics and values of human interaction in a small space--the deck of the about ten feet by 40 feet, the ten canvas sleeping compartments 3 feet by 6 feet.)

The context of the student writing, like the student voyage itself, would be imaginary. If the virtual voyage is set in the distant past, the convention of writing a postcard, letter, or journal would be anachronistic, but still possible, as long as the students assume the virtual reality of the

assignment. On a modern voyage, letters and postcards could not be sent until the canoe reaches an inhabited island with a post office, but a computer on board, with a satellite phone link, is being used to e-mail messages back to land.

Planning and Preparing for the Virtual Voyage

For each step of planning and preparing, students first brainstorm, then do research and refine their plans and preparations. Each step is an occasion for a short, informal essay or oral report.

Step 1. Getting to Know Your Vessel

Students research what **Hokule'a** looks like and how she sails (e.g., points of sail, tacking, and windward ability). This information will help the student understand the course strategy for different legs, the great sailing skill it would take to reach Rapa Nui today, and the great sailing skill it took for Polynesians to reach the island over 1500 years ago.

On-Line Resources:

- [Hokule'a: History, Dimensions, Carrying Capacity, with Drawings](#)
- [Video of Hokule'a](#)
- [Windward Ability of Voyaging Canoes](#)
- [New Sails on Hokule'a](#)
- [Tacking](#)
- [Canoe Speed](#)

Step 2. Sail Planning

Questions for Students: On a map of the Pacific trace out how you would sail to each of the destinations. How long would the canoe take to sail to each destinations? Are your routes and plans similar or different from the course strategies PVS plans to use? How can you account for the difference?

On-line Resources:

- [Map of Voyage](#)
- [How to Plan a Course Strategy](#)
- [Wind, Weather, and Currents of the Pacific](#)
- [Sailing Strategies and Maps with Reference Course Lines](#)

Step 3. Becoming a Crew Member

Questions for Students: You may either decide to join the actual crew of the canoe as an observer and reporter, or come up with your own crew of 12 from classmates, friends or people you know; or make-up an imaginary crew of 12 people. If you select a crew, whom did you choose? What roles would each crew member play? What criteria did you use to make your selections? Visit the PVS website to find information on crew positions and selection. Did you come up with a similar list of crew positions? Did you use the same kinds of criteria for selecting crew members? How can you account for any similarities and differences?

On-line Resources:

- [Crew Positions](#)
- [Criteria for Crew Selection](#)
- [Crew and Navigator Training](#)

Step 4. Provisioning the Vessel

Questions for Students: What would you take with you to insure your survival and good health for 3-5 weeks at sea? Make lists of the following:

- Personal Needs (What personal gear would you take?)
- Dietary Needs (What food and drink would you take?)
- Canoe Needs (What equipment would you take?)
- Medical Needs (What medicines would you take?)

Remember that there are limits of weight and space on the canoe. Each person is limited to carrying what can be fitted into a 48 quart cooler--about the size of a regular suitcase. You may want to start by looking at the stuff you have in your house--bedroom, kitchen, bathroom, living room. How much of the stuff you have in your house is essential for survival or good-health? How much of it is non-essential? How do your lists of supplies compare with what others would bring? How can you account for any differences? Would you add or subtract anything from your lists?

On-line Resources:

- [Provisions for Voyaging](#)
- [List of Recommended Personal Gear](#)
- [Fishing on Board Hokule'a](#)
- [Dangers at Sea](#)
- [Emergency Procedures, Escort Vessel, and Safety Equipment](#)
- [Medical Supplies on Board the Canoe](#)

Step 5. Preparing for the Voyage

Questions for Students: How would you prepare yourself--physically, mentally, spiritually--to fulfill your role for a voyage of 3-5 weeks? Compare your preparation plans with those of your

classmates. How can you account for any differences? Would you modify the way you would prepare?

On-line Resources:

- [Daily Life on Hokule'a](#)
- [Wallace Wong's Journal for the 1992 Voyage from Rarotonga to Hawai'i](#)

Research and Action Projects for "A Quest for Rapa Nui"

The voyage to Rapa Nui can be used as the basis for on-line or library research or writing assignments in Social Studies / Hawaiian Studies, Polynesian / Pacific Islands Studies, Science or Applied Math, or Language Arts classes; or in an interdisciplinary curriculum. It can be adapted for students from K-12 or college, of varying ability. A teacher may design his or her own research and writing assignments, with different emphases, depending on the subject being taught.

Researching any of the following topics before or during the voyage will help the student understand and appreciate the voyage and write more informative postcards, letters, and journals for the virtual voyage project. Students could write research reports and present their research to their classmates at appropriate times during the voyage:

I. Why We Explore

II. Meteorology of the Pacific

III. Naked-Eye Astronomy and Non-Instrument Navigation

IV. Sealife (Fish, Birds, and Mammals of the Open Ocean)

V. Geography, History, Culture, and Ecology of Islands in the Central and Eastern Pacific

I. Why We Explore

On-line Resources

- [Vision and Exploration](#)
- [History and Heritage](#)
- [Polynesian Migrations](#)
- [Voyaging Traditions of the Polynesians.](#)
- [What parallels are there to modern space exploration?](#)

Students brainstorm and write about why people explore the world about them. Why did the people who came to be known as the Polynesians leave the world of continents and large islands in the Western Pacific to explore a vast unknown Ocean, discovering and settling small islands to the east and becoming the greatest explorers of their time? (Was their motive love of adventure? Or

curiosity about the unknown oceanic space at the eastern frontier? Was the impetus for exploration population growth and a search for new land and resources? Or conflicts in the home country, with those defeated forced to leave? Why do we explore today?

Possible Activities: Students conduct explorations of their communities. Ask students to think about, discuss, or write about the following: Where would you like to explore if you could explore anywhere, real or imaginary? Why would you look to explore that place? What benefit would exploration of that place have for you, or for your family or community? How would you go about conducting your exploration? How would you keep your exploration safe?

If one of the places selected for exploration is in the neighborhood, the class could make an actual visit and carry out the exploration (under the supervision of teachers and parents for young children).

II. Meteorology of the Pacific

Students research seasonal wind and weather patterns over the route of the voyage. This information will help the student understand the wind and weather conditions encountered by the canoe as it travels to Rapa Nui. It will also help the student understand and appreciate (1) the timing of the voyage; (2) the course strategy to Rapa Nui and to other destinations; (3) the difficulty of sailing to Rapa Nui, which lies 1450 miles upwind of Mangareva. Advanced Research: How are these seasonal wind and weather patterns created? Do the seasonal wind and weather patterns change from year to year or decade to decade or century to century? What causes these changes (El Nino, La Nina, Effects of Global Warming on Climate, etc.).

On-line Resources

- [Winds, Weather, and Currents of the Pacific](#)
- [Daily Weather Maps and](#)
- [Forecast Models](#)

Possible Activities: Comparing weather where the student is to weather on the canoe: Is the weather outside the same or different from the weather on the canoe? What is creating the weather in both places?

III. Naked-Eye Astronomy and Non-Instrument Navigation

Students research how it is possible to navigate without modern instruments using celestial bodies and other clues of nature that can help a person tell direction and latitude at sea or find land. This knowledge will help the student understand and appreciate what a great challenge it is to find a small island such as Rapa Nui (a triangle 10 x 11 x 13 miles) in the open ocean and what a great accomplishment it was for Polynesians to discover and settle the island over 1500 years ago. Knowledge about astronomy will also help the student understand the navigator's reports on guiding stars and other clues to direction and latitude during the voyage to Rapa Nui.

On-Line Resources:

- [Exploring the Night Sky: How to Find Navigation Stars](#)
- [How Non-instrument Navigation is Done](#)
- [Naked-Eye Astronomy Data \(June 1999 through December 2000\)](#)
- [How Close Do You Have to be to Rapa Nui to See it from the Sea?](#)

Possible Activity: Going out at night to identify stars used in navigation. Students in Hawai'i and elsewhere should be able to see some of the stars the navigators will be using for direction and latitude. Note: Those in the northern hemisphere will not be able to see some of the stars in the southern sky; those in the southern hemisphere will not be able to see some of the stars in the northern sky; the rising and setting points of stars and their altitudes as they cross the meridian will also differ at different latitudes.

IV. [Sealife](#) (Fish, Birds, and Mammals of the Open Ocean)

At the PVS website, students access short descriptions and illustrations of sealife. This information will help students anticipate and understand why the voyagers see certain kinds of birds in different region or catch certain kinds of fish while trolling. It will also help students understand which birds can be used for finding land. Students may also wish to do background research on the ecology of the open ocean--how these birds and fish survive in this environment and what the structure of the food chain is.

On-line Resources:

- [Fish, Birds, and Mammals of the Open Ocean](#)
- [Fishing on Board Hokule'a](#)

Possible Activities: Field trip to a fish market to view and identify deep-sea fish; research into local fishing practices and fishing laws designed for sustainable recreational and commercial fishing; field trip to a bird island and sanctuary to view and identify sea birds; comparisons of reef fish with pelagic fish.

V. [Geography, History, Culture, and Ecology of Islands in the Eastern Pacific](#)

Students research the geography, history, and culture of any of the remote islands that will be visited by Hokule'a--the Marquesas, Mangareva (Gambier Islands), Pitcairn, Rapa Nui, Rangiroa (Tuamotu Archipelago), and Tahiti. Research will be a challenge, as reports on these islands are neither numerous nor widely disseminated.

One of the themes of the voyage is sustainable living--on a canoe, on small islands in an ocean, on the planet earth, a small island in space: thus, a focus of research could be ecology and subsistence on small islands.

A. How have communities lived on these islands in the past? How did the Polynesians manage

their resources to survive and flourish for ten or twenty or thirty centuries on their small islands? What cultural values and resource management strategies did they use? What was the state of the different islands groups visited by European explorers, beginning in the sixteenth century? Were all the islands equally successful in protecting and conserving resources? What was the minimum land-base area needed to sustain a Polynesian settlement? [What were the factors that brought about Rapa Nui's "tree-less" landscape?](#) What kinds of lessons can we learn from the histories of these islands? What has happened to Hawai'i's forests since the coming of the Western economic systems. What is being done to restore and manage [Hawai'i's forests](#). Are these steps sufficient?

B. How do communities live on small islands today? The small islands of the world have come under extreme pressures of modern Capitalism's expansion of population, consumption, and waste production and pollution. Many are suffering from environmental degradation and overcrowding. They are also in danger of losing land mass to rising seas that may be caused by the melting of the polar icecaps under global warming. Could these islands, like the canoe itself, be microcosms of the planet? Have they begun to manage the problems of limited resources and limited space and overconsumption and waste? If so, how? Are the industrial nations of the world doing anything about their wasteful consumption habits or the pollution that may be causing global warming? If so, what?

C. Taking Care of the World's Oceans: Students research ocean environmental issues such as pollution in the world's ocean, or why the stocks of ocean fisheries are declining today, and what steps are being taken to maintain a sustainable yield (One place to start the research of fishing is with Michael Parfit's article "Exploiting the Ocean's Bounty: Diminishing Returns" (National Geographic November 1995: 2-37.) Other Topics: Damage to/Loss of Coral Reef Habitats due to Global Warming, Pollution, and Human Use; Pollution of the World's Oceans from Shipping: Garbage and Oil Slicks Accumulating in Areas such as the Equatorial Doldrums. (See [the Website for the South Pacific Regional Environment Programme \[SPREP\]](#).)

D. Cultural Revival: Students research and write about the devastation of Polynesian population, cultures, and landscapes after the arrival of European and American explorers, imperialists, and colonialists; they could research the modern political and cultural movements to restore native culture and sovereignty in islands that have become colonies of Europe and America. For information and links about Hawaiian sovereignty, see the [Nation of Hawai'i Website](#).

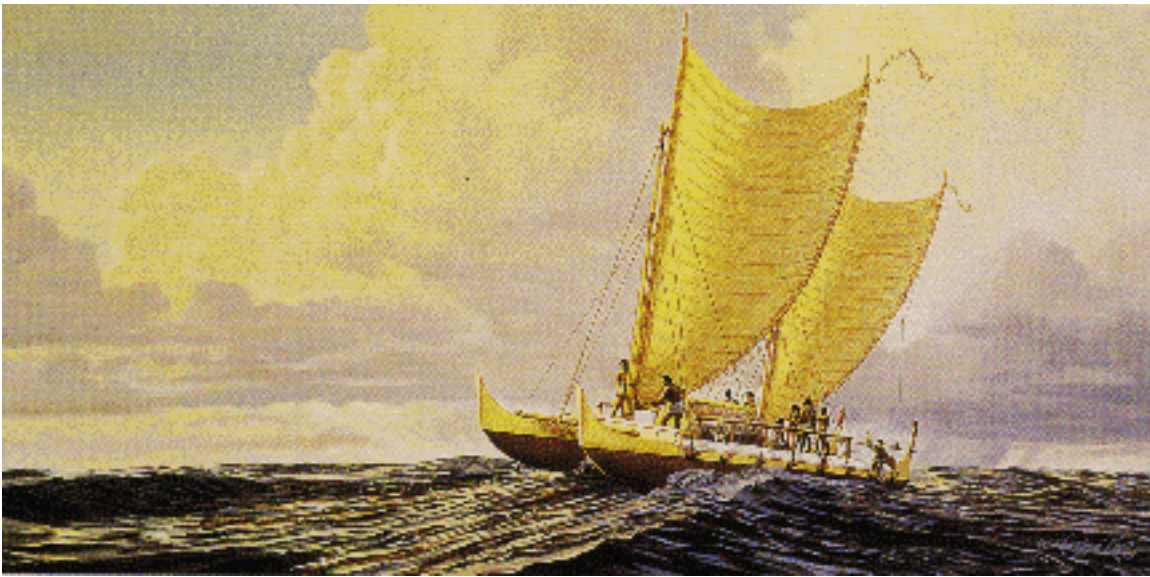
E. Malama Hawai'i? Students apply their ideas about living on islands to our island home: What is unique and special about our island home? What steps do we need to take today to protect what is unique and special? What could students do, or what have they done, to insure that their children and grandchildren and future generations will enjoy those things we love about Hawai'i today? What resources are being consumed daily in the communities where they live? What resources are renewable? unrenowable? What steps would they take to insure that the resources they have would be available to their children, grandchildren, and future generations in perpetuity? What groups in their communities have been active in working for a sustainable future? What kinds of potential conflicts are there in the community? How can these conflicts be resolved?

On-line Resources:

- [Our Sacred Earth](#)

- [Malama Hawai'i Projects](#)

Possible Activities: Students do a project to restore, care for, enhance, or protect some part of Hawai'i's unique and precious heritage, environment, or community. See "Our Sacred Earth" and "Malama Hawai'i Projects" in this education packet.





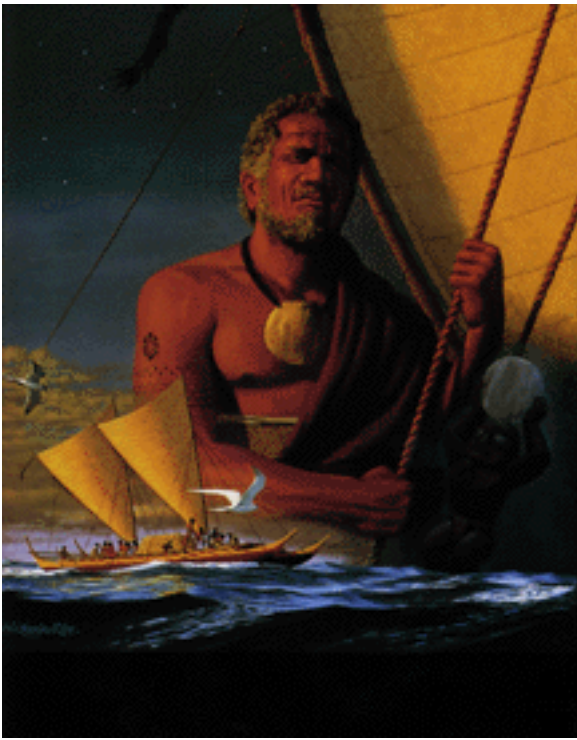
Hawaiian Double-Hulled Canoe

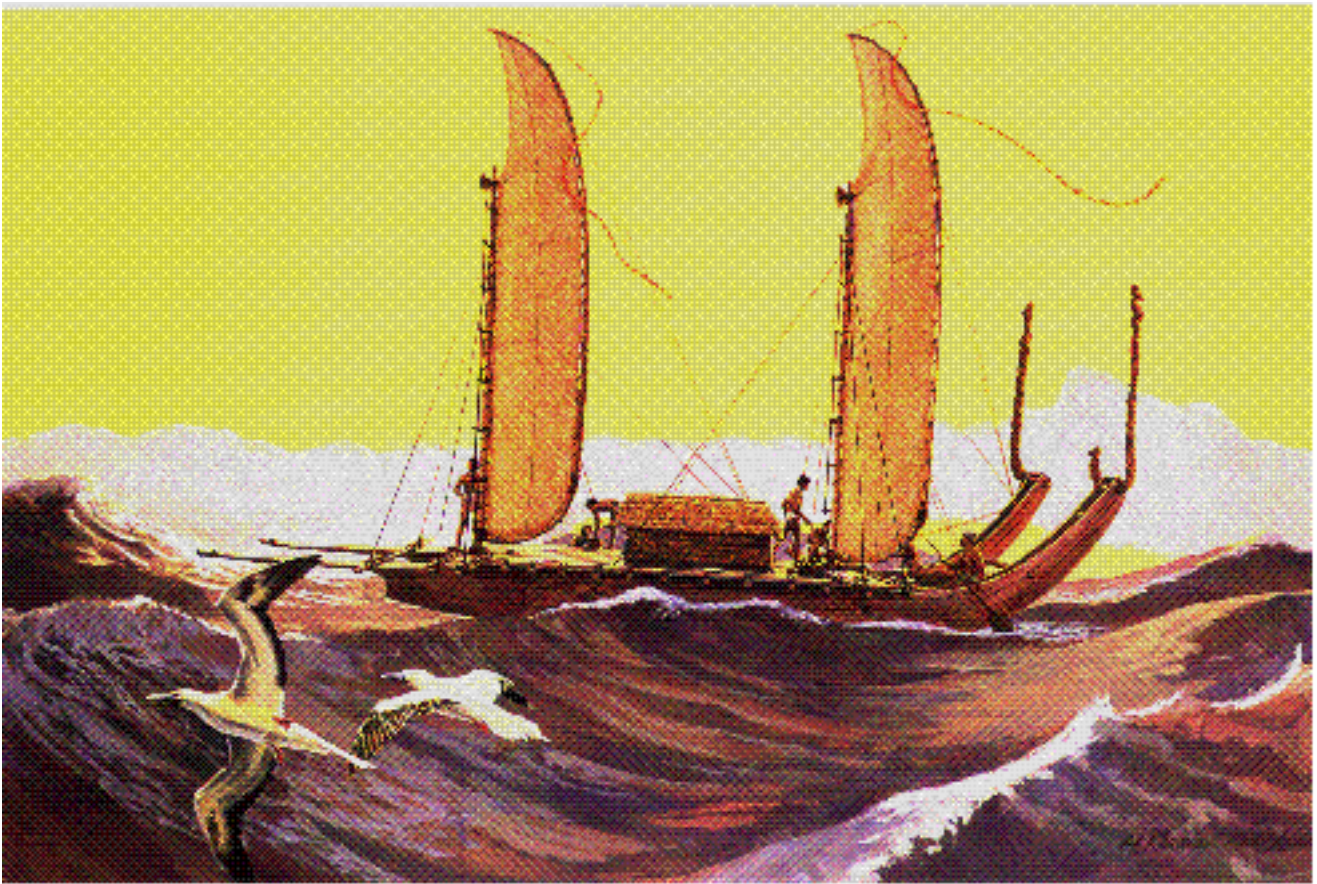
Illustration by Herb Kawainui Kane

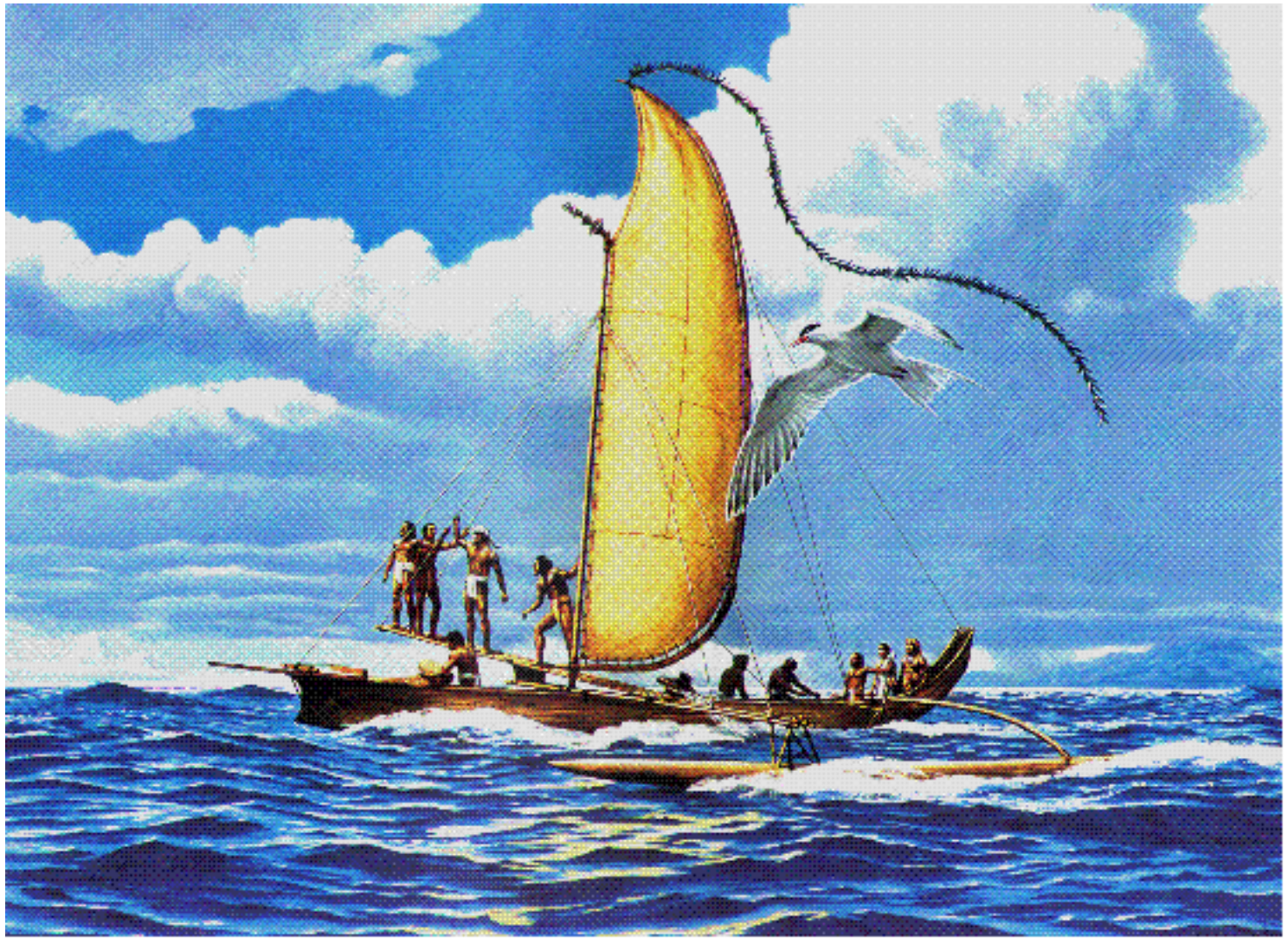






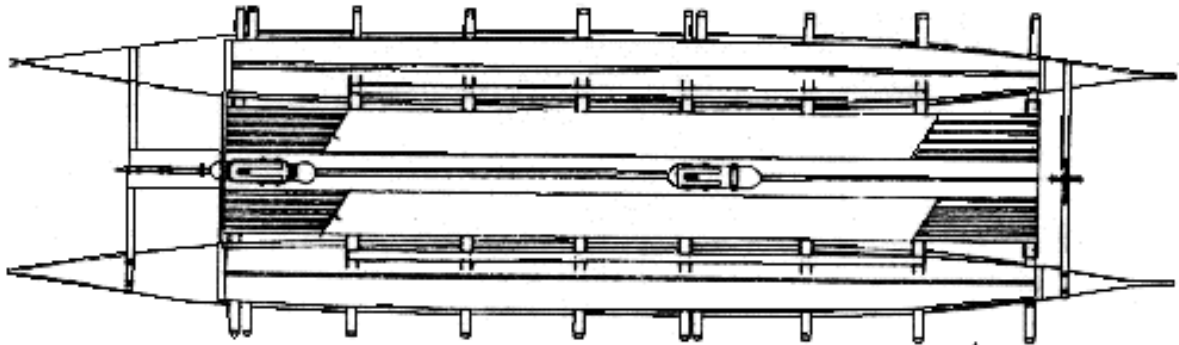




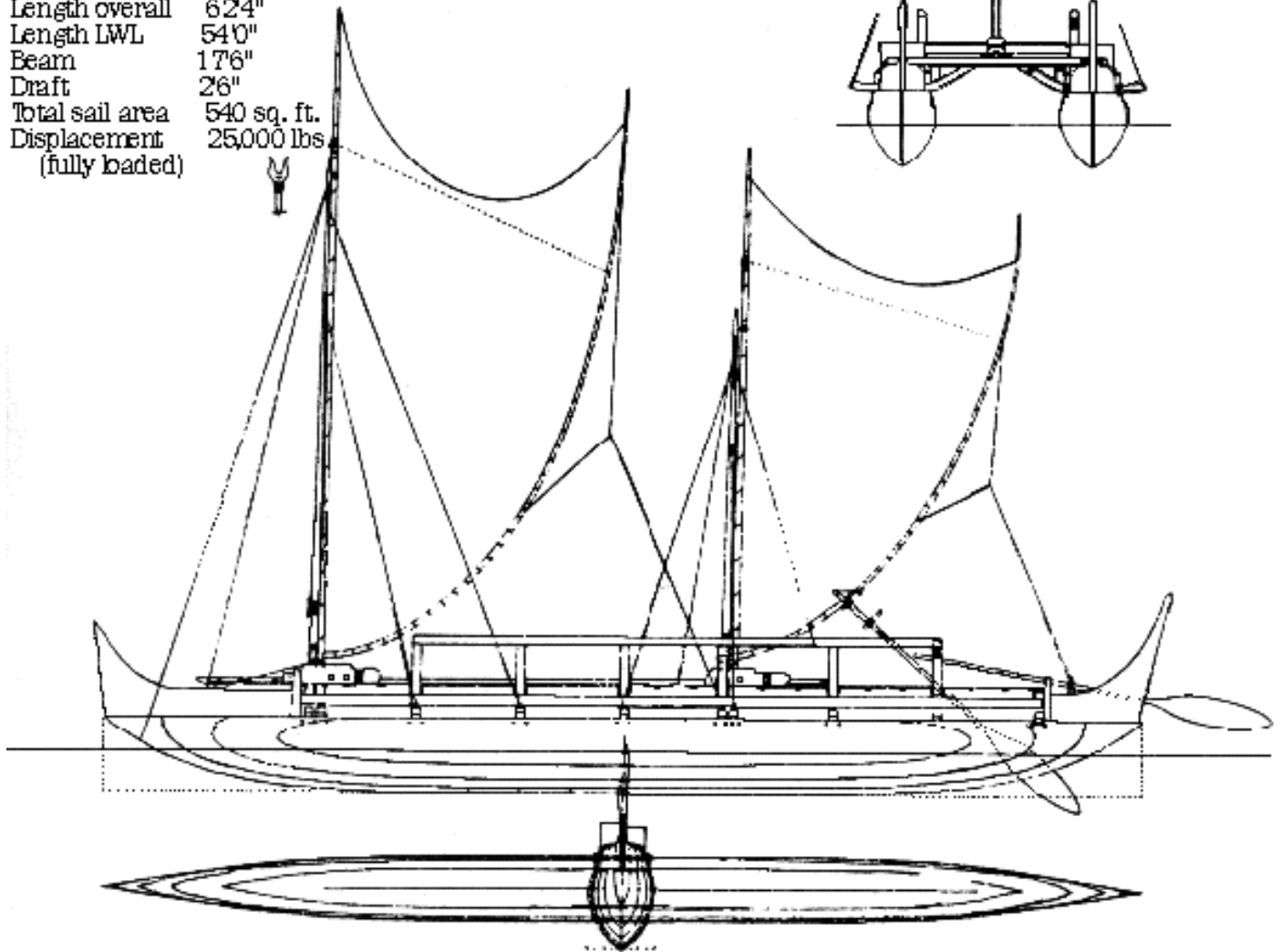
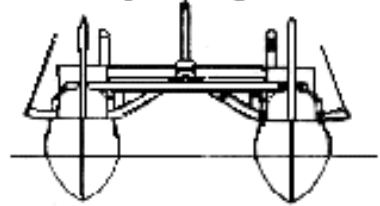




Plans for the Hokule`a



Length overall 624"
Length LWL 540"
Beam 176"
Draft 26"
Total sail area 540 sq. ft.
Displacement 25,000 lbs
(fully loaded)

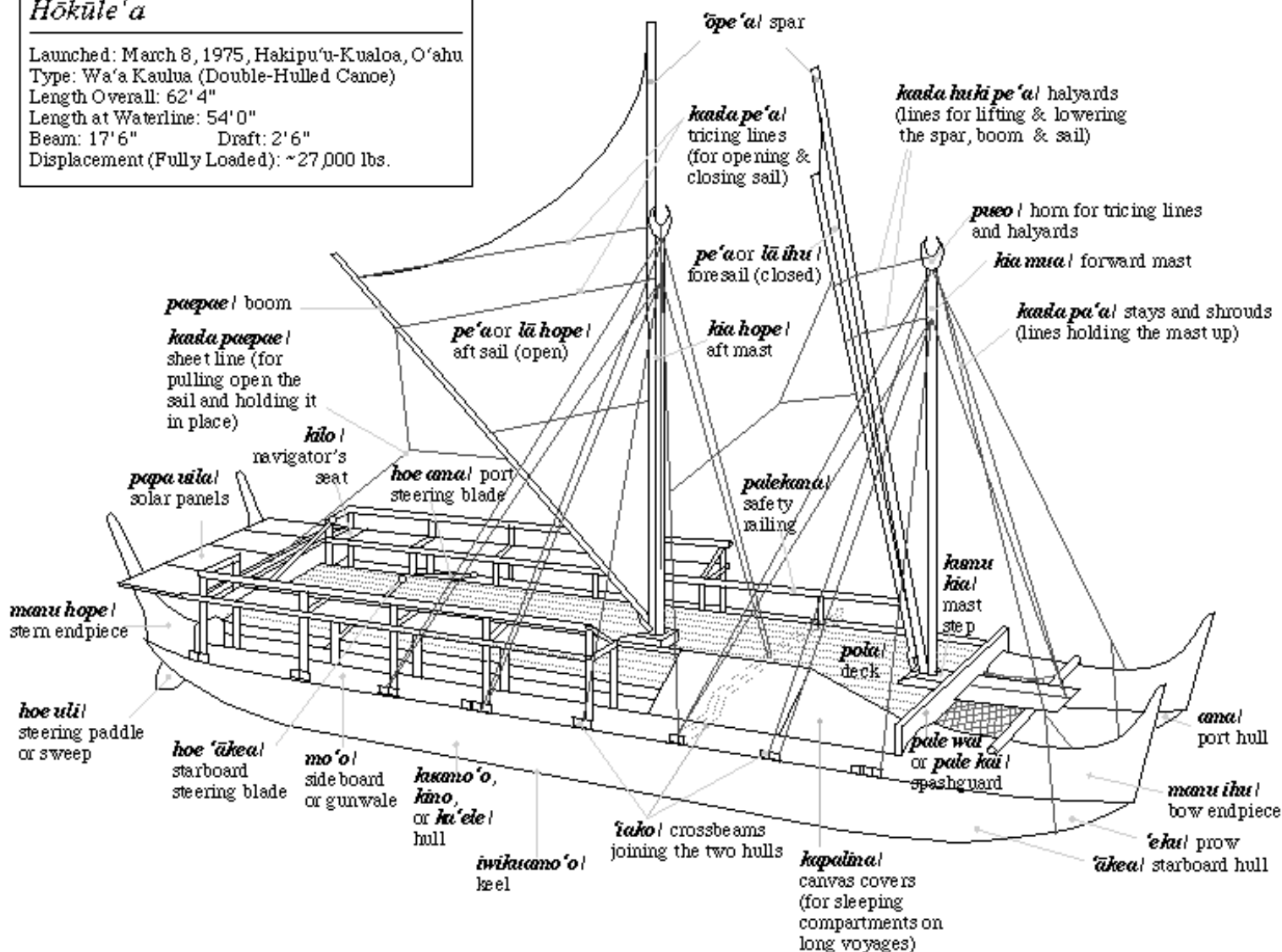


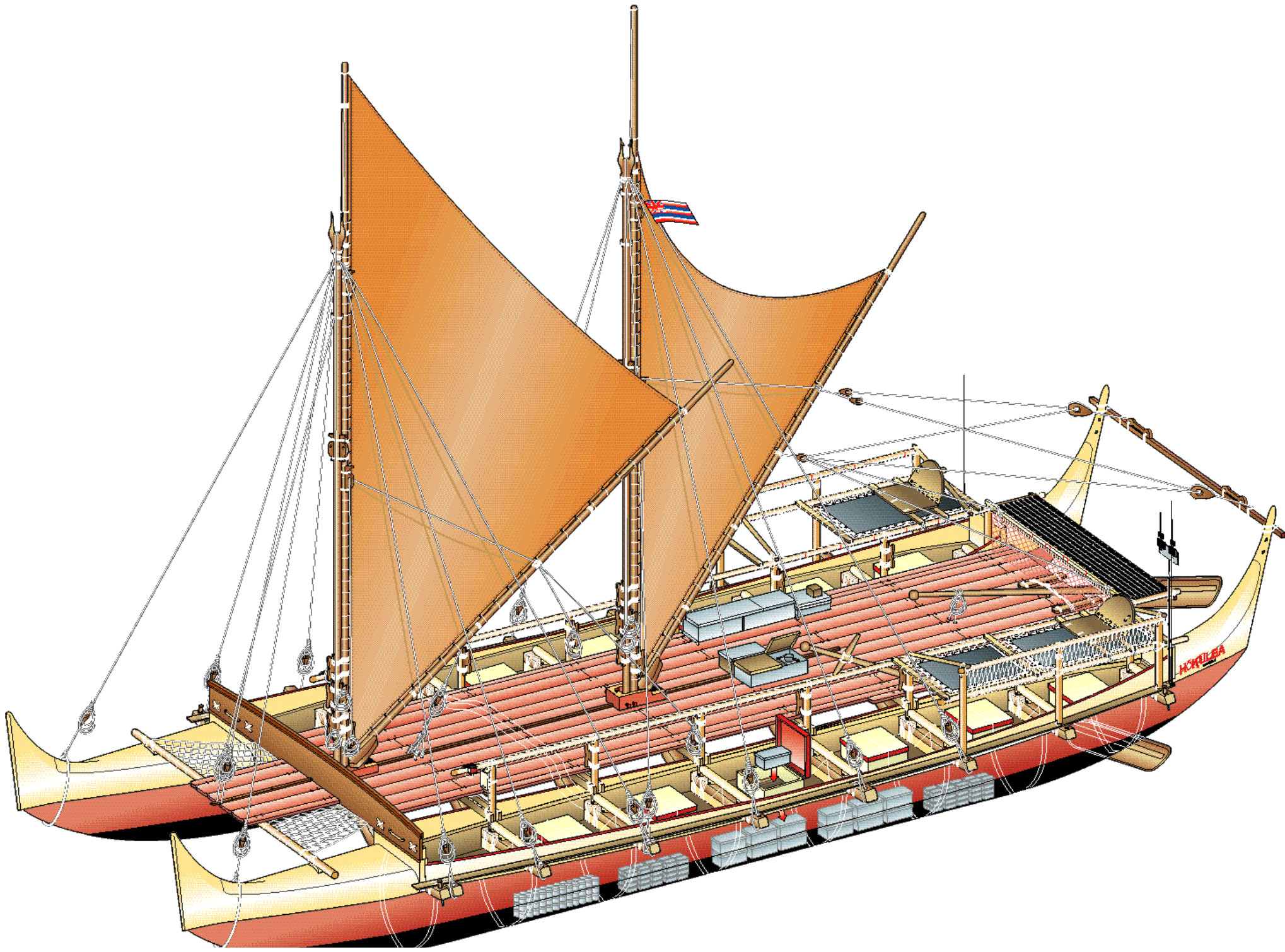


Canoe Parts--Hokule'a

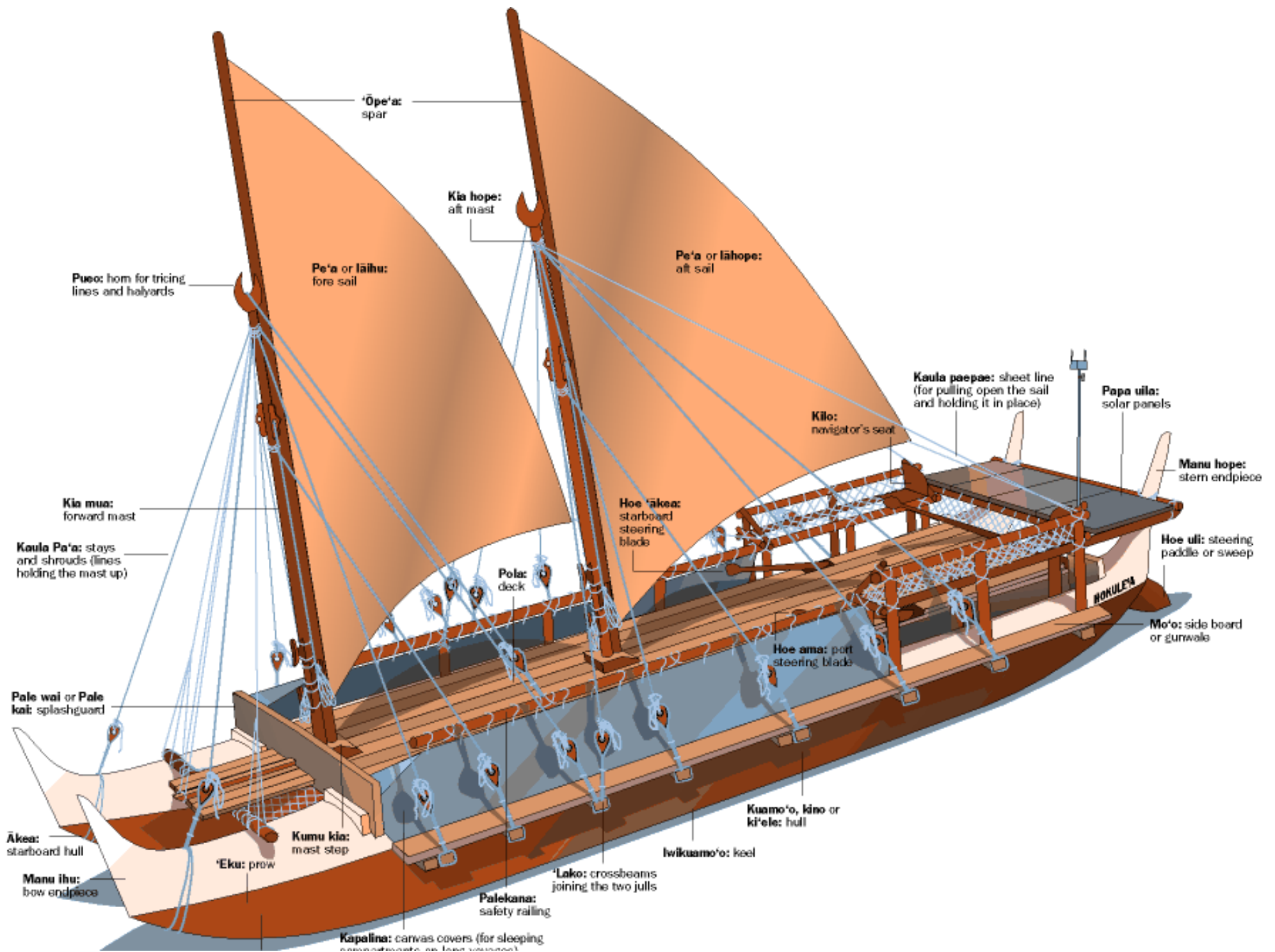
Hōkūle'a

Launched: March 8, 1975, Hakipu'u-Kualoa, O'ahu
 Type: Wa'a Kaulua (Double-Hulled Canoe)
 Length Overall: 62' 4"
 Length at Waterline: 54' 0"
 Beam: 17' 6" Draft: 2' 6"
 Displacement (Fully Loaded): ~27,000 lbs.













A Hokule'a Video Gallery

These video clips were shot at Maunalua Bay, O'ahu, on July 15, 1997, as part of the production of public service announcements for Ke Ala Hoku ("The Star Path"), an organization of youth and adults dedicated to envisioning and shaping a desired future for Hawai'i. The crew included students from Ke Ala Hoku and the Wai'anae High School Marine Science Learning Center and sailors from the Polynesian Voyaging Society under captain/navigator Nainoa Thompson. Video clips courtesy of KHON-TV. A copy of [RealPlayer G2](#) is needed to view the clips.

 <p>1. Tow Line Ready</p>	 <p>2. Turning The Canoe</p>	 <p>3. Placing the Rig in the Mast Step</p>	 <p>4. Raising The Rig</p>	 <p>5. Tightening a Shroud Line</p>
 <p>6. Opening The Sail</p>	 <p>7. Canoe Under Sail</p>	 <p>8. Learning to Steer the Canoe</p>	 <p>9. Side View--Close Up</p>	 <p>10. The Manu</p>
 <p>11. Back View</p>	 <p>12. Heading Into Swells 1</p>	 <p>13. Heading Into Swells 2</p>	 <p>14. Returing To Anchor at Sunset</p>	 <p>15. Closing The Sail</p>

<u>1976: Tahiti</u>	<u>1980: Tahiti</u>	<u>1985-87: Aotearoa (New Zealand)</u>	<u>1992: Rarotonga</u>	<u>1995: Marquesas</u>	<u>1995: West Coast, British Columbia, & Alaska</u>	<u>1999-2000: Rapanui</u>
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<u>Voyages</u>	<u>Canoe-Building</u>	<u>Wayfinding</u>	<u>Life on a Canoe</u>	<u>Polynesian Migrations</u>	<u>Proverbs and Traditions</u>
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<u>Home</u>	<u>Search</u>	<u>Archives</u>	<u>Past Education Programs and Materials</u>	<u>On-Line Visuals</u>	<u>Bibliographies (Books and Films)</u>
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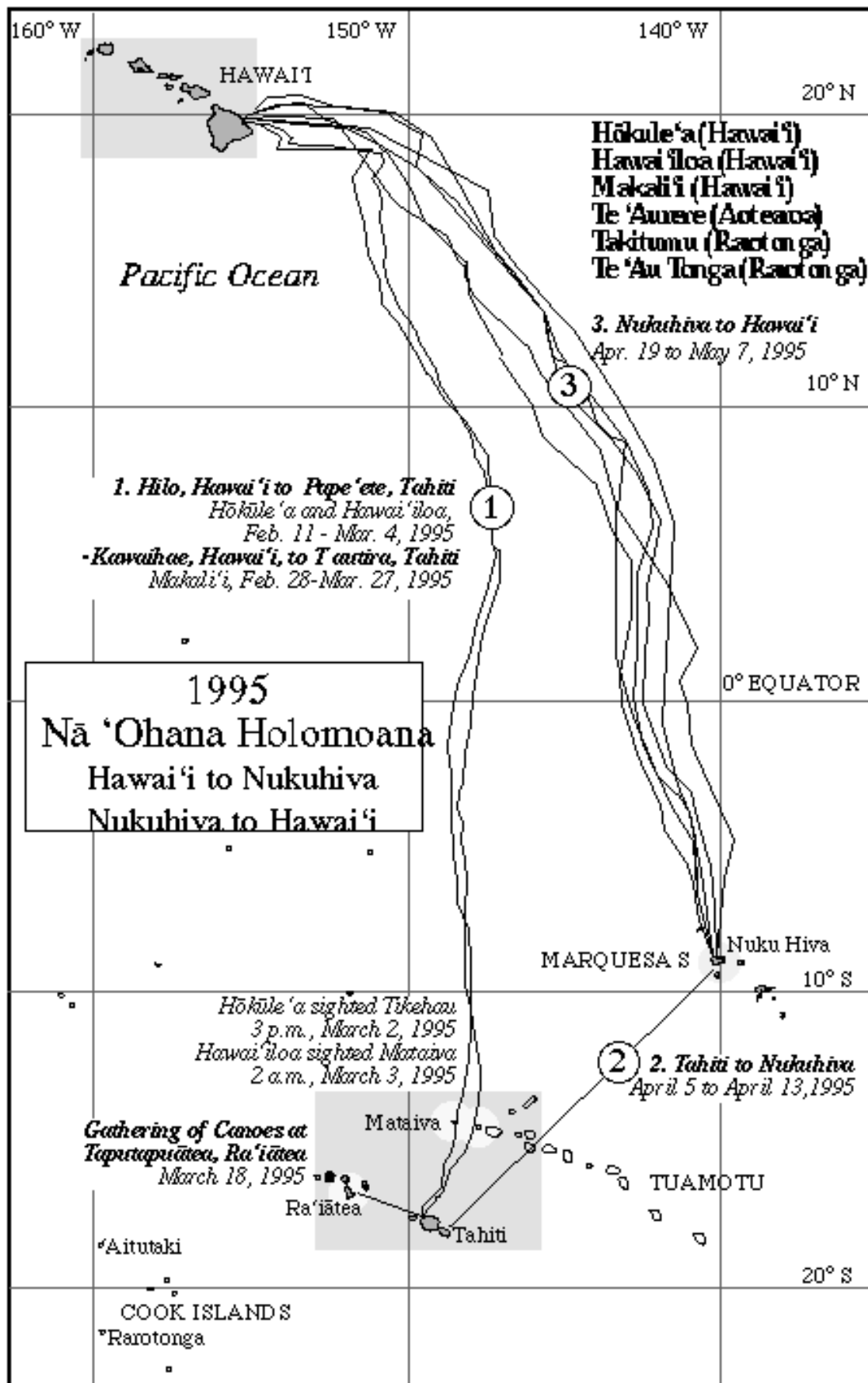


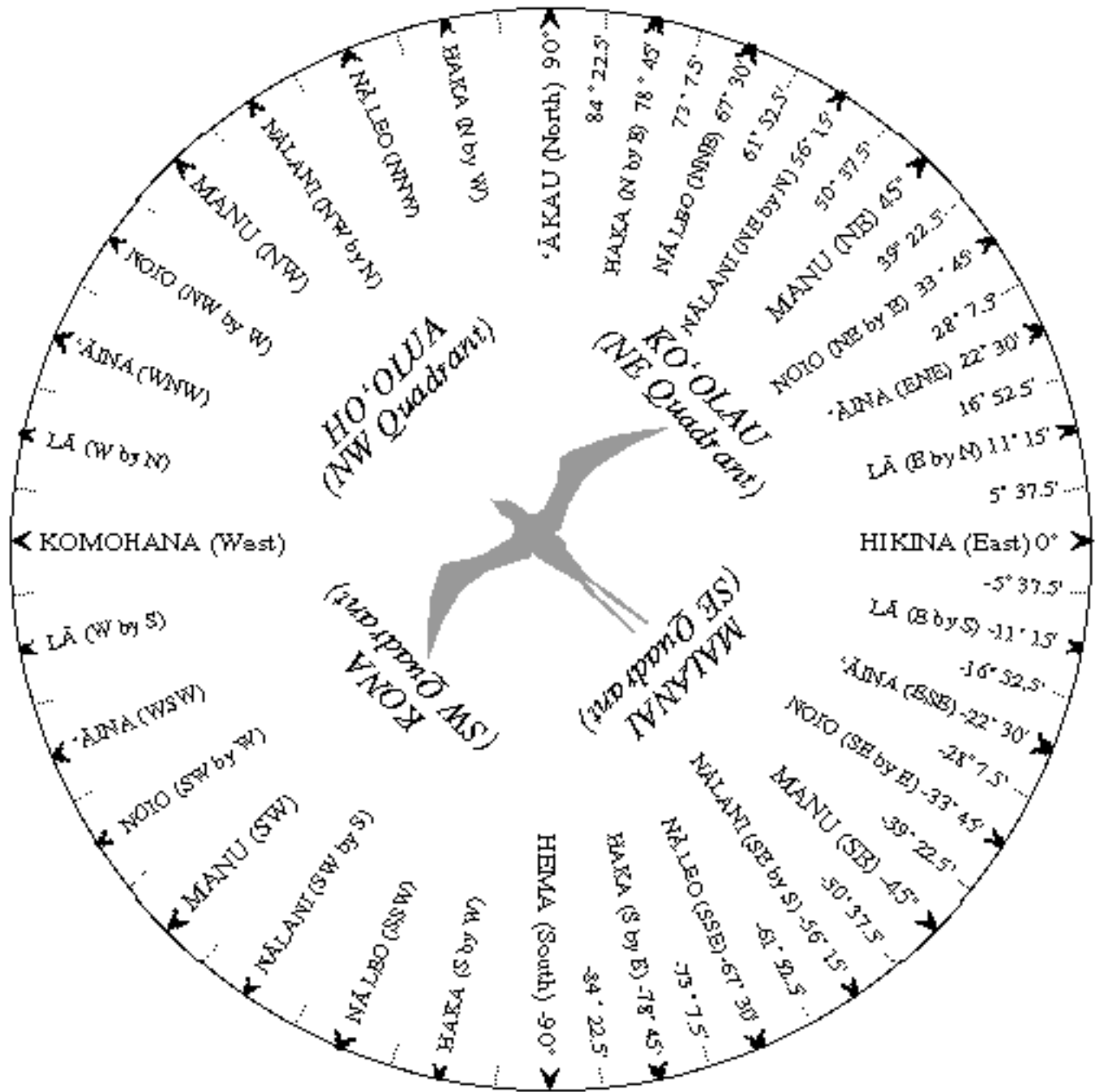


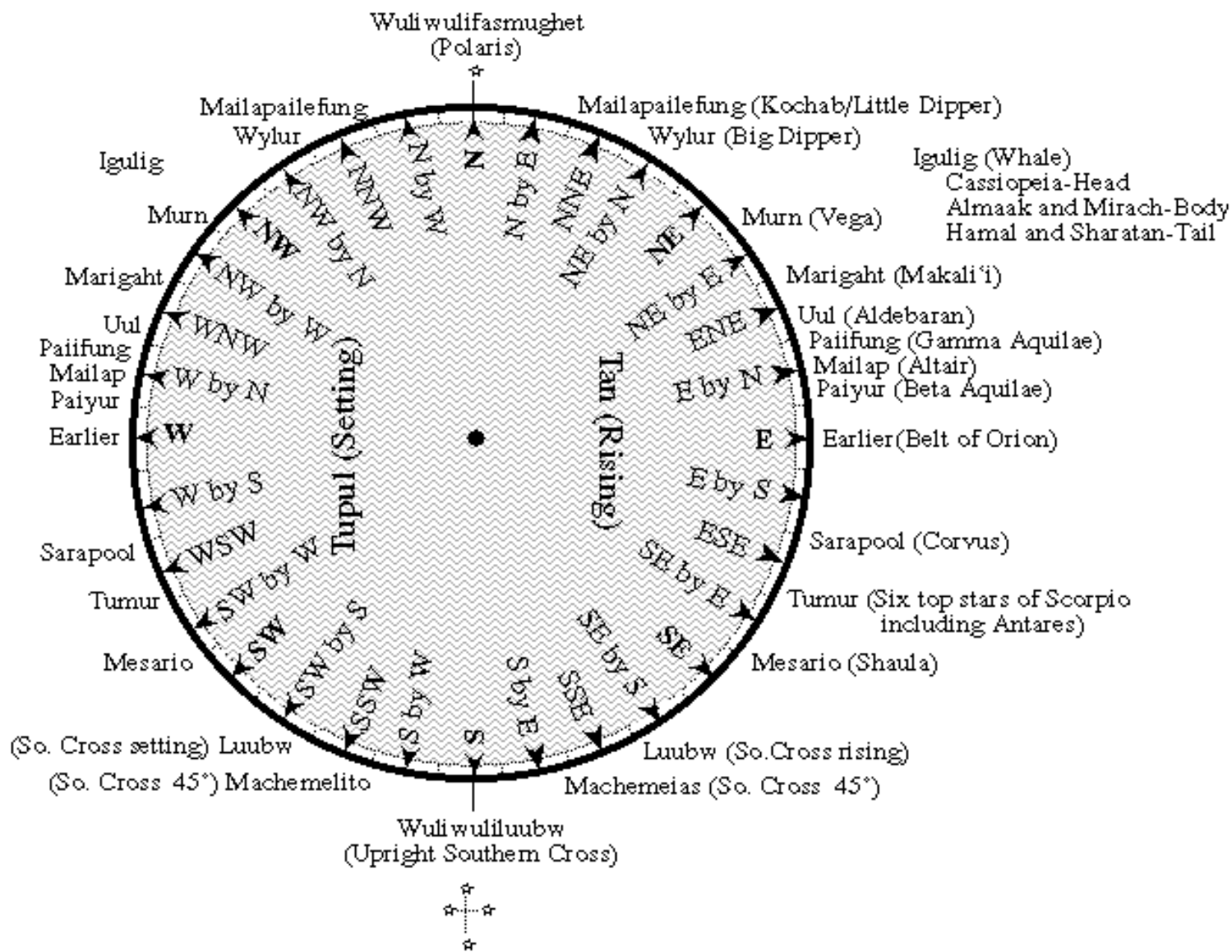












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Illustration right: Lizard Tatoo Design



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Marquesas Geography	Marquesas Today	Marquesan Language	Marquesan Settlement	Archaeology	Land	Religion	Society	Warfare	Canoes	Voyaging	Western Contacts	Bibliography
-------------------------------------	---------------------------------	------------------------------------	--------------------------------------	-----------------------------	----------------------	--------------------------	-------------------------	-------------------------	------------------------	--------------------------	----------------------------------	------------------------------

1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
Home	Search	Archives	Past Education Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)	

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<u>Home</u>	<u>Search</u>	<u>Archives</u>	<u>Educational Programs and Materials</u>	<u>On-Line Visuals</u>	<u>Bibliographies (Books and Films)</u>
-----------------------------	-------------------------------	---------------------------------	---	--	---

Isles of Hiva: Geography

Photo right: The Island of Nukuhiva in the Clouds of Dawn

The group of islands situated between 7 degrees 50 minutes and 10 degrees 35 minutes south latitude and 138 degrees 25 minutes and 140 degrees 50 minutes W longitude were named "Las Marquesas de Mendoza" in 1595 by Spaniard explorer Alvaro de Mendana after his patron Don Garcia Hurtado de Mendoza, Marquis de Canete, Viceroy of Peru (Denig 11). According to Peter Buck, the islands were called Hiva by ancient Polynesians. ([Click here for map.](#))



Three of the six inhabited islands, including the two largest islands, contain the word "Hiva" ("Big Country"): Nuku Hiva, Hiva Oa, and Fatu Hiva. In the Marquesan language, the islands are called "Te Enata Henua," "The Land of the People" (Denig 14).

Oral traditions state that the isles of Hiva, located between 740-900 miles NE of Tahiti, were either "fished from the sea" [by Maui] or "born of the copulation of ocean and sky" (Denig 11). The inhabitants saw the islands as a house: "Nukuhiva was its pointed roof; Ua Pou its support posts, Ua Huka its binding; Hiva Oa its ridge pole; Fautiva its thatching, Tahuata the celebration of its completion" (Denig 11-12).

There are twenty or so islands forming two main groups. The northern group includes the three inhabited islands of Nuku Hiva, Ua Pou, Ua Huka, and the uninhabited islands of Eiao and Hatutu; the southern group includes the inhabited islands of Hivaoa, Tah uata, Fatuhiva and the uninhabited islands of Fatu Huku and Motane.

The isles of Hiva are much smaller and less populated than the Hawaiian Islands. The two largest islands (Nuku Hiva and Hiva Oa) are about the size of Lana'i. Erosion has created deep valleys separated by steep ridges of basalt. The islands are without in land or coastal plains, and some of valleys can only be reached from the sea. There are no offshore lagoons and reefs. The islands, peaks of submarine volcanoes, are exposed to a cold current that flows north from the Antarctic along the coast of Peru and west out into the Pacific. This cold current may account for the poor development of coral in these tropical islands (Ottino 3). The coast is generally unprotected, with few good harbors or beaches. Early inhabitants settled on the bottom land near the mouths of the narrow valleys.

The temperature in the Isles of Hiva is moderated by the southeast trade winds and the sea. The average temperature is about 86 degrees F; 70-90 degrees F is the usual range (Handy Native Culture 8). Humidity is rarely below 80 percent and rainfall averages from 30-100 inches annually (Sinoto 111); Rainclouds are brought by the dominant tradewinds, so as in Hawai'i, the windward sides of islands are much wetter than leeward areas, which have dry, desert like conditions. Lower islands (e.g., Ua Huka) or islands in the lee of high islands (e.g., Ua Pou in the lee of Hiva Oa) get less rain. There is no marked rainy season, though rainfall is most frequent from January to July. Droughts affect the growth and productivity of coconuts and breadfruit. Handy reported droughts of four years on Hiva Oa and seven years on Ua Pou (8).

Marquesas Geography	Marquesas Today	Marquesan Language	Marquesan Settlement	Archaeology	Land	Religion	Society	Warfare	Canoes	Voyaging	Western Contacts	Bibliography
-------------------------------------	---------------------------------	------------------------------------	--------------------------------------	-----------------------------	----------------------	--------------------------	-------------------------	-------------------------	------------------------	--------------------------	----------------------------------	------------------------------

1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
Home	Search	Archives	Past Education Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)	

The Isles of Hiva today

Photo right: The Harbor of Taiohae, the Administrative Center of the Isles of Hiva

The islands are a territory of France, part of French Polynesia, which includes four other groups of islands--Tahiti Nui, the Tuamotus, the Gambiers, and the Australs. Most of the people of Hiva are Roman Catholics.

The people work for "the government, the community, the Catholic church or school system, or for themselves--chopping copra, fishing, raising cattle and other livestock, or sculpting bowls, platters, Marquesan ceremonial clubs, tikis, and ukuleles" ("Marquesan Travel Guide"). Many of the sculptures and other arts and crafts products are sold to tourists. In fact, tourist-related businesses are becoming the main source of income and employment. Small hotels, restaurants, sightseeing tours, activities for tourists, and car rentals (mainly four wheel drives in this country of mountainous, unpaved roads) are centered in the main towns such as Taiohae on Nuku Hiva and Atuona on Hiva Oa.



During the 19th century, the Church played a major role in destroying native culture by banning native dress, dancing and chanting, kava drinking, nude-bathing in public, tattooing, embalming the dead, and other religious and cultural practices. Today, a revival of the native culture is taking place. Along with the production of arts and crafts using traditional materials and designs, tattooing, once a sign of wealth and social status, is making a comeback. Ankle tattoos have become fashionable among the aoe ("foreigners" from the Hawaiian word "haole") who visit the Isles of Hiva.

During the last decade, the native language, still spoken at home, has been added to the school curriculum. The Catholic Church has been promoting the study of the language.

Troupes have been formed to revive traditional dance, although when Handy visited the islands in 1921, he noted that "the natives of this generation know practically nothing of the dancing of ancient times." From the information he could gather, he concluded that there was "no dance corresponding to the hula of Hawai'i and upaupa of Tahiti, of which the hip and abdominal movements are the characteristic feature" (Handy Native Culture 304; the tradition in Hawai'i is that the hula was brought to Hawai'i from Tahiti by La'amaikahiki, a son of the voyager Mo'ikeha). The Hivan dancers of today perform post-contact versions of a pig dance and the haka manu, or bird dance, which is mentioned by Handy as a traditional dance done by young girls "standing stationary and making motions with the arms and hands imitative of birds flying" (Handy 306).

Competing with the revival of the traditional culture is the onslaught of colonial consumerism. When the kids of Taipivai come home on weekends from school in Taiohae, they watch TV, which broadcasts American shows like "Dynasty" and "Santa Barbara" (dubbed into French), games shows, sports events from Paris, and commercials for products the people never knew they needed. And when the kids go off to school during the week, they continue to be indoctrinated in the language, thoughts, and values of the French. Social programs, such as free medical care and stipends for having children in the underpopulated islands, are designed to help the French hold onto the goodwill of the people.

Marquesas Geography	Marquesas Today	Marquesan Language	Marquesan Settlement	Archaeology	Land	Religion	Society	Warfare	Canoes	Voyaging	Western Contacts	Bibliography
-------------------------------------	---------------------------------	------------------------------------	--------------------------------------	-----------------------------	----------------------	--------------------------	-------------------------	-------------------------	------------------------	--------------------------	----------------------------------	------------------------------

1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
Home	Search	Archives	Past Education Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)	

Isles of Hiva: Language

Illustration right: Tadoo Design

The Marquesan language has been grouped under the category Proto Central Eastern Polynesian, along with, among others, Hawaiian, Tahitian, Tuamotuan, Rarotongan, and Maori. The people who speak these languages are also physically and culturally related, having migrated into the Pacific from a homeland in Western Polynesia.



Some scholars believe that the Marquesan language, or more specifically the dialect of the Southern Marquesan Islands (Hiva Oa, Tahuata, Fatu Hiva), is the closest relative of Hawaiian language (Green 1966); and that this suggests that the first Hawaiians came predominantly from the southern Marquesas (K.P. Emory 1978). While this suggestion is no longer held with certainty, the close relationship between Marquesan and Hawaiian is evident from a comparison of vocabularies:

Haw / Marq-So. / Marq-No. / Gloss

inoa / inoa / ikoa / name

mano / mano / mako / shark

moena / moena / moeka / mat

one / one / oke / hunger

[From "Lexical Diffusion in Polynesia and the Marquesan-Hawaiian Relationship," Samuel H. Elbert, *Journal of the Polynesian Society*, 91 (4) December 1982, 505.]

About 56% of basic words in the two languages are the same or similar.

Hawaiian and Marquesan also share words that are not found in other Polynesian languages:

Hawaiian / Marquesan / Gloss

'elele / ke'e'e / messenger

makali / mata'i / tie bait to hook (Haw); string to tie bait a hook (Marq.)

pa'akai / pa'atai / salt

[For a longer list of words, see Elbert's "Lexical Diffusion in Polynesia and the Marquesan-Hawaiian Relationship," 510-511.]

The two languages also share unique sound changes from the Proto Central Eastern Polynesian (the hypothetical original language). Elbert concludes that the linguistic evidence supports the hypothesis of archaeologists that the Hawaiian language derives from Marquesan (511). Although this does not prove that the first Hawaiians came from the Marquesas or that only Marquesans settled Hawai'i, it does seem to support the hypothesis that early settlers of Hawai'i came predominantly from the Marquesas.

[No grammar or dictionary of the Marquesan language is available in English; a French grammar of Marquesan, *Introduction a la Langue des Iles Marquises* was published in Tahiti 1987.]

Marquesas Geography	Marquesas Today	Marquesan Language	Marquesan Settlement	Archaeology	Land	Religion	Society	Warfare	Canoes	Voyaging	Western Contacts	Bibliography
-------------------------------------	---------------------------------	------------------------------------	--------------------------------------	-----------------------------	----------------------	--------------------------	-------------------------	-------------------------	------------------------	--------------------------	----------------------------------	------------------------------

1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
Home	Search	Archives	Past Education Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)	

Isles of Hiva: Settlement

Photo right: The Valley of Ha'atuatua, Nukuhiva

The earliest archaeologically established date for human habitation of the isles of Hiva is around 150 B.C. (Ottino 16).

Genealogies from the 19th century trace the people of Hiva up to ninety generations back to their progenitors, the gods Atea and Atanua; the first man mentioned in these genealogies is named Tiki. That the settlers came from the west is evidenced by the culture, artifacts, language, and traditional Polynesian place names remembered in the chants of the people who settled Hiva (Handy Native Culture 11): For example, Vevau is an ancient name of Atuona valley on Hiva Oa; Vavau is a place name in Tonga and an ancient name for the island of Borabora in the Society Islands. Fiti Nui is the name of a tribe which inhabited a region on the west end of Hiva Oa; Fiji Nui is the Tongan name of the island of Fiji and Hiti Nui was the ancient name of Tahiti.



"Havai'i" or "Havaiki" survives in Hivan chants and traditions as the name of the underworld to which the spirit travel after the death of a person. Hawaiki is the ancient name of the island of Ra'iatea in the Society Islands; Savai'i the name of the largest island in the Samoan group.

The name "Havai'i" refers in Polynesian cultures to an ancestral homeland to the west; Handy believes that ancient chants and traditions of Hiva indicate that "formerly there was a conception of Havai'i as a land or region where men and gods lived in ancient times" and the belief that spirits went to Kiukiu at the western end of the island Hiva Oa to leap into the sea to enter the underworld suggests that this underworld may have been a land toward the west (Handy Native Culture 252).

The names of the original settler of each island were given to Pere Pierre as follows: Mohuta settled on Nuku Hiva; Tapu-oko on Hiva Oa; Toheto on Tahu Ata; Mihi-toka on Fatu Hiva; Koki-oho on Ua Huka; and Pahohe on Ua Pou (Handy Native Culture 16).

It is unlikely the settlers came only once, with everything they needed. Two oral traditions suggest that subsequent settlers brought certain plants and animals not already in the islands: pigs and chickens are said to have been brought to Ha'atuatua Bay on Nuku Hiva by a god named Haii; and coconuts were said to have been brought by a god named Tao from an island named Utupu, upwind of Fatu Hiva (Handy Native Culture 10).

Marquesas Geography	Marquesas Today	Marquesan Language	Marquesan Settlement	Archaeology	Land	Religion	Society	Warfare	Canoes	Voyaging	Western Contacts	Bibliography
-------------------------------------	---------------------------------	------------------------------------	--------------------------------------	-----------------------------	----------------------	--------------------------	-------------------------	-------------------------	------------------------	--------------------------	----------------------------------	------------------------------

1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	

[Home](#)

[Search](#)

[Archives](#)

[Past Education
Programs and
Materials](#)

[On-Line
Visuals](#)

[Bibliographies
\(Books and
Films\)](#)

Isles of Hiva: Prehistory and Archaeology

Photo right: Paepae: A Stone Foundation for a House

Periods of Hivan prehistory were devised by Robert Suggs after his work in the islands from 1956-58 and elaborated upon by Yoshihiko Sinoto in the 1960's and 70's.

Settlement Period (150 B.C. to 100 A.D.): Artifacts from the earliest period of settlement suggest that the first settlers lived near the sea and depended heavily on marine resources for survival, rather than on farming or livestock (Sinoto). Artifacts include fishhooks, sinkers, and adzes. Pottery fragments suggest the first settlers came from the Lapita cultural area in Western Polynesia, or that there was contact between Western and Eastern Polynesia. Few utensils for preparing vegetables for cooking have been found from this early period. No pig or chicken bones have been found; a dog's tooth, but no dog bones, have been found; bones of fish and turtle, as well as seabirds such as the shearwater, petrel and booby dominant the midden. These animals were probably the main sources of protein.



Developmental Period (100 A.D. to 1200 A.D.): The settlers began to spread inland. New types of fishhooks and adzes are found. A greater number of peelers, scrapers, and pounders for land-grown vegetables suggest the growing reliance on horticulture. Breadfruit became an important part of the diet. Pig and dog bones have been found, though not in great quantity. (Dogs eventually became extinct in the isles of Hiva.)

Expansion Period (1100 A.D. to 1400 A.D.): Eventually, the population spread to all habitable space, including the interior of valleys. Raised platforms (paepae) for houses begin to appear, and fortified sites suggest competition for resources may have led to warfare. Shellfish and human bones begin to dominate the midden; charred human bones suggest cannibalism. Pig bones were also found, while pottery disappears. The basic material culture appears stable for over 1000 years (Rolett). Similarities in implements suggest contacts with the Tuamotus and the Society Islands (Ottino 15).

Classic Period (1400 A.D. to 1600 A.D.): After 1400, certain religious and ceremonial structures, some of monumental size, were built. Tohua (paved public plazas) and large stone tiki are characteristic of this classical period. Terraces and irrigation ditches for growing taro also appeared. These were apparently built in order to increase food production to feed an expanding population (Ottino 15).

Archaeological remains include the following:

1. Paepae: stone platforms, usually rectangular, that formed the foundation for traditional houses.
2. Ua ma: These pits for fermenting breadfruit were dug in clay soil, usually near houses. A communal tribal pit in Taipivai on Nuku Hiva was "eighteen feet in diameter and at least thirty feet deep" (Linton 103).
3. Tohua or taha ko'ina: Stone dance plazas, once used as community sites for festivities. These sites were constructed by the haka-iki, or chiefs, and could accommodate hundreds, even thousands of participants (Ottino 33).
4. Me'ae: sites kapu for religious ceremonies. Me'ae consisted of platforms, walls, and pavements. They were located in secluded spots. The remains of chiefs and priests were often kept at these sites (Ottino 36). Human sacrifices were offered to insure victory in war, or to break a drought, insure a good harvest, or cure illness of an important person. Sometimes sacrifices were offered on other occasions, such as the consecration of a new canoe or a new house for a chief, chiefess, or priest; or to honor some great chief or priest; or to

celebrate the completion of the tattooing of a chief's son (Handy Native Culture 240). "Feia'u" (cf. Hawaiian "heia'u" or temple site) referred not to the temple as a whole, but to "small temporary structures at both public and private sacred places." These small, temporary structures were erected for various rites such as rites performed in honor of a chief's first-born child or marriage rites (Handy Native Culture 236).

5. Tiki: Wood and stone images representing powerful, protective ancestral figures; these images were placed at me'ae to aid in worshipping of the deified ancestors; some of the tiki were quite large, as high as 10 feet. According to Linton, there is a "close resemblance in body and leg treatment between the Hawaiian tiki and Marquesan tiki (93).

6. Pa (cf. Hawaiian pa, or enclosure): a defensive site, used as a place of refuge or to cover the approach to a valley. Only a few stone walls of such sites still remain; those forts with barriers of timber have disappeared. (Linton 20)

7. Petroglyphs: drawings on the surfaces of rocks are found at various sites in the islands.

Marquesas Geography	Marquesas Today	Marquesan Language	Marquesan Settlement	Archaeology	Land	Religion	Society	Warfare	Canoes	Voyaging	Western Contacts	Bibliography
1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui						
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions							
Home	Search	Archives	Past Education Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)							

Isles of Hiva: Life of the Land

Photo right: A Fisherman on the Reef at Anaho

Based on reports by early observers and judging from the remains of numerous house foundations found wherever food could be grown, Handy writes that when Europeans first discovered Hiva in the 16th century, "the density of the population was equal to the maximum that could be supported by agricultural and fishing industries practiced by the natives" (9).



Farming

Breadfruit was the principal crop. A tree was planted for each new-born child and henceforth the fruit of that tree belonged to the individual. Families planted trees in their yard; the chiefs had plantations. There were over thirty varieties of breadfruit. The trees, which did not require extensive cultivation, produced two, three, or even four crops a year. The excess harvest was stored in pits in a fermented form of breadfruit paste called ma; in ma form, the pulp could be kept for forty years. This preserved breadfruit paste was a hedge against famine, caused mainly by droughts. During droughts, the fruit fell from the trees before ripening.

Other food crops included coconut (ehi), banana, sugar cane, and taro (ta'o).

Planting was done during high tides or full moons to insure strong plants and large, plentiful fruits.

Fishing

Fishing could be done either individually, or by a group of specialists who lived in a sacred precinct near the sea and who fished (usually with canoes and nets) for the haka-iki of the valley. There was a general kapu during fishing expeditions for the chief, when speaking and activity were forbidden. If the fishing expedition was successful, a ko'ina (feast) was held and the fish distributed to everyone living the valley.

Fishing was done not just with nets but with line and hook (made from pearl shell or human bone), pa (aku lures), spears and harpoons, snares, fish traps, and poison.

The gods of fishing, as in Hawai'i, were numerous. Each type of fishing had its own god. However, the main god was Tana'oa (Kanaloa), also called Te Fatu Moana (Lord of the Sea) (Handy Native Culture 165).

Fish was kapu when breadfruit was not yet ripe, and free when the breadfruit was ready to harvest (Handy Native Culture 167). This was perhaps a conservation practice.

Marquesas Geography	Marquesas Today	Marquesan Language	Marquesan Settlement	Archaeology	Land	Religion	Society	Warfare	Canoes	Voyaging	Western Contacts	Bibliography
1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui						
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions							

[Home](#)

[Search](#)

[Archives](#)

[Past Education
Programs and
Materials](#)

[On-Line
Visuals](#)

[Bibliographies
\(Books and
Films\)](#)

Isles of Hiva: Religion

Photo right: Stone Tiki (Images) in Taipivai, Nukuhiva>

Papa'una (Upper stratum) and Papa'a'o were the primary parents of the universe. They gave birth to the gods in the dark, narrow space between them. The gods later rebelled and forced the two parents apart to make space and to let light into the world (Buck 149).

The gods were called atua (Hawaiian akua). Handy notes that the gods were not as distinct from human beings as in Western culture: "Atua were simply beings with powers and qualities of the same kind as those of living men (enata), but greater. Some men and women were atua in this life; most became atua after death (Handy Native Culture 244).



The following gods are described in Handy (244-247; Hawaiian Names of Deities in Parentheses):

Atea (Wakea; husband) and Atanua (wife): the progenitors of all natives

Tu (Ku): patron of war

Tiki: "ancestor of men through union with a heap of sand which he piled up on the seashore"

Teutoka, Teuhua, and Tahitikaupelka: gods of the sky

Tonofiti (husband) and Hanau (wife): rulers of the underworld

Tana'oa (Kanaloa): god of wind and sea and patron of fishing.

Tane (Kane): associated with the sacred adz (Tane was not a major god in Hiva as he was elsewhere in Polynesia.)

'Ono or 'Ono-tapu (Lono), like Tane, was not a major god in Hiva. He was a legendary character who defeats the god Tohetika (Buck 150-1).

Numerous other gods were patrons of special activities or phenomena of nature such as plants or diseases. For example, Hopekoutoki and Motuhaiki (Hawaiian Mokuha'i'i?) were patrons of canoe-building and woodworking; and Manatu ("Thought") and Pupuke ("Welling up of knowledge") were the patrons of chanting.

Ancestral spirits of chiefs and priests were re-presented by wooden or stone images and were worshipped in the me'ae (temples). Ancestral spirits belonging to families were worshipped at family shrines.

The most prominent names in oral narratives include Maui, Mahuike, Fai, Tana'oa, Tupa, Hahapo'a, Hu'uti, Ono, Tohetika, Tiki Tu Kae, Tuapu'u, Akau, Tiu, Kena, Pohu, Putio, Puainanoa, Puh, and Hina (Handy Native Culture 247). The stories are collected in Handy's Marquesan Legends and Landridge's Von den Steinem's Marquesan Myths. (The story of Akau are included in 1.0. "Polynesian Voyaging Traditions.")

Maui, as elsewhere in Polynesia, is said to have "fished up various islands, obtained fire from his grandfather Mahuike in the lower regions, and snared the sun with a noose of human hair to delay his passage across the sky in order that Maui's laundry might have time to dry" (Buck 153). The canoe building-god Motuhaiki is also said to have snared the sun, in order to give him time to finish a canoe (Handy Native Culture 155).

Marquesas Geography	Marquesas Today	Marquesan Language	Marquesan Settlement	Archaeology	Land	Religion	Society	Warfare	Canoes	Voyaging	Western Contacts	Bibliography
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1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
Home	Search	Archives	Past Education Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)	

Isles of Hiva: Social Structure at Contact

Illustration right: Design by a Tuhuna Patu Tiki (Master Tatooner)

Tribes: Some valleys were inhabited by a single tribe; some larger valleys were inhabited by more than one tribe. Each tribe was ruled by a chief (haka-iki). Although a strong chief might have influence over an entire valley, with subchiefs under him, there were no "kings" ruling over entire islands. Political power was decentralized. The people or the tribe were called mata-ei-nana (cf. Hawaiian maka'ainana). Some evidence indicates that class distinctions were developing between a chiefly class of haka-iki, and a class of common people called mata-ei-nana, though the social distance between chief and commoner was not great at the time of contact because the chief was still seen as related by blood to his tribe, rather than of separate ancestry, as in Hawai'i. According to one early observer, if a chief struck someone, the person could strike him back (Handy Native Culture 35-39). A person became a chief because he was the head of a large and wealthy family, who had allied itself with other powerful families through marriage or adoption, or by trading names (Handy Native Culture 45).



Households: The typical living area consisted of a sleeping house (fa'e hiamoe); a kapu eating house for men (fata'a moe, nahua); a cooking house (fa'e tumau) with an umu, or earth oven, in the floor; and a place where family religious rites were performed, either a platform or an enclosure where corpses could be treated, or food offered to the family god. Five or six related families might live together in such a compound. Nearby an ua ma, or pit for storing fermented breadfruit could be found. Breadfruit, coconut, and bananas were planted around the compound. Other structures included a small enclosure for sugar cane and paper mulberry (ute) and a pig pen (though pigs often were allowed to roam freely) (Handy Native Culture 61-67).

Men and Women: As in Hawai'i and in other Polynesian cultures, distinction was made between men, who were kapu, or privileged, and women, who were me'ie, or free (literally, "clear sky"). However, a woman could become a kapu chiefess of a tribe or a sacred priest, based on her abilities and genealogy.

Occupations: According to Handy, differences in prestige had more to do with one's function in society or expertise than in one's genealogy. Next to the haka-iki, or chief, was the tau'a (Hawaiian kaula), the inspirational priests whose functions were to care for the remains of the chiefs and priests deposited at temples, preside at tribal religious ceremonies, and discover and speak the will of the gods (Handy Native Culture 224). Next in prestige was the tuhuna o'ono (tuhuka o'oko), a chanter who presided over lesser religious ceremonies. Toa (Hawaiian koa), or war leaders were highly respected in civil affairs as well. Other experts included planters, fishermen, canoe-builders, net-makers, house-builders, tapa-makers, mat-makers, tatooners, and the like. (Handy Native Culture 36). These groups of specialists were called tuhuna, or experts, with a modifier describing what the person did. The following list of tuhuna is found in Handy (Native Culture 144):

Tuhuna Hakatu Fa'e, or Tuhuka Atu Ha'e--master housebuilder.

Tuhuna Hakatu Paepae, or Tuhuna Upeupe Paepae--master platform builder.

Tuhuna Tekai Ke'a--Stone cutter, one skilled in cutting stones for platforms, houses, sacred places, and feast places.

Tuhuna Ua Ma--Digger of ma pits.

Tuhuna Pehe--Professional skilled in making string figures and applying them in decoration such as ornamental sennit designs.

Tuhuna Ha'a Tiki Tiki--Skilled wood carver.

Tuhuna Keana Moena--Skilled mat maker.

Tuhuna Tekai Ke'a Tuki Popoi--Maker of pounders for popoi (breadfruit paste).

Tuhuna Ko'oka--Maker of popoi dishes.

Tuhuna A'aka Pahu--Drum-maker.

Tuhuna Ta'ai, or Tekai, Vaka--Master canoe carver.

Tuhuna Ta'ai Tiki--Image carver.

Tuhuna Ta'ai, or Tekai Papa, or Tuhuka Tao--Coffin carver.

Tuhuna Ta'ai Tokotoko Pio'o--Staff maker.

Tuhuna Titi Ouoho--Maker of hair ornaments.

Tuhuna Tutu Tapa, Tutu Kahu--Skilled bark-cloth maker.

Tuhuna A'aka Tah'i--Fan maker.

Tuhuna Hana Pa'a Kea--Maker of tortoise-shell crowns.

Tuhuna Pu Taiana--Maker of pu taiana ear ornaments.

Tuhuna Tehe--He who cuts the foreskin.

Tuhuna Fainu, Tuhuna Apau, or Tuhuka Haika--Medical expert.

Tuhuna Nati Kaha--One skilled in witchcraft.

Tuhuna Patu Tiki--Master tattooer.

Tuhuna Ava-ika--Master fisher.

Tuhuna Upena--Master netmaker, the same as the Tuhuna Ava-ika.

Tuhuna Ha'akekai--One learned in legends.

Tuhuna Mata Tetau--One learned in genealogies.

Tuhuna Pu'e-- Ceremonial priest who taught and chanted the pule.

Tuhuna Vavana--Ceremonial priest who taught and chanted the Vavana.

Tuhuna O'ono--Ceremonial priest skilled in the last four named branches of learning (legends, genealogies, pule, chants).

Tuhuna Nato--He who composed nato chants. (Similarly with other kinds of chants: Tuhuna Pope, Tuhuna Rari, etc.)

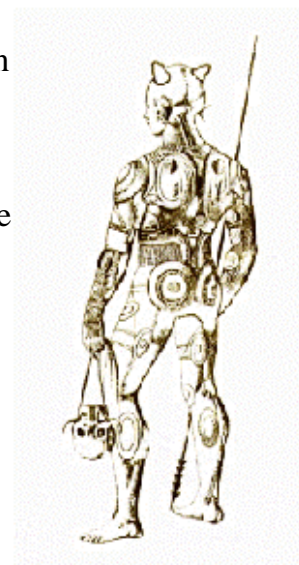
Marquesas Geography	Marquesas Today	Marquesan Language	Marquesan Settlement	Archaeology	Land	Religion	Society	Warfare	Canoes	Voyaging	Western Contacts	Bibliography
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1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions	
Home	Search	Archives	Past Education Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)	

Isles of Hiva: Warfare

Drawing right: a Tattooed Hivan Warrior

Hostilities began when a chief and his priest went to get human sacrifices from a neighboring tribe for some ritual deemed necessary. Once a victim, or victims, had been killed, their families and relatives sought vengeance against the attackers. Vengeance could also be sought for personal slights or insults, for example, a host group being inhospitable to a visiting group. After the first killing, a cycle of retaliation continued until one of the groups sued for peace or was annihilated or driven away (Handy Native Culture 123). Peace was then restored, or alliances sealed through an exchange of human sacrifices and turtles, which were often substituted for human sacrifices (Handy Native Culture 141).



On each of the islands, traditional enmities developed. Wars were fought between the tribes of the two main political divisions on Hiva Oa, the Nuku of the Western end of the island, and the Pepane of the eastern end. The natives believe that Nuku was the elder brother, and Pepane the younger brother, who were the first settlers of their respective ends of the islands. A similar east-west division was found on Nuku Hiva: "Tei'i, traditionally the elder brother, was the ancestor of the western division, while Taipi-nui-a'aiku was the ancestor of the people of the eastern division" (Handy Native Culture 25). While the tribes of each main division on both Hiva Oa and Nuku Hiva fought among themselves, when island-wide warfare broke out, they united to battle the tribes of the other end of the islands (Handy 27-30; 31-34). Rivalries between islands also developed.

The victims slain in revenge warfare were sometimes eaten, apparently an act of revenge (Handy Native Culture 124).

Marquesas Geography	Marquesas Today	Marquesan Language	Marquesan Settlement	Archaeology	Land	Religion	Society	Warfare	Canoes	Voyaging	Western Contacts	Bibliography
-------------------------------------	---------------------------------	------------------------------------	--------------------------------------	-----------------------------	----------------------	--------------------------	-------------------------	-------------------------	------------------------	--------------------------	----------------------------------	------------------------------

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Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions
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Home	Search	Archives	Past Education Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)
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Isles of Hiva: Canoes

Drawing right: A Hivan Canoe

[From Handy, *The Native Culture in the Marquesas*, Honolulu: Bishop Museum, 1923, pp. 136-7, 154-161, 169.]

Canoes and Canoe-Making Process of Manufacture

The following account of canoe-making is from Atu Ona, Hiva Oa. On the first day of the work the canoe-maker (tuhuna vaka) with his assistants, called ta akau, accompanied by a priest to recite the sacred chants (tuhuna pu'e), went up the valley where stood the temamu tree that had been selected. While the workers stood about the tree, the priest chanted the pu'e, recounting the growth of the world. Then the tree was felled, fire being used to aid in the accomplishment of it (according to Linton). This was all that was done on the first day.



On the second day the bark was removed and the work of roughing out the canoe body was begun and continued all day. A temporary shed (oho au vaka), open on all sides, was erected over the place where the work was going on. This building, like all other features of the enterprise, was sacred. All the workers were consecrated during the labor, sleeping at the oho au.

The whole body of the canoe was completed here. When this work was finished the new canoe body was carried on the shoulders of the workers to the sea where it was placed in another shed (oho au veka), which had been erected for the purpose on the shore. As the new hull was carried down the valley, the priest followed close behind chanting the pu'e.

The outrigger was made and fitted to the canoe in its house by the sea. When all the work was completed, the canoe and house in which it rested by the sea were decorated with short peeled stakes of fau (koufau), decorated with neatly woven green coconut leaves (kapihipiri), the reddish cloth made of the bark of the banyan tree, sacred white cloth, and human hair. The human hair was omitted from the decorations of fishing canoes. The crew and warriors who were to go on board were embellished with materials similar to those used in ornamenting the canoe itself and new paddles with small images carved at the upper end of the handle were made.

Certain details of canoe building at Pua Ma'u, Hiva Oa, given to me by Mr. Linton, supplement the above account. Four hundred men were employed in the building of a certain canoe at Pua Ma'u, working under the direction of four tuhuna. The work was done where the tree was felled and where a decorated house was erected for the workmen. Workmen and tuhuna were fed by the chief, twenty men being employed in this work. The place was tapu to women and to strangers. Any intruder from another valley would be killed and eaten. "When the canoe was finished a great feast was held at the place of manufacture, the workmen's house being decorated with ferns and wild vines."

In the sacred chant called oho au o Motuhaiki, which is part of the tona pou chant (see Chants), and which was probably used in connection with canoe-building, are mentioned the stages in the construction of a canoe: finding the tree, trimming it, felling it, measuring and cutting out the proper length, and hollowing the hull; then building the shed for it, placing the body on two log supports in the house, thinning down the sides, polishing the body with crushed coral; then naming the various parts attached to the hull, side-boards, bow, stern, seats, etc. The first master canoe-maker was, traditionally, Motuhaiki, who noosed the sun, so that he might have sufficient time to finish his work.

Canoes, like everything else, were named. Mr. Linton was told in Pua Ma'u that new canoes were named after old ones that were worn out. Not only was the canoe itself named, but every part, the bow-piece,

stern-piece, sideboards, seats, bailers, paddles, and so on.

Launching

Just before a canoe was launched, the crew and warriors were assembled about it in the oho au, and the pu'e was again chanted. The vessel was then carried into the water with all its paddlers and warriors aboard, the canoe and its crew alike being ornamented. Soon after a new war canoe had been consecrated and launched, the chief who owned it sent it to raid an enemy bay and secure sacrifice victims. It was for this purpose that the canoe had been built, and its consecration was not regarded as complete until its mana had been thus demonstrated. A chief would sometimes send his warriors to get victims at the time of the building of the canoe to give it mana. The recitation of the pu'e, a creation chant of the world and nature, made the work complete by uniting the new product of handicraft with creation from its beginnings, right down through the growth of all things to the new canoe. The bedecking of the canoe and its house had this ceremonial significance: the koufau were the sign of tapu; hiapo, the cloth that covered the loins of tapu men symbolized both power and sacredness; and the kopinipini embodied the same sense of sacredness that brought about the use of the coconut leaf as a head and body dress by priests, and as a sign of truce.

Mr. Linton found that in both Hana Hehe and Pua Ma'u, on Hiva Oa, it was the custom, when a war canoe was being made, for a warrior of great prowess to sleep on or in the log from which the hull was being formed, during the nights of the period of its manufacture. This was in order that the canoe might have imparted to it the qualities of mana, power, and luck, which the warrior embodied.

All canoes used for war or the work of fishing were tapu to all women except chiefesses or priestesses for the reason that their contact with the canoe would have profaned it, hence made it lose its power (mana).

Canoes that were built for voyaging must have been an exception to this rule, for women accompanied their men on voyages. If a fishing canoe were profaned by the touch of a woman, it was purified by having hair burned on the bow.

Types of Canoes

In the Marquesas there were craft of all kinds varying from those merely large enough for children to play in to the great exploring canoes. Lt. David Porter [A Voyage to the South Seas 1823] gives excellent descriptions of the appearance of different forms of craft that he observed when he visited Nuku Hiva.

Voyaging Canoes: Of canoes constructed for exploration Porter says, "The canoes formed for the sole purpose of going in search of new lands are of a still larger construction, and are rigged in the same manner." It appears that these canoes for exploration were frequently double--that is, made by lashing two canoe bodies together, leaving a space of several yards between. On the cross-pieces were laid bars forming a platform. So far as I have ascertained, the Marquesas' canoes never had a house on this platform. In the story of Pohu such a platform is described as having a rail around it. The supplies for a voyage were kept here and in the body of the canoe, and the people on board lived on the platform and below decks. According to a trustworthy Fatu Hiva informant, such a canoe would have two sails, the masts being stepped in the usual place in the forward end of each hull. War canoes and canoes for exploration--according to modern natives--were as much as sixty feet long. So far as I know, however, there is no record of a canoe of this size, although no limitation in the materials at the disposal of the native nor in his ability to utilize them would have prevented him from making canoes of this size or even larger.

War Canoes: For more elaborate organized expeditions by sea to attack an enemy, many canoes were necessary. A preliminary of such a war was the building of war canoes. These canoes were merely for transportation or for attacking an enemy on shore from the sea. There seems to have been little that might be characterized as marine warfare, since attacks were always made at a time when the canoes of the enemy were unprepared to meet those of the attacking party.

War canoes when they were not in use were either entirely taken apart and their parts distributed among different families, or they were placed in a house near the shore or possibly far up the valley on the feast place of the chief who owned the canoe. Porter describes war canoes as follows:

"They are about fifty feet in length, two in width, and of a proportionate depth; they are formed of many pieces, and each piece, and indeed each paddle, has its separate proprietor. To one belongs the piece projecting from the stern, to another the part forming the bow. The pieces forming the sides belong to different persons, and when a canoe is taken to pieces, the whole is scattered throughout the valley, and divided, perhaps, among twenty families. Each has the right of disposing of the part belonging to him, and when she is to be set up, everyone brings his piece, with materials for securing it. The setting up a war canoe goes on with the same order and regularity as all their other operations. These canoes are owned only among the wealthy and respectable families, and are rarely used for the purposes of war or for pleasure, or when the chief persons of one tribe make a visit to another. In such cases they are richly ornamented with locks of human hair intermixed with bunches of gray beard, strung from the stern projection to the place raised for the steersman. These ornaments are in the greatest estimation among them, and a bunch of gray beard is in their view what the feathers of the ostrich, of heron, or the richest plumage would be in ours. The seat of the coxswain is highly ornamented with palm leaves and white cloth; he is gaily dressed and richly ornamented with plumes. The chief is seated on an elevation in the middle of the canoe, and a person fancifully dressed in the bow, which has the additional ornaments of pearl shells strung on coconut branches raised in the forepart of the canoe. She is worked altogether by paddles, and those who use them are placed, two on a seat, and give their strokes with great regularity, shouting occasionally to regulate the time and encourage one another. These vessels, when collected in a fleet and in motion, with all their rowers exerting themselves, have a splendid and warlike appearance. They were paraded repeatedly for my inspection, and in all the reviews they appeared greatly to pride themselves on the beauty and splendour of their men of war. They are not, however, so fleet as might be expected, as our whale boats could beat them with great ease."

Captain Cook describes canoes with heaps of sling stones in the bow, the crews armed with slings. In the story of Pohu is mentioned a double war canoe made of two canoe bodies with a platform built up between, the platform being surrounded by a rail that was decorated with tapa and ornamental sennit. In this canoe every seat was named. The crew mentioned in connection with it were a steersman, a man in command on the platform (puapua), the paddlers, bailers, and a woman to chant the tribal genealogies. The informant who recounted to me the story of Pohu told me that war canoes were always taken apart on their arrival from a raid. Bodies of victims were thrown on the bow piece of the war canoe.

Fishing Canoes: Porter describes Hivan fishing canoes as follows: "Their fishing canoes are vessels of a [large and full] construction, many of them being six feet in width, and of an equal depth. They are managed with paddles resembling an oar, and, in some measure, are used as such, but in a perpendicular position, the fulcrum resting on the outriggers projecting from each side. With those they proceed to the small bays on the coast, where they fish with the scoop net, and with the hook and line. They have also smaller canoes, which are commonly nothing more than the hollow keels of the large ones, after the upper works are taken off. These hollow keels are furnished with outriggers, and are used for fishing about the harbour."

Materials for Canoes

Woods used most for canoe-making were temanu, hutu (*Barringtonia speciosa*), and mi'o. The size of the canoe desired frequently determined the choice of a tree. The temanu was the largest of the available trees, and furnished the most durable wood. According to Linton, breadfruit trees were used for smaller canoes.

Parts of a Canoe

The main parts of a canoe consisted of the hull, adzed out of a tree trunk; detachable bow and stern piece; sideboards lashed on the edges of the gunwale; and an outrigger.

The main body or hull (vaka, tua, tekee) of the canoe was made of a hollowed single tree trunk. The bow (piha, au'au, kanihi, hopeta), a separate piece, was usually upturned, but both Cook and Stewart describe horizontal bows. Linton aptly describes the stern (mu'i, hope au'au) as narrowing "rapidly to form the tail, which was a long projection like a thick plank with the edge up, rising from the body of the stern piece at an angle of twenty to thirty degrees." The sideboards (hue tana) consisted of single hewn boards (papa) lashed (humu) to the gunwale of the canoe, but it is probable that the sideboards of some canoes were built up with several boards, for Porter described the sides as made of many pieces of the breadfruit tree, cut into the form of planks, and sewed together with the fibers of the outside shell of coconut. The seams are covered inside and out with strips of bamboo sewed to the edge of each plank, to keep in a stuffing of oakum, made of the coconut shell also.

Over the seams between the sideboards and the hull, both inside and outside, were strips made of wood or bamboo (teka, vaho, teka oto, ta'i, patua). Caulking of the seams at this place and at the point of attachment of bow and sternpiece was done usually with coconut cord fiber (kaha), or with feathers (hu'u manu). Langsdorff describes caulking with moss over which was rubbed resin from the breadfruit tree. Bulkheads in the body of the canoe are described by Porter. Seats (papa tau) for paddlers rested on an inner strip (teka oto) which covered the inboard seam between the sideboard and the hull. These strips were bound and held in place by sennit. The two rods (kiato, hoa) supporting the outrigger were usually fau poles; Marchand describes rods of bamboo. The supporting rods passed across the top of the canoe, being lashed to the top of each gunwale, or sideboard, by means of sennit that passed around the rod and through holes in the board. These lashings were ornamental and were called teka. The float (ama) of the outrigger was made of fau and was attached to the supporting rods by four or six small sticks (ti'a ti'a) which were inserted into holes on the outrigger float and bound on the supporting rods. The platform (papua, hou'ua) resting on the pole that held together a double canoe has been described. On all large single canoes used for fishing or for war there was at the stern an elevated platform (papa'u) on which the steersman stood. Stewart describes "a high platform deeply fringed with the pendent leaves of a palm," on which the steersman stood on the stern of a canoe. Stewart states that in the bow of this canoe there was another platform made of small sticks covered with a mat on which was seated a man who was evidently a priest.

Sails (ti'a, moena) which were used on the smaller fishing craft and the large voyaging canoes were of the triangular, or lateen, type, and according to Linton were made of coconut leaf mats. It seems probable that pandanus mats were also used, particularly for voyages, on account of their greater durability. The mast was stepped in a hole (puti'a) in the bottom of the canoe and passed up through one of the forward seats (pihao).

The paddles (hoe) were made of rosewood. The handle ends were ornamented with a small tiki figure and the blades with designs similar to those used on bowls. The lower end of the paddle blade always terminated in a long rounded point.

The bailers were made of mi'o or temanu wood and were "shaped like a sugar-scoop with the handle reversed--that is, projecting forward over the cavity" (Linton).

The main decoration of canoes was by means of carving and ornamental lashing. Bow and stern pieces were carved with the ornamental adzed designs (tiki) used on house posts. Some modern informants say that tattooing designs were also applied on these parts. This is true at least of canoe models. I believe with Mr. Linton that this type of carving was not used on the large canoes of ancient times. Ornamental lashing (pu'u kaha), the designs of which were taken from string figures, bound the supporting rods of the outrigger to the balancer and to the sideboards and the sideboards to the hull, these lashings being made of sennit dyed red, yellow, and black. There was a conventional figure head, which was apparently always used at the forward end of the bow piece, consisting of a flattened conventionalized face. "There was a tendency to decorate the neck of the bow piece with figures carved in high relief or by the attachment of separate pieces." "A small tiki figure was sometimes but not always attached to the tip of the stern piece" (Linton).

Temporary decoration consisted of coconut leaves, white cloth, and human hair; and "coconut fronds, which

were commonly placed along the sides of the bow and stern platforms with their lower edges trailing in the water" (Linton). On the canoe with the two platforms described above, Stewart observed three green coconut leaves four or five feet high, which were fastened erect on the bow piece. It is probable that these were symbols of peace. Lines were run from the stern piece to corners of the steersman's platform and from these lines hung tufts of human hair and bits of white cloth (Stewart). Stewart describes skulls as being lashed on each corner of the platform at the stern of a war canoe. Under the lashings that held the outside binding strip along the gunwale were put white feathers of the tropic bird, so that the plumed ends were visible--these gave the appearance and impression of speed and, doubtless, in the native mind were potent to make actual in the canoe this quality of the tropic bird.

Crews

Modern informants say that the crews of large canoes numbered from one hundred and forty to one hundred and sixty men. Garcia, on the other hand, puts the number at forty or fifty. Legends commonly speak of a larger number and relate that, usually, in the Marquesas two hundred and eighty (e fitu touha--that is to say, seven forties) warriors constituted the crew of a war canoe or a voyaging canoe. The captain (ava-ika) had charge of the handling of both fishing and war canoes, and doubtless was usually, if not always, the steersman--his name indicating that he was a fisher by profession. The captain stood on the stern platform which was also the place of the chief. A large paddle (kapekape, uki) served for steering. In small canoes paddlers sat two on a seat, in large canoes four abreast, working in shifts, two by two. They paddled rhythmically in unison.

While part of the crew was occupied in paddling, others were busy bailing.

Housing of Canoes

At Pua Ma'u I was told that war canoes were always taken to pieces when they were not in use. Here and at Atu Ona canoes were kept in special houses on the shore. At Atu Ona, the natives relate that a certain traditional canoe used to repose on two stone supports (ano) on the main dance place of the valley. One of these supports, a large block of basalt with a somewhat crescent-shaped concave top, is still on this dance area.

While on Ua Pou, I learned that on that island the chief's war canoe was sometimes, if not always, carried on to the feast place before his house. It seems probable that it was the fishing canoes which were housed by the sea, and that the war canoes, which were more occasionally used, were those that were taken apart or that were kept in houses on the chief's dance area. Porter describes a place, which he calls the "public square," which he invaded far up Tai-pi Valley, and says: "Numbers of their gods were here destroyed, [and] several large and elegant new war canoes, which had never been used, were burnt in the houses that sheltered them."

Marquesas Geography	Marquesas Today	Marquesan Language	Marquesan Settlement	Archaeology	Land	Religion	Society	Warfare	Canoes	Voyaging	Western Contacts	Bibliography
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1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui
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Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions
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Home	Search	Archives	Past Education Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)
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Isles of Hiva: Western Contacts and Colonization

Illustration right: Hawaiian petroglyph of a European ship

The following dates and events are taken from Greg Denning's *Islands and Beaches*:

1595--Alvaro de Mendana visited the southern islands of Hiva in July. He killed two hundred islanders and named the group "Las Marquesas de Mendonza" after the Viceroy of Peru.

1774--Captain James Cook spent four days at Vaitahu on Tahuata. One of his men killed an islander for taking a stanchion from the deck of the ship.

1791--The northern islands of Hiva were sighted by American Joseph Ingraham, who was engaged in the fur trade between Northwest America and China; earlier he had been warned against landing in Hawai'i, where the natives had captured two trading vessels.

1797-78--Twenty-one-year-old William Pascoe Crook of the London Missionary Society was left alone at Vaitahu on the island of Tahuata. The first missionary to visit Hiva, he was not well received by the islanders: "They were contemptuous of him for being ignorant of their language.... Crook was stripped of all he had, scoffed at, left outside any system of food distribution in a time of food shortage and never given any means to obtain it."

1811--Captain William M. Rogers discovered sandalwood (puahi) in the islands and collected two hundred tons of wood. Sandalwood continued to be gathered for the China trade until the supply was depleted, around 1821.

1813--American naval lieutenant David Porter, in the Pacific to capture British whaling ships during the War of 1812, landed at Taiohae and allied himself with the Tei'i tribe against their traditional enemies, the Hapa'a and the Taipi of the valleys to the east. After attacking and subduing the Hapa'a and the Taipi, he attempted to annex the isles of Hiva to the United States in 1814. His claim to the islands was based on "priority of discovery, conquest, and possession." He gathered the chiefs of the island to sign a petition asking President Madison to be their "chief of chiefs." Madison did not want responsibility for the islands and declined the request. After Porter departed, the contingent he left in Taiohae was attacked and fled to Hawai'i.

1830--Whalers began to make visits to supply their ships during a whaling boom in the Pacific that lasted from 1832-1839.

1832--Haole missionaries from Hawai'i landed at Taiohae with Hawaiian servants. Frustrated by lack of success at converting the people and humiliated by the irreverent attitude of the natives toward the Christian god and morality, the missionaries left after nine months, condemning the people as "unthinking," "amoral," and "lazy."

1839--French Catholic missionaries arrived and encountered indifference and ridicule from the people; but the Catholic Church supported the missionaries and they stayed on. Eventually most of the people of Hiva were converted to Roman Catholicism.

1842--The French admiral Dupetit-Thouars landed at Tahuata and took possession of southern islands of Hiva; later that year, he sailed into Taiohae, Nukuhiva, gathered together the chiefs of the island, and had them cede the island to France.

1845--The French met with violent resistance from Pakoko, a local chief of Taiohae. Pakoko ordered the



killing of six French soldiers who trespassed on a kapu area, and used one of them as a sacrifice to his god. Pakoko was tried and executed by the French. He came to represent the spirit of native resistance to foreign intrusion: the idea that thunder was a sign of his return circulated among the people. [Another version of the Pakoko story was told to me by one of his descendants who grew up on Nukuhiva, but now lives in Hawai'i: Pakoko's daughter had been raped by a French sailor when she visited a ship anchored at Taiohae. To cleanse her, Pakoko wanted her to bathe in the blood of a Frenchman. He killed a sailor, cut off his head, and threw the body in to a stream. Downstream, his daughter was positioned for a bath under a waterfall down which the blood of the sailor flowed.]

Sporadic resistance against the French, followed by French retaliation, continued through the second half of the 19th century. A rebellion on the island of Hiva Oa in 1880 was violently suppressed. However, Dupetit-Thouars' dream of making the Isles of Hi va a naval base and the crossroads of the Pacific was never realized. In the second half of the 19th century, the French concentrated on colonizing Tahiti-nui, and the islands of Hiva were relatively neglected.

Comparative Dates--Hawai'i

1778--Captain Cook arrives in Hawai'i, the first record of a Westerner visiting the islands.

1812-1840--Sandalwood trade begins in 1812; and collapses by 1840.

1820-1860--Whalers use Hawaiian ports for supplies; , the whaling fleets were the largest between 1845-1855 when prices for oil and whalbone were high.

1848--The Mahele begins (division lands to chiefs)

1850--Foreigners are allowed to buy land.

1852--First immigrant laborers to Hawai'i arrive from China.

1860--Twelve Sugar plantations were operating by 1860; the American Civil War cut off sugar from the southern states to the northern states creating a market for Hawaiian sugar. 32 plantations were operating by 1866; 90 plantations by 1885

1868--First immigrant laborers from Japan arrive.

1893--Hawaiian Kingdom overthrown by haole businessmen supported by U.S. Marines.

1900--Territory of Hawai'i established by U.S.

Biological Effects of the Western Contact

When western explorers and traders began frequenting the islands in the 1700's and early 1800's, the population was estimated at 80,000-100,000 (e.g., in 1798, Crook and Robart estimated a population of 90,000 [Denig 239]).

In 1863, there were probably nine or ten thousand people left (Denig 239); in 1904, only 4,000 remained; in the 1911, 2,890 (Buck 152); by 1920-1, only 1,800 remained, "including a handful of whites, and many mixed bloods--for the most part white and Chinese mixtures with the natives.ÉThe whites have brought, and still bring, syphilis, gonorrhea, a type of rapid consumption called by the natives pakoko, influenza, and many other minor ailments. Smallpox at one time ravaged two of the northern island and the Chinese brought leprosy." In 1923, the population was at an all time low of only 1200 inhabitants (Handy Native Culture 5).

In 1863, thirty-two natives of Hiva were taken to South America by Peruvian slave-traders. The French government demanded them back, but none returned. Some died on the plantations of South America. Others died of small-pox on the voyage home. Twelve Pacific Islanders with small-pox were dropped off on the

black sands of Taiohae, and the disease spread from there (Dening 232).

Handy writes, "Degeneration of the native physique is due to these diseases against which the natives have been in no way protected; to liquors, drugs, and tobacco; and to an inactive, listless life with decay of native standards resulting in the breaking down of their whole system of life and thought, and the elimination of all their natural avenues for expression--a condition that has been brought about largely by the organized and unorganized forces of white influence" (Native Culture 5)

Western capitalists never imported large amounts of laborers to the islands of Hiva, as they did in Hawai'i, because there was not enough flat land to develop large plantations of tropical crops such as sugar cane or pineapple.

Thus the population today remains small, and predominantly Hivan and French. Because of better health care, the population is gradually increasing: 2,000 by 1926; 5,400 by 1970 (Sinoto 112); in 1990 the population was 7,350.

Marquesas Geography	Marquesas Today	Marquesan Language	Marquesan Settlement	Archaeology	Land	Religion	Society	Warfare	Canoes	Voyaging	Western Contacts	Bibliography
1976: Tahiti	1980: Tahiti	1985-87: Aotearoa (New Zealand)	1992: Rarotonga	1995: Marquesas	1995: West Coast, British Columbia, & Alaska	1999-2000: Rapanui						
Voyages	Canoe-Building	Wayfinding	Life on a Canoe	Polynesian Migrations	Proverbs and Traditions							
Home	Search	Archives	Past Education Programs and Materials	On-Line Visuals	Bibliographies (Books and Films)							