

HAWAIIAN
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1828 Shark attack

SAMUEL M. KAMAKAU

Hawn
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Ruling Chiefs of Hawaii

1961

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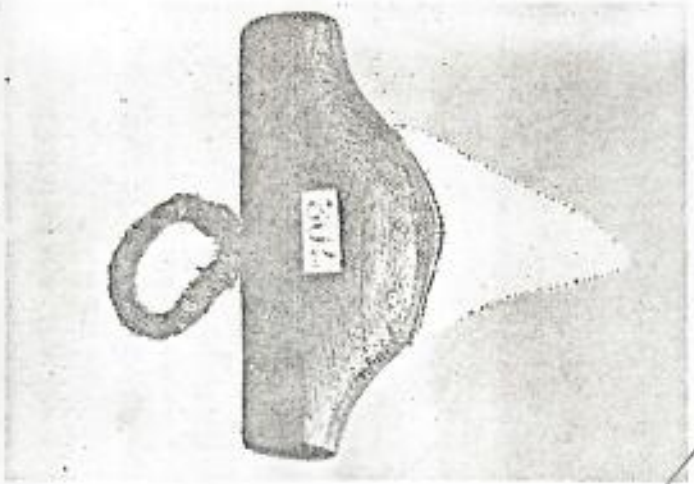
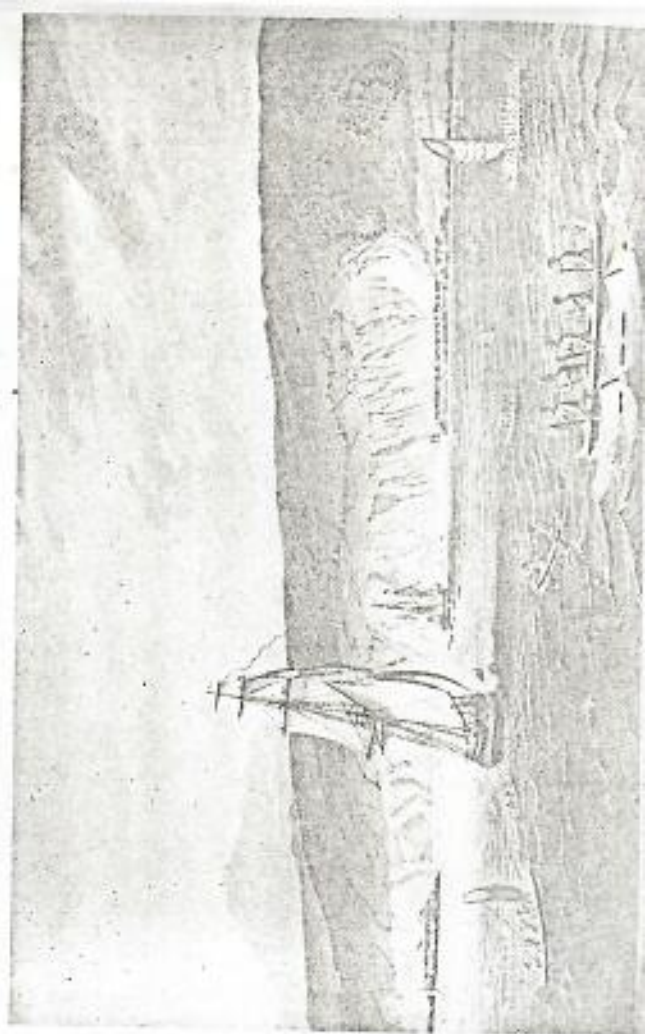
SAMUEL M. KAMAKAU
from a crayon portrait

Bishop Museum Photograph

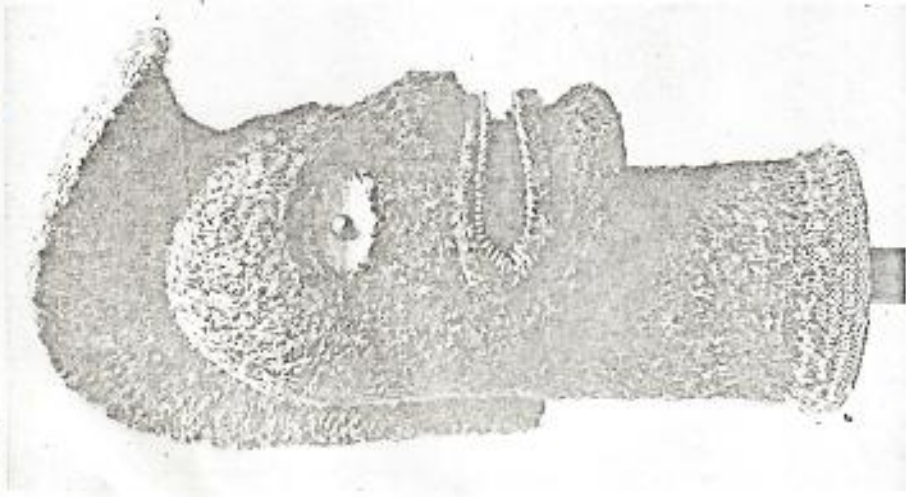


EXPLOSIVE ERUPTION OF KILAUEA
Photograph by K. Mochura used with his permission

KEALAKEKUA BAY
After Thomas Heddington, artist with Captain Vancouver, 1792-1794



SHARK'S-TOOTH WEAPON
(IHI O MĀNOA)



KU-KA'ILI-MOKU
Said to have been the war god of
Kahahione the Great

IAO VALLEY



Perhaps Ka-lani-'opu'u was by this time senile with age. At Kapa'au in North Kohala he selected a place at Hinakahua for sports and games such as hula dancing, *kifu* spinning, *meika* rolling, and sliding sticks. Meanwhile rebellion was brewing. It was I-maka-koloa, a chief of Puna, who rebelled, I-maka-koloa the choice young 'awa [favorite son] of Puna. He seized the valuable products of his district, which consisted of hogs, gray tapa cloth (*'alesti*), tapas made of *manaki* bark, fine mats made of young pandanus blossoms (*'ahu hinoho*), mats made of young pandanus leaves (*'ahuaoo*), and feathers of the 'o and *manua* birds of Puna.

Nu'u-anu-pa'ahu, chief of Ka-'u, was also in the plot to rebel, but he was at this time with Ka-lani-'opu'u, and Ka-lani-'opu'u feared Nu'u-anu-pa'ahu. Ka-lola in the meantime was with Kiwala'o on Maui. Ka-lani-'opu'u ordered nets from Hilo and lines for albacore fishing (*aho hi-ahi*) from Puna and from Kalae in Ka-'u; and Ka-helili and Ka-lola sent him a double canoe filled with small-meshed nets and fishlines. Because of his fear of Nu'u-anu-pa'ahu, Ka-lani-'opu'u plotted with his false kahunas to be rid of him. The kahunas said, "Let Nu'u-anu-pa'ahu be devoured by a shark so that his kahunas may not have his remains to burn in vengeance." "Yes," assented the chief, "let him be swallowed by a shark so that his kahunas cannot avenge him. Let him be swallowed whole by the shark." The kahunas boasted, "O heavenly one, the shark is ready that is to devour him. Let all the chiefs go to Kauhola at Hala'ula to indulge in surfing, the favorite pastime of chiefs. Should the surfer from Ka'ua in Ka-'u join in the sport he will be swallowed by the shark. He will then not be able to rebel against the rule of your son, Kiwala'o." The chief agreed to this plan, and chiefs, guards, warriors, and all the members of the chief's household went to Kauhola, erected temporary shelters, and went surfing, but Nu'u-anu-pa'ahu could not be persuaded to join them. All the other chiefs and commoners went surfing, but he did not go with them.

One day when the waves of Maui and Ka-pae-lauhala were rolling in magnificently, the cutworm-tearing son of Na'alehu resolved to show the skill he had got through practice [in surfing] on the bent wave of Ka'wa', or diving headforemost into the waters of Unaheha. He reached for his surfboard and went out to sea beyond Ka-pae-lauhala. He rode in on a wave and landed at Kinaina. Again he went out and, having set himself in the way of a good wave, rode once more to land. As the wave rolled landward, a shark came in with it. It came with open mouth that showed sharp, pointed teeth. Sea water poured between

its teeth and through its gills; its skin seemed to bristle; dreadful indeed was the appearance of that rough-skinned one. Six fathoms was its length. Chiefs and commoners fled terrified to the shore, but Nu'u-anu-pa'ahu, the lad who had broken *manawa* branches at Kapapala and torn up *koof'e* vines at Ohaieka, did not lose courage. When he saw that the shark was pursuing him, he steered his board for the crest of the wave. The shark saw him on the crest and pursued him there. Nu'u-anu-pa'ahu fled with the speed of an arrow. The shark passed under and turned to slash; Nu'u-anu-pa'ahu struck out with his fists and hit it in the eye. The shark dived downward; Nu'u-anu-pa'ahu turned toward a low surf, and as he rode it the shark passed under him. Again it turned to bite; he sped on and the shark missed. He struck at the shark's gills, his hand found its way in, and he grasped the gills and jerked them out of its head. The shark, wounded, left him. Just as he was about to land, another shark that lurked near a stone appeared with open mouth. Nu'u-anu-pa'ahu struck out at it with his fists, hitting it back of the jaw. The shark turned and gashed him on one side of his buttocks. Then at last Nu'u-anu-pa'ahu reached shore. Chiefs and commoners shouted applause for his strength and congratulated him upon his escape from death. Sounds of wailing echoed and reechoed.* His kahunas meanwhile saw to the securing of the gills (*pihapiha*) of the shark and quickly began their prayers. The leaves of the trees went dry; there was no fish to be had. "Let these sharks die in a day," they prayed, "land on shore, be eaten by hogs and dogs, and their flesh stink in the sun." On that very day one shark came ashore at Na'ohaku, the other at Hapu'u. But Nu'u-anu-pa'ahu lay suffering great pain until he died at Pololu, and there he was buried. The natives of that place will tell you something of this, but they will probably repeat only half the story.

During the stay at Kohala it was arranged by the chiefs and counselors that the young heir to the rule over the laws, Ka-lani-kau-i-ke-aoihi Kiwala'o, should be sent for to Waipi'o. At his arrival it was agreed by the chiefs and counselors and by the ruling chief, Ka-lani-'opu'u, that at the death of Ka-lani-'opu'u the rule over the land should descend to this heir, his should be the right to perform the ritual to dedicate a heiau, and whatever ivory [of whale or walrus tusks] came ashore should belong to him. To the son of his younger brother, to Kamehameha, Ka-lani-'opu'u gave his god Ku-ka'ili-moku and commanded Kamehameha to live under Kiwala'o, who belonged to the senior branch of the family.

* Ka Napepe K'u'ole'o, Feb. 9, 1867.

The heiau of Moa'ula was erected in Waip'o at this time, and after its dedication by Ka-lani-'opu'u the chief set out for Hilo with his chiefs, warriors, and fighting men, some by land and some by canoe, to subdue the rebellion of I-maka-koloa, the rebel chief of Puna. In Hilo Ka-lani-'opu'u built the heiau of Kanowa at Pu'ueo and after dedicating it he went to stay at 'Ohele in Waiakea while his army went to fight in Puna. The fight lasted a long time, but I-maka-koloa fled and for almost a year lay hidden by the people of Puna. Ka-lani-'opu'u meanwhile awaited his capture. Leaving Hilo, he went to Ka-'u and stayed first at Punalu'u, then at Waiotinu, then at Kama'oa in the southern part of Ka-'u, and erected a heiau called Pakini, or Halau-wailua, near Kama'oa. A certain man, a *kahu* of the chief named Puhili, said, "I-maka-koloa is being hidden by the natives of Puna, but if the chief consents I will go with my god and find him." "Go with your god," said the chief. Puhili went until he came to the boundary where Puna adjoins Ka-'u, to 'Oki'okiaho in 'Apua, and began to fire the villages. Great was the sorrow of the villagers over the loss of their property and their canoes by fire. When one district (*ahupua'a*) had been burnt out from upland to sea he moved on to the next. This was Puhili's course of action, and thus it was that he found I-maka-koloa where he was being hidden by a woman *kahu* on a little islet of the sea. A man of handsome features was this I-maka-koloa. He had a fine head of hair so long that it reached to the soles of his feet. Fearing lest he be recognized by his hair he had gone secretly to this woman *kahu*, on a rock islet standing off in the sea, to have his hair cut, and that was how he came to be found. As soon as he was found, Puhili stopped his god from eating up the houses of Puna.

I-maka-koloa was taken to Ka-lani-'opu'u in Ka-'u to be placed on the altar as an offering to the god, and Kiwala'o was the one for whom the house of the god had been made ready that he might perform the offering. Some of the chiefs muttered one to another, "Our chief [Kamehameha] is left destitute!" and, making an end of secrecy, one talked with Kamehameha saying, "Listen to our counsel if you would have wealth rather than poverty. If you will listen to us you may become a chief with wealth for yourself and your descendants, but if you neglect our counsel you will be destitute." Kamehameha said, "Tell me what you advise, and I will consider whether your counsel is good or bad." Said the chief, "This is our counsel: when your cousin is making the offering to the god and has first taken up the hog and the banana to offer, do you seize I-maka-koloa and offer him to the god. The man will be your offering, and the rule over the land will

then be yours. I will not be present at the dedication of the heiau." Kamehameha answered, "I consent. If I die it is well, and if I live so let it be, and may the god help me." The day came when the chief, Kiwala'o, was to perform the tabu for the heiau of Pakini by presenting the offerings. There were present Ka-lani-'opu'u, the chiefs and *kahuna* [the executive officers, highest officers next the ruler], the war leaders (*puhaka*) and bearers of supplies (*mamahakoua*), the warriors, the retinue of the chiefs (*amaia*), and the commoners. The ceremony began at which the heiau was made tabu. Then Kiwala'o grasped the hog to offer it first and afterward the man. He hooked on Manaia-ka-lani, then made the offering. Before he had ended offering the first sacrifices, Kamehameha grasped the body of I-maka-koloa and offered it up to the god, and the freeing of the tabu for the heiau was completed. It was from this incident that Ka-manawa named his son Amama'-lua, Double-freing.*

There was great excitement among the chiefs. "This was not done right! Kamehameha will have the rule over the land!" it was said. Some said, "He will not rebel; both are sons of the chief; they are an elder and a younger brother." Others said, "He will rebel; better to kill him first." Their talk reached the ears of Ka-lani-'opu'u, and he spoke secretly to Kamehameha saying, "My child, I have heard the secret complaints of the chiefs and their mutterings that they will kill you, perhaps soon. While I am alive they are a afraid, but when I die they will take you and kill you. I advise you to go back to Kohala. I have left you the god; there is your wealth." Then Kamehameha, with his wife Ka-lola, daughter of Kumu-ko'a, and his brother Kala'i-mamahi', and Ku-ka'ii-moku the god, went by way of Hilo to Kohala, his own land, and there lived.

Ka-lani-'opu'u left Kama'oa and went to the shores of *Ka'alu'alu* and Paiaha'a to fish. Then there came a school of *ahi* fish to Kalae, and all the chiefs went down to Kalae for the *ahi* fishing. Since the distance to Ka'iliki'i after fresh water for bathing was so great, Ka-lani-'opu'u asked his *kahunas* who were skilled in pointing out proper locations, "Is there water to be found on Kalae?" One *kahuna* said, "There is water here. It is in front of the dog [a rock so called]. That dog is Ka-'ilio-a-Lono. The [pet] dog-of-Lono, who went to the spring for water to drink but was caught by Pele and turned into stone. The water bubbles up within the sea, and one must dig deep for the waters of

* In Ka-'u an old Hawaiian told Pukui that when I-maka-koloa was brought to be sacrificed an old *kahu* of his who pitied him shouted out to the chiefs, "That is not I (makakoloa) the chief, that is I his servant; I can point out to you I the chief!" So a young *kahuna*, a relative who resembled him, was sacrificed in his place. Their descendants in Ka-'u still bear the name of I-kauwa'. (I-the-servant) and I-pa'a-puka (I who-closed-the-door [of death]).

her tears fell. Nor was she pleased to have her enemies act according to their own will. She therefore wrote to the chiefs of Maui, Hawaii, and Kauai to come together in Honolulu, and some of the church people also accompanied Mr. Richards. A council of chiefs was held at the king's home at Pohukaina above the house of Ka-lani-moku to decide whether Mr. Richards was guilty or not. They were ignorant of the English law in the matter. They knew that when a man committed murder he forfeited his life. If Mr. Richards were now to die for this crime it was a pity. For two days they deliberated but could find no way to save Mr. Richards from being put to death, since both John Young and Boki had pronounced against him. The government had at that time no constitution ensuring a legal trial with witnesses presented on both sides to decide such a question, hence their uncertainty.

At noon of the day following David Malo and Ka-na'ina [father of King Lunalilo] met Ka-ahu-manu, Hoa-pili, and Ka-ka-tulu-ohi in secret in one of the rooms of the Council House, which they entered by a private entrance. Ka-ahu-manu addressed David Malo while her tears flowed, saying, "Alas! I see no way to save our teacher. Young and Boki both say he is guilty of writing to America." Malo replied, "Is that what he is accused of?" "Yes." "How these foreigners contradict themselves! [Malo exclaimed] They say it is wrong to worship God, but all right to learn writing, and now they say it is all wrong for Mr. Richards to write a letter." Again Malo asked, "Suppose you had a spoon stolen and some one should inform you who had stolen it, who would be to blame, the one who stole the spoon or the one who told you who was the thief?" "The one who stole it." "You were Kamehameha's wife and Ka-niho-nui forced you to sleep with him. Luhelelu informed Kamehameha. Now, I ask, which of the two did Kamehameha execute? Was it Luhelelu?" "It was Ka-niho-nui." "Is there any country in the world where the wrongdoer is commended and the informant against him pronounced guilty?" "Nowhere!" Light was fast beginning to break in upon the chiefess' mind. Malo continued, "Why should Mr. Richards be convicted and Captain Buckle who committed wrong go free?" "It is plain to me that Mr. Richards is in the right and we have been very ignorant," Ka-ahu-manu replied. She then went before the chiefs and presented her views.

The next day the king, Boki, Manuia, Ke-ku-anao'a, the British consul, and Captain Buckle presented themselves all dressed in gold-trimmed uniforms. When Manuia urged Mr. Richards' imprisonment within the fort, and Boki and the consul also urged this upon the Council, Ka-ahu-manu spoke up and said, "The chiefs have consulted about the charge against Mr. Richards, who has been brought to trial by the British consul because of an alleged wrong committed against a British subject within

the kingdom of Hawaii. This is our decision: Mr. Richards is not guilty of the charge made; he is innocent and we release him."^{*}

The queen by this decision made enemies for herself of the consul and the foreign merchants and of Boki and Manuia of her own people. Manuia and the consul went out shaking their heads and waving their swords in the air, and the captains retired crestfallen. The two captains who had fired on Labaina became Ka-ahu-manu's worst enemies. The consul beat up one of her keepers who had chased away the consul's cattle which roamed at large all the way to Pawa'a and were eating Ka-ahu-manu's plantings at Kapuka'oma'oma'o in Manoa. This man, Kane-kua-hine, was roped about the neck by the consul and dragged behind his carriage, tossed up and down all along the plains, his chin and ribs broken, and was only saved from being killed by getting his hand inside the noose. Englishmen are certainly oppressive to the weak! It was not the missionaries alone who suffered but the Hawaiians much more. . . . I have seen with my own eyes the heads of the New Zealand chiefs dropped into the sea at the wharf near Kapapoko. In Mr. John Jones' store Mr. George Wood, the husband of Ka-maunu, threw the water in which those heads had been washed at the people who came to look at the chiefs' heads. A very cruel act!

On March 30, 1828, a three-masted ship anchored in the harbor bringing a second reinforcement of missionaries together with some Hawaiians who had been educated through the kindness of the American people. The missionaries included the Rev. E. W. Clark (Kalaka), the Rev. P. J. Galick (Kuiika), the Rev. Jonathan S. Green (Kerina), the Rev. Lorrin Andrews (Aneru), Mr. Gerrit P. Judd (Kauka), a physician, Mr. Shepherd (Kapaki), a printer, their wives, and a single woman, Miss Maria Ogden. There were others who later went as missionaries to the Rocky Mountains in Oregon. The Hawaiians were John Palu, Haia, Ka-la'au-lana, 'Ukali-moa, and Ka-lima-hana.† Some of these assisted the missionaries and others lived like any of the people. John Palu became a favorite with Boki and married the daughter of George Holmes and Mrs. Pale.

A few months later the king, accompanied by his chiefs, Boki among them, his Hutumunu, and sailors, went to Hawaii on his warship *Ke-mehameha*, attended by other vessels, for his first visit to that island since leaving it for Honolulu. At Labaina they were well feasted and met Nahi-'ena'ena, Ke-kau-'onohi, Hoa-pili, Ka-hekili, Kau-kuna, and all the other chiefs of that place. Here they witnessed a tragic occurrence: a man out surf riding at (Uo) was killed by a shark which bit off

* This story is by Dibble 10, pp. 197-198, and Remy 27, pp. 217-225.

† *Ka Napepa Ku'oko'e*, June 6, 1868.

1828 Shark Attack

his limbs and left his body floating. At Hilo the party met but a poor reception. Here were Pi'opi'o, his wife Ma'alo, and other chiefs, but they gave nothing but cooked food, held onto their lands, and did not offer them to the king as was the custom . . . Boki gave the district of Hilo to the king to divide among his followers and thus uphold his dignity at this place, but the other chiefs were not pleased at Boki's action. The king went with his sister Harriet Nahi-ena'ena and others to pay his first visit to the volcano and spent the night at Wa'owé'owé' above 'Oma'iaulau some distance *mauka* of Kapu'euhi. He was preceded, by two days, by a black man (lascar) by the name of Kinikona who had made an oath to leave his hair in the keeping of Pele and who had then joined the king's party.

Soon after the king's return to Oahu one of his ships, the *Mikapuka*, arrived from Borabora bringing home the high chief Ke-'aki-lawa, his wife Ka-hope-kahu, and a chief from Tahiti named Paraita, one of the company of Tai, grandfather of Ninio, who had given Tahiti to the French. The ship brought back coconut oil in barrels and bamboo joints, and many other valuables all of which were placed in the hands of Boki. Another of the king's ships, the *Ka-mahole-lani* under Captain Paul Sumner, arrived with Carlos Marin, younger brother of Paula, who brought back another wife, a chiefess of the Wallis (Uvea) islands, a group situated near the cannibal islands of Fiji. The ship brought also the wife's parents and Lohi'au, former wife of Carlos Marin. This was the first time that any Wallis islanders had been seen in Hawaii. They appeared to be somewhat civilized as they wore dresses woven like cloth, and outside of their outer garment both men and women wore another reaching to the feet and gathered at the back. The little fingers of the hands were amputated. The ship also brought mother-of-pearl, sponges, sea shells, and many other articles of value for the king. The ship itself was condemned as unseaworthy, and a two-masted boat was constructed at Pakaka and turned over to Carlos Marin to return to the Wallis Islands, accompanied by some Hawaiians. There he was made ruler, but he made the people work too hard constructing forts and wooden houses for himself; and the chiefs and his father-in-law, William Ka-ni'au, who had come to Hawaii with him rose up and killed him and ten Hawaiians. . . .

When Ka-'ahu-manu and the higher chiefs heard how Boki had divided up his lands in the district of Hilo among the chiefs and the king's men, they suspected him of conspiracy, for they held that the lands were really under their control. They therefore agreed not to hold the government responsible for debts contracted by him or Kuini Liiha his wife, but to consider them his personal indebtedness. The old debts contracted in the time of Kamehameha I and II and those of the ruling

king, yet unpaid, all of which had with interest accrued reached the sum of \$150,000 to \$200,000, were alone to be included in the indebtedness of the kingdom. Of this debt the greater part was owed to American merchants. There was a rumor that the kingdom was to be taken over by the United States. This might have happened had not a constitutional form of government been declared and government revenues conserved so that its debts could be paid in full. Certain of the foreign teachers who loved the Hawaiian people, the chiefs, and the whole nation, were taken into the government, and it became an easy thing to pay these debts and deal with other abuses that had been heaped upon the government. But Boki when he heard what Ka-'ahu-manu had said about his paying his own debts said, "This is strange! I thought that the king was mine, that the government of the whole group was under my control, and that whatever I thought right would be accepted by the king, the chiefs, and the whole people! . . . The woman who is so fond of God said that one should disregard things of the body and think upon things of the spirit. I thought she cared for spiritual riches and looked upon earthly wealth as trash. Here is a proof of it! She went to Hawaii to dismantle Hale-o-Keawe, had the chiefs' bones burned, the house broken down, and the hidden bones of the chiefs brought out and shown publicly. Perhaps if she knew where Kamehameha was buried she would have his bones too made public. I know that the kings of England take excellent care of the bones of their fathers, and so were the bones of our ancient chiefs cared for. They were hidden under oath by a trusted person."

The year 1828 is notable for the visit of Ka-'ahu-manu to Hawaii to fulfill a vow that she had made to attempt the recovery of the bones of Liliuoe on Mauna Kea where her body was said to have lain for more than a thousand years in a well-preserved condition, not even the hair having fallen out. Others deny this and say her body was too well-hidden ever to have been found. Her offspring count from Hua-nui-i-ka-la'ia'i; she was the ancestress of ruling chiefs, and from her line was born 'Umi-ka-lani [father of the Mahi family on Hawaii], son of Keawe-nui-a-'Umi by Ho'opili-a-Haa. It is said that Ka-'ahu-manu did not find the bones of Liliuoe, but only those of Liloa, Lono-i-ka-makahiki, Kauhola, and Lole at Waipi'o, and these she removed to Ka'awaloa. She also removed to Ka'awaloa the bones of all the chiefs up to the time of Ka-lani-opu'u and Kiwala'o which had been netted into baskets (*ka'oi*) and which completely filled the Hale-o-Keawe, and she destroyed the remaining bones with fire. It was this act which embittered Boki further against her.

Another cause of complaint against Ka-'ahu-manu arose when Ka-iki-o-ewa, finding himself deep in debt to Mr. French and other foreign merchants, was arranging to pay his debts by giving over the lands of

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ANCIENT HAWAIIAN CIVILIZATION

A series of lectures delivered at
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EDWIN H. BRYAN

PETER H. BUCK

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and Others

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FOOD AND ITS PREPARATION

JOHN H. WISE

There were certain facts about life in old Hawaii which affected very considerably the diet and eating habits of the people. (1) The people were of course entirely dependent on what the islands and the ocean produced in the line of food. Today we import much of what we eat, and do not begin to produce enough food for a population smaller than the population in the old days. (2) We know that the Hawaiian people were splendid physical specimens, and that their diet must have contained the elements necessary for health. The stature and physique of the old-time Hawaiian was proof of the values his diet must have contained, just as the smaller stature of such people as the Japanese is suggestive of defects in their native diet. (3) We know that the old Hawaiians had no fire-proof cooking utensils, so that they had to manage without much of what we think of as "cooking." (4) Certain foods were kapu to women. It was kapu for men and women to eat together. Consequently, the preparation and serving of food must have been complicated by these facts in the social organization and customs of the times.

THE CHIEF FOODS OF OLD HAWAII AND THEIR FOOD VALUE

The staple foods of old Hawaii were taro and poi, bread-fruit, sweet potato, bananas, taro tops and some other leafy vegetables, limu, fish and other sea-foods, chicken, pig, and dog. The food values of fish, sea-foods, and meats are generally understood, but perhaps the food value of poi, taro, and limu is not so well known. Taro is essentially a starchy food with a high water content. Both taro and poi are good sources of Vitamins A and B. As taro and poi are digested, they produce an alkaline reaction in the body. This is highly important, because most starches, noticeably polished rice, have an acid reaction. / Dr. Buck

often wondered why the Polynesians were physically so much better developed and larger than the various stocks from which they probably originated. It may be that the Polynesian became larger because he changed an acid starch, low in Vitamin B, for an alkaline residue starch with plenty of fish and sea weed. It has been found that when he replaces poi and fish with polished rice, his children have rampant decay of the teeth. Because of their alkaline reaction, poi and taro have the desirable effects of fruit in the diet. Fruits were lacking in old Hawaii, as only coconuts, bananas, and mountain apples were here originally. Another fact to be noted about poi is that the acid in the fermenting poi preserves it, and it becomes a food which will keep several weeks without refrigeration. This is interesting, because of course in old Hawaii there was no such thing as refrigeration.

There are many varieties of limu or edible sea weed. Some of these have been analyzed for their food values. It has been found that they perhaps furnished a small amount of calcium, and doubtless certain vitamins. Their chief value probably lay in the fact that they provided variety in an otherwise monotonous diet. They probably also served a useful purpose in preventing constipation. Opihi, the little limpets to be found on the rocks along the shore, are a very high source of Vitamin A.

Certain vitamins lacking in the diet were supplied by the direct rays of the sun to which the people were continually exposed. The combination of sunlight, sea-foods, and the meats and vegetables mentioned, provided the Hawaiians with everything needed for healthy bodily growth and for splendid physical development.

FOODS AND COOKING

Though they did not have fire-proof cooking utensils, the Hawaiians managed to boil liquids by dropping hot stones into a calabash containing the liquid. In this manner, they prepared certain foods by steaming. Most of the cooking, however, was done in the imu or underground oven, and without the aid of containers of any kind.

The imu used today in the preparation of a luau is much the same as the imu used in the early days. The first step in making an imu was to dig a hole in the ground. This hole was used over and over. Today it is customary to build a shelter over an imu, just as people sometimes build shelters over their out-door picnic fireplaces at their beach or mountain homes. Wood was placed in the hole. If plenty of wood was to be used, kindling was placed in first, then larger pieces, and then still larger ones. The laying of the fire was similar to the laying of any open fire today. Stones were placed over the wood and the fire was lighted. Sometimes arches were built with long stones and the smaller stones were placed over the arches. After the stones were heated the arches were knocked down and the imu was then used in the same way as the other type. The stones used were of a certain kind which the Hawaiians knew would hold the heat and which would not burst when hot. After the stones were hot, grass (hono-hono) was laid in. On this were placed the taro, the bread-fruit, the sweet potato, and the bananas, to be cooked. Over the food a layer of leaves, preferably ti leaves, was placed, and then the imu was closed with old mats and kapas. It took taro from three to four hours to cook in an imu. Taro and taro leaves must be thoroughly cooked before they can be eaten. The reason for this is that the root, the stem, and the leaves all contain needle-like crystals which are extremely irritating and which must be broken down by thorough cooking. Sweet potato, breadfruit and bananas required a shorter time to cook than taro. Three or four days were required to cook the ti root, which was a confection.

Besides chickens, there were only two land animals which could be used for food in old Hawaii. These were pig and dog. Meats, as well as vegetables, were roasted in the imu. After the pig was killed it was dressed and heated stones were placed inside it. It was salted and placed in the imu for one-half to two and a half hours. Then it was taken from the imu, the stones were removed, and the meat cut up. Except in the case of some particular

W A I C H ?

celebration, small pigs were not killed. However, for family use, the large hogs were used but were never put in the imu. After the hog was dressed, hot stones were put in after the inside had been salted. It was then wrapped in old kapas and mats, placed on a poi board, and left for forty-eight hours. Then it was unwrapped, the stones were removed, and the meat was cut from the inside, not the outside. This was because these inner portions which had been next to the stones were more thoroughly cooked than the other portions. A large pig lasted some time and did not spoil because of the salting of the meat.

Meat which remained and which had been imperfectly cooked, was sometimes cut up and placed in laulau for re-cooking. Sometimes it was cut up and placed in calabashes with hot stones. The Hawaiians ate only thoroughly cooked meat, and re-cooked any portions which had come partly cooked from the imu. If several animals were to be cooked in one imu, the imu was built flat, so the heat would be even. The cone-shaped imu was hotter in the middle than at the sides.

Chickens were wrapped in ti leaves and cooked in the imu. Chicken prepared with luau and coconut is a modern adaption of the old Hawaiian use of luau and coconut. If the old method of steaming through the use of hot stones dropped into the calabash is followed, rather than more recent cooking methods, this dish is particularly delicious.

Fish was one of the chief foods of the Hawaiian people. The fish resources of Hawaii were extensive. Bryan, in his "Natural History of Hawaii," says, "Some idea of the fish resources of Hawaii can be gained from the fact that of the 600 or more species which scientists have found in Hawaiian waters, more than 350 are sold in the markets of Honolulu for food, each species having an Hawaiian name by which it is designated." The Hawaiians not only fished in the open ocean, but they raised fish in carefully made and protected fish ponds. The favorite pond fish was the mullet. On one side of the mullet pond was a

smaller pond in which the little fish were kept until their variety could be recognized. Most of those which were not mullet were destroyed and the mullet were then placed in the big pond. This protected the mullet against game fish which would destroy them. Awa and wholehole were also run into the fish pond, as they did not destroy each other or the mullet.

Fish was cooked in several ways. One way was to wrap it in ti leaves, in packages called lawalu, and put it on the coals. Another way was to broil it over hot coals. A third was to place it in a calabash, put a little water on it, and drop in hot stones. Fish cooked in this way is very delicious.

The Hawaiians had different ways of preserving uncooked fish. Their uncooked fish was always preserved by salting or drying or both. The Hawaiians never ate fish raw just as it came from the ocean. They always dried it or preserved it in some way before eating it. Small fish which were to be eaten uncooked were split open, salted, and hung in the sun. Dried fish and poi are a very good combination, a favorite today as well as in the old days.

The leaves of several plants were cooked and eaten as greens. Among these were popolo, pakai, aweo weo, nau-nau, haio, nena, palula, and of course taro tops or luau. Pia was another vegetable food. David Malo describes its preparation in these words, "When ripe the tubers are grated while yet raw by means of rough stones, mixed with water and then allowed to stand until it has turned sweet, after which it is roasted in bundles and eaten." David Malo has an interesting comment on the sweet potato. He says, "The body of one who makes his food of the sweet potato is plump and his flesh is clean and fair whereas the flesh of him who feeds on taro poi is not so clear and wholesome." Whether this is accurate or not, at least it gives an idea that the sweet potato was well thought of by the early Hawaiians. Sugar cane was grown throughout the islands in little patches in every little community. Every group of houses had its patch of cane. The

people developed no artificial methods of extracting the juice; they chewed the stalks of cane and enjoyed them just as people do today, whenever they manage to get a stalk of cane. We find today that the Hawaiians very frequently raise a little sugar cane in their yards, just as they did in the old days.

Nearly all food was eaten cold. This practice is followed today in such places as Samoa where native customs still prevail.

POI-MAKING

Cooked taro was peeled through the use of shells, sticks, or stone knives. Fresh cooked taro, called ai paa, was much liked. Sometimes it was sliced and dried in the sun. So prepared, it furnished a convenient and portable food called ao, suitable for long voyages.

Most of the cooked taro was pounded. The poi board used was a single board five or six inches thick, twenty-four to thirty inches wide, and three to six feet long. Any hard close-grained wood, to be obtained in pieces sufficiently large, was used. Koa and ohia were most used for this purpose. The poi pounder was fashioned from hard lava or coral rock. It had to be just the right weight, neither too heavy nor too light. It might be porous. It was generally made in pestle form, though ring and stirrup pounders were used in certain localities. Poi pounding was heavy work and was always done by the men. The workman seated himself on the ground, with his legs extended on either side of the board. He wore nothing but the malo, for it was necessary that he have perfect freedom of motion. On one side was placed a pile of cooked taro, and on the other, a calabash of water. The board was well moistened with water and some cooked taro was placed on the moistened board and was mashed with short quick strokes. At every blow, the pounder was lifted high in the air. The intensity was increased as more taro was added and the quantity on the board became greater. Between strokes, the face of the stone poi pounder was moistened with the hand dipped in water. This was done

to keep the pounder from sticking. A firm doughlike mass called paiai was produced. When it was needed for storage or transportation it was made with the minimum amount of water, and was tied up in ti leaves, in bundles. Poi was made by pounding this substance and adding water until it reached a smooth somewhat fluid consistency. Poi was also made from sweet potato and from breadfruit. Both of these were much easier to make than poi made from taro since they required so much less pounding.

Down to very recent days, each Hawaiian family still cooked its own taro and prepared its own poi. Taro was generally cooked once a week, pounded, and kept rather hard so that it would not turn sour. The poi was prepared from this as it was needed throughout the week. Nowadays, all the work is done in the poi factory. Here the taro is cleaned, cooked, peeled, run through a machine, mixed with a little water, and placed in bags for delivery. This is a lot easier than it was in the old days but something has been lost from the life of the people.

THE WATER SUPPLY

The chief drink of the Hawaiians was water. Spring water was most desired. There are many springs in the islands. Some are in the mountains, some are in the lowlands, and some are along the shore covered by the ocean. The water in these springs along the shore is perfectly good, though not as fresh as the water from the other springs. To secure the water from the springs along the shore, the Hawaiian took a covered gourd, located the mouth of the spring, uncovered the gourd just at the mouth of the spring, filled it, and covered it. Cattle grazing along the shore today may be seen going into the water and drinking. They are drinking from one of these fresh springs along the shore under the sea.

Streams of fresh water were another source of the water supply. The Hawaiians never dug wells. They found and utilized the water of streams and springs, and if it was necessary, carried the drinking water in gourds from the source of supply to their homes.

ANCIENT CUSTOMS REGARDING PREPARATION AND USE OF FOODS

David Malo, the Hawaiian who reported so many of the customs of the old days, has some very hard words to say about the kapus governing eating. He says, "The task of food providing and eating under the kapu system in Hawaii was very burdensome, a grievous tax on the husband and wife, an iniquitous imposition, at war with domestic peace. The husband was burdened and wearied with the preparation of two ovens of food, one for the husband and a separate one for his wife." This was necessary, since men and women were not allowed to eat together. The women might not even enter the eating house of the men, though a man might enter the eating house of the women. As soon as boys were weaned they were not allowed to eat with women.

David Malo goes on to describe just what the man had to do, because of this necessity of preparing food for men and women separately. "The man first started an oven of food for his wife and when that was done he went to the house (mua) and started an oven of food for himself. Then he would return to the house, open his wife's oven, peel the taro, pound it into poi, knead it, and put it in the calabash. This ended the food cooking for his wife. Then he must return to mua, open his own oven, peel the taro, pound and knead it into poi, put the mass into a separate calabash for himself, and remove the lumps."

The fact that certain foods were kapu to women complicated the daily routine still further. Among the articles of food that were set apart for the exclusive use of men and which women were forbidden to eat, were pork, bananas, coconuts, ulua, kumu and some other fish, and some sea-foods. These kapus and customs touched the every-day life of the people to a great extent, and all the time. When Liholiho sat down with the women and ate with them; when, at the same time, the women ate pork and bananas, the whole daily routine of the people was overturned. Restrictions which

had governed them for generations were set aside. We speak of the "breaking of the kapus." The fact that the king ate with the women seems to us to be a rather simple happening. In reality, this was the beginning of the great change which has taken place in Hawaii in the last hundred years or so, and which has involved the overturning of the ancient culture.

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CHAPTER 27

ANIMAL LIFE

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Oceanic islands are always of intense interest to the biologist and to others as well. Isolated regions of the world, such as the Hawaiian islands, are interesting because of the many things which are not there. When we look over these islands we find that there are many forms of both plant and animal life which we might expect to find but do not find. At the same time we find other forms that are of intense interest because in some way they came to these isolated regions of the world. We have to stop to think often times and wonder where the plants and animals which we find on islands of this sort came from and how they reached these places and when they came. If we take the generally accepted view of the origin of the Hawaiian islands, that they were probably raised from the bottom of the ocean in one isolated unit or several units, unconnected with any continental land, we must consider them to have been at first masses of volcanic rock, bare of soil, bare of vegetation, and bare of animal life. That occurred ages and ages ago, we know not how long ago. Then for countless long ages of time these volcanic rocks must have been disintegrating, soil must have been forming, and from some source came the first organic life on these islands.

THE BEGINNING OF LIFE ON OCEANIC ISLANDS

We must draw an imaginary picture of the source of the first plant life of Hawaii. Doubtless plants came first and animal life later. Perhaps some bird winging its way across the ocean found a haven of rest on these islands, these bare lifeless islands. Seeds of one kind or another, attached to that bird, may have gotten a foothold in the soil. Or perhaps a drifting log was thrown on the island by a wave, and imbedded in such a log may have been

seeds of plants which then gained a foothold in the soil. All such pictures are but guesses. We have no idea how the first plants or the first animals actually arrived on Hawaii. We can only imagine that seeds may have come attached to birds flying through the air or may have come as drifting things on the surface of the ocean, or may have been blown by strong winds from some other source. That is prehistoric, that is pre-human, natural history.

SOURCES OF INFORMATION ABOUT ANIMAL LIFE IN OLD HAWAII

There are a number of ways by which we can guess fairly accurately as to what was present on Hawaii 10,000 years ago. For one thing, we can make more or less accurate guesses by making a careful analysis of the plants and animals found in Hawaii today. We can look back and determine with some accuracy what their ancestors were, and to some extent how long they have been in the islands. We also study the records of those who visited Hawaii in very early times. When Captain Cook visited Hawaii in 1778 the animals mentioned in his official report to the British government were the rat, the mouse, the dog, the bat, the hog, birds of many kinds, lizards, insects, land snails, and chickens. We can believe that the early Hawaiians, as they came to Oahu and the other islands, brought with them certain forms of animal life. There is no doubt that the dog and the pig at least, and probably the chicken, were brought by the early Hawaiians. These animals were very close to the life of the Polynesian people and it is not probable that they would start out from their original home in the South Seas without these animals. Still another source of information about the plant and animal life which existed here is the fossil remains of that life. There are many fossils in the raised beaches and reefs around the islands. Near Waipahu there are beds of huge oysters, some six inches long, much larger than any present day oysters in Hawaii. On the Waianae side of Oahu, far from the sea in the raised reefs, the fossil remains of huge oysters, nearly nine inches in diameter, have been found. Each such fossil tells us something about the animal life which must have existed around the islands in the past. Still another source of information

about the plants and animals once found here, is the old songs, stories, and legends of the people. These songs, stories, and legends are filled with mention of animals, and are proof that such animals were certainly here in early times.

One of the beliefs of the early peoples was that the spirit of a dead person entered into an animal. These spirits, or aumakua, became helpers of the people. Some of these aumakua were not as good or as helpful as others, but nevertheless they were aumakua. Miss Beckwith has written an interesting article on the aumakua of the shark. The shark was considered one of these helpers and almost every community along the sea coast had its aumakua shark, a friendly helper held in reverence by the people. Some of the important gods or aumakua were the shark, the eel, and the limpet. The shark and the limpet were supposed to be friendly aumakua who stilled the waves at sea and assisted the fishermen in various ways. Owls were aumakua in various regions, especially in Kona. The cowrie and the squid were considered among the important aumakua; Mr. Emerson lists many lesser animals which were held in respect.

The dog was considered to be fairly good in certain cases, but nevertheless he was considered a thief. The pig, though a mischief maker, was held in reverence, for the pig was considered an animal which could identify royalty and could point out chiefs and kings even if they were disguised. The rat was considered a good aumakua, generally speaking, because one of the mythological characters in ancient times tied up all the food of the earth in a large bag and hung it up in the heavens. It was the rat who gnawed the rope and let the food drop to earth again, so for this reason, the rat was thought to be a good aumakua. The rat has always been an outstanding mammal in Hawaiian history, both legendary and recent. Some of the curious and the most interesting legends surround this little animal which the Hawaiians must have known long before they came to Hawaii itself.

In Fornander's Folklore there are some interesting stories about the history of the rat in connection with the legendary Hawaiian people. One of these is the story of Mainele. Mainele was a famous rat shooter. All of the legends seem to indicate that rat shooting was one of the chief sports of the kings and high chiefs. One day a challenger arose saying that he could beat Mainele in rat shooting and the contest was arranged. One of the feats of Mainele was to pin ten rats on his arrow at one shot; he did this always, whether he saw the rats or not. The challenger said he could beat this, and the contest began. Mainele shot and the customary ten rats were strung on his arrow. The challenger shot, and behold, ten rats were strung on his arrow, and on its point was a bat. Mainele said, "This is a draw, no one has won," but the challenger quoted an old Hawaiian saying to the effect that the bat is the cousin of the rat; therefore, he said he won because his score was eleven rather than ten, and also because he had strung all the rats on his arrow by their whiskers. Mainele had always shot the rats through the body but this expert had strung them by their whiskers; so he was finally considered the champion. There are all sorts of legends of this type. They show us not only what animals were here in the early days, but also reveal the fact that these animals must have been here for a very long time indeed for this body of legends and folklore to have grown up about them. The aumakua association in the early Hawaiian thinking links up the animal life and the people very closely, and offers further proof of the kind and type of animal life which must have existed here since the earliest days.

MAMMALIAN LIFE SUMMARIZED

We may consider this a little more logically. In Captain Cook's time the mammalian forms of animals known to exist in Hawaii were, as we have seen, the rat, the mouse, the dog, at least one type of bat and possibly two, and the hog. These were the mammals existing at the time of Captain Cook's visit, and probably for a long time before. One of the recent mammalian immigrants to the islands is the Asiatic deer, which was introduced from Japan in 1827

or thereabouts, and which is one of the largest mammals in the islands if we except the domesticated animals. Other immigrants, which entered Hawaii earlier than the deer, are cattle, sheep, the horse, and goats. All of these were introduced by early navigators, some probably by Vancouver. About 1883 the mongoose was introduced for a very definite purpose—to kill the rats in the cane fields.

BIRD LIFE

Hawaiian birds offer the biologist one of the most interesting groups of animals anywhere in the world. There are two places in which birds have been outstanding in natural history. Hawaii is one, and the islands off the South American coast are the other. Strange to say, the development of birds in Hawaii has been somewhat similar to their development in the islands off South America. In both places very strange and peculiar modifications have taken place. The modifications which took place in Hawaii were so peculiar that some specialists did not recognize the native birds as belonging to the group to which they actually belong. This interesting group of birds are Drepanids, and include the mamo, the oo, the uu, and the iwi, all those curious older birds of Hawaii. There were some eighteen or nineteen genera of these curious birds developed in Hawaii, and they developed probably from two forms which came from somewhere, possibly tropical America in ages gone by. These two forms, if there were but two to start with, gave rise to eighteen or nineteen genera and to some fifty different species. It is thought that the cause of this was the food habits of these birds. Those long-billed honey eaters, as they were called, fed on the honey within the lobelia blossoms and their bills became modified for dipping into this flower. Other plants developed and some birds had to become modified so that they could feed upon insects and seeds. Their bills became modified in strange ways. These modifications which took place are among the most noted in biological history. They are cited everywhere in the study of ornithology as outstanding features where food habits have certainly modified birds in very marked ways.

Besides the Drepanid birds there were other forms which were peculiar to the islands. Some of these are the Hawaiian owl, which is still present; the Hawaiian goose, which is very rare but is still found on Hawaii; the Hawaiian hawk, and many sea birds which were peculiar to this region of the world. Years ago a wingless rail was found on Laysan Island. Doubtless it had been on Laysan for a long period of time, so long that it had lost the use of its wings. This curious bird was destroyed on Laysan. Rabbits were introduced there some years ago, the vegetation was destroyed, the birds were nearly wiped out, and that island became a desolate sandy place as a result. In 1923, the Tanager expedition went there and killed every rabbit. It has been recently reported that the vegetation is coming back and this will mean the returning of some birds.

REPTILES

Among the animal life of old Hawaii were found some reptiles. At the time of Captain Cook's visit in 1778, two species of lizards were probably present. Lizards were the land reptiles about which the early Hawaiians knew something, because in their legendary records the lizard was an *aumakua*, sometimes beneficial, sometimes not so beneficial. There are at the present time at least seven species of lizards in Hawaii. There are four geckos—these are the little lizards which come into the houses. There are three skinks, which are the long tailed lizards found outdoors, and which run so rapidly. Recently, on the campus of The Kamehameha Schools, a legless lizard which had never been reported in Hawaii before, was found. It is a little thing like an earthworm and is a burrowing form. Three young specimens were taken from the campus. The adult has never been seen here; it is supposed to be twelve or fifteen inches long, while each of these specimens was only three inches long.

The fishing folk of ancient Hawaii knew something about sea reptiles, the turtles, of which there are two in local waters today. We know that the turtle entered into the experience and life of the fishing folk in the old days.

INSECT LIFE

Among the interesting forms of life in Hawaii are the insects. The records of Captain Cook state that there were many flies in Hawaii. Apparently in no other region visited by the Cook expedition were there so many flies as there were in Hawaii. It is known that the following insects were in the islands in 1822: butterflies, cockroaches, moths, dragonflies, and spiders. There were no mosquitoes in the islands in the early 1820's. Andrew Bloxam, who was here in 1824-1825, reported butterflies, the moth, earwigs, a cicada, and a sphinx moth. In 1832, David Malo, a very capable Hawaiian who was very observing especially in the field of ethnology and natural history, recorded that these animals were present: birds, bats, dragonflies, the wasp, the grasshopper, the spider, the louse, the earthworm, the lizard. In 1837, Jarves mentioned finding many troublesome forms of insects and animals—the mosquito, cockroaches, fleas, the scorpion, the centipede, rats, and the lizard, but no frogs, snakes, or toads. It is probable that the mosquito came in as early as 1828, perhaps from Spanish ships which touched here from Central America and Mexico.

About 1850, the raising of sugar cane began to develop to a considerable degree and with this development came insects which affected the cane in a serious way. From this time on, the economic side of the insect life began to be stressed. In 1892, the Bureau of Plant Inspection was organized. Kalakaua was perhaps the first king who did much about these injurious insects. He attempted to pass laws to restrict the importation of certain plants and also of certain injurious animals. Ever since 1892, certain plants and animals have been excluded from the islands.

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for a route to Britain via Alaska. Cook, welcomed as the long-departed god Lono, and his men were treated to repasts of pig, fish, and fruit by Hawaiian men and to sexual refreshment by native girls. In return, the Hawaiians were introduced to venereal disease, firearms, and the idea of trade for profit.

The social system that the haoles found in Hawaii was feudal but not primitive. Though the Hawaiians had neither a written language nor iron implements, they were not Stone Age men. Each major island had its king, and below him were three major classes: the *alii*, the highest-ranking chiefs, who were in turn divided into several grades; the *kahunas*, who, after years of apprenticeship and study, qualified as advisers to the *alii*, serving as professional prophets, seers, historians, teachers, priests, astronomers, medical practitioners, sorcerers, and skilled workers; and the *makaianana*, the commoners, who made up the bulk of the population. There were the slaves, too, marked from birth for a life of debasement. Hundreds of religious *kapus*, or taboos, were enforced by the priests to keep the commoners in their place. The complex religion, closely interwoven with occupational and recreational life in the Islands, revolved around four main gods and many lesser ones.

Hawaiian economic life depended on a fairly complex division of labor. Special skills were required for the manufacture of outrigger canoes and the preparation of *tapa*, the material made by beating the bark of the mulberry tree into a paper-like fabric which was stained with vegetable dye to be worn as clothing or used as bedcovers. Some men were bird catchers, collecting feathers for the chiefs' cloaks and helmets. An adz maker sharpened the stones used for building and fighting. Other workers thatched roofs. Each island began to specialize in a skill. Oahu was reputed to make excellent *tapa*; Maui, superior canoes and paddles. The Kona Coast of Hawaii, the big island to the southeast, supplied dried fish.

There was considerable diversity of agriculture in the Islands. The starchy root of the *taro* plant which was pounded and mixed with water to form the gelatinous Hawaiian staple *poi*, grew on the wettest slopes of the mountains; bananas were grown where there was less moisture. Polynesian ingenuity appeared in the Hawaiian system of irrigation, used especially in the production of *taro*. The system was praised by the English explorer George Vancouver as surpassing anything of the kind he had ever seen. Yams, sugar cane, and breadfruit were com-

decades. Capitalism replaced feudalism, and oligarchy supplanted monarchy. As the influence of the *haoles*—Caucasians of North European origin, mostly American—continued to permeate Island life, demoralization and disease reduced the Hawaiian people from a vibrant 300,000 to little more than 40,000, and many of these were only partly Hawaiian.

Hawaii was probably the last of the Pacific Islands to be settled by Polynesians. Scholars guess that the time of the final migration from Tahiti was about A.D. 750. Powerful oarsmen navigated the Pacific, bringing to the eight major islands of the Hawaiian chain the culture of central and eastern Polynesia. Their outriggers slipped into the bays and inlets of Hawaii, where they saw on each of the four largest islands volcanic mountains jutting sharply toward the sky, deeply corrugated on the windward side and sloping gently to the leeward. Clouds probably hovered, as they nearly always do, over the tops of the mountains, and trade winds cooled the open places exposed to the subtropical sun.

Hawaiians of royal or chieftain rank were often huge, in some instances well over six feet tall and weighing more than 300 pounds; commoners were not so large. Most Hawaiians, apparently robust, healthy, and loving the outdoor life, reaped the harvests of the soil and sea. More than 2,000 miles from the nearest sizable body of land, on islands roughly the same total size as the State of New Jersey, they developed, within a larger feudalistic framework, their own systems of communal sex, family relationships, and property rights. They farmed, fished, prayed, and fought together in ignorance of the Western world.

Pilikia there was, but it was *pilikia* of their own making or, they believed, of the gods'. Wars, sanctioned by feudal chiefs and priests, periodically filled the gullies with blood. Tidal waves devoured whole villages; volcanic eruptions poured molten lava down the hillsides, covering once fertile soil with black rock in a destructive rush to the sea. And in the months of December, January, and February, when the trade winds stopped, oppressively hot and heavy rainfalls came from the south, damaging the taro, bananas, and breadfruit.

Despite the recklessness of man and nature, the population of Hawaii was relatively stable before the arrival of Cook. That intrepid and indefatigable explorer stumbled upon Hawaii while searching

monly grown and eaten. The Hawaiians also ate a variety of fish, domestic goose, owl, and wild birds. For meat—though the commoners did not get much of it—the Islanders relied on small dogs and pigs.

Even Hawaiian science had made some progress. Astronomers could recognize more than 120 stars; the local botanists and geologists had named and classified forty-three types of trees and fifty-seven varieties of rock; and the medical *kahunas* used more than 300 herbs of known value.

The *kapus* gave the social system great stability, perpetuating the control of the kings, chiefs, and priests. But the family relationships, living conditions, and religious practices resulting from adherence to many *kapus* shocked early Western visitors. Chiefs might have four or more separate buildings on a house lot, while a dozen or more commoners lived in an unventilated hut with the pigs and dogs. The word of a chief could send hundreds of commoners to their slaughter, or the command of a priest could single out men and women for human sacrifice. Abortions and even infanticide were common. Incest between brothers and sisters of royal blood was encouraged. Sex was enjoyed without sin or shame. Constancy between mates was not governed by a *kapu*. Duty was owed to a kinship group larger than the immediate family unit, and husbands and wives could separate easily and without formality. The commoners shared sex as they shared water and produce. They worked and lived in close and friendly co-operation.

The religious, family, and property systems of feudal Hawaii and feudal Europe were different, but there were many parallels between the two. Military service under the Hawaiian kings was like the service owed by medieval knights to their lords, an obligation of the *alii* and not of the commoners, and all land was held by the chiefs on a condition of obedience and payment of taxes to their kings. Taxes depended entirely on the will of the monarchs, and payments were often made in pigs, *tapa*, dogs, fishlines, and nets. It is unlikely that the commoners were able to keep more than one third of their produce for themselves, because the *makaainana*, too, were expected to make presents to the chiefs.

The kings owned all the land and property and held power of life and death over their people. They subdivided land and gave it to many chiefs. The important chiefs held large estates, called *ahupuaas*,

which usually extended from the shore to the mountains and were similar to the large estates of the nobility in England and on the Continent. These were carved into *ilis*, which were run by lesser chiefs, who served almost as plantation proprietors, cultivating the land with their own retainers or hiring it out as did the gentlemen farmers of Europe. These chiefs in turn provided small plots for the commoners to use, promising them a certain amount of protection in return for their labor. The small plot where the individual family grew its yams, *taro*, and sweet potatoes corresponded to a European peasant's holding.

In the years following Cook's discovery, warring kings, aided by *haole* weapons and advisers, fought for control of the Islands. The massive Kamehameha I subdued all claimants to the throne of the Big Island, Hawaii, his own island, and then sailed his legions to successful invasions of Maui, which controlled Kahoolawe (now uninhabited, but then farmed by Hawaiians), of Lanai, Molokai, and then Oahu, where he drove the warriors of the local king up the Nuuanu Valley and over the cliff. Insatiable, he headed for Kauai with a large force but returned exhausted and depleted, due, said Kamehameha, to a storm at sea; Kauaians insist that he was repulsed by the courage of their islanders, and even to this day, skulls are plucked from the "invasion" beaches to prove the point. Finally, in 1810, the King of Kauai was persuaded to place his lands on Kauai and Niihau under Kamehameha.

Through skillful use of patronage and force, Kamehameha cemented his power. He picked a chief counselor, the *kaitiako*, to help him govern, and appointed governors for the several islands. He gave patronage in the form of land to the major chiefs, usually members of his family, his followers, or descendants of the original group that had pledged their allegiance to him. These huge sections of land, called *mokus*, were then divided into the customary *ahupuaas*.

Despite the unification of the Islands, the period of Kamehameha's rule was, for the Hawaiian people, one of disintegration, owing to decimation from war, the infiltration of Western commercial practices, the avarice of the chiefs and priests, the spread of *haole* diseases, and, perhaps most important, the breakdown of the Hawaiian religion. When the first boatload of New England Congregationalist missionaries arrived in 1820, only one year after the death of the Islands' first great king, they found a Hawaii quite different from the idyl that Cook had stumbled upon forty-two years earlier.

On the windward coast of Oahu, in the village of Punaluu, visitors to Hawaii in the 1950's sometimes met a strikingly handsome man, about five feet eleven, whose bronzed and muscular figure was clothed about his loins with the traditional Hawaiian *malo*, this one made of red cloth. David Kaapu, except for his coconut hat and big cigar, was the prototype of the Hawaiian aborigine described in early literature. Vigorous, alert, industrious, full of humor, and hospitable, this philosopher prince of Punaluu brought to life images of the strong men who swam nearly naked to greet the earliest whalers and trading vessels. He was trying desperately to be faithful to the old ways and said, more with sorrow than bitterness, that he had been destroyed even before he was born.

Although the chiefs were generally bigger and healthier than the commoners, chroniclers from 1778 to 1810 were unanimous in stressing the energy and productivity of the Hawaiian villagers. Cook and Vancouver emphasized the strength, intelligence, and cleanliness of the Hawaiian people who farmed, fished, and enjoyed athletic games and dances. But by the 1820's and '30's, commentators invariably complained of the laziness of the Hawaiians, their apathy and bad health. By the time of the arrival of the missionaries, the demoralization of the natives and the destruction of their culture was well under way.

There are today residual pockets of Hawaiiana on Niihau, in the Halowa Valley on Molokai, at Hana and Kaupo on East Maui, and in the Kau and Kona sections of the Big Island, where Hawaiians speak menacingly of *kapus* and the vengeance of ghostly priests who still punish their violators. Even in Honolulu there are Hawaiians who knowingly whisper of ghosts who stalk *their* land, now wrongfully occupied by others. But many Hawaiians, for reasons not entirely clear, stopped believing in the *kapus* toward the end of Kamehameha's reign. Perhaps some of the *kapus* had been broken by the King's favorite chieftains and warriors during the grand conquest. Many *kapus* were undoubtedly violated by hundreds of sailors, merchants, and traders. Hawaiians, finding the priests unable to punish the visitors, probably began to doubt the power of the religious *kahunas*. Women, including royalty, began to break the rules. By 1810, the chiefs themselves, imitating the foreigners, were violating the *kapus*. The few hundred white residents in the Islands had impressed on the educated leaders and rulers of Hawaii the ineffectiveness of the taboos, and, observing the superiority of haole cannon over Hawaiian clubs,

of haole ships over native canoes, the Hawaiian *alii* began to doubt the power of their ancient gods.

Kamehameha, recognizing the weakness of his heir presumptive, Liholiho, designated one of his wives, the huge Kaahumanu, as prime minister, or *kuhina-nui*. She was a powerful woman who had undoubtedly already ignored some of the *kapus* imposed on her sex. Soon after her husband's death, she ate at the same table with the new King, publicly breaking another *kapu*. Kaahumanu, who was later converted to Christianity, persuaded Liholiho to abandon the *kapus* officially in 1819, just before the first missionaries were to embark from Massachusetts.

The rules of conduct that the Reverend Hiram Bingham and his Congregational brothers and sisters came to promote in Hawaii could hardly have been more different from the mores they replaced. The Hawaiians believed life was to be lived here and now; the men from colder climes insisted that life on earth was merely preparation for everlasting life beyond. Even in this life, the Hawaiian was not usually trying to prove his virtue, or improve his status; to the New England missionaries, life was a continuous struggle for moral and material self-improvement to receive God's grace. To the Hawaiian, the sharing of food, hut, and woman came naturally; the New Englanders maintained a stern sense of privacy concerning property and person. Sex to the Polynesians was pure joy; to these haoles, a grim and burdensome necessity. Children born in or out of wedlock received the affection of the Hawaiians; to Bingham and his friends, bastards were conceived in sin.

The process of decay, however, preceded the arrival of the churchmen. The *kapus* had been abolished, the idols destroyed, and the authority of the priests was in question. Christianity rushed in to fill the void. The missionaries proclaimed the new religion without major opposition. Their success was assured by the strong support of Kaahumanu, who gradually took over control from Liholiho.

The one crucial element of the Hawaiian social system that the missionaries did not immediately challenge was the authority of the regent, the king, and the high chiefs. Hawaiian rulers felt secure in their control of the government and leaned increasingly on the haoles, both missionaries and merchants. At least eleven white men were in the service of Kamehameha I, two of them as key advisers, and one as governor of the island of Hawaii. Liholiho also grew dependent on the

haoles, using them as carpenters, bricklayers, and as skilled workers needed to build over thirty sloops and schooners. These men were often given tracts of land and treated as chiefs. Kamehameha III, who ruled for twenty-five years beginning in 1825, continued to encourage haoles in trade and government service with huge gifts of land and other perquisites. He increasingly relied on the missionaries for advice, promoting their religion, language, and educational methods.

The new religion of Hawaii was suitable for the new economics of the Islands. The smaller, ostensibly monogamous family relationship, eliminating confusion of progeny, facilitated the accumulation of property. The enforcement of haole codes against stealing protected it.

Although Christianity reinforced and promoted the accumulation of property, the missionaries were motivated by spiritual goals. Not so the shipwrecked sailors, European and American merchants and shrewd Yankee traders who came, and often stayed, for lust and profit. The spread of the profit motive was a chief cause of the destruction of the Hawaiian. During the first contact on Kauai, the Englishmen were given between sixty and eighty pigs, a few fowl, potatoes, and taro by the gleeful and jabbering natives, who received, in exchange, some nails and a few pieces of iron. What was an exchange of gifts to the Hawaiians was a shrewd and profitable trade to the sailors. To cheat the Hawaiians was hardly a sin, since they were considered savages, as Cook's landing parties on the Big Island clearly indicated by removing the wooden fences around the temples for firewood. Later, off the Kona Coast, the Hawaiians made away with a small English boat. This seemed pure thievery to Cook, and he attempted to get the boat back by landing with a small armed force in a vain effort to capture the high chief who had been his friend. His men shot into a crowd of natives, and Cook was bludgeoned to death with clubs. His second-in-command retaliated with cannon, setting a village on fire and killing many Hawaiians.

The hospitality of the Islanders to haole visitors remained fundamentally unweakened. European and American traders soon found Hawaii a place for happy refreshment, an oasis on long voyages, where they took on pork, fresh vegetables, firewood, and water, and Hawaiian men, as crew for the China trade. The chiefs rushed to trade with the haoles for fancy clothes, ornaments, and weapons. In their rapacity they invented new kinds of taxes to impose on the commoners, claimed the rights to everything on the soil, took fishing grounds and

fruit trees, and often worked the commoners to death by driving them into the wet upland regions to cut sandalwood for shipment to Canton, where the odorous, slow-burning wood was in heavy demand.

The lot of the commoner became increasingly wretched and insecure. But even the *makaiananas* learned to become shrewd traders, and during the peak of the sandalwood period, commoners were caught cheating the sailing vessels by supplying sea water where fresh water was promised. The women sold themselves for a yard of cloth or a white shirt where formerly they gave their bodies freely. Even gods and graven images were sold for a few rusty nails.

When the sandalwood was exhausted, the whalers came in the 1830's and '40's, breaking down the native culture still further. Diminishing labor and agricultural resources went into producing commodities for sale to the visitors, taking from produce ordinarily consumed by the natives; and the tastes of the chiefs for foreign goods resulted in heavier taxes. Hundreds of Hawaiian boys went sailing with the big ships and were alienated from ancient ways. Derelict haole seamen roamed the streets of Honolulu, Lahaina, and other ports, encouraging a swift trade in alcohol and sex. By the end of the third decade of the nineteenth century, the old social ties and group self-respect were virtually demolished. The *kapius* were gone, and the authority of the chiefs was threatened as the invading haoles gained in power and prestige.

On Punchbowl Street in Honolulu, at the site of the first religious meeting held by the Protestant Boston missionaries to Hawaii on April 25, 1820, there stands Kawaiahao, the first organized church in the Islands. On many midweek afternoons in the meeting rooms near this massive coral-stone Congregational church, dozens of Hawaiian *tutuas* (grandmothers) meet for special services or social activities. Here sit the wives and daughters of former mayors and territorial legislators, the granddaughters and great-granddaughters of royalty. Paradoxically, most of the *grandes dames* of Kawaiahao devotedly follow the teachings of the early missionaries while bitterly rejecting the teachers. They gossip to each other rapidly in Hawaiian about recipes, scandals, the "good old days," and invariably about those terrible "sugar-missionaries" who stole the land and despoiled the Hawaiian people. Many haole leaders of the nearby mission society would be shocked to hear from the lips of these wrinkled but stately Hawaiians the resentment

OVERTHROW OF THE ANCIENT TABU SYSTEM IN THE HAWAIIAN ISLANDS.

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All the accounts which we have of the abolition of the Tabu system in these islands are based upon the Moolelo Hawaii, written by Lahainaluna scholars, chiefly by David Malo, in 1838, and on the account given by Mr. Ellis in his "Tour around Hawaii" in 1823.

A revolution so momentous in its consequences and so unique in the history of mankind, deserves even fuller explanation than it has yet received.

Having once had the privilege of hearing the late John Parker of Waimea give an account of this event, of which he was in part an eye witness, I think that some of his statements may be of interest to the readers of the HAWAIIAN MONTHLY.

Few persons of the present generation can have any adequate idea of the oppressive nature of the ancient system of Tabu, which was as widely spread as the Polynesian race.

It covered every part of the life of the Hawaiian of the olden time with its vast and intricate network of regulations. This tabu system seems to have been the fundamental doctrine, the *articulus stantis vel cadentis ecclesiae*, as it were, of the old religion. The part of this code which seems to have been felt most keenly, was that which related to eating. The two sexes were strictly forbidden to eat together, and most of the choicest articles of food were tabu to females. The food of the husband and that of the wife had to be cooked in separate ovens, and separate huts had to be built for them to eat in. Women were not on any account to taste of pork or turtle or certain kinds of fish or bananas or coconuts. Death was the penalty for any violation of these rules, and it was inflicted with pitiless and inexorable rigor. Sometimes when a culprit was a chiefess of high rank, a substitute or scape goat was found to suffer in her stead. A case of this kind occurred at Honaunau, Hawaii, about the beginning of this century. Two young girls of high rank, Kapiolani and Keoua, (afterwards the wife of Governor Kua-kin) having ventured to eat a banana, their *kahu* or guardian was held responsible for it, and was executed by being held under water until he was dead. At a later period a woman was put to death for entering the eating house of her husband, although she was tipsy at the time. As late as 1818, three men were sacrificed at Kealakekua, one for putting on the girdle of a chief, another for eating a forbidden article, and the third for leaving a house that was *kapu* or tabu and entering one that was not.

Naturally enough, the term used by Hawaiians in speaking of the abolition of the tabu system is the *ai noa* or "free eating," in opposition to the *ai kapu*.

As might be expected, this revolution was urged on by the female chiefs of the highest rank, especially by the two queens, Kaahumanu and Keopu-

lanu, and it may justly be regarded as a notable triumph of *Women's Rights*. This, however, was not all, nor was this great emancipation due to a momentary impulse, or merely to the longing of a queen to eat forbidden fruit, but to deep seated and wide spread causes which had been at work for more than a quarter of a century.

As Judge Fornander has stated, "A national creed and a code of morals of a thousand years' standing may be broken any day by an individual, but is not laid aside by a whole people without remorse and without resistance, unless its moral force has been weakened, and its sanctity impaired by extraneous causes, which it was unable to contend with."

Such causes had long been undermining the ancient paganism, and most of the leading minds of the nation, including Hewahewa, the high priest, himself, had become secret disbelievers in the power of their hideous divinities. Hence, as soon as the iron hand of Kamehameha was withdrawn, the whole religious edifice was ready to crumble, and all that was needed was a leader to give the signal of revolt. That leader, according to my informant, was Kaahumanu, who had been constituted guardian of the young princes, and was virtually head of the Maui aristocracy. Liholiho, he said, was a profligate spendthrift, without dignity or force of character, while Kaahumanu was the master spirit, the life and soul of the whole movement. It had no doubt been fully discussed in secret before the death of Kamehameha, which took place May 8th, 1819.

On the following morning, Liholiho and his train departed from Kailua to Kawaihae to avoid ceremonial pollution; as the district of Kona was considered to be defiled until the corpse should have been dissected, the bones tied in a bundle, *whaiipili*, and the rites performed by which the deceased king became an *anahulu*, i. e. defiled ancestor.

During this interval all restraints were laid aside, and the most frightful scenes of debauchery took place, as was usual at the death of a high chief. During this temporary "reign of terror," several violations of tabu took place. Some women ate coconuts, and Kekauloahi, (mother of Lunallo), and other female chiefs even tasted of pork, without being destroyed by the gods. The awful dread of supernatural vengeance had somewhat abated, but still Liholiho and the highest chiefs had taken no step towards the abolition of the tabu system. At the conclusion of this period of about ten days, Kaahumanu sent word to Liholiho to return to Kailua. He did so, although strongly dissuaded from going by his cousin Kekuaokalani, who seems to have had an inkling of the conspiracy. On the second day after his arrival he was formally invested with sovereign

power, amid all the barbaric pomp and display that Hawaii could furnish. The chief men of his father were present, armed with muskets, and a vast assemblage of the people of Kona. Liholiho came forth from the temple, arrayed in a feather cloak, with an English *pipale alii* or cocked hat on his head, attended by his chiefs wearing feather mantles and helmets, and carrying magnificent *kahills*.

Kaahumanu advanced to meet him, and thus addressed him: "I make known to your highness, Liholiho, the will of your father. Behold these chiefs and the men of your father, and these your guns, and this your land, but you and I shall share the realm together." To this Liholiho assented and was duly constituted King, and Kaahumanu Premier, with equal authority. This singular feature of a *dual executive* had been devised by Kamehameha I, from his great confidence in Kaahumanu, his favorite queen, and from his knowledge of the worthless character of his son Liholiho; and it continued to exist until the abrogation of the old constitution of 1864. It must have been on this occasion that Kaahumanu made a memorable speech at which Mr. Parker was present. It was an eloquent plea for *religious toleration*. Wearing her royal feather cloak and feather helmet, and leaning on the spear of Kamehameha I, she spoke in substance as follows: "If you wish to continue to observe my father's laws, it is well and we will not molest you. But as for me and my people, we intend to be free from the tabus. We intend that the husband's food and the wife's food shall be cooked in the same oven, and that they shall be permitted to eat out of the same calabash. We intend to eat pork and bananas and coconuts, and to live as the white people do.

If you think differently, you are at liberty to do so; but as for me and my people we are resolved to be free." Mr. Parker stated that there was no other chief living at that time who would have dared to make such a declaration in public. Mr. Dibble refers to it in his history, when he states that Kaahumanu was the chief actor in the coronation ceremony, and that at the conclusion of her address to the young king, she said, "Let us henceforth disregard tabu." The King remained silent and withheld his consent.

"Then," continues the history, "Keopulani the mother of both Liholiho and Kauikeaouli, was touched with *aloha* for Kaahumanu, because her proposal was rejected. She thought perhaps that it might eventually bring upon Kaahumanu the extreme vengeance of violated tabu." Accordingly on the same day she sent to Liholiho for his younger brother Kauikeaouli, then a mere child, to come and eat with her in defiance of the tabu. Liholiho after some hesitation, granted his mother's request, but still was careful to abstain from any violation of the law, although he saw that no evil consequences had followed his mother's sacrilegious act. He was very slow to yield, and was finally constrained, as it were, by the force of general sentiment and example among his chiefs and people.

Soon after this he returned to Kawaihae, where he attempted to perform the rights of consecrating a heathen temple in the midst of revelry and drunkenness. But it was impossible in such circumstances to preserve ceremonial purity or to observe the conditions required by the ancient ritual. He then proceeded to Honokohau, north of Kailua, where he again attempted to consecrate a *heiau* with no better success than before. Meanwhile Kaahumanu, who had resolved on decisive measures, sent a messenger to the young king, requesting him in figurative language to renounce idolatry on his return to Kailua. Accordingly Liholiho with his retinue embarked in several canoes, and spent two days in a drunken debauch at sea in order, as many believe, to brace up his courage "to the sticking point."

During these two days his first violations of tabu took place, such as drinking and smoking with Kinau and other female chiefs, and partaking of dog's flesh with them. On the evening of the second day a double canoe was sent for the king in which he was rowed to Kailua, where preparations were in progress for a grand feast. On his arrival he sat down with a large company of chiefs of both sexes, and a number of foreigners, and openly feasted with them, while a multitude of the common people looked on, gazing and staring with mingled fear and curiosity, to see what judgments would follow so impious an act. But soon the joyful shout arose, "The tabus are at an end, and the gods are a lie!"

The effect of it was like that of displacing the keystone of an arch. The whole structure, both of idol worship and of the tabus, fell at once into ruins. Hewahewa himself set the example of applying the torch to the idols and their sanctuaries, and messengers were sent even as far as Kauai to proclaim the abolition of the cruel and oppressive system. Kamualu, the King of that island, gladly consented, and an almost universal jubilee pervaded the islands, attended with general revelry and license.

But the tabu system was too ancient and too deeply rooted to be abolished without a struggle.

Kekuaokalani, (who was the son of Keliimaikai, Kamehameha's favorite younger brother), an energetic and popular young chief, was highly incensed at the impious conduct of Liholiho, and retired to Kaawaloa. There the priests gathered around him, and offered him the crown as a reward for his fidelity, repeating an ancient Hawaiian proverb, "A religious chief shall possess a kingdom, but wicked chiefs shall always be poor." They said "No sin of ungodly rulers, by which they lost their kingdoms, is equal to this sin of Liholiho." A large body of chiefs and warriors rallied around the standard of this Defender of the Faith, while his adherents took up arms in the district of Hanakua. Undoubtedly he had the sympathy of the majority of the common people.

Kaahumanu and the Court party who were deep in their carousals at Kailua, suddenly awoke to a sense of their danger. It was decided, however, to

try conciliatory measures first. Accordingly Naihe and Hoapili, the uncle of Kekuaokalani, together with Keopuolani, the queen-mother, were sent to the rebel camp as ambassadors to effect an amicable arrangement if possible. But their mission was a failure, and they were glad to escape with their lives. Kekuaokalani resolved to march immediately on Kailua, hoping to take the court party by surprise. But Kaahumanu and her prime minister, Kalanimoku, were equal to the crisis. A short time before, as Mr. Parker stated, they had purchased a large lot of old fashioned "Brown Bess" muskets and ammunition, which gave them a great advantage in the coming struggle. That night the arms were given out, and in the morning Kalanimoku marshalled his men and thus addressed them: "Be still; make no noise; be valiant; drink bitter water, my children; turn not back; forward even unto death; there is nothing behind to which you can turn." The two armies encountered each other near Kuamoo, about two miles south of Keanou. On the royal side a gallant young chief named Kalkioewa, (who afterwards became governor of Kauai), was conspicuous in feather cloak and helmet, and led a company of fifty picked men. The rebel army occupied a crater like hollow in an extensive tract of lava. As the royal troops approached, they received a volley, and several men fell, on which they sought the cover of a stone wall, from behind which they exchanged a desultory fire with the rebels for some time. At length Kalkioewa became impatient and leaped over the wall, calling on his men to follow, which caused a general advance of the whole line. Soon afterwards he was wounded by a musket ball in the thigh and fell. As his men raised a wail and crowded around him, he partly raised himself up and ordered them to leave him and press on after the enemy. Kekuaokalani had fewer men and fewer muskets than his rival, and but little ammunition. His men were outflanked and gradually driven down towards the sea shore, where they were exposed to a flanking fire from a squadron of double canoes, one of which carried a mounted swivel gun under the charge of a foreign gunner. Jarves says that this fleet was under the command of Kaahumanu herself and her sister Kalakua. Kekuaokalani, although wounded early in the action, fought bravely, and repeatedly rallied his men, until, unable to stand from loss of blood, as Ellis relates, "He sat on a fragment of lava and twice loaded and fired his musket on the advancing foe. He now received a musket ball in the left breast, and covering his face with his feather cloak, expired in the midst of his friends. His wife, Manono, during the whole of the day had fought by his side with steady and dauntless courage. A few moments after her husband's death she called out for quarter, but the words had hardly left her lips before she received a ball in her left temple, fell

upon the lifeless body of her husband and expired." The idolators having lost their chief, made little resistance afterwards and were soon scattered or taken prisoners. An oblong pile of stones near the sea, now overgrown with climbing plants, marks the last resting place of the brave but misguided Kekuaokalani and his heroic wife.

Hoapili was now sent with a force to Hamakua, and made short work of the insurrection in Waipio. One of the leaders, a young chief, was captured in a cave in the upper part of the valley, and brought down to Kailua. Soon after his arrival Liholiho called on him and invited him to drink with him.

"No," said he, "I don't feel like drinking rum, I am afraid that I shall die." Presently the summons came for him to appear before the haughty Kaahumanu and learn his fate. Accordingly, as etiquette required, he literally *craved*, in the most abject manner, into her dreaded presence. Fixing on him one of her most appalling looks, she upbraided him for his ingratitude and treachery to her and the king. "Yet," she continued, "you need not fear for your life. I will command my people not to kill you; but I will make you a poor man. I will take away all your lands, but spare your life. "E ola no oe." You may go now." And the trembling wretch retired in the same manner as he had entered, only too happy to escape with his life.

This little episode of the war, as related by Mr. Parker, appeared to the writer too characteristic to be omitted.

The result of the war having now completely demonstrated the impotence of their idols, the whole people turned against them with rage and contempt. They killed Kuawa, the priest, who had been the chief agent in so fatally misleading Kekuaokalani. "There is no power in the gods," said they, "they are vanity and a lie. The army with idols was weak; the army without idols was strong and victorious." They now made more thorough work of destroying their images and sacred enclosures, with a few reservations, such as the Hale a Keawe at Honaunau. All public worship and sacrifices ceased, the priesthood as an organized body was dissolved, and as Jarves says, Hawaii presented to the world the strange spectacle of a nation without a religion. But this state of things was more apparent than real. The revolution had been the work of the high chiefs, and had been readily accepted by an unthinking people. But *observances* are more easily abandoned than *ideas*, and it is impossible for any mind to cast off entirely the modes of thinking on religious subjects in which it has grown up to maturity. The ancient idolatry was still cherished by many in secret, and their hereditary superstitions, hydra-headed in their variety and tenacity of life, were destined to survive for generations to come, and necessarily blended with and colored their conceptions of Christianity.

W. D. ALEXANDER.

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Volume I

NĀNĀ I KE KUMU

(Look To The Source)

Volume I

Twinkle P123

Mary Kawena Pukui
E.W. Haertig, M.D.
Catherine A. Lee

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no mutilating rites in puberty. The body was to be fed, massaged, molded to beauty, taught the arts of love—and, in general, enjoyed.

If, in the past, fasting was an obvious, observable way of disclaiming old gods and old ways associated with them, it does not always follow that the modern, fasting Hawaiian denies his cultural past. Among Center clients and associates² are many Hawaiians who fast. These include persons who believe "being Hawaiian is bad" and persons who are genuinely proud of being Hawaiian. The fact is today simply an accepted religious practice.

NOTES

1. Self-mutilation. In extreme grief over the death of a beloved *ali'i*, mourners once might knock out teeth, scar their faces or in rare instances scoop out their eyes. This, sometimes accompanied by wild, lawless behavior and the uncovering of the genitals, was done because the mourner was believed "pupuke" or "crazy" with grief.
2. Ministers of various faiths met with the Hawaiian Culture Study Committee; others were interviewed by the writer. In addition, relatives of Hawaiian staff members recounted their experiences and views on fasting.

'ai—eat, to eat, eating; food, particularly *poi* or vegetable food. Meat and fish were originally called *i'a*. Also to destroy. To consume.

Deriv: unknown

A clue to the needs and values of early Hawaiian culture comes in Mary Pukui's statement, "we have not a single word for 'time' but many for food and eating."

There was good reason for prizing food and the *piha ka 'ōpū* or "well-filled belly." Hawaiians enjoyed feasting; they also knew and dreaded hunger. Prayers to prevent famine were said.¹ Hungry experience taught the wisdom of storing food.

Mrs. Pukui tells that "in Ka'u my people dried sweet potatoes and stored them in refuge caves against war and drought." An account that apparently makes legend from a basis of truth tells of the navigator king Makali'i who "... during a season of great fertility sent his messengers all over the country and collected all the food they could get and stored it up in [his] store-houses ..."² Even in peaceful, happy times, obtaining food, whether taro from the patch, or fish from the sea, demanded time, patience, prayers and ritual on the part of commoners. Only the *ali'i* (aristocracy) had food furnished them.

So important was 'ai that the gods were ritually fed, and feasting was a religious as well as a social rite. This is discussed under *aha'aina*. A thief in early Hawaii was an *aihue*, one who snatched food from someone else. Literally, 'ai (food) *hue* (light-fingered; to filch). And if someone was "sick and tired" of something, he was *ai'kena*, from 'ai + *kena* (satisfied, satiated). He was "fed up."

Eating (and drinking) could indicate social, religious and sexual status. 'Awa, the ceremonial liquor and social relaxant was reserved for *ali'i* (aristocracy) and *kahuna*s (priests; doctors) only, though this distinction was often disregarded.³

Eating segregated the men from the women—and the men from the boys. Women could not eat with the men, nor did little boys until after the ceremony that marked their entry into man's world. (See *kā i maa*). Women and little boys were not allowed pork, for the pig (*pua'a*) was the favored sacrifice of the gods. At one time, women were denied the yellow coconut, most varieties of bananas, the *ulu* and *kumu* fish, and some other sea foods.⁴

It was this sex-segregated food *kapu* that set the stage for Hawaii's first dramatic denial of the old religion. For this *kapu* was believed straight from the gods. When Kaahumanu openly ate with Liholiho in 1819, her act was public symbol of a clear break with the gods, and the beginning of a new social order.⁵

Less dramatically, food and plenty of it, was tied in with approved appearance and social standing. An ideally beautiful woman had "a face as round and full as the moon." An early description of a king's daughter read, "she was not very big, but she had pretty features."⁶ Royalty might be as fat as Princess Ruth who was known to eat 13 *hau'ia* pies at one sitting.⁷ Mothers worried when their daughters were thin and gave them medicine to fatten them.⁸ Only the men ever reduced, and that was done to get themselves in fighting trim. Possibly, one purpose of the *Makahiki* games was to get the warriors in shape for battles to come. In fact, the only mention of reducing we have seen applies to men:

"People in the old days liked 'awa as a means of reducing weight. When a man saw himself growing too fat and subject to illness, the best thing was to drink copiously like the gods and like those possessed of the spirit until the skin scaled . . . buy a large quantity to drink and eat nothing between meals."⁹

At any rate, a look at the sketches of early Hawaiians by Choris makes it pretty clear that while warriors cultivated muscles and kept agile for warfare, pounds, curves, and dimples remained a girl's best friend.

If pounds were approved, so were the methods of putting on pounds. Hospitality was the rule; stinginess was beyond contempt. "*Kāhea ai*. 'Ai a *ma'ona*" ("Come in and eat, eat all you want") was the accepted greeting, even to comparative strangers.

ho'i no 'ai i kou kahu Go back and destroy your keeper

'Ai, the verb meaning "to eat," carried a figurative second meaning of "to consume" or "to destroy" in the sense of causing death. The meaning took on supernatural connotations, for this death-dealing destruction was done by spirits often sent through the mystic spells of a sorcerer.

One of the most useful of Hawaii's early ritual phrases was "*ho'i no 'ai i kou kahu*," meaning "go back and destroy—really kill—your keeper." This was said to the spirit sent by a sorcerer to inflict illness or death. This phrase was based on the cultural conviction that a blameless person need not accept a sorcerer's spell but could return it to its sender. From the sorcerer's viewpoint, any harm he sent out might well boomerang back on him. Or, to put it in a timeless and universal context, anyone who directs hostility and instigates harm to another person, usually sets into motion a chain of counter hostilities which eventually rebound.

rather an extension into mystic realms of the Hawaiian closeness to family, and the Hawaiian tendency to seek advice rather than to forge ahead in individualistic, unsupported action.

The Hawaiian vision experience seems to be the slight parting of an already insubstantial curtain between the world of the living and the world of the spirits. And just behind that curtain, waiting his cue to appear with direct or disguised counsel or a message of love, is almost certainly a member of the family!

NOTES AND REFERENCES

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4. Nights of Kane: The 27th night of the lunar month was *kapu* in its meaning of "sacred" to the god Kane. On this night, spirits of departed chiefs march over the pathways they trod in life. Anyone in the pathway of the marchers might be killed. The spirit of a relative could rescue him or the victim could save himself by stripping and lying flat in the path. This may account for him fear that visions can kill. (In the present day, Hawaiians report hearing marching feet more than seeing the ghostly chiefs.) Related by Mrs. Pukui and used in Beckwith-Kepelino's *Traditions of Hawaii*.
5. Vision of living person:
"A sorcerer would tell a person, 'Today at noon . . . I saw your wraith . . . You are entirely naked . . . Your tongue was hanging out, your eyes staring wildly at me. You rushed at me and clubbed me with a stick . . . Your *anuwakua* is wroth with you on this account . . . Now is the proper time . . . to make peace with me.' At this speech . . . the man consented to have the *kahuna* [in this case, sorcerer] perform the ceremony of *kala*, atonement, for him . . . This done, the *kahuna* said, 'I declare the ceremony perfect. . . . You will not die.' The *kahuna* then received his pay."—"Hawaiian Antiquities," D. Malo, pp. 112-2. Malo makes it clear this vision of the living was faked by an unscrupulous sorcerer.
6. Kamakau. *Ka Po'e Kahiko: The People of Old*, p. 50.
7. Decompensation in psychiatric sense: Term is borrowed from physical medicine. An example: When a damaged heart functions fairly well within safe bounds of physical activity, it is a compensated heart. What remains healthy and intact in the heart compensates for the damage. Over-exertion, illness, various stresses may push the heart beyond its limit-of-compensation. It can then no longer function reasonably well. It is a de-compensated heart. The personality, damaged in certain aspects, may also be compensated for by the healthy, intact elements. A person who has sustained and retained damaging outlooks, ways of doing things, ways of relating to others, for instance, may live fairly comfortably within somewhat limited demands and stresses. He functions in a compensated way. But if he pushes himself beyond his compensated capacities, he de-compensates. At this point, symptoms—acute depression, anxiety, psychosomatic distress, hallucinations are some—may develop. This may be described in such terms as "Decompensation is present" or "He is decompensating."

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To this intermittent "pinching" or "nibbling" feeling has been attached yet another meaning, that of malicious gossip or slander. This is the kind of character disparagement that is accomplished by small, continuing, accumulative remarks rather than one big lie or public statement.

'Akī'aki is reported as being felt while awake and in dreams. This and other skin sensations are discussed under 'i'ō'ūli.

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The *akua*s were the impersonal gods of Hawaii, powerful, distant deities whose origins were lost in dim corridors of time. The *akua*s, like the gods of Greek mythology, combined supernatural qualities with many of the characteristic frailties of men. Accordingly, *akua*s could be vengeful, helpful or destructive, wise or capricious. This is in direct contrast to the Christian concept of all good and all evil, God and devil.

*Akua*s, again very much like gods of Western mythology, could take many forms (*kino lau*), appearing as a fish, a shark, a rock, a plant. They could mate with mortals and produce either normal human beings or *mo'ō*, fish-like "water spirit" babies, or *eho'eho*, rock-like babies. They could, in mysterious ways, bring forth *kupuas*, or demi-gods. Pele, the volcano goddess, carried in her bosom the egg that became her sister, Hī'iaka. *Akua*s could take possession (*noho*) of humans, totally or partially.

four major gods

Many *akua*s were nameless; some were famous named gods or goddesses. The four major gods, believed to be worshiped as deities even before the migration from Tahiti to Hawaii, were:

- Kāne, creator of man; heavenly father of all men, symbol of life, nature; god of fresh water and sunlight.
- Lono, god of agriculture, clouds, weather.
- Kū, god of war and chiefs, god of the forests, canoe making, fishing.
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Trying to characterize the "famous four" by their own special *kuleanas* (areas of responsibility) is tricky. The four "traded duties" to an extent. They also took on multiple entities, with each entity worshiped as a separate deity. For example, in his function as god of canoe making, Kū became *Kū-ālanā-āeo* or *Kū-ārising-in the forest*. (Canoes were made of trees from the forest.)

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four major gods

Both Ku and Lono are also considered gods of medicine. This is a logical extension of ideas. For Ku was primarily god of the forests; many of the healing herbs and vines came from the forest. Lono, as god of agriculture, extended his *kuleana* to the medicinal plants grown as agricultural projects. And with Ku and his goddess wife Hina, came the association of male and female properties in healing plants and in ritual. In the ancient myths, both went into the forest together; both were invoked equally when medicinal plants were gathered. Male and female were kept in balance (an idea quite close to the Chinese concept of balancing *yin* and *yan*, heat and cold or male and female).

With the coming of missionaries, efforts were made to fit Kāne, Ku and Lono into the concept of the Trinity and give Kanaloa the role of devil. The role-assignment "didn't take," but many early writings contain a conspicuous blank where Kanaloa's special *kuleana* is concerned.

Lesser, but still powerful gods included Ma'ōiā, god of healing; Kapo, goddess of sorcery; Pele, the volcano goddess; Laka, goddess of the hula. Pele and Laka are examples of deities who remain impersonal *akua*s but who are also personal *aumākua*s to their human descendants. (See *aumākua*.)

Abstract forces are more easily worshiped when they can be visualized as idols. And so Hawaii had carved wooden gods and earlier feather gods, said to accompany the first migration from Tahiti.

If it is possible to "short-change" mystic beings, then we have certainly done so. For there were hundreds of Hawaiian *akua*s. Some individual gods took on dozens of separate names and personalities. Pele's sister, Hī'iaka, was said to have as many as 40 different manifestations. It is impossible to list all the deities here.

(A convenient reference listing of Hawaiian gods is included in *The New Hawaiian Dictionary* by Mrs. Pukui and Dr. Samuel H. Elbert, published in 1971.—C.A.L.)

One conclusion about the gods seems possible. The *akua*s were distant, awesome deities, concerned with the mighty forces of land and sea, storm and calm, light of day and dark of night. As major gods, their help was invoked for major causes and great events. For the needs and solaces of daily life, Hawaiians called on their own personal ancestor gods, the *aumākua*s. (It was Kanaloa who, by inhaling and exhaling, made the ocean tides, but if you got caught in an outgoing tide, you called on your *aumākua* for help!)

the gods and modern Hawaiians

Occasionally, the modern Hawaiian still invokes the old *akua*s. One Hawaiian who openly states that he is a *kahuna* prays to Lono for guidance in healing and in the preparation of herbal medicines. This is within the old tradition. In at least one 1971 public meeting of Hawaiians, Lono was invoked before the proceedings.

Akua, as an unnamed impersonal god or merely "spirit" is more often mentioned. Explicitly or by implication, clients have said an *akua* has possessed them or someone in the family. Often *akua* was used when *uhane*, the spirit of a human, was meant. (*Naku akua* or "spirit bite" is discussed under separate listing.)

In general, the Hawaiian who today retains, emotionally, if not intellectually, his old beliefs, also retains the division between the awesome and the approachable deities. The *aumākua*s, not the *akua*s, remain the personally significant supernatural beings.

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akualele—a "flying god" that was sent on destructive errands.
Deriv: *akua*, god or spirit.
lele, to fly, leap or jump as from a cliff.

Akuaelele or "flying god" goes back to the belief that certain gods took the form of balls of fire and flew through the air. Whether this belief arose from seeing actual shooting stars or glowing phosphorescence at night is anybody's speculation. However, legends say these gods entered the *kawila*, *nioi* or *ōhe* trees growing on Maunaloa on Molokai. These trees became poisonous only at the Molokai location; trees of the same family on other islands remained harmless. It seemed obvious that the gods inhabiting the Molokai trees were poison gods. "It is a wondrous thing how these trees became poisonous," says one account.¹

Another legend tells that these trees on Molokai were descended from men, and, therefore, were inhabited by the spirits of men. One version relates a dream of seeing men marching to Maunaloa and turning into the trees. When the wood burned, it was thought to give off a smell of blood.

Another account, beginning with a dream, says that when the first tree was cut down, chips of wood touched the bodies of men, killing them instantly.²

At any rate, individuals on Molokai began to keep wood of the poison trees and fashioned images of it. Elaborate protective rituals were developed to keep men handling the wood from being poisoned (coconut water and *mini*/urine/were both used).

With the making of god-images of the wood, the ritual of sending the poison god on death-dealing errands began. The image (or perhaps just a piece of wood) was scraped, always at night. This sent the *akua* or god out on its destructive mission. As the god sped through the night air, it was said to look like a "fireball."

Sending a god or spirit on an errand is called *ho'ōiāna* or *ho'ōiānauna*. The term is a general one and does not refer specifically to *akualele*. Sending an ancestral spirit in *unihipihi* is also *ho'ōiānauna*. (See *unihipihi*.)

Associated with, but also not limited to *akualele*, is another phrase, *mālama pā'olo* or "keeping a bundle" for use in sorcery or spirit-sending. The "bundle," in the case of *akualele* the wood, was usually wrapped in tapa. The *kahu* or "keeper" of this "bundle" cared for, fed ritually and constantly called upon the spirit inhabiting the bundle. These were essential parts of the spirit-sending ritual. The fateful climax came when the keeper voiced the command for the spirit to fly on its errand. Thoughts had to be put into words before they took effect, either as sorcery spell (*anā'anā*) or human-to-human curse (*ānai*).

However, the keeper who sent the spirit out to do harm was endangering himself. The spirit or poison god might be returned with the ritual words,

Ao kuewa were the spirits of the dead who were doomed to wander forever within specific geographic areas. Here they chased moths and grasshoppers in a vain effort to appease hunger. This doom came to the spirit of mortals who in life had so offended their *aumākua* (ancestor gods) that they denied them a place in the happier eternity of *Pō*. Hunger was the Hawaiian concept of "hell." See *aumakua* and *Pō*.

aumakua, plural, aumākua—ancestor gods; the god spirits of those who were in life forebears of those now living; spiritual ancestors.

Deriv: *au*, period of time; current of time; era; eon.
makua, parent; parent generation; ancestor.

There is a sea of time, so vast man cannot know its boundaries, so fathomless man cannot plumb its depths. Into this dark sea plunge the spirits of men, released from their earthly bodies. The sea becomes one with the sky and the land and the fiery surgings that rise from deep in the restless earth. For this is the measureless expanse of all space. This is the timelessness of all time. This is eternity. This is Pō.

In Pō there dwell our ancestors, transfigured into gods. They are forever god-spirits, possessing the strange and awesome powers of gods. Yet they are forever our relatives, having for us the loving concern a mother feels for her infant, or a grandfather for his first-born grandson. As gods and relatives in one, they give us strength when we are weak, warning when danger threatens, guidance in our bewilderment, inspiration in our arts. They are equally our judges, hearing our words and watching our actions, reprimanding us for error, and punishing us for blatant offense. For these are our godly ancestors. These are our spiritual parents. These are our aumākua.

You and I, when our time has come, shall plunge from our leina into Pō. Our lives have been worthy, our aumākua will be waiting to welcome us. When we too shall inhabit the eternal realm of the ancestor spirits. We in our time shall become aumākua to our descendants even yet unborn.*

So with the *aumākua*,** Hawaiians of old resolved their own quest for a comprehensible immortality, satisfied their own desire to worship compassionate, approachable deities, and filled their own need for a standard of ethics more personal and more permanent than that incorporated in the chiefly edicts.

The concept of *aumākua* was a nearly ideal one. The Hawaiians lived within the close relationships of the *'ohana* (family or family clan); the *aumākua* remained members of the clan. The *'ohana* invested family authority in its senior members; the *aumākua* as spiritual ancestors were certainly seniors. With one's *aumakua*, a human-to-spirit communication was possible. One spoke to an *aumakua* through ritual and with reverence, but without the most paralyzing awe the *akua*s or impersonal gods sometimes inspired. Therefore, an *aumakua* could also be a "spiritual go between," passing on messages to the *akua*.

Each island had cliffs or seacoast promontories called *leina* from which the spirits of men, after death, were believed to plunge into eternity.

Sometimes the ancestor gods were called *kumupa'a*.

**origin of
aumākua**

Praying to the *aumākua* as link to the *akua* seems logical. For one of the ways the first *aumākua* were said to originate was by the mating of *akua* and mortal. When a child was born to this union, the *akua* became an ancestor to a human line. He took on a dual role. As ancestor-god he became an *aumakua* to his descendants. Yet he remained *akua* or impersonal god to non-related humans. The dual role was sometimes referred to as *akua aumakua*.¹ Traditionally, even the major gods, Kāne, Ku, Lono and Kanaloa were both *akua* and *aumakua*. Union of powerful gods with humans is said also to have created the chiefs who ruled by "divine right." The major gods were more often thought of as *akua* only; the *aumakua* role seems to have been lost, except by Pele, Hi'iaka and Laka. These three were usually accepted as both goddess and *aumakua*. Even today Pele is goddess to non-related Hawaiians and *aumakua* to descendants. To Mrs. Pukui she is *aumakua*.

Evidently in ancient times, there were not enough *aumākua* to go around for prayers for acquiring an *aumakua* are recorded. One could pray for either a male or a female.²

**family had
many aumākua**

This scarcity of *aumākua* was not to be permanent. Co-author Pukui memorized names of all her family *aumākua* as part of her childhood education. She learned a total of 50 names! With so many *aumākua*, the word 'ao'ao' was used to designate the spiritual ancestors on a specific side or branch of the family.

**kino lau,
many forms**

Aumākua were also called "po'e o ka pō," people in the night or dark, therefore, "invisible people." However, *aumākua* could assume visible, tangible forms because of their ability to take *kino lau* (many bodies; many forms). The *akua* also had this ability. *Aumākua* took the form of sharks, owls, mud hens, lizards, eels, and indigenous small field mice, caterpillars, even rocks and plants. They could change back and forth from animal to plant to mineral form. The *aumakua* that was a *pe'elua* or *'enuhe* (caterpillar) on land became the *loli* or sea-cucumber in the ocean. The *aumakua* inhabiting the body of a certain animal might also inhabit a plant that had either visual resemblance, similar characteristics (slippery, clinging, rough or smooth) or symbolic resemblance because of similar name. The *aumakua* in the mackerel or *'ōpeli* was also associated with a variety of the lobelia plant with leaves shaped and colored like the fish, and called *'ōpeli*.

**kākū 'ai
described**

Traditionally, Hawaiians could transform a deceased member of the family into a special class of *aumākua*. This was done in the ceremony of *kākū 'ai*. Mary Pukui describes *kākū 'ai* as her forebears practiced it:

"... They would take the bones after the flesh was all gone, wrap the bones in red and black tapa, and take them to the volcano. Then the *kahuna* [priest] would prepare the 'awa [Hawaii's ceremonial drink]... After the

'awa had been poured. For generations, sons related to the sharks in the sea. The *aumakua* cover it with a belly turned into another.

"The last time my grandmother was tall had earth burial," Mary Pukui said.

A relative so that family *aumākua* with consigned to the volcano did not call on *aumākua*, and some considered unique.

In other *kākū 'ai* be returned to its *akua*.

For the early forms were ever-present given the *piko* (umbilical cord) had connected a directly linked *aumākua* head or face was *aumakua* was certain *kahunas* of the head. The child was taught one man became a fisherman, this was was superimposed from his *aumakua*.

The *aumākua* came from immediate

If, for example, had an experience anthropologist Mary Pukui said:

"... this one appeared in the form the shark appears. want and it will bring and the boat cap.

Or Mary Pukui said:

"... in our 'oi the family *aumākua* 'get out of here to fruit tree and cried right away, and I (foster child) was

*For other accounts, see

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awa had been poured into the crater, the bones were thrown down there. For generations, some of our folks were taken there. Later, others who were related to the sharks were given the *kākū 'ai* ceremony and their bodies placed in the sea. The *aumakua* shark was supposed to take the bundle of bones, cover it with a belly fin, and care for it until that bundle of bones somehow turned into another shark.

"The last time my people conducted *kākū 'ai* rituals was when my great grandmother was taken to the volcano. From my grandmother on down, we had earth burial," Mrs. Pukui explains.*

A relative so transfigured became a particular type of spirit who served family *aumakua* within their own supernatural realm. For example, a relative consigned to the volcano became a flame spirit serving Pele. Living descendants did not call on these spirits for help. Though they were usually called *aumakua*, and sometimes loosely classified as 'unihipili, they were generally considered unique spirit-beings.¹

In other *kākū 'ai* rites, a still-born or malformed live baby or a fetus could be returned to its *aumakua*. This is described in listing, *kākū 'ai*.

For the early Hawaiians, the *aumakua* as invisible force or in tangible form were ever-present, permeating thought and action. The ritualistic care given the *piko* (umbilical cord) came, in part, from the knowledge that the cord had connected the baby with an living ancestor who after death would be a directly linked *aumakua*. The *kapu* (taboo) against hitting anyone on the head or face was intertwined with the belief that good spirits—and the *aumakua* was certainly a good one—entered the body by the head. The many *kahunas* of the healing arts prayed to their *aumakua* for diagnostic insights. The child was taught which specific *aumakua* to call on for help. And when one man became an expert canoe maker and another an especially skilled fisherman, this was due only partially to individual training. The training was superimposed on the *mana* (special power or talent) each had received from his *aumakua*.

aumakua warned and protected

The *aumakua* also brought warnings of coming misfortune and deliverance from immediate danger.

If, for example, your family *aumakua* included the shark, you might have had an experience like this one, reported from the Puna District on Hawaii to anthropologist Martha Beckwith:

"... this one family... had a supernatural helper or *aumakua* who appeared in the form of a particular shark. When any of the family go fishing, the shark appears. The *aumakua* obeys the voice of man. Name the fish you want and it will bring it. This family can never be drowned. If there is a storm and the boat capsizes, the shark appears and the men ride on its back."⁴

Or Mary Pukui's personal experience:

"... in our 'ohana, we were taught to observe the owl. Owls were among the family *aumakua*... If the owl cries in a strange way, 'eu'eu, that means 'get out of here today.' When I was in Puna, an owl came and lit in a bread-fruit tree and cried 'eu'eu. I told the aunt I was visiting that I was going home right away, and I'm glad I did, because when I got home I found my *hānai* (foster child) was sick and feverish."

*For other accounts, see listing, *kākū 'ai*.

The same *aumākua* could also punish. One way to bring certain retribution was to eat the physical form of one's *aumākua*. Co-author Pukui relates:

"There were things we could not eat because if we did, it would kill us . . . a cousin of mine defiantly ate a certain sea creature and said 'I ate the body of our *aumākua*!' He died a month later."

Though this death 30 days later cannot be considered an illustration, the late Nils P. Larsen, M.D., speculated that sudden death or illness after "eating one's *aumākua*" might be "clan allergies," family-line allergic sensitivities reinforced by the Hawaiian practice of intermarriage within the *'ohana*.⁵

illness was punishment

Illness was often thought to be punishment sent from an offended *aumākua*. Breaking food *kapus* (taboos), bathing in pools that were *kapu*, violating the *kapus* of the menstrual period—all these could bring reprimands in the form of physical discomfort. So could behavior that impaired interpersonal relationships—greed, dishonesty, theft. Often there were "diagnostic clues." A swollen hand pained a thief until he made restitution. A sore foot told of "going where you were not supposed to be." An agony of pain in the scrotum betrayed the flagrantly unfaithful man. Psychosomatic ills were not limited to Western civilization.

The *aumākua* had many ways of expressing both warnings and displeasure. Says Mary Pukui:

dream warnings

"The *aumākua* makes its warnings, reprimands and guidance known in dreams, visions, physical manifestations, or just the nagging feeling that something is wrong. If you did something wrong unknowingly, you might be told in *hō'ike a ka pō* [revelation in the night, therefore a dream] or *hō'ailona* [sign or portent] while awake. This would be so you would know what you were punished for. Then you could correct your mistake."

This offer of a "second chance" suggests that the *aumākua*, even when displeased, were not vengeful. They forgave as well as chastised. Says one of Hawaii's earliest written accounts, ". . . if you have sinned against your guardian spirit [*aumākua*], with the root of the *awa* you could be forgiven. Then the anger of the guardian spirit would be appeased . . ."⁶

The *aumākua*'s many helpful, constructive functions strengthen this supposition. One such function was giving mental or physical strength when it was needed. To do this the *aumākua* entered into or possessed (*noho*) a human, in varying degrees and lengths of time.

enabling concepts

Three enabling-strengthening concepts are associated with the *aumākua*: *kiheipua*, *ho'o'ōlu ia* and *noho*.

Ki he i pua or *kiheipua** comes from *kihei* (shoulder covering) and *pua* (flower). It is the "flower shoulder covering" the *aumākua* places gently over the helpless, the child, the sick, the aged. Or to use a later meaning of *kihei*,

*The term *kiheipua* seems to be confined to the Ka'u area of Hawaii, but the concept is generally known.—M.K. Pukui.

a "shawl" of help and porarily enables a help

Mrs. Pukui gives

"A woman may . . . She feels her *aumākua* straighten the house, d gone, she is weak and

Kiheipua comes *aumākua*. A somewhat can be prayed for.

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"Laka takes milk plains Mrs. Pukui.

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a "shawl" of help and comfort. It is the influence of one's *aumakua* that temporarily enables a helpless person to function and help himself.

Mrs. Pukui gives this example:

"A woman may be sick and helpless in bed. Suddenly she feels strong. She feels her *aumakua* is there—right there! She can get up, wash the dishes, straighten the house, do what must be done. After she senses the *aumakua* has gone, she is weak and sick again."

Kiheipua comes by itself, the unsolicited gift of one's compassionate *aumakua*. A somewhat stronger possession that enables is *ho'oōlu ia*. This can be prayed for.

Ho'oōlu ia is literally the "making to grow." Still far short of total possession, *ho'oōlu ia* is a kind of inspiration. Here is a surge of strength and control that gets a job finished. That turns an acceptable bit of work into a superior one. That transforms a mediocre artistic endeavor into a superior, even superlative one. Laka, goddess of the hula and an *aumakua*, was invariably called upon to inspire the dancer to a better performance.

"Laka takes mild possession. She is dancing through the dancer," explains Mrs. Pukui.

So strong was this sense of Laka and dancer becoming one during the hula, that the *lei* the dancer wore became *kapu*. The dancer should not give her *lei* away or put another *lei* on top of the one dedicated to Laka. For as Mary Pukui quotes one serious hula dancer, "It is *our lei*. Mine and my *aumakua*'s."

A third type of possession is the total—but not permanent—possession called *noho* or *noho ia*. Other spirits, notably spirits of the more recent, known dead could also take possession. (See *noho*.)

Noho by one's *aumakua* may supply the sudden burst of "superhuman" strength that enables a mother to lift a heavy log before it crushes her child, or the "second wind" that helps the exhausted swimmer make it to shore. In the benign *noho* of the *aumakua*, normal capability becomes spectacular.

agent of 'ānai (curse)

The *aumakua* also carried out the curse (*'ānai*) one person put on another.

In the "relatives beyond death" concept of the *aumākua*, it was understood that even spiritual beings were not heroic, helpful or admonitory all the time. The *aumākua* also had that most beguiling quality, a sense of fun.

"*Aumākua* could be capricious, mischievous and naughty!" says Mary Pukui.

But even the tricks of a naughty *aumakua* were without malice. For example:

A dignified, usually quiet man all at once becomes "the life of the party." Then just as suddenly he stops, thinks, "what came over me!" and becomes his old, stuffy self. Explanation: his *aumakua* was having a little fun through him.

Without any previous plan, a woman out on an errand finds herself going just the opposite direction. The errand is forgotten and she visits some friends instead. Explanation: Her *aumakua* was having a small adventure through her.

judgment after death

For all their appealing, human-like qualities, the *aumākua* remained figures of supreme authority. After death each mortal would know his *aumākua* as implacable judge and jury. For the *aumākua* had the power to punish or reward the released spirit, or even to send it back to the body.

eternity called Pō

As tradition tells it, when the spirit left the body after death, it traveled along the roads and pathways of the bodily host's own island and on to a *leina* or "place of leaping." And from there the spirit plunged into the sea of eternity or *Pō*.

And there, to quote Mary Pukui, "the *aumākua* would be, ready to welcome those in life who had not offended."

revived after apparent death

Not all spirits made this prompt leap into *Pō*. For some, the mystical acceptance into the *aumākua* was delayed by the *aumākua* themselves. These were the spirits who left the body prematurely in what were evidently "apparent deaths." Says Mary Pukui, "Sometimes when it is not yet time to die, the relatives stand in the road and make you go back. Then the breath returns to the body with a crowing sound, *o'ō-a-moa*."^{*}

Entry into *Pō* would also be delayed by living relatives who constantly recalled the spirit by practicing *'unihipi*. (See *'unihipi*.)

The true unfortunates were the spirits whose earthly existence was found unworthy. Explains Mrs. Pukui:

"Those who in life had offended and did not try to correct the offense disgusted the *aumākua*. The *aumākua* would not bother with them. These became *ao kuewa*, homeless, hungry, wandering spirits, chasing moths and grasshoppers for food."

Spirits neither delayed nor judged unworthy found the *aumākua* waiting, some say in ghostly canoes, near the *leina*. For the Hawaiian conscious of a well-spent life, here was the ultimate, expected benevolence of the *aumākua*. For the final great leap from Now into Forever is an awesome thing, and without the welcoming *aumākua* the mist-veiled waters of eternity would be chill and strange indeed.

welcome in Pō for the worthy

This, then, was the reward for a good life! Eternity with those closest to the *'ohana*-loving Hawaiian, one's own ancestors. An eternal dwelling place in the mystic sea of *Pō*, and at the same time in the specific realm of family *aumākua*, whether water, or rock or sky or land or volcano.

The *aumākua* received their official dismissal notices more than a century ago when the Hawaiian people accepted the missionaries' Christian God.

^{*}The Hawaiian's knowledge of resuscitation was considerable. See *o'ō-a-moa*.

But two questions
Did the *aumākua*

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But two questions persist:

Did the *aumākua* really go away? Or did they just go underground?

aumākua in the present

For the majority of Hawaii's present multi-cultural population, the *aumākua* are forgotten or were never known. For some, *aumākua* is a still-vivid childhood memory. A middle-aged Hawaiian businessman remembers going out with his father to feed shark *aumākua*. Another, when irritated, mutters softly, "may your *aumākua* take care of [meaning punish] you!" And for a few persons the *aumākua* still quite literally exist. Says Mary Pukui:

"I know families who even today make ritual offerings of young taro leaves and eggs to their *aumākua*."

For the Hawaiian and part-Hawaiian clients of the Center, and possibly their close associates, the *aumākua* have never quite disappeared. The "relatives" are still here, by implication. Many clients view dreams in the Hawaiian context as warning, experience waking visions or physical manifestations they interpret as portents, seek the significance of names (see *inoa*), use *ti* leaves to ward off trouble. Many have already consulted a *kahuna* (priest, healer) before they visit the Center, and at least one *kahuna* waits for guidance in a dream before deciding on remedial measures. In all these practices, the *aumākua* are traditionally present, even though the presence is today half acknowledged, or fully acknowledged but never called by name. Staff members speculate that clients most reticent about their *aumākua* may be the ones who more deeply believe in them and are influenced by their belief. This is in the traditional cultural pattern. As Mary Pukui points out, "Hawaiians didn't go around talking about their *aumākua*."

Clients who do mention *aumākua*, may say:

"I have *aumākua*. I don't exactly know which ones. They're just a presence. My *aumākua* have given me this *mana* [special power]. I have had it for 15 years. But since I turned to religion, the *aumākua* can't do anything. They're just there. The *mana* is there. But the *aumākua* can't interfere." (She meant interference to make the *mana* inactive.)

"I have a *mo'o aumākua*. My children are safe in water."

"I had this dream. I think it means I have a shark *aumākua*." (From a teenager).

More frequent are references to "spiritual" parents, ancestors or relatives, or statements that "my people are sharks" or "in our family we have *mo'o* people."

Since the time the *aumākua* (and *akuas*) were "put underground" more than a century ago, a mixed crop of beliefs has sprung from the fertile soil of religious-mystic concepts. The just-converted writers-translators of the mid-1800s attempted Hawaiian-Christian hybrids. From these writings came efforts to make the *aumākua* guardian angels. The two concepts refuse to merge. As Mary Pukui points out, the guardian angel "transfer" leaves out the dominant ancestor-relative concept in which one's close family *aumākua* or 'ao'ao are known even by name. An *aumākua* is not just "a shark;" it is a specific named shark.*

*Not the name borne in life, but one acquired after becoming an *aumākua*. In contrast, the deified spirit of the recent dead (*ʻāhupilili*) may continue to be "Kauane'a" or "Uncle Joe."

7
Today the most peaceful co-existence of *aumākua* and *akua* with the Christian God seems to be in prayers. Hawaiian and Christian prayers are sometimes said on the same occasion without any apparent conflict.

is aumakua super ego?

Obviously a concept as pervasive and deeply felt as *aumākua* must contain universal elements, ideas and beliefs closely akin to those of man in other cultures and other eras. The near-parallel often cited is that of the *aumākua* with the Super Ego of Freud and the conscience of Christian belief.

Opponents of this theory see the early Hawaiians' sense of right and wrong as coming from the externalized controls of the *kapu* system. The view seems to make little distinction between the *kānāwai kapu ali'i* or chiefly, man-made laws, and *kānāwai akua* or laws of the gods. At its extreme, an early chiefly edict ordered a man killed if he changed his body position slightly during a long ritual. Only the chief's own counter-edict could spare the man caught moving. Here was a crime-punishment control which took in no internalized temptation to transgress and no realization of wrong doing. Conversely, a man who broke a *kapu* of *akua* or *aumakua* could be told by a chiding, nagging *aumakua* that he had done wrong, that he must repent, and right the wrong. The process comes pretty close to "having a guilty conscience" and "squaring things with one's conscience." The belief that one who felt innocent could refuse to accept a curse or send back a destructive spirit, and the soul-searching of the *ho'oponopono** (all involving the *aumākua*) suggest a deeply internalized consciousness of right and wrong, guilt and innocence.

Dr. Haertig, our psychiatric consultant, sees the *aumākua* concept as including but not limited to functions of the Super Ego or conscience. He says:

"It seems important that these are family gods with names. Even though these people are in such dim and distant past that nobody alive ever saw them, yet they seem a somewhat mystical and externalized form of deeply ingrained family traditions, family mores, standards and values. All of these have similar broad standards in many families, but each has its unique variances within each particular family. I think this goes beyond the ordinary, limited concept of Super Ego.

"The concept has a similarity to the Oriental feeling for family traditions, perhaps some connection with the Orient's ancestor worship. And certainly it has a counterpart in Western culture, especially in English families who have lived, often on the same land, where generation after generation of ancestors have lived and died. One such Englishman told me, 'I have this sense of an actual physical presence. I can feel my ancestors approving or disapproving my actions . . . almost see them nodding their heads in approbation or shaking their fingers sternly.'

"In the Hawaiian *aumākua* are mystic entities with names. Yet operationally they are experienced as principles, values, standards. Undoubtedly these values and standards were taught Hawaiian children directly by their living family seniors and eventually internalized. Yet it goes beyond that. I

*Prayerful family council to "set to rights" disturbed personal and family relationships. See listing.

is the feeling of a long prerogatives of guidance family."

Or as one Center day school and later c
"In the back of our
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1. Kamakau. *Ka Po'e Kahi*.
2. *Ibid.*, p. 30.
3. This "special class" seems even referring to *aumākua* spirit of the more recently commands of its human I not put into volcano or se
4. Beckwith. "Hawaiian Sha
5. Larsen. Personal comman
6. Fornander. *Collection of*
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is the feeling of a long, shadowy line of ancestors who exercise the seniors' prerogatives of guidance and judgment. It is the actual, felt presence of family."

Or as one Center staff member, a Hawaiian who attended a Christian day school and later earned a graduate degree, says frankly,

"In the back of our minds, there's always the old. It does come back. You have a feeling that your ancestors are always here—always with you."

NOTES AND REFERENCES

1. Kamakau. *Ka Po'e Kahiko: The People of Old*, p. 28.

2. *Ibid.*, p. 30.

3. This "special class" seems to have been the reason for confusing *aumākua* and *'unihipi* and even referring to *aumākua* as slaves who did the bidding of the living. It was the *'unihipi*, the spirit of the more recently deceased person that was believed to be summoned back to obey commands of its human keeper. In this belief, bones or body parts were kept and cherished, not put into volcano or sea.

4. Beckwith. "Hawaiian Shark Aumakua," p. 503.

5. Larsen. Personal communication with M.K. Pukui. Unpublished papers.

6. Fornander. *Collection of Hawaiian Antiquities*, Vol. 5, p. 608.

7. Though the old gods were publicly disavowed with the breaking of eating *kapus* before the first missionaries arrived, Kalakaua wrote: "While the abolition of the *tabu* system received the universal approval of the masses, the destruction of the gods and temples met with very considerable remonstrance and opposition . . . many gods were saved from the burning temples, and thousands refused to relinquish the faith in which they had been reared." King David Kalakaua, *Legends and Myths of Hawaii*, p. 438.

'eu—formication; a creepy, crawly feeling of the skin interpreted as a sign or portent. "It is the feeling that the hair on the head is standing up," says Mrs. Pukui.

Deriv: *'eu*, to crawl.

See discussion under *'ili 'ōuli*.

hōhō—a strong expulsion of breath; to exhale; to breathe; breathe upon; breath; life. As ritual, connotes the imparting of mystic powers through breathing on recipient.

Deriv: unknown.

Grandfather was dying, and the entire *'ohana* (family clan) was gathered around his sleeping mat. Soon the old man's spirit would leave his body to join the family *aumākua* (ancestor gods) in the eternity called *Pō*. But before this moment, the patriarch, with almost his last breath, would impart his specific *mana*, his canoe-building talent, to a chosen descendant.

But now, *Kulikuli! Noho mālie*.* (Hush! Be silent.) The moment has come. Grandfather motions his grandson, Kelala, to come closer. Summoning

* *loho mālie*. Literally, "Sit quiet."

s of hunting and fishing among *ali'i*, *'awa** was t foot in the *mua*.† Nor

lewa—was yet a “dang-angler, he wore no *malo* he was yet *poke'o*, too

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ying wisdom, in their past setting, of such rituals as *kā i mua* might be discussed to help build a better self-image and to increase confidence in “mothering” ability.

More specifically, talking about *kā i mua* may help the overly possessive Hawaiian mother understand that she must loosen the apron strings that bind her son. For *kā i mua* carries a timeless and universal message:

“Stop clinging. He can't remain a baby forever. Let him go. Let the boy learn from his father to be a man.”

REFERENCES

1. Chants and ceremonies associated with *kā i mua* are given in detail in *The Polynesian Family System in Ka'u*, pp. 95, 6, 7.

kākū'ai—transfiguration: the ritual offering of the dead to the *aumākua* (ancestor gods) and the acceptance and change of spirit and body remains into the visible form or manifestation of the particular *aumakua*. An aborted fetus or malformed living infant might similarly be offered and transformed.

Deriv: *kākua*—to worship gods, especially with food offerings; appeal to gods.

'ai—food. The gods so worshiped were thought to eat the “spiritual essence” of the food and be strengthened by it. From being strengthened by food offerings, the belief extended to one of creating a god or spirit from another substance.

✓ In the religion of old Hawaii, the compassionate, approachable gods were those who were once men. These were the *aumākua*,* now supernatural beings; once, long ago, progenitors of one's own mortal self. The *aumākua* dwelt in *Pō* (eternity). Yet at the same time they could assume the form of animals, plants—or even become flame or thunder and lightning.

For the living, there beckoned an eternal reward. Please the gods during life—and join the *aumākua* after death!

Only one thing about this belief seems to have worried the relatives of one who died. Could they be sure the deceased one was on his way to the *aumākua*? Or might he, even now, be miserable and hungry as one of the *ao kuaewa*, the eternally homeless, hungry, wandering spirits? Was there no way to send a loved one speedily and surely to his ancestor gods?

There was. It was *kākū'ai*.

Here was the ritual that sent the dead one directly to the family *aumākua*, whether it be in the form of shark or lizard or Pele's flames or Kanehekili's thunder bolts.

*A major concept. See separate listing.

reunion
with Pele

From Hawaii's dim past, comes this elaborate ritual of offering the dead to Pele:

"For a dead beloved one whom they wished to become a volcanic manifestation . . . the Hawaiians . . . would take to the volcano the bones, hair, fingernails, or some other part of the dead body; sacrifices and offerings for the gods; gifts for the priests and prophets and guardians of the volcano; a pig, 'awa* and a *tapa* garment. . . They would ascend to the pit of Pele. There they ritually killed the dedicatory pig . . . if the rituals went well, a pouring rain would pelt the uplands, and the sounds of thunder would reverberate to the sea as a sign of consent to the admission of the *malihini* [new-comer] spirit. In the morning the pig was roasted. The 'awa was chewed, and all would feast. Then the prophet of Pele [*kāula* Pele] and the relatives of the dead, from 10 to 40 eyewitnesses, would throw the corpse and the offering, a live pig and some 'awa, to the very center of the fire . . .

"The prophet stood and pleaded for the acceptance of the *malihini* and for his being united with the *kama'aina* [long established inhabitants] of the pit. He recited the ancestry of the dead one so that his ancestors in the crater would know him as one of them . . ."

No one knows how far back these full ceremonials go. Mary Kawena Pukui recalls later, somewhat simplified transfiguration in her family.

"My great grandmother was taken to the volcano. This was after Christianity had come. But because we're related to the fire—the line of Pele—great grandmother's people took her secretly, after the flesh was removed from the bones. They wrapped the bones and took her [the bones] to the Halemaumau fire pit of Kilauea Crater and chanted and prayed and let her go happily to her people who were fire.

"Earlier, others in the family who were related to the sharks were given the *kakū'ai* ceremony and their bodies were placed into the sea."

For transfiguration to a shark, Mrs. Pukui explains:

"The bones were wrapped in *tapa* . . . then the family would go down to the sea and pray and give offerings (food and 'awa). Then, it was believed, the shark would come and take this bundle of bones right under its pectoral fin. The shark would hold the bones there. Then for a while the family would keep coming back with offerings, until the bundle of bones took the form of a shark."

transform
to shark

Ka Po'e Kahiko ("The People of Old") gives this description of final stages of shark transfiguration:

"The *kahu manō* (shark keeper, either a relative or a *kahuna*) took 'awa at dawn and at dusk for two or three days, until he saw clearly that the body had definitely assumed the form of a shark, and had changed into a little shark, with recognizable marks (of the deceased) on the cheeks or sides, like a tattoo or an earring mark. After two or three days more, when the *kahu manō* saw the strengthening of this new shark . . . he sent for the relatives who had

*The ritual drink made by chewing roots of the kava (*Piper methysticum*) shrub.

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brought the body [so they could] go with him when he took the 'awa . . . and when the relatives came they would see with their own eyes that it [the deceased] had become a shark, with all the signs by which they could not fail to recognize the loved one in a deep ocean. If the relatives should go bathing or fishing in the sea, it would come around and they would all recognize the markings of their own shark. It became their defender in the sea."²

An almost identical ritual was followed when a malformed living infant or an aborted fetus was offered for transfiguration. If child or fetus resembled a fish or lizard, it was offered to the *mo'o* (water *aumākua*) in ocean or fresh water stream, or to the *manō* (shark) if it looked like a shark. This was separate from *'umi keiki* (infanticide, literally "choke infant").³

Bones or bodies returned to Pele were usually wrapped in red or red and black *tapa*. Those returned to water creatures might be wrapped in predominantly yellow *tapas*. When the dead were sent back to thunder and lightning, dark colors symbolized Kanehekili. For Kanehekili once mortal, now chief of the thunder-lightning spirits, often manifested himself in a body that was black on one side. His touch, it was known, could char and blacken the living on earth.

return to thunder god

Kamakau wrote and Mrs. Pukui translated the following description of this spine-tingling ceremony:

"On the night when a body was to be transfigured, strict regulations were imposed, and . . . prescribed ritual prayers were offered continuously until day. Then there came black threatening storm clouds, and shining black storm clouds, and lightning . . . The earth trembled, and like the rattling to and fro of a sheet of *tapa*, came the persistent rolling of thunder until one great bolt sounded that seemed to crush the earth with its force. A billow of smoke arose, and the sacrifices that had been offered mounted into the air upon the smoke, and the corpse that had been transfigured was carried into the firmament and vanished . . .

"That is how a person became thunder and lightning in the old days."⁴

Behind the drama and the liturgy, what was *kākū'ai*?

A ceremony of consignment to the dead? Or a rite of realization for the living? Probably both.

Certainly, many aspects of *kākū'ai* helped the living relinquish the dead. The preliminary process of stripping flesh from bones, the wrapping and transporting bones or body, the all-night prayers, religious feast and processions—all these established and emphasized the reality of death. These preparations made by family members also renewed the bonds of kinship, both within the surviving 'ohana (family) and of the living 'ohana with the spiritual ancestor-gods, the *aumākua*.

Transfiguration itself was the acknowledgement that the familiar physical presence of a relative is gone forever. At the same time it was affirmation that the relative's spirit continued to exist, in changed but tangible, recognizable form. While the sombre preparations of *kākū'ai* were a kind of start on what Western psychiatry calls "grief work," transfiguration as a belief in survival after death may have eliminated the need to complete this grief work.

To the religious-mystical Hawaiian, transfiguration took place at ocean side, volcano site or mountain top. The drama-charged moment may have aided or even hastened an ultimate "transfiguration" experienced in the minds and emotions of the living. This transfiguration came when the still-hovering, almost living presence of the dead had changed imperceptibly to become merely an important memory.

kākū'ai and the case worker

Whether or not *kākū'ai* is openly mentioned today is anybody's guess. Center caseworkers have encountered it by implication when Hawaiian clients talk about their *aumakua* or say, "My grandmother was a shark." The old belief comes into an elder's objection to cremation. (See incident of Kolokea's great-great grandaunt in section on 'Iwi.)

Possibly, *kākū'ai*, like other long-discontinued rituals, has been emerging in the material of dreams, fantasies and visions, but has not been recognized by the non-Hawaiian therapist.

NOTES AND REFERENCES

1. Kamakau. *Ka Po'e Kahiko: The People of Old*, pp. 64-65.
2. Ibid. pp. 76, 77, 78.
3. Infanticide was practiced when a woman of the *ali'i* (nobility) had a child by a *kaupā*, or member of the despised slave class. Such *'umi keiki* or choking the child to death was an openly recognized act of killing. In giving a malformed infant back to shark or lizard, the rationale was that of returning the child to its own realm. In fact the malformed infant was thought to have been sired by a shark or other water creature *aumakua*.
4. *Ka Po'e Kahiko: The People of Old*, pp. 70, 77.

kanaka makua—a mentally and emotionally mature person; a person, even a child, who demonstrates mature behavior. The term can apply to both sexes.

Deriv: *kanaka*, person, man, human being.
makua, parent, member of the parent generation.

Ask a thoughtful Hawaiian what he hopes his children will be when they grow up, and he probably will *not* answer, "president of a company," or "first Hawaiian Astronaut" or "Miss America" or "successful doctor, lawyer, scholar or businessman" or "All-American halfback."

If he puts it in his ancestral language, chances are he will answer, "*Ke kanaka makua*"—"A mature person."

And, what are the qualities of this mature person? This *kanaka makua*? Here we leave our hypothetical Hawaiian and turn to the answers of Mary Kawena Pukui:

"A *kanaka makua* thinks. He doesn't jump into things."... "He takes responsibility"... "Controls temper"... "Is not scatterbrained."... "Real-

izes that anger can ca-

But a "cool head" equally a "warm heart"

"A *kanaka makua* others."

Or, points out our hostilities; a presence

So far, this could any culture. However, attribute—he must be

In part, this is specifically traditional *kanaka makua*. "you saw them coming and eat!"

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The *kanaka makua* development, and a person to "learn to behave counseled to emulate credited to both sexes. Grandparents became only a *keiki* [child].

Listen to the old and they will be in. And, to an extent, o-

So, if part of our essential to know why dications they do not

"I am a *kanaka makua* he displayed marked means I am all man!

His Hawaiian meaning "man," an and "human being."

His idea of "m super "he-man," not passion as well as n-

His declared s formed over his repeated statements t lucky to get me" ..

*An ever-widening, intellectual into a family feud.

The History of the
Hawaiian or Sandwich Islands

by
James F. James

407P.

Entered according to act of Congress, in the year 1843,
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fish purposes. In sickness, or fear of sorcery, their aid was to be purchased only by gifts, in proportion to the rank of the applicant. Great prices were extorted for incantations to be practiced upon enemies, or counter ceremonies, to avoid such phantoms as their imaginations had not only give birth to, but pretended to the exclusive power to allay.

Offerings to the gods, or, more properly, to the priests, were required at definite periods, as at all religious ceremonies, and on all occasions when the people desired their services. The wants of the priesthood regulated the amount; and when the regular taxes failed in supplying their desires, the wishes of the god were called into requisition, and the coveted articles tabued for his use. Orisons, chants, and offerings, were made by the priests at their meals. Even in the care of their fowls and quadrupeds, they enjoyed remarkable privileges. When hogs were received alive, they were dedicated to the god of the order, received his marks, and were turned loose, to fatten upon the plantations of the poor cultivators; no one daring openly to injure or drive away the sacred animals.

The expression, *tabu*, or, according to Hawaiian orthography, *Kapu*, which, from its usefulness, has now become incorporated into most modern tongues, requires some explanation. Originally, it meant sacred. It does not imply any moral quality, but is indicative of a particular distinction, or separation from common purposes, for some special design. It also expresses an unlimited restriction. Formerly, it was applied exclusively to persons or things in a sacred sense, and was strictly a religious ceremony, imposed only by the priests; but has since come into common use in all the every day concerns of life. Anciently, those chiefs who pretended to derive their descent from the gods, were called *alii kapu*, sacred chiefs. A temple, exclusively devoted to the abode and worship of

gods, was said to be *wahi kapu*—sacred place. Any thing dedicated or reserved for the exclusive use of gods, chiefs, or priests, was considered as *kapu* for them. Certain lands and islands was *kapu*, as well as hunting-grounds, fish, fruit, or whatever the sacred classes chose to reserve for themselves. These *kapus* were occasional, or permanent—particular fruits, fish, and vegetables, being sometimes *tabu* both from men and women, for several successive months. The idols, temples, persons, and names of their kings, and members of the royal family; persons and property of the priests; every thing appertaining to the gods; religious devotees; the chiefs' bathing-places, or favorite springs of water; and every thing offered in sacrifice, were strictly *kapu*. In modern times, this magic term has become the property of all. A common man can *tabu* his house, lands, or make any partial restrictions, and all would respect the prohibition. Any forbidden article, or action, is called *tabued*; hence, its common use in the domestic circle, and its application to laws. A captain can *tabu* his ship, and none dare approach. *Tabued* property is generally marked by small white flags, or other signs which are well understood. At the present time, any individual can impose such *tabu* as suits his necessities or convenience, provided they do not infringe personal rights or the laws of the kingdom.

Formerly a religious motive was necessary for its assigment, but as the power of the chiefs increased, its use was greatly corrupted, while its influence remained the same, and may be said to have partaken of the preternatural. The bans of the Romish church, in the proudest days of that hierarchy, were not more powerful or obligatory. Every will of a chief, however monstrous, was promulgated as a *tabu*, and officers were appointed to see that it was observed.

This institution, unknown elsewhere, was general with

slight variations throughout the Polynesian groups. Its antiquity was coeval with the superstitions which it so materially strengthened, and it may be regarded as one of the greatest productions of heathen ingenuity. A more powerful system of religious despotism, at once capable of great utility and equal abuse, could not have been devised. Its application was adapted to all wants and circumstances, and no civil or ecclesiastical government ever possessed a more refined, yet effective weapon. Its influence, among the common people, was universal and inflexible. Its exactments were of the most humiliating and troublesome description, and if anything had been wanting to complete their bondage, this, like the key-stone to an arch, was made to perfect and perpetuate their degradation. Emanating as did the religion and government from the higher classes, it fitted them loosely and easily, and could be set aside or put in motion at their option.

The penalties partook both of a temporal and supernatural character. The victims, like those of the Inquisition, being equally delivered to the terrors of the secular arm, and the judgments of offended gods. Unless powerful friends interfered, the slightest breach of any of its requisitions, however absurd or artificial, was punished with death. Some were burnt, others strangled, or despatched with clubs or stones within the temples, or sacrificed in a more lingering and dreadful manner. Eyes were scooped out, limbs broken, and the most exquisite tortures inflicted for several days, before the fatal stroke was given.

Particular seasons were tabu; as on the sickness of a high chief, preparations for war, or the approach of important religious ceremonies. Their duration was indefinite, sometimes for a day only, then for months, and occasionally for years. Thirty to forty days was the ordinary period before Kamehameha's reign, when they were much reduced.

These tabus were either common or strict, and were proclaimed by criers or heralds. Men only were required to abstain from their common pursuits, and to attend prayers morning and evening at the heiau, during the former. But when the season of strict tabu was in force, a general gloom and silence pervaded the whole district or island. Not a fire or light was to be seen, or canoe launched; none batted; the mouths of dogs were tied up, and fowls put under calabashes, or their heads enveloped in cloth; for no noise of man or animal must be heard. No persons, excepting those who officiated at the temple, were allowed to leave the shelter of their roofs. Were but one of these rules broken, the tabu would fail and the gods be displeased.

When the sacred chiefs appeared in public, all the common people prostrated themselves, with their faces upon the earth. The food of chiefs and priests, they being interdicted from handling any thing during this tabu, was put into their mouths by their attendants.

The only feature in the religious system, which can be regarded with a degree of satisfaction, and that only partially, was the *Pahoua*, or city of refuge, which stands amid rapidly increasing darkness, like the last faint ray of a setting sun. There were two on Hawaii; one at *Waipio*, the other at *Honahuia*. To those who fled from an enemy, the manslayer, those who had transgressed tabu, the thief, and even to the vilest criminal, their precincts, once gained, afforded an inviolable sanctuary. They were free to all of every tribe, or condition, though the flying party could be pursued to their very gates. They were perpetually open. The rescued party repaired immediately to the idol, and offered a thanksgiving for his escape.

They also afforded safe retreats during war. All the non-combatants of the neighboring districts, men, women, and children, flocked into them, and there awaited the issue of the struggle. To them the vanquished fled. If they

could reach a spot, a short distance outside the walls, where, during war, a white banner was displayed, they were safe. Should a victorious warrior venture further, he would be put to death by the attendant priests and their adherents. Those once within the pale of the sanctuary, were under the protection of the spirit of *Keawe*, the tutelar deity of the enclosure.

Houses were erected for the accommodation of all within their walls. After a short period, they were permitted to return unmolested to their homes, the divine protection being supposed still to abide with them.

These places of refuge were very capacious, and built after the manner of their temples. The one at *Honauau*, as measured by *Ellis*, was seven hundred and fifteen feet in length, and four hundred and four feet wide. Its walls were twelve feet high, and fifteen thick, and formerly surmounted with images, which stood four rods apart, on their whole extent. Within, three large heiaus were erected, one of which presented a solid pyramid of stone, one hundred and twenty-six feet by sixty, and ten feet high. In several parts of the wall, were large masses of rock, weighing two or more tons, each raised six feet above the ground. This *Pahonua* was built for *Keawe*, who reigned in *Hawaii*, two hundred and seventy years ago; and destined as the islanders were of any machinery, must have been a herculean task, requiring the labor of a vast number of people.

The sanctuaries are somewhat analogous to the *Israelitish* cities of refuge, and originated, doubtless, from the barbarous and sanguinary customs, common to both nations, which required a safeguard from the effects of evil passions, constantly kept in excitement by the universal prevalence of the law of retaliation, and the bloody character of their warfare.

While considerable difference in government, and cer-

tain customs, originating from local circumstances, prevailed throughout Polynesia, a general uniformity in religion existed. The earliest traditions are strikingly similar, and the rites and priesthood of the same sanguinary character. A more refined barbarism, prevailed among the Society and Samoa islanders, the former of which have aptly been called the French of the Pacific. Still, when a general comparison is drawn, not a doubt of their common origin, can be entertained. The structure of their languages, their physical characteristics, analogous religious systems, and a general conformity in all the arts and customs of life, clearly demonstrate the fact. While the Hawaiian, in certain points, appears to more advantage than his southern brother, in religion and government, they appear behind them. In New Zealand, the Marquesas, Samoan, and Tonga groups, a kind of republican freedom prevailed, which here finds no counterpart. The power of the chiefs was more restricted, varying much in the different groups. The religion of the Tahitian, Samoan, and Tongan, constituted a better defined system, and was founded on certain well established traditions and maxims, handed down from their forefathers. Its effects, though disastrous in the extreme, were less conspicuously degrading. A refinement of heathenism was diffused, which served to gild the darker shades of its character, and it was not until the veil was completely stripped from the vile image, that all its deformities appeared. Many of the early voyagers, formed from superficial views, favorable opinions of the savage character, which served for awhile to deceive the world with false ideas of the innocence of man, in his primeval condition. A knowledge of his dreadful worship, and its direful effects, soon served to dissipate this belief; none, but those who have interested views to maintain, now give it credence. A valuable lesson is to be learned from the history of the savage tribes, so rapidly

wasting away, or merging into civilized nations, inasmuch as it serves to illustrate the history of unenlightened and unevangelized man—man, left in isolated communities to grope his way, unaided by the light of revelation. Could a result more painful to human dignity present itself? As before the flood, "the wickedness of man became great in the earth, and every imagination of the thoughts of his heart was only evil continually."



Interior view of a Hian, or Kama, in 1778.

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American Anthropologist

NEW SERIES

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HAWAIIAN HOUSEHOLD CUSTOMS

By LAURA F. GREEN AND MARTHA WARREN BECKWITH

THE HOUSE

THE ANCIENT Hawaiians lived in thatched houses of rectangular shape, the roof sloping from a ridgepole much as in our own cottages of wood and shingle. An ancient house-site at Opihikao in Puna district of the island of Hawaii shows a laid stone platform as foundation for the house.

The parts of the house were all named.¹ The central post of the house was called *poa*, a name also applied to the mast of a canoe. The ridgepole was called *kaupeka*, the word *kau* being also applied to the horizontal pole hung over a canoe to support the mats that served for its protection. The rafters were the *kau*, or "back"; the cross-sticks which held the thatch in place were the *a-a-ko*; the outer walls of the ends of the house in distinction from the sides were called *kaka*; the lintel was the *lepe kuuia*, shortened to *le-pe'a-i-ka*; the low opening at the back of the house just wide enough for a person to crawl through was the *puke paka*, or "narrow door."

The material used in thatching depended upon the locality.² A coarse wild grass filled at seeding time with sharp stickers (*pii*), which grows near the seashore but was also carried inland for thatching, gave the name of *kale pii* to the thatched house.

¹ The terms here given differ in some respects from the much fuller nomenclature recorded by Malo, *Hawaiian Antiquities*, 158-167. Cf. Formander, *Memoirs of the Bernice Pauahi Bishop Museum*, 5: 640-656.

² For full information as to old thatching practices see Formander, *op. cit.*, 644-646; 650-656.

Ku-ula and Hina, his wife, are invoked as the gods of fishing,¹¹ but in addition to these universal gods, each district has its own special fish-god in the shape of some fish, plant, or, more commonly, some rock which is supposed to attract the fish to that particular locality. Many old stone fish-gods are to be seen about the coast of Hawaii where offerings are still laid by fishermen. One was pointed out to me on the beach at Waialua¹² and another is sunk in a brackish pool near the beach below Hilea in Kau district. This last is one of a pair which used to entice the fish through a causeway into the pool until freshets broke away the walls, when the discouraged votaries sold one god to a collector. An old Hawaiian woman named Walaika says that in old days a diviner (*kiho*) named Kukalia lived in Manoa valley back of Honolulu near the place where the Castle Home now stands. He kept watch over the ocean, and when he saw how selfish the men at the shore were who drew up the nets of fish, he caused great numbers of fish to swim up the stream into an *wameke*-shaped rock to supply fish for the people of the valley. Walaika herself used to get fish there, but now the basin is filled with trash and has neither water nor fish any more.

When men are out fishing,¹³ all inquiries as to their whereabouts should receive non-committal answers. One says that they have perhaps gone to the mountains after leaves, or, if they are engaged in river fishing, that they have gone to a certain beach. This is to put unfriendly spirits off the track who might otherwise follow the fisherman and make him trouble. The word "death" (*maka*) should not be mentioned or the name of a deceased friend, lest spirits be summoned who will deceive the fisherman as to where to cast the net. The people at home must refrain from

¹¹ "Through Kuula all the different methods of fishing and the fishes became established throughout these islands," and the story of their establishment and the methods of fishing so taught are described fully in Fornander, 6: 172-190. For the legend of Kuula and of Aloi, his son, see Thurum, Hawaiian Folk Tales, 215-249; Fornander, 4: 534-558.

¹² See Thurum's version of the legend of Kaucuakal, op. cit., 250, and Fornander's story of Hinaiimalama, 5: 272. It was the Hina in this story who "turned the moon into (vegetable) food and the stars into fish."

¹³ Compare Malo, 274-281, and Fornander, 6: 118-120; 190, note 72.

dancing and singing the *hula* lest their merriment be turned to grief. A fisherman can tell by observing the actions of certain fish whether the family at home are behaving properly. If the fish wag their tails and sport about, this is a sign that the family is enjoying itself; the man should go home and beat his wife in order to insure luck the next time. If while out fishing the man sees a number of *wai-kai* fish touching noses he knows that his wife is unfaithful.¹⁴ A bird-catcher comes to the same conclusion if he sees birds billing while he is away from home bird-hunting.

Those who accompany a fishing excursion must refrain from eating sea-moss or shell-fish until the fishing party have returned; lest the god of the sea be angry and raise a storm. No one should eat the fish until the first one caught is offered to Kanaka-o-kai by placing it on a crude stone altar dedicated to the many gods of the sea.

A number of omens are quoted in regard to the use of fishing utensils.¹⁵ A hook made from the bone of a hairless person brings great luck in fishing; so does a hook made from the bone of a good fisherman. Should an eel or a crab (*elakume*) catch upon a hook, the hook will ever after be unlucky and is generally thrown away. Should anyone walk or sit on a fish-net or pole, that net or pole will be unlucky. Should one step over fish-bait in a container the fish will reject the bait; such bait must be thrown away and fresh bait prepared. It is unlucky for one on the way to fish to hear the call of the "canoe bird," the woodpecker called *elapeio*. Its note is said to resemble the words *Oho ke ia*, "Good is the taste of the fish," interpreted by Mrs. Pukui as a kind of taunt,—"I like fish, you will get none!"

Other signs connect the fate of the fisher or bather with the spirit world. If the fisher sees a bright dazzling light moving over the surface of the ocean at night he should go home at once, as this is a sign of spirits abroad. If he hears a sound in the sea as if one had thrown a stone into it, some spirit has evil designs against him. The same is true if a crab or a small fish "with-

¹⁴ See Grey's story of Munnia, Polynesian Mythology (2nd. edition), 138, 139.

¹⁵ Malo (page 109) lists some of the names given to the different kinds of fish-hooks used in ancient times.

only-one-tooth" (*kuniho-kahi*) bites at his toe. This omen shows him that an enemy has called upon his shark *awmakua* to destroy the fisher. The presence of a shark is indicated to him if an *uua* or an *apele* fish (these two being fishes friendly to man) strikes his leg with its tail or if a turtle rises quickly and stays on the surface for some time in front of a swimmer. A bite from an eel means that the person bitten has done something to offend his *awmakua*. When sharks toss their victims about on the surface of the water as they chew the limbs, it is a proof that they are the emissaries of a sorcerer. The presence of a shark is indicated by an unusual warmth in the sea as sharks are believed to be closely related to the volcano goddess. If the sea is luke-warm, an eel is near. A stream that is turbid is inhabited by an eel; one that is limpid, by a *wao*.

Hawaiians living in the mountains watch the bearing of certain fruit-trees to tell when particular fish are to be had. When bread-fruit trees bear, they say it is squid season; when the mountain apples (*ohia*) are ripe, the sea-eggs (*wawa*) will be fat and plentiful; when the pandanus (*kala*) ripens it is the season for shell-fish (*hau-ke-ake*). In this way the farmers gauge the time to go fishing.

It is said that those fish which have a foul odor like the *pelani* and *kala* can be rid of it by holding the fish on the palms of both hands with the head turned to the left and the tail to the right and blowing over the fish from head to tail, then expelling the breath with the head turned away and blowing in similar fashion upon the other side.

If a fly falls into a dish of fish, the owner may expect to receive fresh fish before sun-down.

In dividing a fish a man should always give his neighbor the head end lest the neighbor's *awmakua* be angry and cause his feet to wag back and forth like the tail he has offered to his neighbor.

Sea-bathing has also its rituals. Mrs. Pukui's grandmother taught her grandchildren before venturing into the sea to pacify the unfriendly spirits inhabiting both land and water by grasping a handful of edible sea-weed (*imui*), breaking it in two and throwing half ashore with the words "*Ko uka, no uka no ia!*" ("Of land

for land is this") and the other half seaward saying, "*Ko kai, no kai no ia!*" ("Of ocean for ocean is this").

To bring about a good sea for surfing the custom still is to lash the water with a length of the common convolvulus vine of the seashore crying, "*Pii wai, ka kai, a wai!*" ("Swell, sea, mightily!").¹⁸

PLANTING CUSTOMS

The influence of mimetic methods of planting upon the success of crops is occasionally to be observed in modern folk usage.

Plant sweet potatoes on the day of the full moon. To insure size, place a little cutting between each finger of the "planting hand" (the right) and, spreading the fingers, draw them tightly together again before dropping the cuttings into the ground, as if holding a big potato, at the same time making use of exclamations extolling its prodigious size.

Plant water-melons on the day after full moon, called *maka-lani* ("full moon") to insure fullness in the fruit. The seed should be soaked over night in a bowl of water sweetened with sugar or honey. In the morning lock the fingers of both hands together to form a cradle and dip the hands into the bowl, take up as many seeds as will remain in the locked hands, then, holding the elbows crooked as if carrying a huge melon, stagger to the hole prepared for the planting and drop two or three seeds into each by means of unlocking the fingers and letting the seeds slip through.

Squash seeds are planted in the same way, but without the

¹⁸ The point seems to lie in the pun on the name of the vine, which contains the syllable *ku*, "to well up." See Fernander, 6: 206 for the full incantation:

*Ku wai! ku wai! ku wai! ku wai! Kahihi mai,
Alo poi poi! ku wai! ku wai! ku wai! ku wai!
Hui! kahihi loa*

Arise! arise! great surfs from Kahiki,

The powerful curling waves, Arise with the (sea convolvulus)

Well up! long raging surfs!

¹⁹ Hawaiian methods of agriculture are detailed in Fernander, 6: 160-170; lucky days on pages 120-124; the significance to farmers of the month *Ikaiki* (April to May) on page 142. Malo has a chapter on agriculture, pages 269-273, as also in the chapter on foods, pages 67-70.

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turtle

The Works of the People of Old

Na Hana a ka Po'e Kahiko

By Samuel Manaiakalani Kamakau

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By Mary Kawena Pukui

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When one skilled in examining *uhi* saw a choice one he took the two valves (*pa*)—the right and the left—and cut each straight up from the base to the tip. Then he cut each one to the width of a finger, tapering it down and to about the length of a finger. After that he ground off the outside "scales" (*ka unahi o waho*) down to the inside surface (*ka maika'i iloko*). The *pa*—like the *leho 'ula*—was a choice "chiefess" (*ali'i wahine maika'i*), and the lure, the *pa hi aku*, was desired by the *aku* fish as a beautiful chiefess is desired by men. At the base of the *pa* there is a ridge, and through this a hole was drilled as a foundation for the cord of the snood, *ka'a*. The cord ran from the hole to the edge of the hook that was fastened to the tip of the shank lure, *pa*. The hook was made of human or dog bone, filed smooth and curved nicely. Pig bristles crossed at the base of the hook where it joined onto the tip of the shank so that the hook would not fall over. The bristles ruffled the water behind the lure as those on the canoe paddled in unison, and the *aku* mistook the lure for an 'iao or other small fish and crowded around to seize the *pa hi aku*.

Fishing for *aku* was greatly enjoyed by the chiefs and rulers in the old days, and they would all go together to fish for *aku* and 'ahi. Kamehameha I was accustomed to fishing for these fishes, and they were famous in ancient times. But fishing with a *malau* bait holder and with a *pa* lure were quite different. With the *malau*, all stayed in one place; in fishing with the *pa* lure, each canoe was paddled strongly in a different direction. Since this would interfere with the *malau* fishing, it was not wise for the two kinds to go on at the same time, as those trolling with the lure would drive away the fish of the *malau* fishermen.

DEEP-SEA FISHING

The length of the long-line fishing line, *lawai'a aho loa*, limited the seeking of *ka po'e kahiko*. Shark fishing with chum (*lawai'a kupalupalu mano*) and *malolo* fishing (*lawai'a papa pahoehoe malolo*) were done in the deep sea almost out of sight of land. These were not fishes to be found in the *ko'a* fishing grounds—they moved about and *ka po'e kahiko* caught them far, far out at sea (*i ka lewa a i ka lipo*). The actual limits of the fishes sought by *ka po'e kahiko* were in the deep-sea fishing grounds (*ko'a hohonu*); the *kuhaua* grounds, of eighty fathoms more or less in depth; the *ka'aka'a* grounds of the *kahala* and 'ahi fishes; and the *pohakialoa*, the deepest of all the fishing grounds—two or three hundred fathoms deep and even up to four hundred (*lau*) *anana* deep.¹⁴ The kinds of fishes caught in the deep-sea fishing grounds were the *kahala*, *mokule'ia*, *paka*, *koa'e*, 'ula'ula, *oholehole*, *hapu'u 'ele'ele*, *hapu'u 'ula'ula*, 'ahi, *tupe*, *hahalua*, *uku*, *hahalua teleiona*, *moelua*, *lehe*, and *momi*. These were the fishes of the deep blue sea, *kai uliuli*. They had to be cut up with adzes before salting.

Those who wished to fish in the deep ocean sought out these fishing

grounds and kept them secret. *Ka po'e kahiko* regarded their secret fishing grounds, *ho'a huna*, as "calabashes and meat dishes" (*he 'umeke a he ipu kai*) and as "grandparents" (*kupunakane a he kupunawahine*) [sources of provisions], and could be robbed and beaten before they would reveal their locations. They pointed out their secret fishing grounds only to their own children. The locations of most of the deep-sea *ho'a* have been lost; only a few remain known, as the knowledge of their whereabouts has lessened, and the youth of today have not been taught their locations. The fishing ground of Palapala, on the eastern side of Mokuho'oniki, an islet off the east coast of Molokai, was once a *ho'a huna*. After the time of Kahekili its location became known, and today even the unskilled fishermen know where it is.

A man learning to fish in the ocean first bartered for a canoe one to six or more fathoms long, to carry from one to five persons. Then he bartered for fishing lines, for a fisherman did not twist, *hilo*, his own lines, but got them from those whose work it was to make them. Those people would twist the cords into two or three strands according to the desire of the fisherman. The work of twisting was laborious. The palm of the hand was used to rub (*hamo*) fibers over the thigh, and to make a firm, tight cord of two or three strands, even throughout. They would make six or eight times forty (*ka'au*), or up to four hundred (*lau*) lines, according to the wish of the fisherman. A landholder or a chief would have four hundred at the most, or perhaps a few *ka'au* over. The fishing lines of the chiefs or fishermen were kept in gourd containers, *hoheo 'olulo*, a meter, more or less, in length.

When taken by an *'ahi*, a *kahala*, an *ulua*, or a *hahalua leleiona*, the line would rise and fall (*'ole'ole'o*) in the gourd curving like the *ama* or the *'iako* of a canoe or the arch of a rainbow. If there were a heavy weight pulling the line obliquely, it was a shark that had taken the line; but if the line rushed out and whirred on the surface of the sea, it was a sailfish. If the fish fought and caused the line to rise and fall, there was a robber [bait-stealer] below, but if the line remained straight while the fish nibbled like a litter of piglets nuzzling and resting at their mother's breast, then the fisherman rejoiced. It meant that the fish were in a row, fluttering like pennants from the mainmast to the mizzenmast and on down the back of the aft sail of a man-of-war. If there were ten hooks on the line, then ten fish would be caught; if twenty hooks, then twenty fish, and so on up to forty or fifty or more. This was fishing in the *pohakialoa* fishing grounds with *kaka* hooks. With one haul the fish would fill the canoe. The fish would die below in the *ho'a*. The great depth would kill them down there with "tremors" (*naue*) while they were being pulled up on the line, because of the deepness of the *ho'a*. If they came loose from the hooks, they would float to the surface with their stomachs protruding from their mouths like fishes that had died from *'auhuhu* or other fish poisoning.

What kinds of hooks did *ka po'e kahiko* have? They had large and small hooks made from sections of the shell of the *'ea* turtle, filed on the outside

and the inside of the point of the hook to a well-shaped curve (*ua hole "m ā ku maika'i ka lou maloko a mawaho o ka lihi*); *aku* lures made from *uhi*, or *paua*, bivalves and filed, like the turtle shell; hooks made from dog bones ground down with *puna* coral and files made of lava, *apuapu pele*. Hooks of human bones were made from bones of the 'olohe, "hairless men," not the bones of all men. Most of the human bones are "cuttlebone" (*iwi puna*); they break easily. Those skilled in examining bones chose hard bones to file into fishhooks. The bones of the buttocks are rounded and they made excellent [one-piece] hooks; nothing was joined onto them as in the case of the [composite] *kakala* hook for octopus, *kakala he'e*, or the lure for *aku*, *pa hi aku*. Bones of the thigh, the lower leg, the upper arm and the forearm were filed down to a "point" (*lihi*) and a "shank" (*kano*) with a "tail" (*puapua*) [a knob, 'apua], where the snood was tied on. Small bones were shaped into *ho'omo*, these "hooks" were gorges, like the *ho'olaoa* gorges used in eel fishing. Such gorges were used in line fishing in the *ko'a pohakialoa* of the deep ocean. When a fish swallowed a gorge it stuck fast, and the fish died down there in the *ko'a*. Another fishhook of *ka po'e kahiko* was the large, wood hook, *kihoho*, made of *uhiuhi*, *walahé'e*, *koai'e*, 'aweoweo, or other hard wood. Some *kihoho* were joined [were two-piece hooks], and some were naturally curved like [one-piece] fishhooks. *Kihoho* were used for catching *mano*, *niihi*, *luhia*, *a'ulepe*, and other large fishes of the ocean. Snaring with ropes (*pahēle kaula*) and grasping with the hands (*hopu o na lima*) were also "hooks" of *ka po'e kahiko*.

The deep-sea fisherman was equipped with a canoe and large and small fishing lines, *makau* hooks, *ho'olaoa* and *ho'omo* gorges, *kihoho* hooks, ropes, large and small *paka* sinkers, large and small *pohakialoa* plummet sinkers and long stones with holes in them (*pohaku kialoa puka*) to be used for catching "robbers" (*powa*) of the ocean. The cords for the snoods which had been prepared beforehand were bound (*mali a pa'a*) onto the hooks, and when everything was ready it was the work of the man who had fishing 'aumakua to lash (*kauli*; *li*) the snoods onto the fishing line, *aho*. Then he waited for calm weather in the Ho'oilo season for, as the saying of *ka po'e kahiko* goes, "O ke aho pulu o ka Ho'oilo"—Fishlines are wetted in Ho'oilo. During the bad weather of Ho'oilo waves roll high, rains fall, and there is thunder and lightning; mud is washed into the *kai kea* and the *kai lu he'e* where reef fishes and octopuses are caught, and the holes of the 'ohiki crabs are covered over. Casting, *ka'ili*, and fishing along the shore are impossible with the sea floor muddied up and obscured by the silt stirred up by the waves, and the fisherman turned his thoughts to the fishes of the deep sea. Even if the waves rolled in continuously and there were heavy thunder and lightning and pouring rain, as long as there was no wind the fisherman had nothing to fear; only a storm that brought wind was dreaded.

As the fisherman slept at night, he was aroused by a creaking sound from the *hokeo* and *holoholona* gourds that held his fishing gear, a sound like the creak of the cords of the carrying nets (*koko'aha*) of the peddlers or of

the cords of the knotted-net carriers (*koko pu'upu'u 'aha*) being borne by the steward of a chief—or like the scratchy noise of a rat that had fallen into a water gourd. It was thus that the gourds of the fisherman called to him to go fishing. The deep-sea fisherman got up before dawn, blew out his *kukui* nut light, and ate his fill. His fishing companions—his father and brothers—carried his canoe to the water's edge. If the fisherman had ready bait (*maunu ho'omoe*)—*kule* or *'opelu* or *muhe'e* [he baited the hooks]—if not, he took along a squid net for floating squids (*kaulana muhe'e*) or perhaps one for lobster. If none of these baits had been obtainable because of the waves and the mud along the shore, then he had to get his bait out at sea.¹⁵

When he was out on the ocean the fisherman took out one of his precious cowries, *leho*, to fashion a lure. He bound a stone—a *maheu* perhaps, or an *'ole niho*, or a *kawa'upu'u*, or a *kalapa-iki*—to the stem, *amana*, of the *kakala* hook, and covered it on the other side with the cowry—on the side where the *kakala* hook stood up. The cowry was fastened on at the "tail" (*puapua*) and snood, *ha'a*, ends and was tied onto the line. While it was still dark the fisherman used a *leho ahi*; when the sun's rays struck obliquely he used a *kupa 'ula* or a *leho 'ula*. Now all he had to do was to let down the cowry. Holding the line up and jerking it all the while, he let the cowry down two or three *ha'au*¹⁶ until it reached the bottom. Then he raised it up a couple of overhand pulls and shook the *leho* about. He did not have to do this long before an octopus, *he'e*, took hold of the *leho* and was drawn up into the canoe. If two cowries were let down, two *he'e* were caught. Two or three *he'e* gave enough bait. The skin was stripped from the head and tentacles and the *he'e* cut into bits and chewed until soft. Then the hooks were baited, twenty or more of them.

In the *kuapu'e* fishing grounds, *ko'a kuapu'e* ["thrust-up back" *ko'a*—those located by landmarks] there would be about forty hooks, put on like this: There was a *pohakialoa* sinker at the bottom—a stone made somewhat like a poi pounder but long and swelling at the lower end, and with a knob at the top to which the line was tied. About two fathoms from the knob a fishhook was attached (*kaka a'e ha makau*) then another hook a yard from that one, and so on up the line like a row of pennants. The line was let down with the *pohakialoa* sinker and its cluster of hooks until it touched the bottom. It was then worked into position in the *ko'a* by sighting two marks on land until they lay in a direct line with a third point, which was the site of the *ko'a*. If there were a mistake made in the sighting, the line would fall into a barren spot and the fish would not take it. The more skilled fishermen knew many landmarks for determining the locations of certain *ko'a*; they knew the latitude and longitude (*ka latitu a me ka lonitu*) of that and this *ko'a* in the ocean. The *ko'a* found by landmarks and those not generally known to others (*ko'a huna*) were as good as "meat dishes" (*ipu kai*)—one haul and the canoe would be filled. When the fisherman went ashore the fish for the gods were separated and the rest of the fish went to the people.

For fishing in secret fishing grounds, *ko'a huna*, the hooks were pre-

pared and baited on shore; the short lines that were the snoods of the hooks were put in one gourd, and the fishlines in another. Early in the morning, before there was light enough for him to be recognized, the fisherman went out to his *ko'a*. At daylight he let down the *pohakialoa* sinker, and as many fish took the line as there were hooks on it. When he knew that the hooks had all been taken by the fish, he pulled the line part way up, enough so that the stone was clear of the bottom, and tied the line to the starboard end (*muku*) of the *'iako* and sailed out of sight of the *ko'a* before hauling the fish into the canoe. Then he returned to shore. In this way those who had secret fishing grounds kept their locations from becoming common knowledge. That is why most of the fishing grounds of *ka po'e kahiko* are unknown to their descendants and their locations have been lost.*

BAITS AND TRAPS

Fishermen had many customs and devices. The *lihi* was one kind of hook; another was a baited hook; octopus *palu* or chum was the device used by some fishermen; released (*ho'oholo*) live fishes was the bait of others. A hook baited with flesh (*pa 'i'o*) was another bait. There were many kinds of devices. One kind of *palu* was handful of whole fish—*opelu* or *akule*, or *puhi ki'i* perhaps—pounded until soft, and wrapped in coconut cloth, *a'a niu*, with a stone inside. This was let down to the bottom of the *ko'a*, and then shaken until the stone rolled out and the *palu* scattered. The *palu* was liked by fish, and they ate the bait until the *kahala* fish was hooked, and choked on the squid-baited hook. Those who understood the "properties" (*mana*) of baits would come to shore with a good catch. But those who were "born lucky" (*po'e kulia*) and had a "bone of power" (*iwi paowa*) for fishing were as attractive as lovers to the fish—they swarmed to such a one just as men swarm around a desirable woman of fragrant skin.

Basket traps, *hina'i*, of various kinds may have been the earliest "nets" used by *ka po'e kahiko* of Hawaii nei. Some *hina'i* were large, some small. The *hina'i* used to catch *kala* and *palani* fishes were big enough for two or three men to crouch inside; the eel traps, *hina'i puhi*, were tightly woven and squat-shaped and about as big around as two men could reach. *Hina'i* for *hinalea* were of various sizes, and the *hina'i* for *'o'opu* very small. The *hina'i hinalea* was a very old type of fish trap spoken of in a tradition of Hawaii. It may have been the pattern for the *hina'i kala* made by Kahuku, Uweleki, Uweleka, Pauhakaki and Pauhakaka for the *kala* fish of Ka'ena, Oahu, and afterward for the *hina'i kala* of Ku'ula and Hinahale at Hamoa on Maui.

HINA'I HINALEA

This is the ancient tradition of the *hina'i hinalea*. The *'e'epa*, or *mo'o*,

*December 30, 1869.

Hawaii.
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No. 95

KEPELINO'S TRADITIONS
OF HAWAII

206pp.

EDITED
BY
MARTHA WARREN BECKWITH

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HONOLULU, HAWAII
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The chiefs learned the kahuna ritual in all its branches in order to assist the kahuna in times of emergency or when there was no kahuna to officiate. They offered the sacrifice and observed all the other rules that applied to the kahuna.

PART 34. THE UNION OF THE PRIESTLY AND THE CHIEFLY FAMILIES 39

Wakea was the husband and Papa the wife; to them was born a daughter named Ho'ohokukalani. Wakea took his own daughter to be his wife and a son was born, Haloa, who was both chief and kahuna. Haloa took Hinamanouluai to be his wife. Waia was born, a son. He was a very bad chief all the days of his reign. Hence Haloa was the first of the kahuna class of chiefs descended from Wakea and the first Chief Kahuna of really royal descent. From Haloa were descended both the branches of the chiefs and those of the Chief Kahuna, but the office of kahuna had existed long before. It was the setting up of the chief as both kahuna and chief that was the innovation dating from the time of Haloa.

Part 35 will describe the royal council from Wakea to Waia through which the chief became kahuna.

PART 35. HOW CHIEFS BECAME PRIESTS

Kahiko (Ancient) was the royal parent of Hawaii. He together with Kupulahakehau, his wife, were religious. He was a wise chief in caring for the land and for the welfare of his people. The people of Hawaii at that time observed the prayers of consecration and there were no burdensome tapus. To these two was born Wakea, a son. He was a bad chief, a wicked one. He did not observe the words of his parents to offer the prayers of consecration. When Kahiko died, he stepped into the chief place. He took Papa to be his wife, the daughter of Kukalaniehu and Hakikauakoko, and Ho'ohoku-ka-lani was born to them, and she grew up to be a very good-looking girl.

When she was grown and had become lovely in her ways, Wakea saw his daughter's beauty and his heart was filled with evil lust. He sought a way to carry out his evil intention but could devise nothing, so he got the priest to help him in his wicked deed. The priest consented, perhaps because he was afraid.

Their plan was to set apart some tapu nights in order to separate Wakea from Papa. The kahuna advised Wakea to say when he told Papa of the innovation, in order to allay her anger, that it was done by the command of

lakou
Aaio

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malok
ka oia
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Haloa
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Waia,
ke kiko

K
O I
Kupul
aina ar
sole he
kehau
he alii
noho h
ka'noh
Kukala
o Hool
kona n
Nui
Wakea
haunia
ia kela
kahuna
ae ana.

Kul
ia Papa
al

God; Papa could not then be angry because of this new arrangement to set apart tapu nights for the separation of husband and wife. Wakea was glad to do all that the kahuna ordered. He told the chiefess all, pretending that it was done at the command of God. She readily consented, believing that it was really from God. She had no suspicion that this was merely an excuse on the part of Wakea—"a covering of *mamane* leaves," as the saying is—in order to hide his sin with his daughter. What a pity!

Wakea had his wish. He separated himself from the high chiefess, he took Ho'ohoku-ka-lani that night to be his wife, and on the second night, before day, the kahuna offered a prayer to awaken the two from sleep. But Wakea was too sound asleep, he did not hear the chanting call of his accomplice (so composed as) to conceal the warning. He slept until broad daylight; when he awoke it was day. He was very much afraid of Papa. As the chiefess sat that morning in her own house, Wakea covered his head with the sleeping-tapa, ran from Ho'ohoku-ka-lani and came to Papa.

Papa was puzzled by Wakea's manner. She ran to meet her daughter and Ho'ohoku-ka-lani related all that Wakea had done that night. The chiefess was very angry and she came to the house where the sin had been committed. Outside the house she found Wakea, they quarreled, and Papa related to Wakea everything that her daughter had told her. When Wakea heard all the shameful things he had done he was ashamed and angry, and he beat the chiefess and spat in her face and their union was broken.

At that time disagreement arose among the chiefs, the manner of worship was changed, laws were made and proclaimed throughout all the land. Here are the laws of class I:

1. It is not right for a man to eat with his wife.
2. It is not right for a woman to enter the *waa* or house of worship.
3. It is not right for women to go to the men's eating house.
4. It is not right for women to eat bananas except the *pupuulu* and the *iholewa* varieties.
5. Women must not eat pork, the yellow coconut, the *ulua* fish, the *kumu* fish, the *niihi* shark, the whale, the porpoise, the spotted sting-ray, the *kailepo*; all these things were dedicated to God, hence women could not eat them.

Here are the laws of class II:

1. There is to be one house (the *noa*) for the wife and the husband, etc.
2. There is to be a house (called *waa*) for the men's eating house.
3. There is to be a *heiau* for the images.
4. There are to be two eating houses, one for the men and another for the women.
5. There is to be a house (called *hoo*) for tapa beating.
6. There is to be a house (called *pea*) for the separation of the woman when she is unclean.

The nights were thus divided. Four tapu periods were appointed for each month. During those nights men separated from their wives. This was done that each might satisfy the evil inclinations of his heart. It was an innovation to pray during the night; before that, prayer had been offered during the day. In the time of Wakea prayer was transferred to the night, and there was a great deal of dissatisfaction and excitement in the land. Wakea was the chief who first transformed worship into real image-worship and the land and its people were troubled; this evil Wakea proclaimed all those laws all over the land, and to him who disobeyed it was death.

Hence Wakea was Hawaii's evil chief and Henry the Eighth was England's; they were alike.

Wakea and Ho'o-hoku-ka-lani were married and to them was born a son named Haloa, who was both kahuna and chief, as the name signifies.⁴⁰ The reason why Wakea gave his son that name was in order to give the chiefs power so that they might commit evil without fear because they belonged to the kahuna class and thus possessed their power. It was at that time that the chiefs became chiefs with divine tapus and were regarded as gods. Hence the power of this class of chiefs increased because they assumed the three characters—of a god, of a kahuna, of a chief—in the one chief class.

The reason why the class of chiefs entered the kahuna class was in order that they might do wrong without fearing the kahuna. But Haloa himself was a righteous chief.

PART 36. THE HAWAIIAN PEOPLE

This group is composed of a mixed people. But as its tradition now exists it is clear to see that it was of the race of Israel, the Semitic.

There are different strains in the people as we see them, some traces of Spanish, some of Chinese, some of Malay, some of Polynesian, and some of the white people.

They are like Israel in their religion and their tapus. Some are like the Spanish in the breadth of the face, without bulging head like the Americans and the English, without long noses, without wide mouths, not flat in the nose, with skin like the Spaniard. Some have slanting eyes and high cheek-bones like the Chinese. Some have high cheek-bones, very large chins, broad flat noses, coarse hair, and so forth, like the Malay. Some are like the white people with long noses and prominent features like the Americans. Some are like the Polynesians with noses neither flat nor long, without large mouths, plump in appearance, with yellow skins. The skin of all the Hawaiians is not alike, they are different. Some are white-skinned, as the albinos. Some have dark skin, some still darker, and some black.

A pela no hoi
Ea wa kapu i ke
kia wa, e kaawa
na hanai a pela,
au a kona naau e
Wakea, hoihoia k
ka spaa. A o Wa
mana kii maoli, a
Wakea ino i na k
keia kanawai, e
Nolaila, o Wa
ua iike pu laua.

Hoao ae la o
ia hope iho ke k
a he 'lii, oia ke a
keiki ma ia inoa,
ka makau ole, no
no lakou ma ia ar
ia Haloa mai a
Nolaila, oi hou k
ekolu, ke ano aku

Oia iho la ke
i hiki ai ia lakou
Aka, o Haloa, he

He huina ia r
ponoi e waiho nei
He nui no r
kekahi, he ano pe
a he ano haole no

1. Ano Israel
kia lahui.
2. Ano Sepani
Amerika a
pepe, ili no
3. Ano pake:
ano o kekahi
4. Ano malae:
pela 'ku; oi
5. Ano haole:
6. Ano polines
kekebeke ke
memele. A
kia. He ili

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(MOOLELO HAWAII)

by

DAVID MALO

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Preface by the Author

I do not suppose the following history to be free from mistakes, in that the material for it has come from oral traditions; consequently it is marred by errors of human judgment and does not approach the accuracy of the word of God.

David Malo

4. Beyond this lies a belt called *kua-aw* where the shoal water ended; and outside of the *kua-aw* was a belt called *kai-aw*, *ko-aw*, *kai-o-kilo-kee*, that is, swimming deep or sea for spearing squid, or *kai-kee-naku*,⁵ that is, a surf-swimming region. Another name still for this belt was *kai-kohala*.
5. Outside of this was a belt called *kai-ni*, blue sea, squid-fishing sea *kai-ku-kee*, or sea-of-the-flying-fish, *kai-malolo*, or sea-of-the-*opelu*, *kai-opelu*.
6. Beyond this lies a belt called *kai-ni-aku*, sea for trolling the *aku*, and outside of this lay a belt called *kai-kohala*, where swim the whales, monsters of the sea; beyond this lay the deep ocean, *moana*, which was variously termed *waho-kilo* (far out to sea), or *lepo* (underground), or *lewa* (floating), or *lipa* (blue-black), which reach Kahiki-moe, the utmost bounds of the ocean.
7. When the sea is tossed into billows they are termed *ale*. The breakers which roll in are termed *naku*. The currents that move through the ocean are called *au* or *wai-aw*.
8. Portions of the sea that enter into recesses of the land are *kai-ke-naku*, that is a surf-swimming region. Another name still *kai-o-kilo-kee*, that is swimming deep, or sea for spearing squid, or called *kai-kuono*; that belt of shoal where the breakers curl is called *pu-oo*; another name for it is *ko-aka*.
9. A blow-hole where the ocean spouts up through a hole in the rocks is called a *puhi* (to blow). A place where the ocean is sucked with force down through a cavity in the rocks is called a *mimii*, whirlpool; it is also called a *mimiki* or an *akaka*.
10. The rising of the ocean tide is called by such names as *kai-pii* (rising sea), *kai-nui* (big sea), *kai-pihia* (full sea), and *kai-poo* (surrounding sea).
11. When the tide remains stationary, neither rising nor falling, it is called *kai-ku*, standing sea; when it ebbs it is called *kai-moku* (the parted sea), or *kai-emi* (ebbing sea), or *kai-koi* (retiring sea), or *kai-make* (defeated sea).
12. A violent, raging surf is called *kai-koo*. When the surf beats violently against a sharp point of land, that is a cape (*lae*), it is termed *kai-ma-ke-ke-lae*.
13. A calm in the ocean is termed a *lai* or a *malino* or a *pa-e-a-e-e* or a *pohe*.

¹ Sect. 1. In New Zealand *aki-tai* means the dash of the waves. A well known tribe, now extinct, was named *Aki-tai*, because their ancestor was dashed to pieces on the rocks of the sea-shore. Mr. S. Percy Smith of New Zealand, remarks that if this word is actually *ai* in the Hawaiian, it forms an exception to the rule of vowel-changes. As stated by Mr. Smith, this rule is as follows, "vowels change in the Polynesian language according to the following law, *e, e, o* form one series which may interchange without altering the meaning of the word. *i* and *u* form another series. Very rarely do the two series change with each other." The phrase *ai-oi* was also used when it concerned a sand-beach.

² Sect. 2. *Poua-kai* is the expression in the text. But I am informed from many sources that *poia-kai* is the correct expression, that *poua-kai* is applied to the place where the breakers scoop out the sand near the shore.

³ Sect. 2. *Pu-ore*, sand-heap, from the heaping up of the sand by the action of the waves.

⁴ Sect. 3. Called *kai-olua* because there was found a small fish called *olua*. I am informed it was also termed *kai-o-ker*, because the squid is there speared.

⁵ Sect. 4. Called *kai-ke-naku* because there the rollers from the ocean took head and it was there that the surfrider lay in wait for a big wave to carry him in on its back.

⁶ Sect. 4. *Kai-kohala* is clearly a mistake. *Kohala* is applied only to the shoal water inside the surf where it reaches out in a long stretch as at Waikiki. (See Sect. 2.)

CHAPTER 11

EATING UNDER THE KAPU SYSTEM

1. The task of providing food and eating under the *kapu* system in Hawaii nei was very burdensome, a grievous tax on husband and wife, an iniquitous imposition, at war with domestic peace. The husband was burdened and wearied with the preparation of two ovens of food, one for himself and a separate one for his wife.
2. The man first started an oven of food for his wife, and, when that was done, he went to the house [called] *mau* and started an oven of food for himself.
3. Then he would return to the house and open his wife's oven, peel the *tero*, pound it into *poi*, knead it and put it into the calabash. This ended the food-cooking for his wife.
4. Then he must return to *mau*, open his own oven, peel the *tero*, pound and knead it into *poi*, put the mass into a (separate) calabash for himself and remove the lumps. Thus did he prepare his food (*ai*, vegetable food); and thus was he ever compelled to do so long as he and his wife lived.

5. Another burden that fell to the lot of the man was thatching the houses for himself and his wife; because the houses for the man must be other than those for the woman. The man had first to thatch a house for himself to eat in and another house as a sanctuary (*heiau*) in which to worship his idols.

6. And, that accomplished, he had to prepare a third house for himself and his wife to sleep in. After that he must build and thatch an eating house for his wife, and lastly he had to prepare a *hale kua*, a place for his wife to beat *toʻpa* in (as well as to engage in other domestic occupations—TRANSLATOR). While the husband was busy and exhausted with all these labors, the wife had to cook and serve the food for her husband, and thus it fell that the burdens that lay upon the woman were even heavier than those allotted to the man.

7. During the days of religious tabu, when the gods were specially worshipped, many women were put to death by reason of infraction of some tabu. According to the tabu a woman must live entirely apart from her husband during the period of her infirmity; she always ate in her own house, and the man ate in the house called *nua*. As a result of this custom, the mutual love of the man and his wife was not kept warm; the man might use the opportunity to associate with another woman, likewise the woman with another man. It has not been stated who was the author of this tabu that prohibited the mingling of the sexes while partaking of food. It was no doubt a very ancient practice; possibly it dates from the time of Wakea; but it may be subsequent to that.

8. There is, however, a tradition accepted by some that Wakea himself was the originator of this tabu that restricts eating; others have it that it was initiated by Luahau-kapawa. It is not certain where the truth lies between these two statements. No information on this point is given by the genealogies of these two characters, and every one seems to be ignorant in the matter. Perhaps, however, there are persons now living who know the truth about this matter; if so they should speak out.

9. It is stated in one of the traditions relating to the gods that the motive of the tabu restricting eating was the desire on the part of Wakea to keep secret his incestuous intercourse with Hoo-hoku-ka-lani. For this reason he devised a plan by which he might escape the observation of Papa; and he accordingly appointed certain nights for prayer and religious observance, and at the same time tabued certain articles of food to women. The reason for this arrangement was not communicated to Papa, and she incautiously consented to it, and thus the tabu was established. The truth of this story I cannot vouch for.

10. If it was indeed Wakea who instituted this tabu then it was a very ancient one. It was abolished by Kamehameha II, known as Liholiho, at Kailua, Hawaii, on the third or fourth day of October, 1819. On that day the tabu putting restrictions on eating in common ceased to be regarded here in Hawaii. The effect of this tabu, which bore equally on men and women, was to separate men and women, husbands and wives from each other when partaking of food.

11. Certain places were set apart for the husband's sole and exclusive use; such were the sanctuary in which he worshipped and the eating-house in which he took his food. The wife might not enter these places while her husband was worshipping or while he was eating; nor might she enter the sanctuary or eating-house of another man; and if she did so she must suffer the penalty of death, if her action was discovered.

12. Certain places also were set apart for the woman alone. These were the *hale ʻoia*, where she stayed during her period of monthly infirmity—at which time it was tabu for a man to associate with his own wife, or with any other woman. The penalty was death if he were discovered in the act of approaching any woman during such a period. A flowing woman was looked upon as both unclean and unlucky (*kaunia, poiua*).

13. Among the articles of food that were set apart for the exclusive use of man, of which it was forbidden the woman to eat, were pork, bananas, coconuts, also certain fishes, the *niua*, *kumu* (a red fish used in sacrifice), the *niwhi* shark, the sea turtle, the *e-a* (the sea turtle that furnished the tortoise shell), the *paia*, the *na-ia* (porpoise), the whale, the *nua*, *hahaka* *hikumumu* (the ray) and the *kailepa*. If a woman was clearly detected in the act of eating any of these things, as well as a number of other articles that were tabu, which I have not enumerated, she was put to death.

14. The house in which the men ate was called the *nua*; the sanctuary where they worshipped was called *heiau*, and it was a very tabu place. The house in which the women ate was called the *hale aiua*. These houses were the ones to which the restrictions and tabu applied, but in the common dwelling house, *hale nua*, the man and his wife met freely together.

15. The house in which the wife and husband slept together was also called *hale-nua*. It was there they met and lived and worked together and associated with their children. The man, however, was permitted to enter his wife's eating house, but the woman was forbidden to enter her husband's *nua*.

16. Another house also was put up for the woman called *hale kua*, the place where she beat out *toʻpa* cloth into blankets, into *ʻo-a-u* for herself,

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malō for her husband, in fact, the clothing for the whole family as well as for her friends, not forgetting the landlord and chiefs (to whom no doubt these things went in lieu of rent, or as presents.—TRANSLATOR).

17. The out-of-door work fell mostly upon the man, while the in-door work was done by the woman—that is provided she was not a worthless and profligate woman.

18. I must mention that certain men were appointed to an office in the service of the female chiefs and women of high station which was termed *ai-noa*. It was their duty to prepare the food of these chiefish women and it was permitted them at all times to eat in their presence, for which reason they were termed *ai-noa*—to eat in common—or *ai-pūhiki*.

CHAPTER 12

THE DIVISIONS OF THE YEAR

1. The seasons and months of the year were appropriately divided and designated by the ancients.
2. The year was divided into two seasons Kau and Hoo-ilo. Kau was the season when the sun was directly overhead, when daylight was prolonged, when the tradewind, *mākani noae*, prevailed, when days and nights alike were warm and the vegetation put forth fresh leaves.
3. Hoo-ilo was the season when the sun declined towards the south, when the nights lengthened, when days and nights were cool, when herbage (literally, vines) died away.
4. There were six months in Kau and six in Hoo-ilo.
5. The months in Kau were Iki-iki, answering to May, at which time the constellation of the Pleiades, *huhui kekū*, set at sunrise. Kan-ona, answering to June,—in ancient times this was the month in which fishermen got their *a-ei* nets in readiness for catching the *opelu*, procuring in advance the sticks to use in keeping its mouth open; Hina-ia-elecle, answering to July, the month in which the *ohia* fruit began to ripen; Mahoe-nua, answering to August,—this was the season when the *ohia* fruit ripened abundantly; Mahoe-hope, answering to September, the time when the plume of the sugar-cane began to unsheath itself; Ikuwa, corresponding to October, which was the sixth and last month of the season of Kau.
6. The months in Hoo-ilo were Weleehu, answering to November, which was the season when people, for sport, darted arrows made of the

flower stalk of the sugar-cane; Makalii, corresponding to December, at which time trailing plants died down and the south wind, the Kona, prevailed; Kaele, corresponding to January, the time when appeared the *enike*,¹ when also the vines began to put forth fresh leaves; Kaulua, answering to February, the time when the mullet, *enae*, spawned; Nana, corresponding to March, the season when the flying fish, the *malolo*, swarmed in the ocean; Welo, answering to April, which was the last of the six months belonging to Hoo-ilo.

7. These two seasons of six months each made up a year of twelve months,² equal to nine times forty days and nights—but the ancients reckoned by nights instead of days.

8. There were thirty nights and days in each month; seventeen of these days had compound names (*inoa hihiki*) and thirteen had simple names (*inoa pakahi*) given to them.

9. These names were given to the different nights to correspond to the phases of the moon. There were three phases—*ano*—marking the moon's increase and decrease of size, namely, (1) the first appearance of the new moon in the west at evening:

10. (2) the time of full moon when it stood directly overhead (literally, over the island) at midnight.

11. (3) The period when the moon was waning, when it showed itself in the east late at night. It was with reference to these three phases of the moon that names were given to the nights that made up the month.

12. The first appearance of the moon at evening in the west marked the first day of the month. It was called Hilo on account of the moon's slender, twisted form.

13. The second night when the moon had become more distinct in outline was called Iioaka; and the third when its form had grown still thicker, was called Ku-kahi; so also the fourth was called Ku-lua. Then came Ku-kolu, followed by Ku-pau which was the last of the four nights named Ku.

14. The seventh, when the moon had grown still larger, was called Ole-ku-kahi; the eighth, Ole-ku-lua; the ninth, Ole-ku-kolu; the tenth, Olepau,³ making four in all of these nights, which, added to the previous four, brings the number of nights with compound names up to eight.

15. As soon as the sharp points of the moon's horns were hidden the name Huna (hidden) was given to that night—the eleventh. The twelfth night, by which time the moon had grown still more full, was called Mohalu. The thirteenth night was called Hua, because its form had then become quite egg-shaped (*hua* an egg); and the fourteenth

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CHAPTER 15

THE FISHES

1. There are many distinct species of fish in Hawaii. All products of the ocean, whether they move or do not move, are called fish (*ia*).¹ There are also fish in the inland waters.

2. The mosses in fresh and salt water are classed with the fish (as regards food). There are many varieties of moss, which are named from their peculiarities, from color, red or black, or from their flavor. The *o-o-pu* (a small eel-like fish) and the shrimp (*opae*) are the fish of fresh water.

3. The fish from shoal and from deep water differ from each other. Some fish are provided with feet, some are beset with sharp bones and spines. Some fish crawl slowly along, clinging to the rocks, while others swim freely about, of which there are many different kinds, some small, some peaked (*o-e-o-e*; this is also the name of a fish), some flattened, some very flat, some long, some white, some red, many different species in the ocean.

5. The following fish have feet with prongs: the *hihihi*, *elēpi* (a four-footed sea animal), *elē-mihi*,² the *kukuna* (a whitish crab), the *hūmūni* (a poisonous crab), the *pūpa* or the *pū-pai* (a wholesome crab), *pū-pai-lanai*, the lobster or *ūka*, the *alo*, the *pōpōki*, the *omamau*, and the shrimp or *opae*. These are all good food save the *hūmūni*. That is poisonous and is not eaten.

6. I will now mention some fish that are beset with spines: the *isa*, *hāwae*, and *wana*,³ the *hā-ike-ake*, and the *hākūc*. These fish are all fit to be eaten; their flesh is within their shell. The *kōkōka*, *oōpu-hue* and *keke* are also fish that are covered with spines; they move swiftly through the water and are eaten as food. Death is sometimes caused by eating the *oōpu-hue*.⁴

7. The following fish are covered with heavy shells: the *pīpī* (one of the *Nerita*, which is excellent eating.—*ΤΡΑΥΣΣΙΛΑΤΟΣ*), the *alea-alea*, the *asa*, the *kesakaka*, the *pūpu* (a generic name for all shells at the present time), the *knolo*, the *pū-hoōkani* or conch, the *pūpu-ava*, the *olepe* (a bivalve), the *ole*, the *osakak*, the *ka-hama-cōtē*, the *ūi*, the *pīpī*, the *maha-moc*, the *opīhi*, the cowry or *leho*, the *pau-pau-pūhi*, the *pūpu-lōlō*. This is of course not the whole list of what are called fish.

15. Among the kinds of food brought from foreign countries are flour, rice, Irish potatoes, beans, Indian corn, squashes and melons, of which the former are eaten after cooking and the latter raw.

16. In Hawaii nei people drink either the water from heaven, which is called real water (*wai maoli*), or the water that comes from beneath the earth, which is (often) brackish.

Awa was the intoxicating drink of the Hawaiians in old times; but in modern times many new intoxicants have been introduced from foreign lands, as rum, brandy, gin.

17. People also have learned to make intoxicating swipes from fermented potatoes, watermelon, or the fruit of the *ohia*.⁷

NOTES ON CHAPTER 14

¹ Sect. 1. Hard poi, that is, pounded taro unmixcd with water, is made up into bundles, which on Oahu and Molokai were round and covered with the leaves of the *hi* plant. On Hawaii and Maui they were long and cylindrical and were covered with banana stalks or the leaf of the pandanus, and were called *omao* or *hōlo-ai*.

² Sect. 2. The names given to the different varieties of taro might be reckoned by the score. In spite of Mr. Maalo's assertion, color seems to have had but little to do with the determination of the name. To mention a few representative names, the *ka-i*, which made the very best of poi, was of firm consistency, of a steel-blue color, and of an agreeable sweetish taste; the *hāo-ka* of a light grey color, softer consistency and more neutral flavor; between these two, which may be taken as intervening shades of blue and grey. The *ihū-o-lolo* and *āpu-ūni* are of medium blue-grey color and consistency, representing a mean between the extremes mentioned. The *hi-ahi* (king's desire) is of a pinky-purple hue and makes a delicate poi that is regarded as the most choice of all varieties.

³ Sect. 3. This remark does not do justice to the facts. The names given to the different species of *uau* and of taro as well show accurate observation and good powers of description. One variety was named *ten-tii*, small-leaf, another *pūko-ūni*, big-navel, another *hāo-moa*, hen's egg, etc.

⁴ Sect. 9. By some mistake the author says that the *ohia* is propagated from branches or cuttings. Only the seed is used. One might as well expect a branch of oak to grow as a branch of *ohia* [?].

⁵ Sect. 11. The action of this famine-diet is well described in the following triplet:

I ka wa wi, wi, wi,
A i ka ti, ti, ti,
A hi, hi, hi.

⁶ Sect. 14. The juice of the leaves and stems of the *keahi* was used as a cathartic in Hawaiian medicine. Its effects are powerful.

⁷ Sect. 17. *Okole-hao*—so called from the small round hole of the iron pipe from which the liquor dripped—is a liquor distilled from the fermented juice of the *hi* root. It is said to be of excellent quality, resembling New England rum.

8. The following are fish that move slowly: the *naka*, the *ku-akakai*, the *ku-nou-nou*, the *kona-lelewa*, the *lofi* or béche de mer, the *mai-hole*, the *ku-naka*, the *mini-ole*, the *lepe-lepe-okina*. These are not fish of fine quality, though they are eaten.

9. The following small-fry are seen along shore—they are swift of motion: the young (*pua* or flowers) of the mullet or *anae* (when of medium size it is called *ama-ama*), of the *awa*, *aholehole*, *hinani*, *neku*, *iao*, *pika*, *opuu-puu okua-palema*, *paoa*, *olukhe-luke*, *ohune*, *moi-hi*, and the *akeke*. All of these fish are used as food. Doubtless I have omitted the mention of some.

10. The following fish have bodies with eminences or sharp protuberances (*kino oos*): the *paaca*, *pauiho-toa*, *olali*, *hinalea*, *aki-lolo*, *awhi*, *manamalo*, *aweia*, *maha-wela*, *hou*, *hiku*, *omalemale*, *o-niho-niho opuie*, *lau-ia*, *ulae*, *oao-wela*, *upa-palu*, *uhu-eleie*, *lao*, *palao*, *oana*, and the *awa*. No doubt I have omitted some of them. These fish are excellent eating.

11. The following fish have flattened bodies: the *atoi-toi*, *kupipi*, *ao-ao-nui*, *mai-i-i*, *kolé*, *manini*, *manama*, *mao-mao*, *lau-hau*,⁵ *lani-pala*, *mai-ko*, *mao*, *hunu-hunu*, *kiki-kiki*, *kika-kapu*, *ka-pu-hii*, *oii-lapa*, *pa-hii*, *pa-paa*, *uui-wi*, *uwanua-lei*, *waku*; and probably these are not all of them. These fish are good eating.

12. The following are fish with bodies greatly flattened: the *kala*, *palani*, *maru*, *pika-wen-wen*, *pa-kuhui*, and the *opi*.

13. The following fish have bodies of a silvery color: the *akole* (same as the *ahole-akole*), *anae* (full grown mullet), *awa*, *uaa*, *o-to*, *opelu*, *mo-i*, *u-lua*, *u-lua-nolai*, *aku*, *ahi*, *omaka*, *kerwa-karua*, *moku-le-to*, *ka-i*, and the *hoana*, all of which are good eating.

14. The following are fish with long bodies: the *ku-pou-pou*, *aha*, *munu*, *ou-ou*, *wela*, *waku*, *ono*, *auiepe*, *ka-ufi-ufi*; these fish are used as food.

15. The following fish have bodies of a red color: the *a-aka-iki*, *u-u*, *moana*, *wefe* (of a pink, salmon and fawn color, a fine fish), *o-uw-o-wo-o*,⁶ *ku-mu*, *pa-ka-le-ko-le*, *u-lua-ula*, *pa-ou-ou*, *o-pa-ka-pa-ka*, *ula-ula*, *ko-o-e*, *pika-wen-wen*, *o-ka-le-ka-le*, *mu-ku-muku-waka-nui*. These fish are all wholesome food; though probably my list is not complete.

16. The following fish are furnished with rays or arms (*awa-awa*): the octopus (*he-e*) and the *mu-he-e* (squid?), which are eaten; also the *ke-e-ma-ko-ko*, which is bitter.

17. The following sea animals have a great resemblance to each other: the sea turtle or *houu*, from whose shell is made an instrument useful in scraping *olona* bark, also in making haircombs in modern times; the *e-a*, a species of sea turtle, whose shell was used in making fish-hooks. The *houu* is excellent eating, but the flesh of the *e-a* is poisonous.

18. The *manu* or shark has one peculiarity, he is a man-eater. His skin is used in making drums for the worship of idols, also for the *hula* and the *ka-eké-eké* drum. The *ka-ka-ia* and the *maki-mahi* are quite unlike other fishes. Their flesh is excellent eating.

19. The following are fish that breathe on the surface of the ocean: the porpoise or *wa-ia*, *uiao*, *pa-hu*, and the whale (*ko-ho-ia*). The *kohola* or whale was formerly called the *pa-lao-a*.⁷ These fish, cast ashore by the sea, were held to be the property of the king. Both the *houu* and the *e-a* come to the surface to breathe.

20. The following fish are provided with (long fins like) wings: the *lolo-ou ma-lolo* (the flying fish), the *pahi-hii* (*pahi-hii* is a mistaken orthography), *lupe*, *kiki-manu*, *kaka-lua*, and the *hai-lepo*. These fishes are all used as food, but they are not of the finest flavor. No doubt many fish have failed of mention.

NOTES ON CHAPTER 15

¹ Sect. 1. From *ia*, the *k*, which still remains in its related form *i-ko* of the Maori language, has been dropped out; its grave is still marked, however, in the Hawaiian by a peculiar break, the result of a sudden glottic closure (*'o*). It means primarily fish; also any kind of meat or animal food, and in the absence of these, any savory vegetable, which as a relish temporarily takes the place of animal food, is for the time spoken of as the *i-a* for that meal. Thus it is common to say, *hau* was our *ie* on such an occasion. Even salt, *pa-kei*, is sometimes spoken of as the *ie* for a particular meal or in time of want. In the Malay language the word for fish is *ikan*.

² Sect. 5. *Aiemiki* is a small crab, also called the *ala-wiki*, spoken of as the corpse-eating *aiemiki*, *ka aiemiki ai ku-pu-hu*. In spite of its scavenging propensities this crab is eaten, and it was undoubtedly one of the means of spreading cholera in Honolulu in 1895.

³ Sect. 6. All of these are *echini*. The spines of the *uw-ua* are very long, fine and sharp as a needle.

⁴ Sect. 6. In the *copu-hue* the poisonous part is the gall. By carefully dissecting out the gall-bladder without allowing the escape of any of its contents, the fish may be eaten with impunity. Its flavor is delicious.

⁵ Sect. 11. *Lau-hu* is named for its patches of gold and dark brown, resembling the ripe leaf of the *hou*.

⁶ Sect. 15. The appearance of the *awa-awa*, also called *u-la-lau-a*, in large numbers about the harbor of Honolulu was formerly regarded as an omen of death to some *alii*.

⁷ Sect. 19. The *pa-lao* is the sperm whale.

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THE WRITTEN WORD
MAKES HISTORY

Writing was one of the gifts the New England missionaries brought to the Hawaiian people. After their arrival in 1820 the events and flavor of life in Hawaii were amply recorded in such documents as the journals, state papers, and letters of which you see examples in this exhibit. This new art was used also by the Hawaiians to record what they knew of old Hawaii. In 1835 Lahainaluna School on Maui started gathering historical and traditional information concerning Hawaii's past. A principal contributor was David Malo, a man of 42, who had associated with the chiefs of the court of King Kamehameha I. He later wrote an organized account of ancient Hawaiian life, and this account, translated and edited, was published by Bishop Museum in 1903 as "Hawaiian Antiquities." This has long been the authoritative source book for all students of Hawaiian history. A second, revised edition was published by the Museum in 1951.

Shown here is the ^①manuscript in Hawaiian, probably copied by Malo for the Rev. Lorrin Andrews about 1840, ^②a handwritten translation, and the ^③Museum's second edition of the book.

Kai ke when the water abating returns it is called a Barren sea (Kai moke or Retreating sea (Kai moe) or Returning sea (Kai hoi) or a Dead sea (Kai make)

Sec 12. If the surf breaks strongly and frequently it is a High surf (Kai ke); the place where the surf breaks on any projecting point of an island called a Cape it is called Sea of the Cape (Kai ma ka lae); the place in the sea where the water lies still in streaks like a road, it is called Kauai.

Sec 13. A place in the sea where the water lies quietly is called a Calm place (Lui); it is also called Maline also Smooth sea (Kai paipaeae), also Dead calm (Yiwha).

Chapt. 11.

Of the Kapu system.

Sec 1st The rating according to Kapu was a great affair on the Hawaiian Islands, it was opposed to all the true interests of the people, it was exceedingly burdensome, it was conducive of no good, but much evil, between men and their wives, the husband was grievously burdened and fatigued also in preparing food, for the husband had to prepare and bake at two ovens, for the husband's oven was

entirely separate from that of his wife.

Sec 2. The husband must first prepare the oven for his wife's food and then put the food in to be baked; then he might go and prepare his own oven and take his own food.

Sec 3. After that he might return and open up his wife's oven and skin the rats and finish it until it was all soft, then place it in the calabash, that finished the man's work for his wife.

Sec 4. Then he must go again to his own oven and take out his own rats, and peel it and pound it till it was fine, and put it into the calabash and tie it up, and that finished the work of preparing food, and so on this work had continually to be done by the husband as long as they lived together.

Sec 5. Another hard labor of the husband was the building and thatching of the houses for himself and his wife, for the husband and wife had each their own separate houses to eat in, but it belonged to the husband to build for both, besides these, the husband must build the temple (Léa) a house in which the gods (Ahoa Kii) were placed and where they were worshipped, this was more particularly for the husband.

This done, he then prepared a sleeping house for himself and wife, after that he had to build a house for beating Kapa (Kua). Thus the husband had much to do in these preparations of houses and cooking of food, but the wife sometimes cooked food for her husband; but after all the duties of the woman were greater, than that of the man. See 7. The woman often died in the practice of their religion which was inculcated by the false gods. During the time of their infirmities, they were entirely separate from others, their eat separation, they lived separately the husband in his own house, but at such times he showed no love or sympathy for his wife nor she for him; the husband took such times to be false to his wife, the wife did the same when able, but of the origins of this evil we are not informed, viz of the Kapa system (ai Kapa) it is a practice from the time of Kahiko (past ages) perhaps, or perhaps it originated with Wakea, or it may be something more recent.

See 8. But one party hands it down by tradition that the Kapa system (ai Kapa) had its origin with Wakea, and from him it has come down; but another party affirms

That its origin was later, that it commenced with Lehuakapana, but it is not certain which of these opinions is correct, for there is no mention of either of them in the genealogies and men do not know, if any one at the present time does know, let him make it known.

Sec. 9. It has been said in one of the traditions of the image gods that the strong desire of Hakea to be connected securely with Hoohokukalo was the origin of the Kapu system; for the Hakea, sought occasion to be separate from the notice of Papa his wife, and to gain his point he sought out certain nights to be devoted to prayer, and laid a Kapu on certain kinds of food that his wife should not eat, but he told nothing of this (for none of the reasons) to Papa. To this Papa ignorantly consented, hence the origin of the Kapu system. But this tradition is not certainly true, perhaps it is true, but it may be false.

Sec 10. Although the Kapu system had its origin in the day of Hakea, and has been in practice from that time, to the time of Kamehameha II also called Liholiho, yet it was he that overthrew it at once at Kailua in Hona Hawaii in the month of October, either on the 3^d or 4th day, in the year 1819 that

was its final overthrow. Thus the practices of the Kapu system, held a sway over husbands and wives and extended from the common people to the chiefs, they all lived under it, it separated husbands and wives, and interferred with all the relations of life.

Sec. 11. It separated many women from their husbands, that is, they were shut up or confined to their own houses, there they must work - there they must eat, for they could have no friendly intercourse with their husbands. Because if it was heard that a woman entered her husband's house under the Kapu, the penalty was death.

Sec 12. But the woman also was Kapu at certain times, and her husband even could not approach her, that was during the time of her infirmity, when she lived in her house of separation (hale pua) nor could she receive the sympathy of other women for it would be the death if it should even be heard of.

Sec 13. The following are things set apart for men to eat, and entirely forbidden to women to eat on pain of death. The flesh of Togs, the Baniana, the Cocconut and along with these were certain kinds of fish as the

Uua, the Kuani, the Mano, Niuli, the
Houu, the Ea, the Sahu, the Naia, the Hohola
 the Kuas, the Takalua, the Hihimamu, the
 Pailipo and many others that were Kapeu,
 too many to name, of which death was the
 penalty for a woman to eat.

Sec. 14. The husband's eating house (the Uua),
 his house of worship (the Hiau) were Kapeu to
 the wife, the woman's eating house, called the
 Eating house (hale aina) there the woman eat,
 but the husband eat in the Uua, and these
 were entirely separate; but when they lived together
 that was their place to meet.

Sec 15. The house where the parties slept was
 called the sleeping (hale moe) there the husband
 and wife lived together, worked together, and
 their children lived with them though the
 husband might freely enter the eating house
 of his wife, yet the wife must not enter the
 eating house of the husband.

Sec 16. There was another house built for the wife,
 and this was called the eating house (hale kuku)
 for there the women beat out Kapeu's; the part
 the male for the husband; such were the
 houses built for convenience sake for the
 parties, for the children, for their friends and
 others, for the love of the land and for the chief

Sec 17. As a general thing, the hard work out of doors was for the husband to do, and also the principal work within doors was done by the wife, this applies however to women of regular habits and not to the vicious and mischievous.

Sec. 18. It should be mentioned however, that certain persons (men) were free from the labor of eating, they prepared food for female Chiefs or noble women, such people (men) always eat with their wives and prepared the food for the Chief women, and this was called their free eating (as was), another was as public

Chapt. 12.

Concerning times within the year.

Sec 1. There was different periods of time, and months within a year.

Sec 2. The year was divided into two parts viz. the summer (Kase) and winter (Hooile), the summer began when the sun stood directly over an island - the days were long - the trade winds (Moae) blew - the nights were warm as well as the days, and the forest and the trees grew again.

Sec 3. It was winter (Hooile) when the sun moved off to the south - when the nights were long - the days and nights were cold,

Dec. 16. The following are the drinks of Hawaii, viz. Rain water (wai ua), this comes down from Heaven and is called Pure water (wai maale), Water from below the surface of the earth, and is called Sea water (wai kei). The juice of Awa, that is Hawaii's drink to produce drunkenness, from ancient times until the present. Many other intoxicating drinks have been recently introduced from foreign lands, such as Rum (kuma); Brandy, (barani) Wine (wini).

Dec 17. The following have lately been invented here, viz. Sugar cane Beer (wini), Potato Beer (kaka ho awa-awa), Watermelon Beer, Ipu kaka ho awa-awa, and the Ohia Beer, (Ohia ho awa-awa)

Chapter 15.

Concerning Fish.

The fish in the Hawaiian sea are different from others, and they differ among themselves, there being many different kinds, they are also called by different names. All the animals that live in water are called fish (iia) some of them swim and some do not, some live in the sea, and some in fresh water inland.

Dec. 9. Even the seaweed, sea moss, sea grass (kimo) whether found in salt water or fresh is called fish (iia), of this grass or sea moss there are a

great variety, and they are named accordingly. Some kinds are red, some dark colored, and some are named from their taste.

The Popae (mud fish), the Opae (shrimp) and such like are found in fresh water.

Sec. 3. The fish from the shallow water out to the deep are of various kinds, some have legs and sharp bones externally, some have all their (shells) outside, some crawl very slowly and mostly fasten themselves to the rocks.

Sec. 4. Of those that move about, there are several different kinds; some are very small, and some are long and thin, some are flat, and some are very broad, some are white and some are red. Some are indelible (he mau anoe) these all live in the sea.

Sec. 5. The following are fish with many feet, viz. the Huhiwai, the Elepi, the Ekepihi, the Huhuma, the Ohiki, the Aama, the Pai, the Huhuan, the Humimi, the Papa, the Papai, the Papuilanai, the Ula, the Mo, the Pokipoki, the Oumama, the Opae, these are all eatable fish, except the Humimi, which is poisonous if eaten.

Sec. 6. The following have their bones outside, viz. the Ina, the Hawai, the Hana, the Haukukui, the Hakue; these are eatable fish their meat is inside. The Hokala, the Popuhue, the Hehe.

these too have their bones outside but they are movable and their flesh eatable; the Opeu has Imorani is poisonous.

Sec. 7. The following are fish with very thick shells (isi) outside. Viz. the Pipipi, the Ala ha the Aoa, the Tuanaka, the Pupa, the Kuoho, the Pahokani, the Pupuawa, the Olepe, the Ole, the Oaoaka, the Nahamawaka, the Uhi, the Pipi the Mahamoa, the Opiki, the Leho, Panapanapane the Papuloha; and there are more perhaps, than are mentioned; they are all eatable and are called fish (ia).

Sec. 8. The following are those that merely crawl (hold water), the Naka, the Kualakai, the Kuononon, the Konalekua, the Loli, the Kaihole the Kuamaka, the Kiniolu the Lepelape ohina; these are fish not very good, they are however eaten.

Sec. 9. The following are small fish found on the sea shore, they are fish that move (hold), the Puanoo, the Puaava, the Puaaholehole, the Hinano, the Nehu, the Suo, the Pohu, the Opeupue, the Ohua, the Ohuapalano, the Para the Uluhelake, the Ohume, the Koiti, the Aheke; these are fish that may be eaten; there are perhaps more belonging to this class.

Sec. 10. The following are fish whose bodies are long the Paua, the Paniboha, the Uali, the Hemaha.

Sec 14. The following have long bodies, the Kupapapa, the Aha, the Kumu, the Anau, the Wela, the Wolu, the Omo, the Aulepe, the Wauliuli, these are all eatable fish.

Sec 15. The following are red fish; the Maiki, the Kou, the Moano, the Whe, the Kano eyes, the Kumi, the Pakohoko, the Whuula, the Paouu, the Opahakaha, the Ulamia, the Kocu, the Piharawira, the Ohakahi, the Mukumuku wahamui; these are all good to eat, perhaps however all the names of this class are not put down.

Sec 16. The following are slippery fish viz. the Teu, the Muui, the Heumakoko; these are eatable fish the Heumakoko however is poisonous.

Sec 17. The following are two kinds of fish resembling each other; the Honu (sea turtle) the shell of its back makes a good instrument for rowing. Olona; it is also made into hair combs even at the present time. The Ea (turtle) has a beautiful shell, which was made into fish hooks in ancient times. This fish was Kapua to women in ancient times; the Honu is eatable but Ea is somewhat bitter.

Sec. 18. Only one kind of shark (Mau) is eatable. Sharks eat men. Their skins are used in making drum heads, to be beaten before the idol gods, and for drumming at Hulai.

it was also used in the drums made of
Coconut logs. (Pahu Kacheke). The Kahala
is a fish of its own class, so also the Makimahi
they are all eatable fish.

Sec. 19. The following class breathe on the surface
of the water, the Kaia, the Aua, the Pahu, the
Ancient Hawaiians used to say that the Palou,
a kind of whale was often cast ashore.

The Hoona and the Ea breathe on the surface of
the sea.

Sec. 20. The following are winged fish, the Lobou,
the Malolo, the Puhikiu, the Lupe, the Kihimani,
the Haahua the Hailopo; these are all eatable
but not very pleasant to the taste. There are probably
other species of fish not named here.

Chapt. 16.

Of the Cloth, Mats, Pail & Mats of the Hawaiian.
The clothing of Hawaiians consisted formerly
of Kapa, it was made from the bark of certain
trees (shrubs) viz. Wauke, Mamaki, Maalooa,
and Poulu. The Wauke was a bush extensively
cultivated; the bark of the Wauke was made
into Kapa in the following manner. The men
cut down the Wauke, but it belonged to the
women to peel off the bark, when peeled off
it was thrown into water until it became

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There are several reminiscences about springs in the *ahupua'a* of Waimanalo, which Mrs. Pukui has found in Hawaiian newspaper articles and translated. This one (Hoku o Hawaii, March 11, 1930) says:

There are two peculiar springs at Waimanalo... The one called Kupunakane [Grandfather] is away up in the mountains. The spring called Kupunawahine [Grandmother] is a spring way down on the level land. The strange, strange thing about these ponds was that on calm, sunny days they begin to cry out to each other. Their voices are soft and sounded very much like a woman mourning her husband. On days that were overcast with clouds in the sky, then the water of the mountain spring changed. The water of the mountain spring became warm and when you drank the water in the lowland spring it was cool, according to their legend.

A *kama'aina* informant, Charles Alona, has told us of two other well-known old springs, both of which are now, perhaps long since, dry. He said that Wai-kupanaha was the name of a spring (*mouka* of the plantation mill) surrounded by tall taro plants, banana trees, and fragrant white gingers. This was a *lele* (section of land) which had its counterpart on the seashore, where the owner of the *kuleana* that included the upland and shore-side areas lived. There was fresh water also on the piece by the sea. And at Olomaha above the sugar mill there was a fine old spring. This area was then thickly populated. There was another spring across the road from what is now Bellows Air Force Base. Near this is Maha'ilua, another thickly populated place with a good water supply in earlier days.

McAllister (1933, p. 192) records the existence of a sea pond which was said to have been 500 feet long and 50 feet wide. "A line of stones, submerged at high tide, but visible at low tide, indicates its former extent." The ali'i kept turtles in the pond. Charles Alona said that this ali'i was so fond of turtle meat that everyone in the district was required to bring any turtles they caught to him.

Levi Chamberlain is quoted (Sterling and Summers, 1962, Bk. 5, Vol. 2, p. 344) as reporting in 1828 the location of a small and quite poor fishing village near the beach, toward Makapu'u Point from the present Waimanalo town, just beyond which there was a pool named Ka-wai-kupanaha where these people got their fresh water. This has since been covered by the roadway. It is probably adjacent to this site that the remains of a fishing shrine (*ko'a*) are visible on a point of land just offshore, surrounded by water at high tide (McAllister, 1933, p. 195).

Charles Alona told of another village situated on a low hill across from the Waimanalo Beach Park. This was settled by folk from Molokai, hence its name: Pu'u o Molokai. These people held themselves apart from the people of Waimanalo. If a girl born there married a Waimanalo man, she had to leave Pu'u o Molokai. But gradually the Molokai people were absorbed by Waimanalo.

Another newspaper account (*Ku'okoa*, October 26, 1906) describes Waimanalo District in 1847, as follows:

At that time it seemed that the valley was filled with breadfruit, mountain apples, *kukui* and coconut trees. There were taro patches, with banks covered with *ti* and *wauke* plants. Grass houses occupied the dry lands, a hundred of them here, and sweet potatoes and sugar cane were much grown. It was a great help toward their livelihood. . . . The whole *ohupua'a* of Waimanalo was leased to white men except the native *kuleanas* and because the cattle wandered over them, they were compelled to build fences for protection. The taro patches that were neatly built in the time when chiefs ruled over the people and the land, were broken up. The sugar cane, *ti* and *wauke* plants were destroyed. The big trees that grew in those days, died because the roots could not get moisture. The valley became a place for animals.

Beyond the old plantation town of Waimanalo and toward Makapu'u Point is a narrow stretch of land lying between the dry windward face of this southeast end of the Ko'olau range and the sea, the name of which was Ko'o-o-na-pou (mistakenly called Kaupo in recent times). This was a sweet-potato planting area. A village was established here by a *kahuna* who had a peculiar grass house with two rooms: the front room into which visitors came; and his private room behind this, which abutted on a low cave with a rather thin roof of lava shaped like a flat dome. In this little cave the *kahuna* kept his paraphernalia. The site was exposed to heavy winds, so the house frame was braced by heavy props (*ko'o*) that held the posts (*na pou*) secure against the winds of the sea. The village and the land took their descriptive names from this house.

The scattered rocks where the house had been and the little lava dome were carried off during World War II, and likewise the stones of a fisherman's *heiau* on the rocky foreshore where the beach begins, named Ka-ala-pueo.

In the early years of this century these stone remains were regarded as having considerable antiquity, and there was popular speculation as to why it had become a "deserted village" and also why it should have been founded in so unpropitious a spot in the first place. Actually the so-called "Kaupo village" never consisted of more than a few poor huts, and these were built by Hawaiians seeking to escape the quarantine during the smallpox epidemic of 1853 (McAllister, 1933, p. 193). Charles Alona adds that it was the fame of the *kahuna lapa'au* (healer) above referred to (whose name was Kapoi) that attracted them. When the epidemic reached this little settlement and Kapoi was one of those who died, the spring which had appeared in answer to his prayers, dried up.

Ka-ala-pueo (Rallying-of-the-owls) was the last settlement near Makapu'u Point, and consisted of only a few fishermen's huts.

Offshore lies Manana, the true name of the little gray volcanic island shaped somewhat like a crouching or recumbent animal and now popularly

The Impact of the Prehistoric Polynesians on the Hawaiian Ecosystem¹

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ABSTRACT: Evidence obtained from archaeological and ancillary studies of paleoenvironment suggests that the prehistoric Polynesians had a far greater impact on the Hawaiian ecosystem than has heretofore been realized. Such impact began with the introduction, by Polynesians, of exotic plants and animals. The cumulative effects of forest clearance and habitat modification through the use of fire led to major changes in lowland ecology. Among the consequences of this transformation of the Hawaiian landscape were the extinction of endemic species, alteration of vegetation communities, and erosion.

THE EXTANT BIOTA of the Hawaiian Islands represents a sadly depauperate reflection of the archipelago's flora and fauna prior to the advent of humans. This observation is not likely to startle most naturalists familiar with Hawaiian natural history. However, the consensus has long been that by far the greatest human impact on the Hawaiian ecosystem occurred in the two centuries since initial European contact. Carlquist, for instance, attributes the removal of large tracts of native dry forest to the actions of "peoples other than the Polynesians" (1970:275). Indeed, it has been commonly assumed that the impact of the indigenous Polynesian inhabitants of Hawaii was minimal. The anthropologist Kelly maintained that "works of Hawaiians, both on land and in the sea, were so carefully planned, engineered and executed that they enhanced productivity *without massive environmental degradation*" (1975:iii, emphasis added).

Sufficient evidence is now available (accumulated largely over the past decade by archaeologists with interdisciplinary support from a range of natural sciences) to question seriously the orthodox view regarding minimal prehistoric Polynesian impact on the Hawaiian environment. In fairness, I must note that some naturalists have realized the

potential of prehistoric Polynesians to disrupt their island environments. Zimmerman, for example, opined that prior to the Polynesian colonization of Hawaii, the land was "densely forested down to the seashore," and that "the fires of even the early Polynesians swept away vast tracts of woodland" (1963:57-8). Similar views have been expressed by Atkinson (1977), Degener and Degener (1974), Egler (1942), Fosberg (1972), and Newman (n.d.). Nevertheless, until quite recently there has been a dearth of direct, paleoenvironmental data bearing on the question of pre-European human impact on the Hawaiian ecosystem.

This paper provides a synopsis of such evidence from the viewpoint of an archaeologist who has been actively engaged in research on the question of human-environment interaction in Polynesia. I believe such a synopsis to be timely for at least two reasons: First, the popular orthodoxy of indigenous peoples in symbiotic "harmony" with nature should not go unquestioned. Second, by presenting the evidence thus far accumulated, other natural scientists may be inspired to contribute their analytical efforts, and the archaeological study of human-environment relations requires interdisciplinary cooperation. I hasten to add that over the course of the past decade of investigations, far more questions than answers have emerged. Some of the most startling evidence regarding, for example, avifaunal extinctions and shoreline changes has been obtained only within the past year or

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two. Clearly, the synopsis given here is of a rapidly changing area of research.

ARCHAEOLOGY AND PALEOECOLOGY IN HAWAII

Scientific archaeology utilizing the methods of stratigraphic excavation accompanied by precise chronological control is barely three decades old in Hawaii. With the discovery by Emory (in 1950) that the Hawaiian occupation of the archipelago was of considerably longer duration than originally supposed, a program of excavation was initiated, aimed at establishing a culture-historical sequence. This initial phase of investigations was strongly cultural in orientation, with emphasis placed upon delineation of artifact types and sequences. Although some attention was focused on the faunal and botanical evidence for prehistoric Hawaiian environmental exploitation and subsistence (Bonk 1954), there was little overt concern with defining the nature of human-environment interaction. The impact of humans on the Hawaiian environment was a nonexistent question.

Research orientations in Hawaiian archaeology underwent a substantial transition in the late 1960s and early 1970s, largely through the application of the "settlement pattern" approach. Investigators began to consider how microenvironmental variation influenced the varieties of ecological adaptations witnessed in the Hawaiian archaeological record. Out of these initial settlement pattern studies, especially those focusing upon Makaha, Halawa, and Lapakahi (Green 1969, 1970, Kirch and Kelly 1975, Ladd and Yen 1972, Rosendahl 1972a, Tuggle and Griffin 1973), came the first detailed evidence that the Hawaiian environment had not been a stable, changeless monolith during the course of prehistoric human tenure. Evidence of local but massive slope erosion in Makaha and Halawa, and of deforestation at Lapakahi were among the signs that human activities had wrought substantial environmental change.

Most Hawaiian archaeologists have now come to the realization that neither the contact period Hawaiian culture nor its environ-

ment can be adequately comprehended except as the product of some 1400 years of dynamic interaction. Variability and constraint inherent in the Hawaiian environment have been powerful forces in molding the particular form of Hawaiian culture from a colonizing archaic Polynesian ancestor. At the same time, Hawaiian adaptation to environment was anything but passive, for, like all human populations, the prehistoric Polynesian inhabitants of Hawaii actively manipulated and modified their habitat. This kind of interaction is reciprocal, because culture "transforms its landscape and so must respond anew to changes that it had set in motion" (Sahlins 1964:133). Just as the evolutionary development of a "natural" ecosystem must be regarded as the coevolution of its constituent species, so the prehistory of humans in the Hawaiian archipelago must be understood in coevolutionary terms.

TRANSPORTED LANDSCAPES

Edgar Anderson set out the bold concept of "transported landscapes" based upon his research with the adventive, ruderal floras of North America. He wrote: "unconsciously as well as deliberately man carries whole floras about the globe with him, . . . he now lives surrounded by transported landscapes, [and] . . . our commonest everyday plants have been transformed by their long associations with us so that many roadside and dooryard plants are artifacts" (1952:9). Although Anderson was concerned primarily with weeds and cultigens, his concept of transported landscapes epitomizes the effects of human colonization of a natural ecosystem. By means of both purposeful and accidental transport of adventive plants and animals, humans alter the biota of any new habitat. In oceanic islands, the introduction of highly competitive weeds and predators had drastic effects on the vulnerable endemic biota (cf. Fosberg 1963:5). In the colonization of new lands, however, humans do more than act as the means of transport for a group of adventives. They carry with them a cultural concept of landscape, which causes them to actively shape a

new environment in that mold. For Polynesians, this cultural concept of landscape, transferred from previously settled archipelagoes in the south and southwest Pacific, included such notions as the suitability of valley bottoms for irrigated terracing and the efficacy of fire in converting forest into shifting cultivations. At the time of initial settlement by humans, the Hawaiian archipelago could be likened to a canvas upon which a cultural landscape was gradually to replace a scene of great natural diversity.

Natural scientists have long been seduced by the endemic biota of Hawaii, yet, as Bates argued, "the adventive fauna [and flora] comprises, really, a sort of gigantic, unplanned ecological experiment that might also yield information of great biological interest" (1956:796). It is clear that the history of these adventives and of purposefully introduced biota began with the first Polynesian colonization. Direct archaeological evidence for the introduction of several species has come from the earliest known habitation sites at Bellows, Oahu (Pearson, Kirch, and Pietruszewsky 1971), and at Halawa, Molokai (Kirch and Kelly 1975). Skeletal remains of domestic pig and dog (*Sus scrofa*, *Canis familiaris*) were recovered at both sites, while those of the fowl (*Gallus gallus*) are known from other early sites on Hawaii Island. The Polynesian rat (*Rattus exulans*) was also carried on the initial settlement voyages, probably as an inadvertent stowaway (Tate 1951). Geckos and skinks (Gekkonidae, Scincidae; Stejneger 1899) were also stowaways on Polynesian voyaging canoes; their minute skeletal remains have not been reported from the early settlement sites, but gecko and skink mandibles have been found in prehistoric avifaunal deposits at Barbers Point, Oahu, in association with introduced land snails (Kirch and Christensen 1980; see below). Even though direct botanical evidence is lacking, there is no doubt that the Polynesian colonizers were agriculturalists who brought with them a full complement of oceanic crop plants. The Bellows and Halawa sites were permanent settlements, with considerable indirect evidence of an agricultural subsistence base. Furthermore, excavations at Hanalei

Valley on Kauai Island have revealed typical pondfield soil horizons, indicative of taro irrigation, with an associated carbon-14 age determination of A.D. 610 \pm 95 (Schilt 1980).

In addition to the introduced vertebrates and cultigens, there is evidence that a host of invertebrates and weeds accompanied the colonizing Polynesians. Anderson (1952:15) maintained that "the history of weeds is the history of man," a history that for the Pacific islands remains largely unknown. St. John (1978) has shown that on the basis of the collections and observations of David Nelson (botanist on Cook's third expedition in 1779), several weeds were established in Hawaii prior to European contact as the result of accidental dispersal by Polynesians. These weeds include *Ludwigia octovalvis*, *Oxalis corniculata*, *Urena lobata*, *Thelypteris interrupta*, *Digitaria setigera*, *Waltheria indica*, and *Merremia aegyptia* (St. John 1978:316). As St. John notes, *Thelypteris* and *Ludwigia* frequent wet habitats, particularly irrigated taro pondfields. (In 1974, I observed *Ludwigia* to be one of the dominant and persistent weeds in the native taro fields of Futuna Island.) "The spores or seeds of both plants could have been close to growing taro in Tahiti [or the Marquesas], and could have been in the mud packed around the taro corms in transit to Hawaii" (St. John 1978:316). Similarly, "*Digitaria* abounds about pig pens" (1978:317) and may have accompanied the first swine to Hawaii; its native name, *kukaepua'a*, "pig feces," underscores this relationship with swine.

Allen (1981) has reported on preserved seeds of four weedy species from prehistoric contexts in a rock shelter site at the Mauna Kea Adz Quarry on Hawaii Island: *Oxalis corniculata*, *Daucus* sp., *Solanum nigrum*, and *Adenostemma lavenia*. The future application of paleoethnobotanical analyses can be expected to provide additional information on the introduction of cultigens and weeds to Hawaii.

Malacologists have long regarded several widespread Pacific snails as having been dispersed by the prehistoric oceanic peoples (Cooke 1926, Cooke and Kondo 1960, Pilsbry 1916-1918, Solem 1959). At least three species appear to have reached Hawaii prior

to European contact: *Lamellaxis gracilis*, *Lamellidea oblonga*, and *Gastrocopta pediculus*. The first of these, *Lamellaxis gracilis*, is common in several early oceanic archaeological sites (Christensen and Kirch 1981) and occurs in Hawaii in the Barbers Point paleontological sites in association with extinct avifauna (see below).

It would be surprising if arthropods were not also transported by the Polynesians. Unfortunately, there are no early entomological collections to indicate which of the adventive insects may have been present prior to European contact. However, it does appear that ectoparasites (such as *Laelaps hawaiiensis*) accompanied the Polynesian rats; the same species of ectoparasite has been reported from rats in both Hawaii and the Marquesas (Ewing 1924, Ferris 1932).

In short, the process of conversion of a natural ecosystem into an actively manipulated cultural landscape began with the colonization of Hawaii by Polynesians ca. A.D. 400. The purposeful introduction of domestic animals and crop plants, and the inadvertent dispersal of rats, geckos, skinks, snails, arthropods, and weeds marked the beginning of a gradual transformation of the lower-altitude Hawaiian biota. To understand this transformation and its full impact upon the Hawaiian environment we need to consider the sequence of human population growth and agricultural development over the 14 centuries from initial colonization to European contact.

POPULATION, AGRICULTURE, AND ENVIRONMENT

Schmitt (1971) conservatively estimated that the indigenous Polynesian population of Hawaii numbered no less than 200,000 persons at the time of initial European contact. Given that the habitable portion of the principal islands (i.e., those areas excluding steep cliffs and land over 880 m elevation) equals about 9000 km², this population had an average density on the order of 22 persons/km², although densities obviously varied from area to area and were considerably higher in the fertile valleys (e.g., 250/km²

in Halawa Valley, Molokai) and in other agriculturally productive regions. This large population developed over the centuries through internal growth (and not from large-scale immigration), from a relatively small founding propagule—perhaps less than 100 persons.

Several studies have relied on archaeological data to produce models of prehistoric Hawaiian demographic change (Cordy 1978, Hommon 1976, Kirch 1980) based on the reasonable assumption that the number of permanent habitation sites at any given time is allometrically related to the size of the population inhabiting them (cf. Ammerman, Cavalli-Sforza, and Wagener 1976). Figure 1 is a histogram of a sample of 170 dated habitation sites (primarily from Hawaii Island, with 47 sites from Oahu, Molokai, and Maui), showing the number of occupied sites per 100-year interval. Given the assumed relationship between habitation sites and population, the shape of this site-population histogram should reflect the shape of the actual population growth curve from the time of initial colonization to European contact. Two features of this curve deserve special attention: (1) In overall shape, the curve is sigmoid, with initial exponential growth (intrinsic rate, r , about 0.008), followed by a slowing of the growth rate, with a peak ($r = 0$) reached about A.D. 1650. (2) There appears to have been a significant decrease in population from A.D. 1650 to the time of initial European contact (r about -0.03). Hommon (1980) has analyzed a series of 655 dated sites from the island of Kaho'olawe, which show a parallel population growth curve, with a peak ca. A.D. 1500–1550, and subsequent decline.

These paleodemographic data are replete with implications for the dynamic relationship between the prehistoric Hawaiian population and its insular environment. The evidence that population growth had reached a peak, and was even on the decline, prior to European contact strongly suggests that the capacity of the indigenous technological productive system to support increased population had reached its limits. The data also pose a further question: Was the late prehistoric demographic decrease a response, in

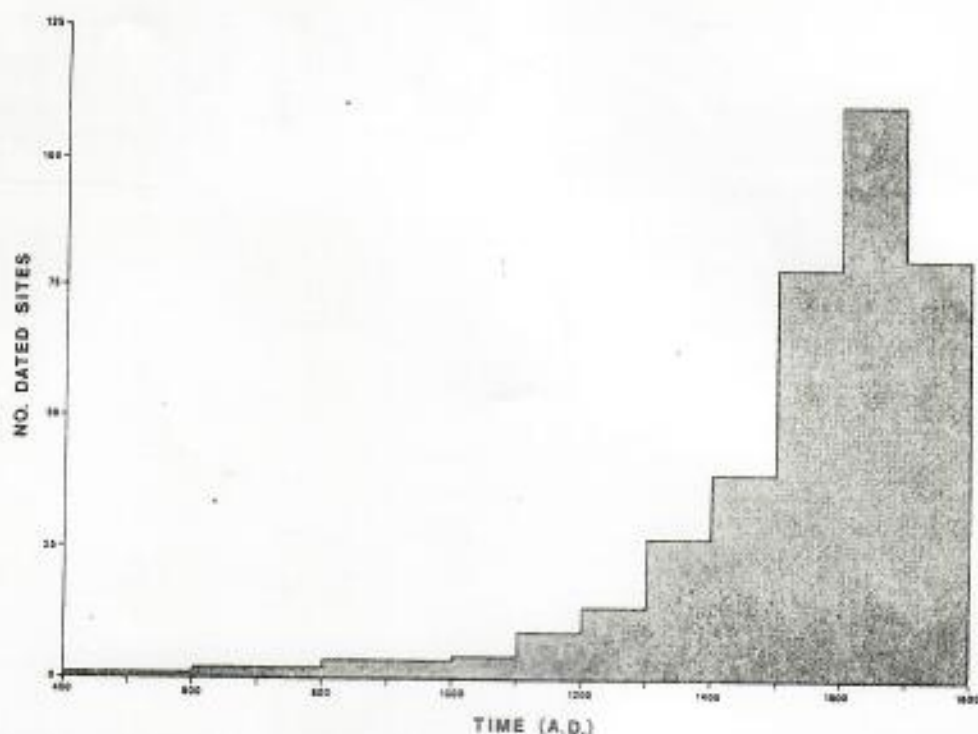


FIGURE 1. Histogram of dated prehistoric habitation sites from the islands of Hawaii, Maui, Molokai, and Oahu.

part at least, to deterioration of the environment and consequent reduction in carrying capacity? Archaeological investigation of prehistoric Hawaiian agricultural systems conducted over the past decade provide partial answers to these fundamental questions.

In the most general terms, oceanic agricultural systems can be categorized into two basic types: (1) water-control systems, which create artificial hydrologic-edaphic media suitable for the intensive cultivation of taro (*Colocasia esculenta*); and (2) extensive systems of shifting cultivation ("slash-and-burn") utilizing fire as the primary means of vegetation clearance, and involving a range of crop plants, including yams (*Dioscorea* spp.), aroids (*Colocasia* and *Alocasia*), and bananas (*Musa* hybrids) (Barrau 1965, Yen 1973). Both kinds of systems were part of the cultural concept of landscape transported by the earliest Polynesian colonizers of Hawaii. Over the ensuing one and a half millennia these systems were adapted, expanded, and intensified until they had come to dominate the lowland

landscape of the archipelago. There is scarcely an area in the lowlands (if it receives greater than 500 mm rainfall and is not steep cliff) that upon archaeological reconnaissance does not yield evidence of indigenous Polynesian agricultural use.

I have already noted the recently obtained carbon-14 date from Hanalei Valley, Kauai Island, indicative of pondfield irrigation by ca. A.D. 600. Excavations in Halawa, Molokai, and Makaha, Oahu (Kirch and Kelly 1975, Yen et al. 1972), demonstrated the conversion of inland alluvial flats and terraces to pondfield irrigation ca. A.D. 1200-1400, the period of rapid population increase according to the paleodemographic reconstructions. By the advent of Europeans, virtually all valley bottoms with permanent stream flow had been transformed into reticulate irrigation networks (Earle 1978, Handy and Handy 1972, Kirch 1977). This technological transformation of the environment obviously created substantial areas of ponded, marshy habitat. Olson and James (in press) have suggested

that this new, man-made aquatic habitat provided an opportunity for ducks (*Anas platyrhynchos*), gallinules (*Gallinula chloropus sandvicensis*), and coots (*Fulica americana alai*) to establish permanent colonies in the archipelago. "The extensive Polynesian cultivation of taro in flooded pondfields would have provided much more suitable habitat for the duck and the gallinule than ever existed previously" (Olson and James, in press). The absence of these species from the abundant Pleistocene avifaunal deposits may be taken as tentative evidence that they did not become established (or at least abundant) until humans created the appropriate habitats.

The expansion of shifting cultivation out of the ecologically favorable valleys to the more arid leeward areas resulted in even greater impacts upon the Hawaiian ecosystem. The adaptability of the sweet potato (Yen 1974) aided immeasurably in the extension of this type of indigenous cultivation to the more arid portions of the islands. Archaeological studies on the western side of Hawaii Island have produced an outline of the temporal and spatial axes of agricultural development (Kirch 1981b, Newman n.d., Rosendahl 1972a, Soehren and Newman 1968). Several large field systems began to be developed about A.D. 1300 in North Kohala, Kona, and Waimea. As population increased to A.D. 1650, these systems underwent both expansion (to the limits of suitable soil and rainfall conditions) and intensification (in cropping interval, labor input, construction of permanent field borders, and animal husbandry). Clearly, the development of these systems was accompanied by the simultaneous removal of vast tracts of native xerophytic and mesophytic plant communities with the aid of fire. From all three field systems we now have stratigraphic evidence of "burn layers," with associated deposits of endemic land snails, indicative of former park land or dry forest conditions (Christensen in Kirch and Clause 1981, Rosendahl 1972a). Analyses (in process) of pollen, opal phytoliths, and charcoal from agricultural and preagricultural soil horizons at Lalamilo and Pua'a, Kona, may aid in reconstructing more precisely the

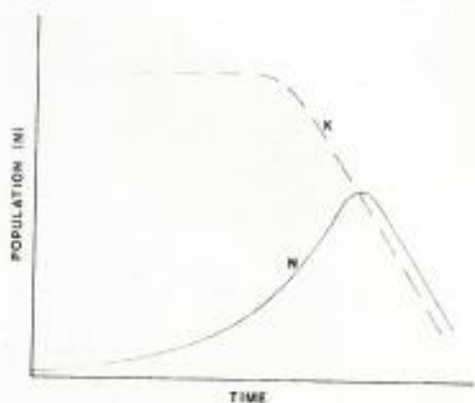


FIGURE 2. Hypothetical relationship between human population growth (N) and carrying capacity (K) in prehistoric Hawaii. Environmental degradation may have led to a lowering of carrying capacity, which in turn affected the size of the human population.

nature of the leeward vegetation prior to the great agricultural expansion that occurred between A.D. 1300 and 1700.

As a result of population increase and concomitant agricultural development, the greater part of the lowland landscape of the archipelago had been converted to a thoroughly artificial ecosystem prior to European advent. Only the higher forested regions (generally above 760 m) and alpine zones were left relatively undisturbed, although even these were subjected to less severe forms of exploitation (for stone, wild birds, wood, and other forest products). A fundamental question—which we are as yet unable to answer definitively—is whether this ecological transformation of nature into culture had a reciprocal, feedback effect on the human population by reducing the size of the population that could be supported, given the technological repertoire of Polynesian agriculturalists. The data obtained to date suggest that at least some aspects of this transformation should be regarded as true environmental degradation. The strongest evidence for a reduction in carrying capacity, though indirect, is the decline and reduction in population growth itself. Figure 2 is a diagrammatic representation of what the relationship between population (N) and carrying capacity (K) may have been over the course of the pre-

historic human tenure of the islands. For the present, this diagram must be regarded as representing no more than an hypothesis, but unquestionably one of the utmost significance to anthropologists and naturalists alike.

HUMAN IMPACT: BIOTA AND GEOMORPHOLOGY

Thus far I have reviewed the evidence that prehistoric Polynesians, with their transported landscapes, actively transformed the lowlands of the archipelago over the course of 14 centuries of population growth and agricultural expansion. I now turn to some specific examples of human impact on the native vegetation and fauna and on the physical environment itself.

Vegetation

The earliest explorers to visit Hawaii—who viewed the landscape prior to the ravages of the historically introduced cattle, goats, and sheep—were struck with the generally barren and unwooded character of the lowlands. Cook and his officers remarked several times on the “woods that so remarkably surround this island [Hawaii] at a uniform distance of four and five miles from the shore” (Ledyard in Munford 1963:120). On Kauai, Vancouver reported that “the sides of the hills extending from these [taro] plantations to the commencement of the forest, a space comprehending at least one half of the island, appeared to produce nothing but a coarse spiry grass from an argillaceous soil, which had the appearance of having undergone the action of fire” (1798:170, emphasis added). The island of Kaho’olawe was described by Ellis in 1823 as “almost destitute of every kind of shrub or verdure, excepting a species of coarse grass” (1963:6).

In a masterful analysis of most available early historic descriptions of the Hilo area of Hawaii Island, McEldowney (1979) has shown that a broad zone extending from about 8 to 440 m elevations was dominated by cultivations interspersed among a

thoroughly anthropogenic vegetation. “The cumulative effects of shifting agricultural practices (i.e., slash-and-burn or swidden), prevalent among Polynesian and Pacific peoples, probably created and maintained this open grassland mixed with pioneering species and species that tolerate light and regenerate after a fire” (1979:18–19). The vegetation of this zone had been reduced through human agency to an association of grasses, *Sadleria* and Gleicheniaceae ferns, the shrub *Rhus sandwicensis*, and feral *Tacca leontopetaloides*. Several early writers refer to intentional burning of this vegetation community, and McEldowney plausibly suggests the frequency of firing was intended to encourage the growth and abundance of the *Sadleria* and *Tacca*, which were used both as famine food and pig fodder (1979:23–24). Furthermore, in addition to the effects of repeated firing, the disruption of nutrient cycles in these heavily leached soils, as well as the disruption of soil structure by pig digging and agriculture, may have played significant roles in maintaining this vegetation community (McEldowney, personal communication, Sept. 1981).

Although some biologists, such as Selling (1948:44), have supposed that a grassland climax constituted the natural vegetation of the lowlands, we now have sufficient paleoenvironmental evidence to state confidently that the lowland grasslands were anthropogenic in origin. To date, the most extensive evidence has come from investigations of subfossil land snail assemblages in archaeological and geomorphological contexts. Zimmerman (1948:48) wrote of the possibilities of snail analysis: “Fossil land shells are good indicators of the character of the pre-existing forest cover in a given region, for it can be ascertained from study of them whether the forest was of the wet or dry type. Many of these species appear to have become fossil since man has so drastically upset the balance of native life in the lowlands” (see also Cooke in Brigham 1915:8).

In Halawa Valley, Molokai, intensive stratigraphic and paleomalacological studies were conducted on a series of erosional de-

posits that form a large "fan" at the base of the valley (Kirch 1972, Kirch and Kelly 1975:55-64, 180-183). The stratified colluvial beds contained abundant terrestrial snails, as well as charcoal indicative of burning (in the lower deposits). Radiocarbon dating indicates that the erosional cycle that produced the colluvial fan began no later than A.D. 1100-1320. The terrestrial gastropods (14 species in 10 genera) leave no doubt that the vegetation on the lower valley slopes, prior to burning and subsequent erosion, consisted of native forest, perhaps dominated by *Acacia koa*. This forest was cleared by the Polynesian settlers of the valley, with the aid of fire, during the expansion of shifting cultivation. By the time of early European contact, the valley's vegetation had been reduced to a grassland-shrub climax.

Similar evidence of land snails in erosional deposits or associated with extensive burn layers has now been obtained from Kaho'olawe (Hommon 1980) and from several localities on Hawaii Island (Henshaw 1904, Christensen in Kirch and Clause 1981, Rosendahl 1972a). At Kauhara Point, Oahu, snail deposits are situated in limestone sinks containing extinct avifauna (see below). It is probable that a majority of the extensive subfossil deposits of *Cavello* (Amastriidae) on the island of Kauai (Cooke 1931) will be shown to date to the period of Polynesian occupation and to evidence the reduction of native forest and/or park land to the grassland climax described by Vancouver (1798).

The snail assemblages that have been studied leave no doubt that the original vegetation in these leeward areas was a climax dry forest, or, in some cases, open park land. Fosberg (1972:32-33) has termed this kind of vegetation "dryland sclerophyll forest": "In its best development this is now a low closed forest, the trees with rounded crowns. More commonly it is open, the trees not touching." The trees probably included such dry forest trees as *Erythrina*, *Reynoldsia*, *Myoporum*, *Diospyros*, *Nothocestrum*, *Rauvolfia*, *Canthium*, and *Santalum*, with the ground cover consisting of such native shrubs as *Abutilon*, *Gossypium*, *Euphorbia*, *Nototrichum*, *Chenopodium*, *Dodonaea*,

Wikstroemia, and *Sida* (Fosberg 1972). By the time of early European contact, only remnant pockets of this lowland vegetation remained; as we shall see, the widespread destruction of this habitat had tremendous consequences for the endemic avifauna.

The primary tool that effected these great modifications of the prehuman vegetation was undoubtedly fire. Burning for agricultural purposes was one application of fire, but there were certainly others. In 1792, Menzies "observed a large fire kindled a few miles to the eastward of Waimea [Kauai], and spreading over the face of that plain country, which was mostly covered with dry, rank grass [*Heteropogon*] that burnt with great rapidity" (1920:32). The inhabitants explained that the conflagration had been kindled in order that "the next crop of grass grew up clear and free of stumps, and was therefore better adapted for thatching their houses" (1920:32-33). In short, the Hawaiian case is yet another instance "where the addition by man of a single, potent factor—fire—could transform and has transformed cleared forest land into grassland" (Bartlett 1956:698, cf. Stewart 1956).

Fauna

The endemic terrestrial fauna of the archipelago consists almost solely of three groups: arthropods, nonmarine mollusks, and birds. I have already observed that several hundred molluskan species became extinct, probably through the destruction of the lowland forest habitats, and are known to science only as fossil species. Of the insects that must have inhabited these lowland forests, we know almost nothing, and can only surmise that there must formerly have been a very diverse fauna. Only within the past several years has evidence been obtained to suggest strongly that in addition to the invertebrates the Polynesian transformation of the lowland landscape resulted in the extinction of no less than half of the known avifauna of the archipelago (Olson and James, in press). The former existence of a range of birds not known in historic times was hinted at by the

discovery of a large fossil goose (*Geochen rhuax*) in volcanic ash in Ka'u, Hawaii (Wetmore 1943). In the early 1970s, two further extinct species, another large goose (*Thambetothen chauliodous*) and a flightless ibis (*Apteribis glenos*), were recovered from Pleistocene deposits, largely on Molokai (Olson and Wetmore 1976, Stearns 1973). Since then, investigations by Olson and his associates have revealed the former existence of no less than 38 extinct or locally extirpated species, including representatives of the following families: Procellariidae, Threskiornithidae, Anatidae, Accipitridae, Rallidae, Strigidae, Corvidae, Meliphagidae, and Drepanididae. Many of these species have been recovered from archaeological sites, or from deposits in which there is unquestioned evidence of human associations. Hence, the massive extinction of these species occurred within the period of Polynesian occupation of Hawaii, most likely through a combination of direct predation and habitat destruction (Olson and James, in press). It is no hyperbole to state that the discovery of this extinct avifauna is one of the most significant advances in Hawaiian natural history, comparable to the discovery—more than a century ago—that the Polynesians in New Zealand caused the extinction of another great insular avifauna, the moa (Cumberland 1962). We can only wonder that it has taken us so long to make the discovery!

It is known that Hawaiians exploited birds both for meat and for their plumage, and predation was doubtless one of the factors leading to the massive avifaunal extinctions. Faunal analyses from the early leeward habitation sites of O1 at Kuliouou, Oahu, and H8 at Waiiahukini, Hawaii (summarized in Table 1), document significant reductions in the quantity of birds taken over time (Emory and Sinoto 1961, Emory, Bonk, and Sinoto 1969), a reflection of human impact on the local bird populations. Olson and James (personal communication, Aug. 1981) have examined some of the O1 material (not previously identified to specific level) and found that it contains several extinct species.

According to Olson and James, "ulti-

TABLE 1
FREQUENCY OF BIRD BONES FROM SITES O1 AND H8

DEPTH OF DEPOSIT (INCH)	PERCENT BIRD BONE	
	SITE O1	SITE H8
0-6	0.05	0.03
6-12	0.33	0.09
12-18	0.49	0.39
18-24	8.40	0.63
24-25-30	10.24	4.10

NOTE: Frequencies given are percent of total molles by weight. Data from Emory and Sinoto (1961) and Emory et al. (1969).

mately, the cause of most of the prehistoric extinctions of Hawaiian birds was probably not predation but habitat destruction, particularly of the drier lowland forest" (in press). One of the richest and most intensively studied extinct avifaunal sites, Barbers Point, provides evidence of such habitat destruction. The Ewa Plain consists of exposed Pleistocene reef, and the resulting karst terrain, with abundant sink-holes, has provided an ideal environment for the preservation of both land snails and bird bones. Fortunately, at Barbers Point we have had the opportunity to conduct detailed stratigraphic and paleoenvironmental studies of both the mollusks and the extinct birds, and of associated archaeological features (Kirch and Christensen 1980, Olson and James 1980, Sinoto 1978). Here, I will briefly summarize the evidence from Site B6-78, a sink with an opening 1.5 × 2.5 m, one of the type localities studied over several seasons. The extinct avifauna is concentrated in layer II, 10-30 cm below the sink floor. Land snails in layer II indicate that this was a phase of marked environmental change, with drastic reductions (from the earlier layer III) in certain endemic taxa (*Orobophana*, *Lep-tachatina*, *Cookeconcha*, and *Endodonta*), and relative increases in certain other taxa preadapted to disturbed conditions (*Lamellidea*, *Tornatellides*, *Lyropupa*, and *Succinea*). Humans are indicated as the cause of these habitat changes by the presence in layer II of four of the anthropophilic animals introduced by the Polynesians to Hawaii: *Rattus exulans*, geckos, skinks, and the adventive snail *Lamel-laxis gracilis* (Kirch and Christensen 1980).

Although there has been no direct radiometric dating of these sediments or their fossil contents, when such dates are obtained, they are almost certain to confirm the association of humans with this phase of rapid ecological change and extinction of a lowland biota.

Geomorphological Changes

The impact of Polynesians in Hawaii was not confined to the biota, and evidence is beginning to accumulate which would suggest that the actions of humans had major consequences for erosion, siltation, and shoreline change. In fact, it is probable that we have yet to realize the scale of such human-induced geomorphological change. Certainly, the cases of other Pacific islands would so indicate (e.g., Kirch 1981a, Kirch and Yen, forthcoming, Spriggs 1981).

The lowland colluvial beds in Halawa Valley, Molokai, referred to above, evidence significant human-induced erosion by A.D. 1200 (Kirch and Kelly 1975). In Makaha Valley, Oahu, an inland irrigation system was partially buried under several hundred cubic meters of alluvium and slump deposit, the result of slope instability believed to have been the result of shifting cultivation up-slope (Yen et al. 1972). In South Kohala on Hawaii Island, small alluvial basins contain sediment interbedded with ash, indicating that humans played a significant role in the denudation and erosion of the surrounding terrain (Rosendahl 1972b). Evidence of far more massive erosion has recently come from Kaho'olawe, where burn layers associated with extinct land snails and dated to the sixteenth century A.D. mark the beginning of a phase of erosion (Hammatt 1978, Hommon 1980). As Hommon writes: "During the 1500-1550 period, when the estimated inland population reached its maximum, it is evident that massive erosion was beginning . . . extensive [prehistoric] use of the land led directly and indirectly to major erosion" (1980:7-63).

If, as these cases suggest, erosion was occurring on a fairly widespread scale by the fourteenth through sixteenth centuries, it is probable that deposition of sediments in

valley bottoms and along coastlines was correspondingly accelerated. P. Beggerly and J. Kraft (personal communication, 1981) have conducted borings in Kahana Valley, Oahu, which reveal a thin (40-cm) alluvial deposit overlying marine sands some 590 m inland of the present shoreline, suggesting fairly rapid aggradation of the valley floor. Beggerly plans to extend the investigations in order to test the likely possibility that human-induced geomorphological changes are linked to this apparently rapid aggradation of the Kahana shoreline. The stratigraphic corings of Kraft (1980) in Kawainui Marsh, Oahu, have shown this physiographic feature to have been a marine embayment at the time of initial human settlement of Oahu. [An early habitation site, carbon-14 dated to ca. A.D. 500, is situated on the slopes adjacent to the marsh; Kelly and Clark (1980).] Kraft has hypothesized that construction of fish pond walls across the embayment mouth may have initiated, or at least hastened, the build up of the sand spit which turned the embayment into a marsh. In my view, these preliminary results are only indications of what will prove, upon detailed investigation, to have been major human-induced changes in shoreline configurations.

SUMMARY

Ramon Margalef's comment on humanity and evolution appropriately describes the Hawaiian microcosm: "The evolutionary play was going on in the evolutionary theatre when as part of the plot men entered, romping and stamping on the stage and bringing it almost to the point of collapse" (1968:96). Collapse may be too harsh a term, but there can no longer be any doubt that the island chain as first viewed through European eyes was a land already transformed by centuries of intensive exploitation, modification, manipulation, and, frequently, degradation. The vast tracts of grassland that covered the lowlands cannot be attributed, as Pickering (1840-1841, quoted in McEldowney 1979:22) was wont, to "a defect of creation." They were products

of human action. Recent studies have suggested that the endemic biota was drastically affected by this habitat destruction, with perhaps one-third to one-half of the known nonmarine molluscan and bird faunas becoming extinct within the span of prehistoric human tenure. We are only beginning to understand what effects the Polynesians may have had on landforms and shorelines.

Odum (1969) and Margalef (1968) have argued that the fundamental impact of humans on ecosystems is to cause them to "regress," a reversal of the natural direction of ecological succession. Certainly, the Hawaiian case would bear this out. It is further obvious that an understanding of this sequence of human-induced transformation of the Hawaiian ecosystem should be a major goal of both natural scientists and prehistorians. For the naturalist, it cannot be assumed that the historically known biota represents a "natural" one (consider the implications for biogeographic and evolutionary models of an extinct avifauna twice as diverse as previously assumed). For the prehistorian, the evolutionary development of Hawaiian culture must be viewed in the context of a changing environment that continued to place selection pressures upon the human population and its adaptive strategies—pressures in large part due to the actions of humans themselves.

To some who read the above arguments that the prehistoric Polynesian inhabitants of Hawaii seriously transformed and, in many instances, degraded their island ecosystem, the nagging question may occur: What of the proposition, often cited, that the Hawaiians and other oceanic peoples had a conservationist approach to nature? It is certainly true that various resource management measures (such as the imposition of a *kapu*, or ban, on certain fish; Malo 1951:209) were enacted at times to reduce the impact of exploitation on certain resources. But the existence of a conservation ethic and its effectiveness are two different things: the former does not automatically imply the latter. To paraphrase Anderson (1979:64) on a case of Maori overexploitation of shellfish in New Zealand, it would

be invidious to suggest that the prehistoric Hawaiians were ignorant or unsympathetic to the needs or importance of conservation. Yet, given their burgeoning population and technological limits, conservation "may well have been a luxury they could simply not afford."

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EPILOGUE

*The old net is laid aside;
A new net goes afishing.*

MAORI PROVERB

THE old world created by our Polynesian ancestors has passed away, and a new world is in the process of being fashioned. The stone temples have been destroyed and the temple drums and shell trumpets have long been silent. Tane, Tu, Rongo, Tangaroa and the other members of the divine family of the Sky-father and the Earth-mother have left us. The great voyaging canoes have crumbled to dust, and the sea captains and the expert craftsmen have passed away to the Spirit-land. The regalia and symbols of spiritual and temporal power have been scattered among the museums of other peoples. The glory of the Stone Age has departed out of Polynesia.

The old net is full of holes, its meshes have rotted, and it has been laid aside.

WHAT NEW NET GOES AFISHING?

1938
Te Rangī Hīroa

IN HAWAII

Racial Tension in Vi

Huge Growth of Tourism

By Russ Lynch
Star-Bulletin Writer



Kenneth Brown

"There is something vital missing."

Curses such as "damn tourist, damn moke, damn Japanese" flow more easily off the lips of people in the visitor industry than they used to because of the sheer size of the visitor trade, part-Hawaiian businessman Kenneth Brown said yesterday.

Brown, a former state senator, agreed with several other speakers at the Governor's Tourism Congress, that racial tensions and social resentment run high in Hawaii's visitor industry.

When tourism was a small industry, Brown said, "person-to-person" relationships were more common. That helped mitigate the resentment that economically deprived workers in tourism often felt against the affluent visitors they served, Brown said at the closing session of the two-day conference at the Sheraton-Waikiki Hotel.

"Now, with the huge numbers (close to 4.5 million tourists this year) each sees the other as a type or category" rather than an individual, Brown said.

Brown noted a great resurgence of interest in Hawaiian culture and said tourism has been one of the forces in preserving it.

culture is overlooked" but "there is something vital missing," he said.

The former legislator said there is no commonly accepted notion of what "Hawaiian" is, no "central concept of Hawaiian-ness and Hawaiian values."

Stuart Gerry Brown, a University of Hawaii professor emeritus and lecturer in American studies, also spoke at yesterday's session. (The Browns are not related.)

The UH professor said the racial tensions that exist in Hawaii are not unique and, in fact, are "nearly universal" in the tourist industry.

Tensions are especially common where American, European or affluent Japanese are visiting areas where the people are poor, dark-skinned and deprived.

The educator said the position of so many Filipinos, Hawaiians and other ethnic groups at the bottom of the island economic ladder adds to the problem.

"Either there are no jobs for those at the bottom of the ladder or they are so insecure that they are poorly motivated," he said.

MANY WORKERS resent "haole or Japanese tourists, but there is also resentment of those slightly higher up the ladder," he said.

"YOU CAN'T SAY Hawaiian

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Visitor Industry Aired

Is Blamed for Problem

"Those most disadvantaged frequently divide on ethnic lines, contributing to and themselves experiencing racial tension," the educator said.

Professor Brown quoted several comments with racial overtones gathered from workers in the tourist industry for a study he and conference co-chairman Peter Fithian said was well documented.

"Generally, there is a racial dimension in most of the strains that exist between tourism workers and the people they serve," Professor Brown said.

Many immigrants and locals believe they are forced into menial jobs, "clean the rooms, change the beds, janitor and maintenance" work, Brown said. One maid from the Philippines said "both haoles and Japanese treat her as a stupid immigrant."

HAWAIIANS FROM the Waianae Coast seeking jobs in the city or in Waikiki believe they encounter discrimination when the potential employees find out where they live.

But those who do find jobs often look down on those who haven't made it, the educator said.

One solution is to educate the visitors so that they understand that the fact that they pay the bills doesn't entitle them to "pa-

tronize" the tourism workers, he said.

Gard Kealoha, a trustee of the Office of Hawaiian Affairs, received a standing ovation for his address expressing the sadness of the Hawaiian people at the changes the modernization of Hawaii and the growth of tourism has brought to their lifestyle.

Kealoha criticized the lack of opportunities for people of Hawaiian ancestry.

"Why are there so few Hawaiians in management positions? What kind of incentives and programs are being provided within the visitor industry for employees desiring upward mobility?"

"HOW DOES THE native Hawaiian community participate in the decision-making processes that lead toward the development and building of the industry?"

"Are Hawaiians, in general, so stereotyped that one is more likely to find them playing music during the cocktail hours and floor shows or tending the gardens and fixing the beds?" he said.

"Our visitor industry may well be able to exist in a vacuum of ledgers, profits and computer files without the native Hawaiians, but I think not for long."



Gard Kealoha
Hawaiians need upward mobility

Table 1.—Malo's Fish Divisions

CHARACTERISTICS	NUMBER IN DIVISION	REMARKS
small fry along the shore	14	food
with hard protuberances	23	excellent eating
with flattened bodies	22	good eating
bodies greatly flattened	6	
bodies with silvery color	15	good eating
with long bodies	9	used as food
bodies with red color	15	wholesome food

Malo (1951, p. 47) classes "fish with long fins like wings" together: the flying fish (*loloa'u malolo*), rays (*hikimannu*), *puhiki'i*, *lupe*, *kahalua*, and the *hai-lepo*. All are used as food but are not of the finest flavor. He mentions that the shark (*mano*) provided the skin for covering drum heads, but Malo does not mention its food value. Of the *mahimahi* (dolphin) and the *kahala* he remarks that they "are quite unlike other fishes" in shape but are excellent eating.

Malo (1951, p. 46) classes the octopus group with fishes and says that the octopus (*he'e*) and squid (*muhe'e*) are highly esteemed for food. He adds that the *he'emakoko* is eaten but that the flesh is bitter.

The turtle he classes as a sea animal, distinguishing between the *honu*, which is excellent food, and the '*ea*, which is poisonous. Sea mammals are classed as "fish which breathe on the surface of the ocean." These include the porpoise (*nai'a*, *nu'ao*, *pahu*), the sperm whale (*palaoa*), and other whales (*kohola*). When cast ashore, they were "held to be the property of the king." The flesh was eaten. (See Malo, 1951, p. 47.)

CRUSTACEANS AND SHELLFISH

All crustaceans are esteemed as food except the poisonous *kumini* crab. Malo (1951, p. 45) alludes to them as fishes having feet with prongs, and he lists 13 by name. Chief among them are crayfish (*ula*), crabs (*papa'i*), and fresh-water shrimp ('*opae*). Echinoderms are eaten, and they are classed by Malo as fish beset with spines. He enumerates them as '*ina*, *hawa'e*, *wana*, *ha'uke'uke*, and *haku'e*.

Shellfish which are large enough to repay the work of extracting the contents are eaten. Malo lists 19 names, among them *pipipi* (*Nerita* sp.), *puho'okani* (conch), '*olepe* (a bivalve), *leho* (cowrie), and '*opihi* (limpets).

PLANTS

INDIGENOUS PLANTS

Indigenous plants which supplied any form of food were utilized by the Menchune settlers. Anything edible in the form of pith, root tuber, corm, fruit, or

Any of the native birds, large or small, land or sea, were considered good food, though some species were caught primarily for their feathers. The smaller birds with yellow, red, black, or green feathers, which were used for capes and cloaks, were caught in the moulting season by professional fowlers, who used bird lime made from breadfruit gum (*kepau*) or kukui tree gum (*pilali*). The Hawaiians did not believe in killing the birds that grew the golden feathers, hence the few yellow feathers of the 'o'o [*Moho (Acruocerus) nobilis*] and the *mamo (Drepanis pacifica)* were plucked without damage to the birds, which were liberated to grow more feathers for another plucking. However, some 'o'o were killed for their black body feathers. The 'i'iwi (*Vestiaria coccinea*) and the 'apapane (*Himatione sanguinea*), too extensively covered with red feathers to survive plucking, were killed, skinned, and eaten.

Birds with larger feathers were caught to provide feathers for fly switches and large ceremonial standards, both termed *kahilis*. Of these birds, the largest was the Hawaiian goose, or *nene (Branta (Nesochen) sandvicensis)*, which was also excellent for eating. Malo (1951, pp. 37-40) lists the names of 32 species of birds which were eaten. Among them are the mudhen, or 'alae (*Fulica americana sandwicensis*); the wild duck (*koloa*); the night heron, or 'auku'u (*Nycticorax nycticorax hoactli*); a stilt, or *kukuluae'o (Himantopus himantopus knudseni)*; a wader (*kioea*), the bristle-thighed curlew (*Numenius tahitiensis*); and the plover, or *kolea (Pluvialis dominica fulva)*.

A number of sea birds were caught with nets and lines, others were taken by hand on rookeries. Expeditions were made to the rocky islets of Kaula and Nihoa to procure sea birds, which were eaten despite a fishy flavor.

Malo states that nets with a wide mouth were set to catch birds on their way to their nests and also that snares were set. He mentions the use of a bird pole (*hia*) but gives no details; and he says that the rather primitive method of pelting with stones was used to catch mudhens, wild ducks, herons, stilts, and waders. Plovers, he writes, were attracted by whistling, but he does not describe the rest of the process.

FISHES

Fishes (*i'a*), like birds, were all eaten, for there were no poisonous ones as there are in some parts of Polynesia. An exception, perhaps, is the porcupine fish ('*o'opuhue*), the gall of which is poisonous; but if the gall bladder is carefully removed without spilling the gall, the flesh may be eaten without danger and has a delicious flavor. A crab (*kumimi*) and a species of sea turtle ('*ea*) are also said to be poisonous.

Malo (1951, pp. 45-47) lists the fishes according to various characteristics. As he sums up their values as food, it is interesting to note his divisions, which are given in the following list (table 1). For the actual names of the individual fish, the reader is referred to Malo.

Baby sea turtles imported to boost local population

By PEGGY HODGE
 • WINDWARD

Something new has been added to the turquoise waters surrounding Oahu: Baby year-old green sea turtles released last month to help boost the population and breeding.

George H. Balazs, fishery biologist, and William Gilmartin, wildlife biologist with the National Marine Fisheries Service, set the 165 squirming yearlings into Waimanalo and Hanauma bays along the North Shore and in Makaha waters.

The baby turtles weigh an average of 8 pounds and measure 8-10 inches in shell diameter. They were hatched in their native breeding grounds at French Frigate Shoals, 500 miles from here, a unit of the Hawaiian Islands National Wildlife Refuge.

Balazs spent the last 10 years immersed in the study of these gentle creatures, spending months at the lonely islands of Hawaii's Leeward Islands.

Already one has probably been sighted — at Lanikai recently, by Mr. and Mrs. William Nolan — near shore and resting in shallow waters. It's unusual to see green sea turtles there today, especially young ones, and this one was settling in nicely for several days.

About 20 years ago green sea turtles were common in Lanikai bay and we'd see folks bring in boatloads at a time, turn them over on their backs and let them die.

Today they are protected by strict laws.

In the 1930s green sea turtles would be silhouetted in the breaking waves as surfers rode along with them, a thrilling sight.

During the last few years, only one adult was seen close to shore in Lanikai, lifting its head curiously as swimmers watched.

Turtles have to breathe the air and surface often when active, but can stay under for hours when resting or sleeping. They tuck their flippers back over their shells in neat fashion.

Those released baby turtles were brought as day old hatchlings to Sea Life Park, where small pieces of white tissue were surgically grafted on their dark black shells, a project in identification. After a year's tending, they were released at sea.

Balazs and Gilmartin tagged the turtles with metal markers on their front flippers. If anyone sees one, Balazs would like to be notified at his office, National Marine Fisheries Service (under U.S. Dept. of Commerce), phone 946-2181.

Look, folks, and gently handle, but no touching — or taking! Today the sale of any product from any species of sea turtle is prohibited in the U.S., including farm-raised products. Civil violation is six months in jail and a \$10,000 fine; criminal penalty, a year imprisonment and \$20,000 fine.

Turtle info is fascinating. These



A green sea turtle is tagged while nesting at French Frigate Shoals.

little turtles will take from 10 to 60 years to grow to adulthood. They mature when their shells are about a yard long and body weight is 200 pounds.

Balazs hopes these released young turtles will eventually become part of the breeding colony as mature adults. In Florida, where a "headstart" project such as Hawaii's was conducted, the results were good, he said.

Sadly enough, though, in this century no major population of any species of sea turtle has increased, either in the wild or as a result of conservation.

The green sea turtle is actually a mottled light to dark brown streaked with olive and is called green because of the color of its fat.

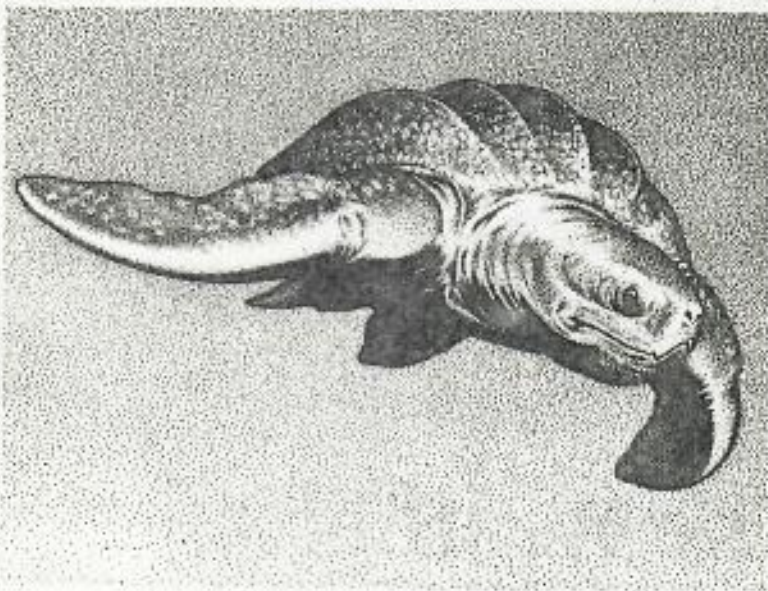
Because the green sea turtle has the best meat and its oil is used in cosmetics, it was almost fished out of existence. The young hatchlings may be wiped out by ants, crabs, lizards, birds and dogs on the beach. And fish and birds may devour them later at sea.

Unlike other turtles, sea turtles cannot retract their heads into their shells, making them even more vulnerable.

Green sea turtles are great migrants and famous navigators. Some of their nesting journeys, made every 2-4 years, are more than 1,000 miles.

The stalwart males are often indiscriminate in their efforts to mate, scientists relate. During breeding season they will attempt to mount crude wooden decoys, other males, skin divers and even small rowboats.

When a lady green wants to say "no," she will bite pursuing males, assume a vertical "refusal" position or leave the water. Wahines note — there is also a "female reserve," an underwater refuge where females can go to escape the advances of sexually aroused males they do not desire. No one knows how this female reserve is established or why, but the stalwart males honor it.



Artist's rendering of "leatherback" turtle

**Shells on beach
no surprise, but
this one's rare**

MAUI NEWS

September 14, 1982

By TOM STEVENS

Staff Writer

MAALAEA — Like a lot of coastal residents, KMVI radio manager Russ Doran enjoys starting his day with a brisk early morning stroll down the beach.

He usually sees the same things: sand, driftwood, occasional clumps of debris. So he wasn't surprised one recent morning to spot a large clump of something on the beach up ahead.

He was surprised, however, to see the clump move.

"I was walking down the beach one morning just after daylight and I came upon this big hulk of a thing," Doran recalled. "At first it looked like some debris had washed up on the beach, but then I saw it moving, and I thought it might be a beached whale."

When he got closer, Doran discovered an enormous live sea turtle flipping itself slowly along the sand.

"The shell was probably four feet long and three feet wide," he said. "And my guess at the weight would be between 500 and 600 pounds. It was a huge son-of-a-gun."

Or daughter-of-a-gun, as things turned out. After watching the creature lumber into the ocean and disappear, Doran returned to his Maalaea apartment and called the National Marine Fisheries Service on Oahu to describe the sighting to turtle researcher George Balazs.

Within hours, Balazs had flown to Maui and was inspecting the site with Doran. The flipper marks in the sand and Doran's description of a "ridge-backed, leathery-looking" turtle convinced the researcher that what Doran had seen was a female "leatherback" turtle and that what she was doing was looking for a likely place to lay her eggs.

"It's the very first record we have of a leatherback nesting in the Hawaiian Islands," said Balazs, who added that such turtles usually spend most of their lives five to 15 miles from shore, where they feed happily on jellyfish and can reach a weight of 1,500 pounds.

"Fishermen who see them out on the ocean say they look like a Volkswagen bug in the water," Balazs said. He added that the leatherbacks have several distinctive ridges running lengthwise along their shells.

Balazs and Doran carefully excavated the dry sand area where the turtle tracks led but were unable to find evidence that the turtle had "nested" at the site.

"There was no way she could have laid any eggs around there," said Doran, but Balazs said the site could be one of several visited by the prospective mother leatherback.

"Turtles are fussy creatures," he said. "If she didn't lay her eggs there, she may go back to another spot and try again in a couple of weeks." Balazs asked Maui residents spotting a turtle like that described by Doran to contact him at the National Marine Fisheries Service office on Oahu, 946-2181.

There are only about 50,000 leatherbacks in the world, Balazs said, and "for one to come ashore on Maui is an interesting and potentially important event."

Added Doran: "It was an awesome looking thing."

4 Are Fined for Fishing with Chlorine

WAILUKU, Maui—Four men were fined \$150 each and given suspended jail sentences yesterday for fishing with chlorine.

Tetsuji Amine, 57, Wayne Amine, 23, and James K. Low, 34, all of Lahaina, and Ken Nagahiro, 32, of Ewa, Oahu, were found guilty in Wailuku District Court of using the chemical to kill nearly 600 pounds of fish off Lanai May 14.

Judge Richard Komo imposed 30-day jail sentences and \$500 fines for each but suspended the jail terms for one year. He also suspended \$350 of the fines.

The men denied using chlorine that game wardens found in their boat. They said the chemical was used to treat coral taken from the sea.

However, according to a report by a state fish and game warden, Peter Conally of Lanai, the four were observed diving with plastic bags containing the chlorine.

Deputy County prosecutor Joseph Cardoza described the violation as a "serious matter" and recommended that the four be given maximum sentences of six months in jail and fined \$500 each.

According to Edward Schmidling of the State Fish and Wildlife Division, use of chlorine in the sea "is perhaps the worst type of fishing violation we have because of its long lasting effect on the ecology."

He said the chemical is highly detrimental to sea life and could cause total depopulation of reefs.

"It burns up the capillaries on the gill rakers so the fish can't pick up oxygen from the water," Schmidling said.

He said use of chlorine by "unscrupulous fishermen" is believed to be widespread in Hawaiian waters.

But he said very few convictions are obtained because the Fish and Game Division does not have the manpower or equipment to supervise all fishing activities.

STAR-BULLETIN

OCTOBER 14, 78



don chapman

HEADACHES OF A SENATOR-TURNED-RE-

STAURATEUR: State Sen. Andy Anderson

should find out next week whether the National Marine Fisheries Service will issue a notice of violation to his new John Dominis restaurant. The Federal agency investigated Anderson's having had three green sea turtles in the restaurant's saltwater stream and pond. The turtles, of the



Anderson

species *Chelonia mydas*, are protected under the federal Endangered Species Act, which makes it illegal to take, possess or eat them. The three juvenile turtles were confiscated and released at sea by local NMFS agents just before the posh restaurant opened. Said Anderson yesterday: "A couple of fishing buddies of mine caught the turtles and threw them in the stream here. I knew you couldn't eat them, but I didn't know it

was illegal to possess them. . . We're applying for a federal permit to have them here under the Endangered Species Act." Dr. Edward Shallenberger, v-p of Sea World Park, which contracted to design the saltwater stream at John Dominis, said Anderson initially approached him about supplying turtles to enliven the stream. "I spent about 30 minutes with Mr. Anderson explaining the pertinent state and federal legislation," said Shallenberger. "I was helping him collect fish for the stream and then I heard that he had turtles out there anyway. Once we got into the turtle problem, that's when I stopped dealing with Mr. Anderson." An investigator with the NMFS regional office at Terminal Island, Calif., said yesterday: "The bottom line is this: The investigation has been completed and the results are not in because it takes a lot of time, not because it's Andy Anderson who is involved. I hope that some decision is made sometime next week. This is on my list of things to agitate about." Possible penalties range from a letter of warning to a substantial monetary fine.

Hawaii Warned on Turtle-Fishing

Hawaii residents have been reminded by the National Marine Fisheries Service that it is illegal to take sea turtles. Violations are subject to a \$1,000 fine.

The NMFS said in a new release that it was issuing a reminder because it had received reports that residents are continuing to take green sea turtles.

A ban on taking all sea turtles has been in effect since July 1978 when the green sea turtle was placed on the list of threatened species under provisions of the Endangered Species Act.

The only exceptions are in the Trust Territory of the Pacific where limited taking of turtles is permitted for subsistence and, under special permit, for scientific, zoological and educational purposes.