I aku o Aiwohikupua, "Aole no'u na wela, malia paha no Poliahu no na wela, ua huhu paha ia kaua…"

Aiwohikupua said, "This heat is not from me, it is perhaps a heat from ***Poliahu***, who is perhaps upset with us…"

…I ke kolu o ka po lealea o Hauailiki, i na'lii e akoakoa ana, a me na mea e ae, oia ka po i hui ai o Lilinoe, me Poliahu, o Waiau, a me Kahoupokane, no ka mea, ua imi mai lakou ia Poliahu, me ka manao ke pono nei ko Aiwohikupua ma noho ana me Poliahu.

On the third night of the contests of Hauailiki, the chiefs gathered together, as well as the others. And it was on that night that ***Lilinoe***, ***Waiau***, and ***Kahoupokane*** joined with ***Poliahu***. They had been searching for her, thinking that all was good between ***Poliahu*** and Aiwohikupua.

Ia po, ia Aiwohikupua me Makaweli, e kilu ana, a i ka waenakonu o ko laua manawa lealea, komo ana na wahine noho mauna iloko o ka aha lealea.

That night, while Aiwohikupua and Makaweli were playing *kilu*, the women who dwell upon the mountain entered the assembly.

Ia Poliahu ma eha e ku ana me na kapa hau o lakou, he mea e ka hulali, ia manawa, nei aku la ka aha lealea no keia poe wahine, no ke ano e o ko lakou kapa. Ia manawa, popoi mai la ke anu i ka aha lealea a puni ka papai kilu, a kau mai la maluna o ka aha ka pilikia a hiki i ka wanaao, haalele o Poliahu ma ia Kauai. O keia manawa pu no hoi ka haalele ana o Hinaikamalama ia Kauai…

With ***Poliahu***, the four of them stood in their glistening snow mantles. The crowd murmured among themselves about these women and the nature of their garments. Then, the assembly in the *kilu* shelter was buffeted waves of severe cold, a trouble which persisted to the early morning light. ***Poliahu*** and her companions then left Kauai. Hinaikamalama also left Kauai at that time… [Maly, translator]

As described by Beckwith, 'Aiwohikūpua was left without the company of either of the women, Poli'ahu and Hina-i-ka-mālama.

Heiau of the Mountain Lands Described in "Na Kaao a Kekahi Elemakule o Hawaii" (1865)

Among the early accounts penned by Hawaiian writers, in which reference to features associated with Humu'ula, Ka'ohe and the *'āina mauna* are found, is an 1865 account, originally collected in 1853. The Hawaiian newspaper "*Ke Au Okoa*" published an article titled "*Na Kaao a Kekahi Elemakule o Hawaii*" (May 8, 15, & 22, 1865), taken from the stories collected by Jules Remy, a French man who came to Hawai'i in 1851. While introducing the article, readers are told that Remy dwelt in Hawai'i for about three years, during which time he became quite proficient in the Hawaiian language. While here, Remy traveled around the islands, documenting sites and events which he witnessed, and recording histories that were related to him. His narratives, written in French, reached Hawai'i, and were translated into Hawaiian by W.D. Alexander (*Ke Au Okoa*, *Mei* 8, 1865).

"*Na Kaao a Kekahi Elemakule Hawaii*" was collected by Remy in March 1853, when he visited Ho'opūloa, South Kona. Upon landing, Remy records that he was warmly greeted by the people on the shore, and among the many people gathered, he observed an elderly gentleman. He was "stout and broad-chested, and on the account of his age, his hair was reddish gray."

Remy learned that the old man was Kanuha[7], a man of chiefly descent, born before the time that Alapa'i-nui died, in 1752 (*Ke Au Okoa*, *Mei* 8, 1865). Remy noted that Kanuha was nearly 116 years old, and in good health. Because of his advanced age, he spoke with authority on ancient customs and history of the Hawaiian people, that few, if any, other people were able to (*Ke Au Okoa*, *Mei* 8, 1865).

[7] Kanuha is found in several historical accounts recorded by Kamakau (1961) and Fornander (1973).

Among the traditions which Kanuha told Remy, was an account of the ascent of ʻUmi to the position of king on the island of Hawaiʻi. In the account, Kanuha describes the history behind the construction of the famed *heiau* (temple) Ahu-a-ʻUmi, and the construction of three other *heiau* on the *ʻāina mauna*—one on Mauna Kea, one on Mauna Loa, and one on a hill near the Kaʻohe-Waikōloa boundary. In addition to ʻAhu-a-ʻUmi (*Figure 3*), these *heiau* included Puʻu Keʻekeʻe (an area of a known *puʻu* in Kaʻohe, near Puʻu ka Pele), Mauna Halepōhaku (on Mauna Kea), and Pōhaku o Hanalei (on Mauna Loa). By description, and in some cases, by physical features on the ground, these *heiau* were situated in the lands of Humuʻula (perhaps two of the *heiau*), Kaʻohe, and Keauhou.

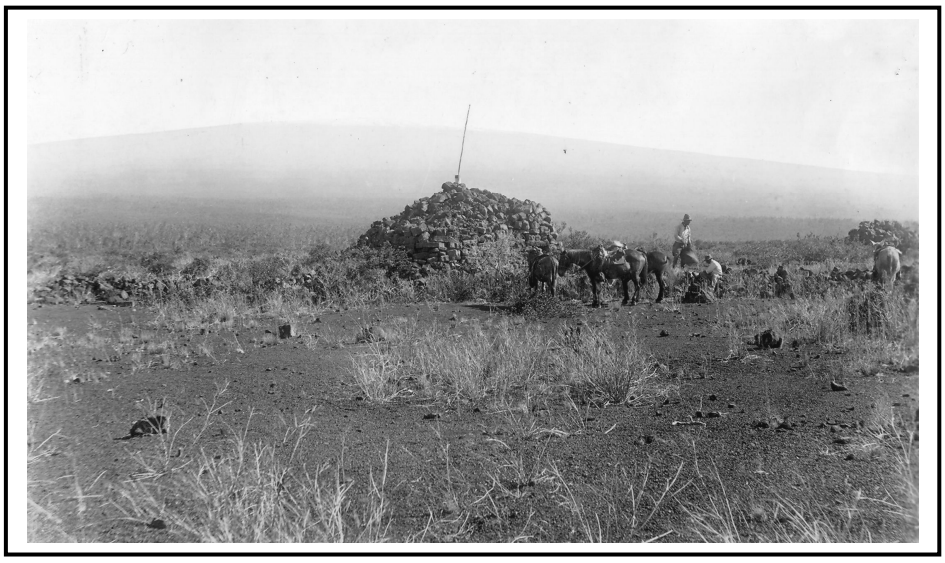

Figure 3. Portion of ʻAhu-a-ʻUmi Heiau, Mauna Kea viewed in the Background (ca. 1890; in collection of the Hawaiʻi State Archives)

It is noted here, that in his own work, Abraham Fornander (1973) acknowledged the age and authority of Kanuha, but he also found inconsistencies in the genealogical relationship of individuals mentioned by Kanuha (Fornander 1973:99-101). In particular, Remy reports that Kanuha conveyed to him that ʻUmi went to war with Keliʻiokaloa, a chief of Kona. Historical accounts by native writers and Fornander record that Keliʻiokaloa was the son of ʻUmi, and that he became king of Kona for a time following his father's death (Fornander 1973:99-101). It should be considered here that this historical inconsistency may actually be attributed to Remy's own hand, rather than the narratives of Kanuha.

Regardless of the possible genealogical differences, one of the unique qualities of the account is that it provides us with otherwise unrecorded documentation regarding construction and occurrence of *heiau* in the high mountainous region of Hawaiʻi. The following narratives, with excerpts of the original Hawaiian and translations of the accounts (translated by Maly), are taken from Remy's recording of Kanuha's story in 1853, and published in *Ke Au Okoa* on May 22, 1865:

> Umi ruled in place of Hakau, and his friends Koi and Omaokamau dwelt with him. Piimaiwaa, Umi's war leader dwelt in Hilo. With Umi, there was also his trusted companion Pakaa, and his priest Lono. At this time, Umi ruled the eastern side of Hawaii, while on the western side, his relative Keliiokaloa, ruled and dwelt at Kailua... In the time that he dwelt in Kailua, Keliiokaloa was known as an evil chief, he cut down the coconut trees and desecrated the cultivated fields. It was because of these evil deeds that Umi made preparations to go to war against him. Umi marched to battle, joined by his famous warrior, Piimaiwaa, and his companions Koi and Omaokamau. Also with him were his favorite, Pakaa, and his priest Lono.

The Hawaiian narrative then reads:

> *Mawaena o **Maunakea** a me Hualalai ka hele pualu ana o ua alii nei me kona manao e iho ae i Kailua. Aole nae i kali o Keliiokaloa, aka, ua pii nui aku oia me kona poe koa e houka aku ia Umi. Ua halawai na puulu kaua a i elua maluna o kekahi wahi papu i hoopuni ia e na mauna ekolu, a i kapaia hoi ke **Ahu a Umi**. Kaua mai o Laepuni ma (he mau kanaka makaainana pili alii ole) ia Umi, a aneane e make o Umi ia laua, lele mai o Piimaiwaa e kokua iaia, a oia ka mea nana i hooholo ae ka lanakila ma ko Umi aoao. Aohe mau mea nui i hai ia mai, aka, me he mea la, ua make ke alii o Kailua iloko oia kaua ana. Ma keia kaua ana, ua lilo holookoa ia Umi ke Aupuni, a lilo iho oia ke alii ai moku o ka mokupuni o Hawaii. I mea e ili aku ai ka hoomanao ana no ia kaua ua hanauna aku a ia hanauna aku, ua kukulu ae la ia i ke ahu aa, e o ia nei a hiki i keia wa ke **ahua a Umi**...*
>
> Between ***Mauna Kea*** and Hualalai the chief and all his party traveled, with the thought of descending to Kailua. Keliiokaloa did not wait though, but instead, traveled with his warriors to meet Umi in battle. The two armies met on a broad open plain, surrounded by the three mountains, at the place [now] called ***Ahu a Umi***. There, Laepuni and them (people who were unattached to a chief) fought with Umi. Umi was almost killed, but Piimaiwaa leapt in and helped him, it was he who turned the battle in the favor of Umi's side. There is not much else that is said, but, it is known that the chief of Kailua died in the battle. Thus, with this battle, the entire kingdom was gained by Umi. He became the chief that controlled the entire island of Hawaii. *So that the battle would be remembered from generation to generation, he (Umi) built the stone altar, that remains to this day, **the altar (ahua) of Umi**…* [*Ke Au Okoa*; *Mei* 22, 1865]

The narrative records that early in 'Umi's life, the priests Nunu and Wawa had discerned 'Umi's nature, and foretold that his god Kā'ili, made with a feather from the god Halulu, had empowered him. Indeed, 'Umi was a religious chief, and made many temples for his god. Among the temples were—

> *…Ua kukulu no hoi ia he heiau malalo o **Pohaku Hanalei**, a ua kapaia o ke **ahua o Hanalei**; a ma na aoao o **Maunakea** e hele ala i Hilo, ua kukulu no ia i ke kolu o ka heiau, ma kahi i kapa ia o **Puukekee** [8]; a ma **Mauna Halepohaku** malaila ia i kukulu ai i ka ha o na heiau, a malaila no hoi i olelo ia ai ua noho o Umi malaila me kona mau kanaka. Ua olelo ia o Umi he alii noho mauna, no kona aloha i kona poe kanaka, nolaila, ua hoi aku ia i waenakonu o ka mokupuni ilaila kona wahi i noho ai me kona poe kanaka, a na kona makaainana e noho ana ma na kapakai, e lawe mai i ka ai na lakou, mai kela pea, keia pea…*
>
> *...He (Umi) also built a heiau (temple) below **Pohaku Hanalei**, it is called the **ahua o Hanalei** (altar of Hanalei); and on the side of **Mauna Kea**, by where one travels to Hilo, he built the third of his temples, at the place called **Puukekee** [also written Puu Keekee in historical texts]; and there at **Mauna Halepohaku** he built the fourth of his temples;*

[8] Puukekee (Puʻu Kēkeʻe or Puʻu Keʻekeʻe) is a hill that sits on the boundary between Waikōloa, Kohala, and Kaʻohe, Hāmākua.

> *there, it is said, Umi dwelt with his many people. It is said that Umi was a chief who dwelt upon the mountain, it was because of his love of his people, that he (Umi) returned and dwelt in the middle of the island [Ahu-a-Umi], that is where he dwelt with his beloved people. His commoners lived along the shores, and they brought food for them (in the uplands), from one side of the island to the other...* [*Ke Au Okoa*; *Mei* 22, 1865; Maly, translator]

Also, in the 1860s, Hawaiian historian Samuel Mānaiakalani Kamakau (1961), provided readers with several early Hawaiian historical accounts of Mauna Kea and environs (either directly or indirectly by association with place names). These accounts are particularly significant because they can be dated by genealogical associations with individuals identified in text. Two of Kamakau's narratives are set in the period of the great king ʻUmi-a-Līloa, who in c. 1525-50, unified the island of Hawaiʻi under his rule, and established the land division and land management system that remained in place until the *Māhele* of 1848.

In Kamakau's description of the rise of ʻUmi to power, we learn of his conquest of Hilo, and the route traveled from Waipiʻo, Hāmākua, crossed Mauna Kea, via the trail that ran across Humuʻula-Piʻihonua, and through Kaūmana, to the royal community on Hilo Bay:

> It was decided to make war on the chiefs of Hilo and to go without delay by way of ***Mauna Kea***. From back of Kaʻumana they were to descend to Hilo. It was shorter to go by way of the mountain to *the trail of* ***Poliʻahu*** *and Poliʻahu's spring* [***Waiau***] at the top of ***Mauna Kea***, and then down toward Hilo. It was an ancient trail used by those of Hamakua, Kohala, and Waimea to go to Hilo. They made ready to go with their fighting parties to ***Mauna Kea***, descended back of Hilo, and encamped just above the stream of Wai-anuenue… [Kamakau 1961:16-17]

Describing a later period during the reign of ʻUmi, Kamakau related an account of the death and burial of the *kahuna* Pae, who served ʻUmi. Kamakau reports that Pae was "a descendant of ***Lilinoe***, the woman of the mountains" (Kamakau 1961:215). Kamakau also reported that Lilinoe was an important ancestral figure in the genealogy's of Hawaiʻi's *aliʻi* (royalty), and that she was buried on Mauna Kea. He observes that in 1828 Kaʻahumanu traveled to Hawaiʻi to:

> …attempt the recovery of the bones of ***Lilinoe*** on ***Maunakea*** 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-laʻilaʻi; she was the ancestress of ruling chiefs, and from her line was born ʻUmi-ka-lani [father of the Mahi family on Hawaii], son of Keawe-nui-a-ʻUmi by Hoʻopili-a-Hae. It is said that Ka-ʻahu-*manu* did not find the bones of Lilinoe… [Kamakau 1961:285]

Warriors Traveled the Mountain Paths and Met in Battle on the ʻĀina Mauna

Among S.M. Kamakau's traditions are found the history of Keawe-nui-a-ʻUmi and his brother Ke-liʻi-o-Kaloa, who shared the rule over Hawaiʻi. When it was learned that Ke-liʻi-o-Kaloa was abusing his people, Keawe-nui-a-ʻUmi determined to depose Ke-liʻi-o-Kaloa. The warring parties traveled across the mountain lands, with Keawe-nui-a-ʻUmi's war parties marching from Hilo, Puna, and Kaʻū, across the plateau between Mauna Kea and Mauna Loa, and towards ʻAhu-a-ʻUmi, the temple built by his father. Kamakau (1961) reported:

> When Keawe-nui-a-ʻUmi learned of the unjust rule of Ke-liʻi-o-kaloa and the burdening of the common people, he was filled with compassion for the chiefs and commoners of Kona. Therefore he made himself ready with his chiefs, war lords, war leaders, and

warriors from Hilo, Puna, and Ka-ʻu to make war on Kona. The war parties [met?] at the volcano (pit of Pele) before going on to battle along the southern side of ***Mauna Kea*** and the northern side of Mauna Loa. The mountain road lay stretched on the level. At the north flank of Hualalai, before the highway, was a very wide, rough bed of lava—barren, waterless, and a desert of rocks. It was a mountain place familiar to ʻUmi-a-Liloa when he battled against the chiefs of Hilo, Ka-ʻu, and Kona. There on that extensive stretch of lava stood the mound (*ahu*), the road, the house, and *heiau* of ʻUmi.* It was through there that Keawe-nui-a-ʻUmi's army went to do battle against his older brother, Ke-liʻi-o-kaloa.

When the chiefs of Kona heard that those of Hilo were coming by way of the mountain to do battle, Ke-liʻi-o-kaloa sent his armies, but they [page 35] were defeated by the armies from Hilo. The armies of Kona were put to flight. When the armies of Hilo reached the shore of Kona the war canoes arrived from Ka-ʻu and from Hilo. The battle was [both] from the upland and from the sea. Ke-liʻi-o-kaloa fled and was killed on a lava bed. The spot where he was killed was called Puʻu-o-Kaloa (Kaloa's hill), situated between Kailua and Honokohau… [Kamakau, 1961:36]

In the next generation, Lono-i-ka-makahiki, grandson of ʻUmi-a-Līloa, was also called upon to battle, this time, against the invading forces of the Maui chief, Kama-lālā-walu. Once again, we find that warriors of Hawaiʻi made use of the mountain land trails to meet the final challenge on the plains of Waimea. The warriors from the Kaʻū, Puna and Hilo districts passed by Mauna Kea, to join in the battle below Puʻu ʻOāʻoaka, in Waimea:

Kama-Iala-walu, the heedless chief, paid no attention, but followed the advice of two old men of Kawaihae who counseled falsely. One of them was named Puhau-kole. They said, "Puʻuoaʻoaka is a good battlefield and will be a great help to the chief. All the canoes should be taken apart because the warriors may desire to run back to the canoes and depart in secret for Maui. The best thing to do is to cut up the canoes and outriggers, for there are canoes enough in Hawaii. When it is conquered, there will be many canoes from Kona and Ka-ʻu. There will be much property and wealth for the Maui chiefs." The chief, Kama-Iala-walu, listened to the advice of Puhau-kole and his companion. Their suggestions were carried out, and the canoes were broken up. Then Kama-Iala-walu's fighting men went up to the grass-covered plain of Waimea.

After Kama-Iala-walu's warriors reached the grassy plain, they looked seaward on the left and beheld the men of Kona advancing toward them. The lava bed of Kaniku and all the land up to Huʻehuʻe was covered with the men of Kona. Those of Ka-ʻu and Puna were coming down from ***Mauna Kea***, and those of Waimea and Kohala were on the level plain of Waimea. The men covered the whole of the grassy plain of Waimea like locusts. Kama-lala-walu with his warriors dared to fight. The battlefield of Puʻoaʻoaka was outside of the grassy plain of Waimea, but the men of Hawaii were afraid of being taken captive by Kama, so they led to the waterless plain lest Maui's warriors find water and hard, waterworn pebbles. The men of Hawaii feared that the Maui warriors would find water to drink and become stronger… [Kamakau, 1961:58]

"He Moolelo Kaao Hawaii no Laukaieie" (1894)

"*He Moolelo Kaao Hawaii no Laukaieie*…" (A Hawaiian Tradition of Laukaieie) was published in the native language newspaper, *Nupepa Ka Oiaio*, between January 5th 1894 to September 13th 1895. The *moʻolelo* was submitted to the paper by Moses *Manu*. The story is a rich and complex account with island-wide references to—places; descriptions of place name origins; history and *mele*; interspersed with accounts from other traditions and references to nineteenth century events.

* It is reached "by a fourteen mile journey from Holualoa up the old Judd trail, or by an eighteen or twenty mile trip from Kealakekua, via Puʻulehua and Kanahaha… It is on the slope of Hualalai, at between 4,500 and 5000 feet elevation, with Mauna Kea and Mauna Loa towering snow-clad, much farther away."

The following narratives (translated by Maly), have been excerpted from the *mo'olelo*, and include an overview of the tradition and those narratives which recount the travels of Pūpū-kani-'oe, an elder of Lau-ka-'ie'ie—

> Kaholokuaīwa [w] and Koa'ekea [k] lived at Ulu, in Waipi'o Valley on the island of Hawai'i. They were descended from the chiefly and godly lines of Kahiki and Hawai'i. Their first child was Lauka'ie'ie. But because she was born in an *'e'epa* (mysterious) form, looking more like a plant than a child, she was wrapped in *līpoa* seaweed and set in the stream. Without her parents knowledge, Lauka'ie'ie was retrieved by a mountain goddess and nurtured. Later, two other children, boys, were born to Kaholokuaīwa and Koa'ekea. One was named Hi'ilawe, and the other was Makanikeoe (who was also a wind deity).
>
> Koa'ekea's sister was Pōkāhi, and her husband was Kaukini. Though they had been married for a long time, they were childless, and because of their prayers and offerings, the forest goddess, Hinaulu'ōhi'a, approached Pōkāhi while she was gathering seaweed, and told her that she would have a girl child to raise as her own. The condition was, that no one, not even her brother and sister-in-law were to know about this child. Because Pōkāhi and Kaukini lived on the mountain ridges between Waipi'o and Waimanu, it was easy for her to keep the secret. It was in this way, that Lauka'ie'ie came to be raised by her own aunt and uncle. As a youth, Lauka'ie'ie's companions were the spirits of the plants and animals of the forest. When she matured, she was very beautiful, and thoughts of finding an acceptable mate for her began to grow. One night, when Lauka'ie'ie was sleeping, she dreamed of flying past the valley lands of Hawai'i, and across, Maui, Moloka'i, O'ahu, Kaua'i, Ni'ihau, Ka'ula, and on to *Lehua*[9], where she saw a handsome young chief, named Kawelonaakalāilehua. It was this chief that was destined to become her husband, and who was fetched to Hawai'i, by her elder relative, Pūpū-kani-'oe… [January 5-19, 1894]
>
> Pūpū-kani-'oe and her companions from *Lehua* and Ka'ula, sailed in their canoe, passing Kaho'olawe, guided by the sharks of those waters. They entered the channel of 'Alenuihāhā, and her companions, who had never before seen Hawai'i, saw the mountains of ***Mauna Kea***, ***Mauna Loa*** and Hualālai rising above. Ka-welona-a-ka-lā-i-*Lehua* inquired of Pūpū-kani-'oe, the names of those places on Hawai'i. She answered, telling them that they were the mountains on which dwell the women who wear the *kapa hau* (snow garments), and who covered the lands down to where the woods were found. Pūpū-kani-'oe then chanted:
>
> | | |
> |---|---|
> | Ma'ema'e i ka hau ka luna o Mauna Kea, | Pure are the snows atop **Mauna Kea** |
> | Ōpū iho la iluna o ka hinahina, | Little clumps settled upon the hinahina, |
> | *Ka pua luhiehu a ka māmane,* | Adorned with the blossoms of the *māmane*, |
> | *He lama wale ala no ke ike aku,* | It looks like a light when seen, |
> | *Aloha mai nei hoi ka Aina…* | There is such love for the land… |
>
> She then called out, describing Haleakalā:
>
> | | |
> |---|---|
> | *Aia ho'i ke kuahiwi kaulana o Maui,* | Behold the famous mountain of Maui, |
> | *Ke kunihi a'e la i ka makani,* | Standing boldly in the winds, |
> | Akāka wale no Haleakalā, | Haleakalā is clear, |
> | *Ka 'uwē a ke kini of Ko'olau…* | And the multitudes of Ko'olau cry out… |

[9] The lengthy narratives include site descriptions and traditional accounts for various locations on each of the named islands.

The party then passed Kohala, and arrived at Waipiʻo, were they landed. [March 9, 1894; Maly, translator]

Poʻe Lawaiʻa Manu: Bird Catchers in Old Hawaiʻi (1895)

Among those people who would have most often frequented the uplands of the *ʻāina mauna*, being both the forested region and the upper plateau and mountain slopes were the *lawaiʻa manu* or *kia manu* (bird catchers). Their knowledge of the mountain lands, trails, shelters, and resources was widely valued throughout the nineteenth century, and the bird catchers were often sought out as guides and for their expertise in matters of land.

There are a number of traditional accounts describing the arts of the class of people who caught native birds in order to collect their feathers, or catch birds which were considered delicacies in the Hawaiian diet. And several methods of bird catching were widely practiced by native Hawaiians. The practices of the *kia manu* were also dictated by *kapu* and a code of conduct. Accounts from the later period in the life of Kamehameha I, reported that as a result of growing commercial activities in the islands, traditional methods of harvesting resources and catching birds, were changing (Kamakau, 1961 & Emerson, 1895). Regarding these changes, and the response of Kamehameha I to careless collection of bird feathers, in which the birds were killed, Kamakau (1961) wrote:

> …Troubles that arose were not of his [Kamehameha's] making, and those that had to do with disputes about religion came after his time. He ordered the sandalwood cutters to spare the young trees and, not to let the felled trees fall on the saplings. "Who are to have the young trees now that you are getting old?" he was asked and he answered, "When I die my chief and my children will inherit them." He gave similar orders to bird catchers, canoe makers, weavers of feather capes, wood carvers, and fishermen. These are the acts of a wise and Christian king who has regard for the future of his children, but the old rulers of Hawaii did the same… [Kamakau, 1961:209-210]

In 1895, N.B. Emerson, published an article pertaining to bird catchers of old. The article notes the importance of the Hilo region forest lands for the favored honey creepers, which were sought after by the *kia manu*. The following narratives describing the arts and practices of the *kia manu*, and the nature of the forest and birds therein, were collected by Emerson from native practitioners:

> …Bird-catching, while of great fascination, was a most exacting profession, demanding of the hunter a mastery of bird-craft and wood-craft attainable only by him who would retire from the habitations of men and make his home for long periods in the wooded solitudes of the interior.
>
> The kings of Hawaii constantly had men in their service who followed the vocation of bird-catching, called *kia-manu*. It is related of one of the ancient kings that at a critical juncture in his affairs he led off his warriors into the mountains with the purpose or pretext of engaging in bird-catching for plumage. But this is not a business in which a multitude can successfully engage in close proximity to each other. The *kia-manu* needs room; he must do his work in solitude, with the field to himself.
>
> The feathers of Hawaiian plumage-birds may be divided, as to color, into several classes:
>
> 1. Pure yellow. The yellow feathers were taken either from the *o-o* or from the coat of the still rarer *mamo*. Those of the *mamo* were of a deeper tint, but of shorter staple than the former, and as the bird was shy and difficult of capture, they were greatly coveted for the richest articles for feather-work, cloaks, capes and necklaces. It is a question still in dispute whether this rare bird is not extinct.
>
>   The *o-o*, though a proud and solitary bird, was more prolific than the *mamo*. Its coat was of deep black, set off with small tufts of clear yellow under each wing

and about the tail and in some varieties about the neck and thighs. Those from the axial were called *e-e* and were the choicest, and being of a longer staple were in the greatest demand for the *lei*.

No swan's down can surpass, in delicacy of texture, the axilliary tufts of the *o-o*.

2. Red. Scarlet, or red feathers were obtained from the body of the *i-iwi* and the *akakani* (*akakane* or *apapane*). It may be disputed whether one or the other of these is not to be designated as common. The color-tone of the feathers varies. They were song-birds, and when on the wing, displaying their plumage of black and scarlet, were objects of great brilliancy. There [page 102] was, I am told, another red-feathered bird called *ula-ai-hawane*, a beautiful thing in scarlet, wild and shy, a great fighter, a bird very rarely taken by the hunter. Its plumage would have been a welcome addition to the resources of Hawaiian feather-workers had it been obtainable.
3. Green. Feathers of an olive green were obtained from the *o-u*, and from the *amakihi* those of a greenish-yellow. Though of less value than some others, the green feathers were an important resource in adding variety to Hawaiian feather-work. This color, however, was not used in the richest and most costly cloaks and capes.
4. Black. Feathers of black were obtained from the *o-o*, *mamo*, *i-iwi* and *akakani*, not to mention numerous other sources, including the domestic fowl, which also contributed feathers of white.

While this list is not intended to be exhaustive, mention should be made of the *koa*'e (bosen, or tropic bird), which furnished two long feathers from its tail used in making kahilis. Though this bird took its prey from the ocean, its nest was in the face of the steep mountain palis and in the cliffs of the small, rocky island, Kaula, Nihoa, Lehua, and Necker. There are two varieties of this feather.

The methods used by one hunter in the capture of the birds differed from those used by another. They also varied somewhat, no doubt, in different districts, on the different islands, at different seasons of the year and seen in the different islands, at different hours of the day.

There could be nothing stereotyped in the way the hunter of birds practiced his art. While the method might remain essentially the same, it was necessarily subject to a wide range of modification, to suit the skill and ingenuity of each hunter in his efforts to meet the habits and outwit the cunning of the birds themselves.

For the purpose of observing more closely the manner of life and methods of the bird-catcher, let us transport ourselves in imagination to the interior wilderness of Hawaii, and live for a time amid the stretches of forest with which the climate of rainy Hilo clothes the volcanic debris of active Kilauea and extinct ***Mauna Kea***. [page 103]

There were two seasons of the year favorable to the operations of the hunter; first, during the months of March and April, extending into May, and second, during August, September and October.

These two bird-seasons corresponded with the two flowering seasons of the *lehua*. The *lehua* of the lower woods flowered in the earlier season, that of March, April and May, at the same time with the *ohia-ai*, (the fruit-bearing *ohia*), commonly known as the mountain-apple.

The upland *lehua*, situated in a more temperate climate, flowered during the later season, that from about the beginning of August till the last of October or into the early part of November.

The birds in general moved from upland to lowland, or vice versa, to be in at the flowering season, and many of the hunters moved likewise.

In the early season (*kau mua*), the birds, except the *mamo*, who was a true highlander and despised the lowlands, migrated to the lower levels, *makai*. Later in the year, during the second season, the birds were to be found in the more interior uplands.

The yellow-green *amakihi*, and the *elepaio*, famous in legend and poetry, were exceptions to this rule. These two birds were insectivorous, in addition to being honey and fruit-eaters.

A bird-hunting campaign was not an affair to be lightly entered upon. Like every other serious enterprise of ancient Hawaii, a service of prayer and an offering to the gods and aumakuas, must first be performed… …Having selected a camp, he erects the necessary huts for himself and his family. His wife, who will keep him company in the wil- [page 105] derness, will not lack for occupation. It will be hers to engage in the manufacture of *kapa* from the delicate fibers of the *mamake* bark, perhaps to aid in plucking and sorting the feathers.

The early morning, when the vapors are beginning to lift, is the favorite time for most of the birds to visit their aerial pasturage. A few hours later, when the sun has had time to dull the edge of the sharp morning air, and to clear away the fogs, the aristocratic *o-o* will come to his more fashionable breakfast. Necessity makes the hunter an early riser, that he may repair to his chosen ground before the morning sun has begun to illuminate the summits of ***Maunakea*** and ***Maunaloa***.

Behold him then setting forth at dawn from his rude thatched cottage, with the implements of his craft in hand. The bag, or wallet, hanging at his side contains, besides food for himself, fine lines twisted from tough *olona* fiber, to be used in making snares, also a supply of tenacious bird lime carefully wrapped in leaves of the ti plant.

This important article was made in several ways. The sticky gum of the breadfruit tree was sometimes used but that of the *papala*, and of the *oha* were more highly esteemed. Sometimes a compound of two or more was made, being mixed and purified while gently boiling with the water over a fire.

The most important implements of the hunter's craft were his spears, called *kia*, or *kia-manu*, a name often used to indicate his vocation [*Figure 4*]. They were long, slender, well polished poles, like fishing rods, made sometimes of dark spear wood, *kauila*, also of tough *ulei* wood from Kona. Bamboo was sometimes used, but for some reason or other it was not a favorite. The birds did not take to it. And as they were the ones whose tastes were most to be considered, that settled the question.

There were different styles of dressing the *kia*, and no one can assume to be acquainted with them all. One method is that illustrated in the cut.

The hunter himself must remain concealed beneath the shelter of the foliage, or, if that be too scanty, under a covert extemporized from material at hand, fern leaves, or *i-e-i-e* fronds. If the day is a good one and the charm of his prayer works well, the birds will presently make their appearance, singly, or by twos and threes. Anon a struggling and a

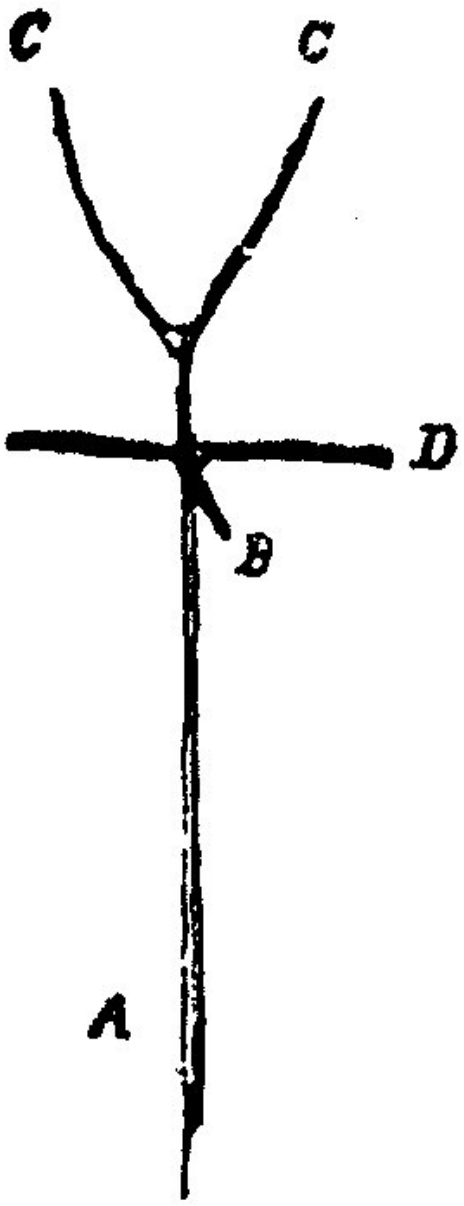

Figure 4. Kiamanu.

A. Portion of the pole, *kia-manu*.
B. The hook, *kihele*, by which the pole is hung in position high up in the tree.
C. The forked branch, *lalua* or *amana*.
D The cross-piece, *kano*.

fluttering of wings an- [page 106] nounces to the watchful hunter that the little creatures have alighted on his poles and are held fast by the sticky gum.

It would seem as if the alighting of one bird on the limed fork or cross-piece of the hunter's pole did not deter others from seeking to put themselves in the same plight. At the right time the hunter cautiously withdraws one pole after another, and using care that no bird escapes, transfers the captured birds to the bag that hangs at his side, or to a cage of wicker work that is kept at hand.

It seems unaccountable, almost incredible, that any wild thing of the air should prefer alighting on the limed twig of the hunter's pole to seeking refreshment elsewhere from the scarlet honey-flowers of the *lehua* which at this season abound. The explanation given me by the hunter was that he depended entirely upon the efficacy of his incantations to draw the birds to his *kepau* (birdlime). Sometimes instead of this formal arrangement of fork and cross-piece, a small branch with several twigs attached, the whole plentifully smeared with gum, was bound to the tip of the pole and displayed as before.

The hunter often made his pole attractive to the birds by baiting it with their favorite honey-flowers. This was done in a variety of ways, but always with an effort to imitate nature, appreciating that the highest art is to conceal art. With this intent he sometimes attached to his pole a flowering branch artfully smeared with gum, or the *kepau* would be applied directly to some part of the tree where the hunter's judgment told him the bird would alight to feed.

Another ingenious plan was the use of the decoy, called *maunu* (literally bait). For this purpose the gay *i-iwi*, or *akakani*, were among the favorites, perhaps because they were likely to be captured earliest in the day. The decoy, still alive, was tied in an upright position to the prong at the tip of the pole, together with an arrangement of flowers. It was necessary to smear the gum at such a distance from the decoy as not to be within reach of its wings, if extended in an effort to fly. [page 107] It was a common practice to preserve alive in special cages certain birds to be used as decoys, feeding them daily with their nectar-flowers. The *o-o*, *i-iwi* and *akakani* were thus treated. In time these wild things became quite domesticated and were of great service.

The *o-o*, with his suit of jetty black touched with points of gold, was of a jealous and domineering spirit that would allow no other bird to enjoy a meal peacefully in his

presence. He no sooner espied the hunter's decoy, though of his own species, in quiet possession of a flowery perch than he would alight to dispute with him its tenancy and seek to drive him away, thus himself becoming a captive. The note of the *o-o* is one that no one who has heard it can ever forget; it may be properly described as "most musical and most melancholy".

It delights to sound it forth from the topmost branch of some over-looking forest-tree, either as a call to its mate, or in pure joy of existence, as a token that its delicate tastes have been satisfied.

The *mamo*, from the richness and brilliancy of its coat, as well as from the pride and audacity of its nature, was often spoken of as the prince, or king, of Hawaiian plumage-birds. If one is not to distrust the enthusiasm of a Hawaiian writer on birds, its actions and manners entitled it to that distinction. To quote from this writer: "The *mamo-kini-oki* was the king of the small birds of the uplands. This bird was most ostentatious in its bearing, proud and lordly. Look at it perched on its tree prinking and preening and displaying itself, turning this way and that, disdaining the *o-o, i-iwi* and other birds that approach, attacking and driving away any bird that comes to alight upon its tree," etc., etc. In addition to its mixture of pride and vanity the *mamo* had a reputation for great shrewdness and for being full of alert suspicion and watchfulness. The hunter had to use all his wits to compass its capture.

While the *o-o* haunted the depths of the forest and ranged equally the lower as well as the higher forest-regions, the *mamo* made his home principally in the upper borders, where the forest-vegetation is seen to have changed from its dense massing into a more open and park-like arrangement. Here the *lehua* no longer reaches its full height as the lord of the forest, and, [page 108] becoming somewhat more branching and scrubby, yields its supremacy to the still more imposing *koa*.

The means generally employed for the capture of the *mamo* was the snare, *pahele*, baited with flowers or fruit.

The flowers of the *ke'a, oha, lehua* and *mamane* were often used, also the flowers and fruit of the banana, and the fruit (*kokole*) of the parasitic *i-e-i-e*, of which the *mamo* was very fond. The *hawane*, a palm that grew in the protection of the upland forests of Hawaii, had a flower, the nectar of which the *mamo* was said to esteem as a food and the hunter sometimes succeeded in capturing this bird by means of gum applied directly to its flower-stalk.

The greatest art was necessary in arranging the snare and bait for the *mamo*. The bird was most shrewd and observant, and if he detected any traces (*meheu*) of the hunter's work, from breakage or trampling his suspicions were aroused and he would take his leave at once. Having baited his trap and fixed in position his snare, which was a simple noose at the end of a fine line, fifteen or more yards long, the hunter placed himself in hiding, with his line in hand, and began to call the bird with an imitation of its penetrating whistle.

If the *mamo* was within hearing and pleased with the hunter's call, he would answer, and soon be on the wing in that direction to make acquaintance of the siren that had called him. At the bird's approach the hunter modulates his tone, only piping forth an occasional reassuring note, to lead the *mamo* still nearer, relapsing into silence and motionless quiet soon as the bird has come within sight of the baited trap. Having made his reconnaissance and satisfied himself that all is right, the bird alights and, warily cocking his head to one side and the other, to observe more closely, he moves forward to taste

the hunter's bounty, in doing which he must set his foot within the reach of the nicely placed snare;—on the instant the bird-catcher pulls his line and the bird is his.

One old bird-catcher aroused my incredulity by the surprising tale, which I recommend the readers of this article to take with as many grains of salt as are necessary for the attaching of a bird, that so long as the hunter remained rigidly motionless and kept his features hidden from the sight of the [page 109] *mamo*, by bending his head forward upon his chest, not even venturing to open his eyes, lest their flash betray him, the little creature took no offence, and would even go so far as to perch unsuspiciously upon the hunter's head and shoulders. "*Credatiste Judaeus! Non ego*."

The plumage-birds, like everything else in Hawaii, were the property of the *alii* of the land, and as such were protected by *tabu*; at least that was the case in the reign of Kamehameha I, and for some time before. The choicest of the feathers found their way into the possession of the kings and chiefs, being largely used in payment of the annual tribute, or land tax, that was levied on each *ahupuaa*.

As prerequisites of royalty, they were made up into full length cloaks to be worn only by the kings and highest chiefs. Besides these there were capes, *kipuka*, to adorn the shoulders of the lesser chiefs and the king's chosen warriors, called *hulumanu*, not to mention helmets, *mahiole*, a most showy head-covering. The supply needed to meet this demand was great, without reckoning the number consumed in the fabrication of lei and the numerous imposing *kahili* that surrounded Hawaiian royalty on every occasion of state.

It is, therefore, no surprise when we learn that in the economic system of ancient Hawaii a higher valuation was set upon bird-feathers (those of the *mamo* and *o-o*) than upon any other species of property, the next rank being occupied by whale-tooth, a jetsam-ivory called *palaoa pae*, monopolized as a perquisite of the king.

While the plumage-birds were of such diminutive size and so difficult of capture that it would not have been profitable to hunt them for food, they were in reality such delicacies for the table, that the hunters were quite willing to use them in that way.

And, in truth, it is difficult to see what better disposition could have been made of them in many cases. In the case of the *mamo, i-wii, akakani, o-u* and *amakihi* the extent of skin-surface left bare after stripping the plumage from the bird was so considerable that it would have been an act of cruelty, if not of destruction, to have set it loose in such a condition. It was entirely different with the *o-o*. In its case the injury done was trifling and constituted no bar to its being immediately released. [page 110]

Kamehameha I is said to have reproved his bird-catchers for taking the life of the birds. "The feathers belong to me, but the birds themselves belong to my heirs," said the considerate monarch.

It was the practice of some hunters to release the first bird caught, unplucked, as an offering to the gods.

The greatest care was always used to keep the feathers from becoming ruffled or wet in rainy weather.

The *mamo, i-iwi* and such birds as were destined to be eaten after being plucked, were, as soon as caught, killed by pressure over the thorax and then wrapped in the outer dried parchment of the banana-stalk, and packed in the hunting bag. The *o-o* and birds destined to be released were secured in cages.

As a means of accomplishing the double purpose of protecting himself and of preserving the plumage of his birds from injury by the wet, the hunter was provided with a long, hooded cloak that encased him from his head to his knees. The basis of this garment was a net-work, into the meshes of which were looped strips of dried ti-leaf that hung point down on the outside. The method was almost identical with that used in roofing a grass hut. The garment might with propriety be termed a thatched cloak. Its water-shedding power is said to have been most excellent, of which it had opportunity to give ample proof in the fierce, tropical, down-pours of the region.

Hooded and encased in this unique garment, the hunter must have presented a fantastic resemblance to a Capuchin monk.

The days of the bird-catchers of ancient Hawaii are over. Their place has been taken by those who know not *Ku-huluhulumanu* and the other gods of the craft. In their hands, instead of the snare and the pole, with its gum, its flowers and decoy, there is the deadly shot-gun.

The birds that were once the pride of Hawaii's woods have to contend for their existence under conditions imposed by the marauding mynah and thievish sparrow, that seem to have been imported for their destruction. Emerson, 1895:111]

"Ahele Manu" – Bird Catching Techniques on the Mountain Lands

While researching various ethnographic records of the Bernice Pauahi Bishop Museum (BPBM), the author reviewed Hawaiian language papers (handwritten and typed) collected by island historian, Theodore Kelsey. Kelsey was born in Hilo in the late 1800s, and spent his entire life speaking with elderly Hawaiian people, collecting their stories, and translating their writings. Among his papers found at the Bishop Museum (BPBM Archives–SC Kelsey; Box 1.5), are notes on various aspects of Hawaiian culture including bird catching. Kelsey's informant, was the elder Reverend Nālimu, who shared his account of bird catching, both as a means of providing feathers used for making Hawaiian emblems of royalty, and with other birds, as a food source. The account specifically references localities in the uplands of the Hilo District, and is a first-hand description of traditional and customary practices which had broad application in the mountain regions.

The following Hawaiian texts are presented verbatim as recorded by Kelsey in c. 1921 (including his use of diacritical marks). The English translation of the Hawaiian narratives was prepared by the author of this study, and reflects the basic tenor of the Hawaiian narratives. It should be noted here, that in the Hawaiian language, occurrences of certain words naturally imply a specific action or statement, which is reflected in the translation:

"Ahele Manu."
by H.B. Nalimu
Poʻe kia manu o Laa, oia ka poʻe ahele manu, kekahi me ka laau a kekahi me ka lehua. O ka mea ahele manu ma ka lehua malaila ka puka e hanai kokoke i ka lehua, he puka paa ke-ia. Kekahi piko o ke kaula ma ka la-la o ka ʻohiʻa e paa ai. Elima, eono paha anana ka loihi o ke aho mai ka puka mai a hiki i ka lima o ke kanaka e paa nei i ka piko o ke aho. A o ka puka aia ma kahi kokoke i ka lehua e kiko aku ai ka manu i ka lehua. I ka wa e lele mai ai ka manu lele no a ku maluna o ke-ia puka e kiko aku i ka lehua. A ia manawa e huki ai ke kanaka i ka piko o ke kaula a paa ka wawae o ka manu. Pii ke kanaka iluna a lawe i ka manu a hana hou aku i kela puka malaila. O ka akakane a me ka ʻiiwi, a me ka ʻo-oʻ iluna o ka pua lehua. Ahele me ke aho olonaʻ makalii. Maluna o ka maiʻa pala e ahele iʻ ai ka manu o-u'.

"Kāwili Kēpau."
O ke kepau oia ke kohu o ka ʻulu. E ʻoki-oki ai i ka ʻulu a kahe mai ke kohu keʻokeʻo, a i ka wa e maloo ai ua kohu ʻla i ke ahiahi alaila ua paa aʻe ua kohu la.

Hele oe e ho-ulu-ulu ke-ia kohu a pau. Ho-ulu-ulu a nui, alaila lilo a'e'la ua' kohu nei i kepau. Alaila hele oe e 'ohi i hookahi kukui maka a hemo kona iwi 'a 'o kona 'i'o malama 'oe kela'. Hele hou oe i ka' pa-ihi ku-kepau (kind of clover) he pa-ihi 'ele-ele ia, a hoohui me ke kukui maka, alaila nau a wali ke kukui maka me ka pa-ihi. Hookomo iloko o ke kapa wauke (he mea uaua ia), alaila 'uwi' i ka wai o ke kukui a me ka pa-ihi iloko o ka 'opihi, oia ka "ipuhao" e kupa 'ai iluna o ke kapuahi. I ka wa e hoomaka ai e paila alaila 'oki-oki i ke kepau a liilii a hookomo iloko o ke-ia wai kukui me ka pa-ihi i paila ia. Kii elua ni-au ai 'ole ia, mau laau liilii paha e koali ai iloko o ke-ia wai paila.

Pela e hanai a pau kela' wai a mo'a kela' kepau. Hookomo iloko o ke poho 'opihi a i 'ole he la-i' a wahi i ka la-i'. Kāwili 'iuka a'e nei o Mokau-lele. Neenee ke pulu 'ohi'a o ia wahi ilalo o ka pahoehoe.

Ilalo no oe e ku ai o ka pahoehoe a hana oe i ke kepau iluna o ka pua lehua. Ina ekolu, eha' pua lehua au i kāwili ai i ke kēpau alaila i ka wa e pili ai kekahi pua lehua i ka manu alaila alualu a loaa. Pee hou oe iloko o ka pulu 'ohi'a (kāhi o ka lau 'ohi'a e luhe ana ilalo, oia ka pulu 'ohi'a) a pili hou kekahi manu. Opa' ke poo o ka manu a make. Hookomo iloko o kekahi eke. Hola ekolu paha alaila ho'i, nui ka manu, i hookahi kaau, iwakalua, kanakolu paha. A kela manu makalii; ua momona——kuhikuhi kona i'o, momona. Oia ke kāwili kēpau.

***"Laau Kia Manu**."*
*Ekolu, eha' paha anana ka lo-ihi o ka laau. Kau ia ka pua lehua iluna o ia laau nei mai kekahi 'ao-ao o ka laau a hiki i kekahi poo o ka laau. Hana elua kanaka, kekahi ma kekahi laau a kekahi ma kekahi. Kepau maluna o ka laau a he mau pua lehua mawaena o ke-ia mau kēpau——he laau kia manu ia |_____|. Olaa ka Aina kia manu a me **Piihonua**. Nui ka manu o-o ma **Puu O-o**. Malaila ka po'e kia manu e hele ai a loaa na lei hulu no na lii. O Pana-'ewa kekahi wahi kia manu.*

Huki ka laau kia manu iluna mawaena o na 'ohi'a elua. Hana me ka 'upena kekahi. Huki ia iluna ka 'upena, hookahi laau maluna, hookahi laau malalo. He 'upena 'olona' maka hakahaka, a he kaula 'olona' ma na poo. 'Elima, eha', ekolu paha anana kela' 'upena palupalu. Lele no ka manu, paa ka wawae, paa ka pekekeu. Ina' hookahi, elua manu, waiho no pela', oia na manu e kahea ana i na manu e a'e. Nui ka manu, hookuu ilalo ka 'upena a huki hou iluna. He ulu 'ohi'a ma kekahi 'ao-ao a me kekahi 'ao-ao. Oia ka hana ana o ka po'e lawai'a manu. Ho'i i ka hale e wehe ai ka hulu o ka manu 'o-o'. Piha ke po'i i ka hulu a haku lei. Malalo o ka po-ae-ae o ka o-o' oia ka hulu a-a', a maluna o ka piapia oia me pue.

Bird Snaring (or Trapping)
Bird catchers (*kia manu*) of 'Ōla'a were people who snared (*'āhele*) birds. Some with branches and others with *lehua* blossoms. The individual who snared birds among the *lehua* made a snare (lasso) close to the *lehua* flower, the snare was secured there.

One end of the line was securely fastened on the branch of the *'ōhi'a*. The cord of perhaps five or six fathoms long, extended from the lasso (on the branch) to the man's hand where the end of the line was held tightly. The snare was placed close to a *lehua* blossom, where the bird would step (*kīko'o*) to the *lehua*. At that time, the man would then pull the end of the cordage and secure the feet of the bird. The man then climbed the tree, took the bird, and he would make the snare there again. The *'akakane* (*'apapane*), the *'i'iwi*, and the *'ō'ō* were caught up in the *lehua*, snared with fine *olonā* cordage. The *'ō'ū* bird was snared while it was on the ripe banana fruit.

Preparing Bird Lime to Kāwili, or Ensnare Birds.
The bird lime (*kēpau*) is made from the sap of the breadfruit. Cut the breadfruit bark and the white sap flows, and when the sap is dry, say in the evening, the sap is hardened. You go and gather the sap. When enough has been gathered, the sap can be made into bird lime. Then you go and gather some raw *kukui*, removing the shell, you keep its meat. You then go and get the "clover" for making bird lime (*'ihi-ku-kapu*, the *Nasturtium sarmentosum*), it is a black *pā'ihi*, and you mix it with the raw *kukui*. Then you chew it, and the *kukui* and *pā'ihi* become slimy. This is put into a *wauke* bark cloth (it is a tough piece), then the juice of the *kukui* and *pā 'ihi* are squeezed into the *'ōpihi* (shell), it is the "pot" for cooking the broth over the fire. When it starts to boil, the (*'ulu*) gum is cut into small pieces and put in the juice of the *kukui* and *pā'ihi* so it can boil. Then get two coconut mid-ribs or perhaps little sticks to stir this boiling juice. This is how it is done until the juice is cooked and becomes the birdlime. It is then placed into the empty *'ōpihi* or a *ti* leaf, wrapped up in ti leaves. Kāwili is in the uplands adjoining Mokaulele. Then go to where there is low branching *'ōhi'a* (*pulu 'ōhi'a*), where the *pāhoehoe* is below.

You are below on the *pāhoehoe*, and you apply the bird lime above around the *lehua* flowers. Now you *kāwili* (twist, i.e. apply) this bird lime in among three or four *lehua* flowers, then when a bird is stuck by one of the *lehua* that blossoms, you free it and it is caught. You then hide again among the low *'ōhi'a* branches (a place where the *'ōhi'a* tops droop down, that is the *pulu 'ōhi'a*), and catch another bird. You squeeze the birds head and it is killed. It is placed into a bag. Returning (home) perhaps around three 'o clock, there are many birds, perhaps forty, twenty, or thirty. Those small birds; when fat——the meat is tasty and sweet. That's how one prepares *kawili kēpau*, or bird lime to ensnare birds.

Snaring Birds on Branches.
The (decoy) branch is perhaps three or four fathoms long. *Lehua* blossoms are placed on this branch, from one side of the branch up to the tip of the branch. Two men do this job, one at one (end of the) branch and one at the other. Bird lime is placed on top of the branch along with many *lehua* blossoms in between this bird lime——this is a bird catchers (*kia manu*) branch [drawn] |_____|. 'Ōla'a and ***Pi'ihonua*** are lands of bird catchers. The are many *'ō'ō* birds at ***Pu'u 'Ō'ō***. It is there that the bird catchers go to get the feathers for adornments (*lei*) of the chiefs. Pana'ewa is also a place of the bird catchers.

The bird catchers (decoy) branch is pulled in between the *'ōhi'a lehua* trees. One (person) uses the net. The net is pulled up, one branch is above, one branch is below. It is an open (wide) meshed *olonā* net (*'upena olonā maka hakahaka*), and *olonā* cordage at the tip. It is a soft (pliable) net perhaps five, four, or three fathoms long. As the birds fly their feet are caught, or their wings caught. Now if there are one or two birds, they are left, these are the birds that call out to the other birds. When there are many birds the net is let down (the birds taken), then the net is pulled up again. *'Ōhi'a* growth is all around. So this is the work of the "bird-fishers," or *lawai'a manu*. They return to the house and then remove the feathers of the *manu 'ō'ō*. When the container is filled with feathers, a *lei* is made. Below the wing-pit is where the male *'ō'ō* bird feathers are, and above on the back by the tail, are the pale yellow feathers. [Nalimu in Kelsey; Bishop Museum , Archives–SC Kelsey; Box 1.5; Maly, translator]

"Kaao Hooniua Puuwai no Ka-Miki"
(The Heart Stirring Story of Ka-Miki)

Perhaps one of the most detailed native traditions which includes rich accounts of place names and practices of natives of the land, and describing features of Mauna Kea, Humu'ula, Ka'ohe, Pi'ihonua and the *'āina mauna*, is a historical account titled "*Kaao Hooniua Puuwai no Ka-Miki*" (The Heart Stirring Tale of Ka-Miki). The story of Ka-Miki was published in the Hawaiian language newspaper *Ka*

Hoku o Hawaii between 1914 to 1917. It is a long and complex account that was recorded for the paper by Hawaiian historians John Wise and J.W.H.I. Kihe with contributions by local informants.

While "Ka-Miki" is not entirely an ancient account, the authors used a mixture of local traditions, tales, and family accounts in association with place names to tie together fragments of site specific history that had been handed down over the generations. The complete narrative includes historical accounts of more than 800 place names (many personified, commemorating particular individuals) around the island of Hawai'i. While the personification of specific individuals in this account, and their associated place names may not be entirely "ancient," such place name-person accounts are common throughout Hawaiian traditions (as noted in the preceding *mo'olelo*); and the locational documentation within the "story of Ka-Miki" is of both cultural and historical value.

The selected narratives below, are excerpted from several sections of the tradition, and provide readers with descriptions of the land, resources, areas of residence, and practices of the native residents, as handed down by *kama'āina* (those familiar with the land). The English translations (Kepā Maly, translator), are a synopsis of the Hawaiian texts, with emphasis upon the main events of the narratives. Also, when the meaning was clear, diacritical marks have been added to help with pronunciation of the Hawaiian.

Synopsis of Translations from the Historic Account of Ka-Miki

This *mo'olelo* is set in the 1300s (by association with the chief Pili-a-Ka'aiaea), and is an account of two supernatural brothers, Ka-Miki (The quick, or adept, one) and Maka-'iole (Rat [squinting] eyes). The narratives describe the journey of the brothers, as they walked around the island of Hawai'i along the ancient *ala loa* and *ala hele* (trails and paths) that encircled the island. During their journey, the brothers competed alongside the trails they traveled, and in famed *kahua* (contest fields) and royal courts, against *'ōlohe* (experts skilled in fighting or in other competitions, such as running, fishing, debating, or solving riddles, that were practiced by the ancient Hawaiians). They also challenged priests whose dishonorable conduct offended the gods of ancient Hawai'i. Ka-Miki and Maka-'iole were empowered by their ancestress Ka-uluhe-nui-hihi-kolo-i-uka (The great entangled growth of *uluhe* fern which spreads across the uplands), who was one of the myriad of body forms of the goddess Haumea, one of the creative forces of nature—also called Papa or Hina— and was also a goddess of priests and competitors.

The excerpted narratives from Ka-Miki, in this study, include place name accounts that range from the summit of Mauna Kea, to the plains of Humu'ula, Ka'ohe, and Waimea, and to the depths of Waipi'o Valley. The names—*Nana-i-ke-kihi-o-Kamalama* and *Nana-i-kaulu-o-Kamalama*—by which Ka-Miki is called while ascending Mauna Kea, and the names by which he was empowered while undertaking his various tasks, are also the names of stars known in the Hawaiian skies. In the Hawaiian cultural context, such narratives demonstrate depth of the relationship of various points of the heavens, land, and resources to one another—

> Born in *'e'epa* (mysterious – premature) forms, Ka-Miki and Maka-'iole were the children of Pōhaku-o-Kāne (*kāne*) and Kapa'ihilani (*wahine*), the *ali'i* of the lands of Kohana-iki and Kaloko, North Kona. Maka-'iole was the first born child and Ka-Miki was the second. Following their birth, Ka-Miki was given up for dead and placed in the cave of Pōnahanaha, and though Maka-'iole was of a misshapen form, he was taken to his paternal grandparents Pohokinikini and Pu'uwalea to be cared for. Being aware of all that took place at the time of their birth, Ka-uluhe retrieved Ka-Miki from the cave and reared him at Kalama'ula on the heights of Hualālai. It was there that Ka-uluhe began instructing Ka-Miki in the uses of his supernatural powers. Maka-'iole joined his young brother and together, they learned various techniques of contest skills, in preparation for their journey around Hawai'i Island.
>
> After a period of training and tests, Ka-uluhe instructed Ka-Miki to journey to the *hālau ali'i* (royal compound) of one of their elder relatives, ***Poli'ahu***. Poli'ahu and her companion

Lilinoe, were the guardians of ***Waiau*** and the sacred water of Kāne. While Maka-ʻiole was to go collect the *ʻawa* (*Piper methysticum*) of the god Luanuʻu at Waipiʻo. These two items would be used in an *ʻai-lolo* (ceremony of graduation), commemorating sacred nature of the brothers and completion of their training in *ʻōlohe* skills. Ka-uluhe told the brothers:

Waipiʻo Haʻiwahine *ʻawa* of Waipiʻo

O ʻoe e Maka-ʻiole, e kiʻi ʻoe i ka ʻawa ʻili lena a ke akua e inu ala, a ʻona, ʻōleha, kūnewanewa nā maka, aia la ia i ka pali kapu o Waipiʻo i ka poli (ka-ulu) o Haʻiwahine - i ka papa lohi mai o ʻĀpua…

…You, Maka-ʻiole, are to fetch the yellow barked *ʻawa* which the gods drink till they are drunk and bleary eyed, till their eyes are reeling, it is the *ʻawa* that is there along the sacred cliff of Waipiʻo in the breast (the ledge) of Haʻiwahine - at the long plain of ʻĀpua…

Maka-'iole stood up straight, prepared to fly like the *ʻiwa* bird soaring upon the winds… The ancestress then called to Ka-Miki, telling him:

Poliʻahu Lilinoe Waiau Pōhaku-a-Kāne & Pōhakuloa a platform feature on Mauna Kea

*…e kiʻi ʻoe i **ka wai a Kāne**, aia i luna i ka piko o ke kuahiwi i ka hālau aliʻi o **Poliʻahu** a me **Lilinoe**, me ka hānai a lāua o **Ka-piko-o-Waiau**. Aia malalo mai o kaulu o ka paepae o **Pōhaku-a-Kāne** e nānā iho la iā **Pōhakuloa**, o ka ʻohana ʻia o ko makuakāne. E kiʻi ʻoe i ka wai no ka ʻawa o ʻolua…*

…You are to fetch ***the water of Kāne*** which is there atop the summit of the mountain (Mauna Kea), at the royal compound of ***Poliʻahu***, ***Lilinoe***, and their ward, ***Ka-piko-o-Waiau***. The water is there below the ledge of the platform of ***Pōhakuakāne***, from where you may look down to ***Pōhakuloa***; they are your family through your father's genealogy. You are to fetch the water that will be used to make the *ʻawa* for you two…

Telling Ka-Miki to travel with all swiftness, Ka-uluhe then offered a traveling chant, to keep Ka-Miki warm while traveling the trail to the *hālau aliʻi* of ***Poliʻahu*** —

A mele for traveling on Mauna Kea

Ala hele mauka la	The path goes to the uplands
Ala hele makai la	The path goes to the lowlands
Ala hele mehameha i ke kualono	It is a lonely path to the mountain
Ala hele kuo-ū koʻekoʻe	A damp dreary path
He ahi kou kapa e mehana ai	A fire will be the wrap
which warms you	
E lala ai i ke ala kapu la	Warming you along the sacred trail
A ko kūpuna wahine	[Fire] of your ancestress with many
kino manamana	body forms
Manamana ke ala nui ou	Your path will have many branches
e kuʻu kama	my child
E Nana-i-ka-ulu-o-Kamalama	O Nana-i-ka-ulu-o-Kamalama (Ka-Miki)
Ku ana hoʻolono i ka leo oʻu	Stand and heed my voice
O ko kūpuna wahine nei la	It is I your ancestress
Kū—e, kū la	Stand, make ready
Kū hoʻolono, lono e!	Stand and hear, listen!

Ka-uluhe also told the brothers that they were to:

Lani-mamao items used for an *ʻawa* ceremony

Go to the place of their ancestress Lani-kuʻi-a-mamao-loa (whose name is commemorated in the place name ***Lani-mamao*** at Waimea); for she had the *kānoa* (*ʻawa* bowl) that was called ***Hōkūʻula*** and the *mauʻu ʻawa* (strainer) Ka-lau-o-ke-Kāhuli, which would be used in preparing the *ʻawa* ceremony. Ka-uluhe then told Ka-Miki:

Sacred water of Kāne and Kanaloa; awe inspired by Mauna Kea

*…e ukuhi ai i **ka wai kapu a Kāne mā lāua me Kanaloa**, a e hiʻi aʻe i ka poli a huli hoʻi mai. Maluna mai ʻoe o nā kualono, kuahiwi, kuakea, e lehei ana ma nā kuamauna, mauna kapu kamehaʻi hoʻopaʻeʻe i ke kanaka, a moe luhi ka leo—e, ʻae…*

(…dip into ***the sacred water of Kāne and Kanaloa*** and hold it close to your breast while returning. You shall be at the heights of the mountainous region, at the whitened peaks, leaping on the mountain top, the sacred and astonishing mountain, that causes people to go astray, and the voice is wearied by calling out—indeed it is so…)

Lani-mamao

Ka-Miki and Maka-ʼiole then set out to complete their tasks, first traveling to meet their ancestress Lani-mamao on the windward plains of Waimea (in the region of Mahiki). [February 5, 1914]

The brothers greeted their *kupuna* with genealogical chants, and gained her recognition of their descent. When Lani-mamao inquired of their journey and quest, Maka-ʻiole called out to her with a *mele* (chant):

Mele ʻawa

Aia la ilalo o Waipiʻo,	[The *ʻawa*] is there below in Waipiʻo
I ka pali o Kaholokuaī	Along the cliff of Kaholokuaīwawa
I ka ʻawa ʻili lena	The yellow barked *ʻawa*
I ka papa lohi o ʻĀpua	of the long plain of ʻĀpua
A kini o ke akua	[*ʻAwa*] of the 40,000 gods
A ka mano o ke akua	[*ʻAwa*] of the 4,000 gods
A ka lehu o ke akua	[*ʻAwa*] which the 400,000
e inu a—i…	gods drink…

Lani-mamao exclaimed:

Luanuʻu, the god of ghosts

What is your *kupuna* thinking of, sending you to fetch the cherished *ʻawa* of Luanuʻu-a-nuʻu-pōʻele-ka-pō-loa, king of the hordes of ghosts who dwelt at Waipiʻo? And where is the water that she told you to fetch?

Ka-Miki answered:

The sacred water of Kāne and Kanaloa (Waiau); sacred platform of Kāne; the mountain mist Kākīkepa

I ka wai kapu a Kāne mā lāua me Kanaloa, i ka paepae kapu o ka Pōhaku-a-Kāne, ke naʻi ʻia ala e ka ʻohu Kākīkepa, e ka ʻuwahi noe a ka wahine o ka lua…

(It is the sacred water of Kāne and Kanaloa at the sacred platform of ***Pōhaku-a-Kāne***, overcome by the mists, *Kākīkepa*, that is like the steaming mists of the woman [Pele] who dwells at the crater…) [*Figure 5*]

The thick mountain fog

Because of the great challenges the brothers would face while going to fetch the *ʻawa* and water of the gods, Lani-mamao tested their *ʻōlohe* skills to make sure that they were prepared to meet the challenges which lay ahead of them. Lani-mamao set out the supernatural net *Kuʻukuʻu* which was also called *Kanikawī - Kanikawā* [the thick rain belt fog] that trapped and

likened to a supernatural net

ensnared many travelers. She told Ka-Miki and his brother to leap into the net, which they did, she then pulled the net closed and placed high overhead in the rafters of her house. In no time, Ka-Miki had pulled on the lines and caused the net to *hoʻomōhala* (to blossom or open), thus the brothers were freed. Lani-maomao then told Nana-i-ke-kihi-o-Kamalama (Ka-Miki):

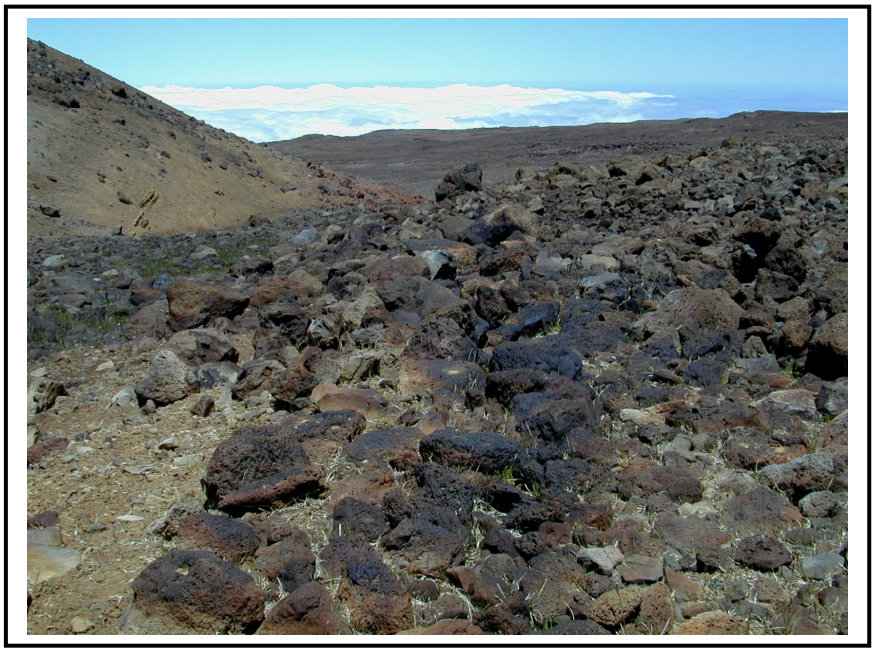

Figure 5. Ka Paepae Kapu o ka Pōhaku a Kāne (Photo KPA-3722)

Great is your alertness, bravery, skill, cleverness, strength, and wisdom; indeed if you possessed only half of your abilities you would not have been able to free yourself. No one has ever escaped from this net, and if you had not been able to free yourselves, your training would not have been adequate. Because of this sign, it is you Ka-Miki who must fetch the *ʻawa* of the ghost king Luanuʻu, for only you could succeed. [February 12, 1914]

Waipiʻo

Waikōloa

Thus, Ka-Miki agreed to go to Waipiʻo. Lanimamao then told Maka-ʻiole, that he was to go to fetch the strainer Ka-lau-o-ke-kāhuli [from the plains of Waikōloa]. And this is why Ka-uluhe sent you to me, to test your abilities. Lani-mamao then warned Ka-Miki not to make any sounds lest he awaken the gods as he drew near the ledge of Haʻiwahine. She went on to tell him:

Sites and features in Waipiʻo

"When you reach the hill of Puaʻahuku, gaze below to the *heiau* of Pākaʻalana, and look upon Waipiʻo, there you will see the cliff of Kaluahine. Then look to the side and go into the *ʻōhiʻa* forest of Kaʻauana. It is there that you will find the *ʻawa* container called Ka-pāpāiaoa [*Ka pāpāiaʻawa* (the ceremonial *ʻawa*)], which Luanuʻu-a-nuʻu-pōʻele-ka-pō uses as his pillow so that no one may take it. Luanuʻu will be there in the center of his *hālau hale aliʻi* (royal compound), and the assembly of 4,000, 40,000, 400,000 ghosts will be outside."

Mahiki

When Lanimamao completed her instructions, she allowed Ka-Miki to depart. In the blink of an eye Ka-Miki disappeared, leaping to the forest of Mahiki. Leaping again, Ka-Miki arrived at Puaʻahuku, and he looked upon the beauty of Waipiʻo. Ka-Miki then turned and leapt to the heights of Kaʻauana, and went to the cliff of

The royal compound of Luanuʻu

Kaholokuaīwa where he saw the royal compound of Luanuʻu along the ledge of Hea-ke-Akua, overlooking Nā-poʻopoʻo (The-nooks and crannies), in Waipiʻo, not Kona.

The ghost hordes of Luanuʻu;

Hālau thatched with bird feathers

Indeed, there were innumerable ghost beings throughout the region. Ka-Miki called upon Ka-ʻohu-kolo-mai-iluna-o-ka-lāʻau, and a thick mist settled on Waipiʻo, even covering the compound of the god [Luanuʻu]. Ka-Miki then leapt and landed upon the ridge pole of the god's long house. Ka-Miki parted the bird feathers, for this is what the house was thatched with, and looked in. He saw that the god and those with him were sleeping, nestled in the mists of the *ʻawa*. Now those in the house were of various shapes and sizes, some with hollow eyes, others with long thin necks, or hands that reached to their feet, truly, things which living people would fear.

While Ka-Miki was looking in the house, he heard the voice of Luanuʻu's lead ghosts, Hio and Nana-nui call out in a *mele*:

mele kahea

Mū e, Mū a	O Mū ghosts, Say Mū
Mū hoʻi, Mū naʻanaʻa	Return Mū, Mū of the protruding bellies
Mū hoʻokikiʻi,	Mū which lean back,
Mū hoʻolono a lono	Mū which listen and hear
Mū kānaka, Mū hauna	Mū like men, Mū of the unpleasant odor
Mū hono—a, ʻOia…	Mū of the excrement, So it is…

Upon hearing the call, all of the ghosts arose and left Luanuʻu alone in his house with only his guardians Mū-kī and Mū-kā, who also served as Luanuʻu's messengers.

Before taking Luanuʻu's *ʻawa*, Ka-Miki played a trick on Luanuʻu and awakened him from his *ʻawa* induced sleep. Ka-Miki then hid unseen amongst the rafters of the *hālau*. Luanuʻu called upon his *kūkini*, Mū-kā and Mū-kī, commanding that they capture the one who would attempt stealing his cherished *ʻawa*.

Luanuʻu sent his messengers to places where *ʻawa* was grown or would be consumed.

Sites in Kaʻū, Kohala, Kona; And the god Kapu-ko-malo

Mū-kā was sent to the cliff of Mōlīlele by Palahemo, Kaʻū. Mū-kī was sent to start at the cliff of Kaʻenamakaohue (at Neue, Kohala), where the wind entered along the cliff of Makanikāhiō. Mū-kī was then to encircle the island searching, Kapākai and Kahuā (Kohala), Kalinaʻōpelu, on the plain of Kanikū; and ascend the hills of Anahulu (Kona) to look for a sign from the place of the god, Kapu-ko-malo.

Humuʻula; The hills of ʻŌmaʻokoili & ʻŌmaʻokanihae; Poliʻahu, Lilinoe & Waiau; an *ʻauwai* from the spring

Then they were to circle around to the heights of ***Humuʻula*** and inquire of ***ʻŌmaʻokoili*** and ***ʻŌmaʻokanihae*** if either of them knew who this rascal thief was. "Encircle ***Ka-piko-o-Waiau***, the ward of the chiefesses ***Poliʻahu*** and ***Lilinoe***. Pier down upon the multitudes, and watch the sacred water of Kāne mā[10]. Look too, to where they dug the *ʻauwai* (water channel)." Then Luanuʻu commanded them to "go to Puʻu-o-Moeʻawa in the forest of Mahiki and stand guard."

Mahiki & Pōkāhi Pūʻawaliʻi

Mū-kā and Mū-kī departed and the multitudes of other ghosts wandered (*ʻauana*) through the depths of forests of Mahiki and Pōkāhi in search of this rebel. Ka-Miki heard the indistinct voices of these many ghosts ascend the cliff, and pass through the forests to the heights of Pūʻawaliʻi in the thick mist which ensnares the fished birds (at *Pōkāhi*). When all the ghosts were gone Luanuʻu fell

[10] *Mā* is a Hawaiian word that means "and companions, friends," or "and others."

The *ʻawa* container of Luanuʻu; *ʻawa* preparation

back to sleep with the *ʻawa* container as his pillow. Ka-Miki then leapt from the ridge pole and took Ka-pāpāiaoa which was filled with *ʻawa* that had been made ready to use and bundled into balls [wrapped] with *limu pāʻihiʻihi* (a native *limu pōhaku* (rock moss) weed [*Nasturtium saremento*sum]).

Luanuʻu arose greatly angered thinking that he would ensnare this rascal upstart in the net of Nananana-nui-hoʻomakua (Nana-nui was also one of Luanuʻu's ghost marshals). But unseen, Ka-Miki hid on the ridge pole of the *hālau hale aliʻi* where he held the *ʻawa* container. [February 19, 1914]

Luanuʻu, also called Pahulu-nui; Pahu Hāwea Pākaʻalana

Luanuʻu, who was also called Pahulu nui then leapt to the place where the sacred *pahu* (drum) Lono Hāwea was kept at the *heiau* of Pākaʻalana. Striking the *pahu*, he called all the wandering ghosts to return to the low-lands of Waipiʻo. The voice of this drum was a great sign that all of the path ways were to be sealed. The command was heard by all; along the *hulaʻana* cliffs from Waipiʻo to the ledge of Makanikāhiō; heard by those who were at Koholālele and Maulua; heard by those who were by the steep cliffs looking to the uplands of ***Kalaiʻeha***; and heard by those who were in the forests of Mahiki. And so all of the pathways and swimming trails were blocked, and the net trap was set.

Koholālele, Maulua, Kalaiʻeha Mahiki

Ka-Miki departs from Waipiʻo

While all of this occurred Ka-Miki remained hidden in the rafters of the *hālau*. One of the ghosts looked inside and saw Ka-Miki upon the ridge pole and prepared to call out on the *hōkio* (gourd nose flute) which would alert the ghosts that the upstart had been found. With great speed, Ka-Miki then leapt from Heakeakua up to the ridge heights, and landed on a *kāwaʻu* (*Ilex anomala*) tree branch. Ka-ʻohu-kolo-mai-iluna-o-ka-lāʻau then covered the region in a thick mist, blocking everything from sight.

Ka-Miki thwarts the hordes of Luanuʻu's ghosts; accounts of various place name origins

The cry of the ghost hordes could be heard from uplands to shore, as they hungrily looked for Ka-Miki, having been thwarted in their attempts to ensnare him in their supernatural net Nananana-nui-hoʻomakua, just as birds were caught. Because the ghosts wandered along the cliffs and forests of Kaʻauana (Kohala side of Waipiʻo) and Mahiki (Hāmākua side of Waipiʻo), and were unable to catch Ka-Miki, they went hungry. Under the cover of his ancestresses' mist body form, Ka-Miki leapt from the *kawaʻu* tree to Puʻu-o-Moeʻawa in the forest of Mahiki. The ghosts wandered hungrily about and two place names commemorate their wandering and having gone hungry: Ka-ʻauana (The wandering), and in Mahiki, Pōloli-ke-akua (The gods [ghosts] are hungry) which is also called Pōloli-(i)-ka-*manu* (Hungry for the bird). At Puʻuomoeʻawa, Ka-Miki met with the ghost runner Mū-kī who had been stationed there by Luanuʻu. [February 26, 1914]

Ka-Miki thwarted his efforts at catching him by throwing foul smelling dirt (dabs of excrement) at him. Though many other ghosts arrived for the fight, they were all driven off, as Ka-Miki began destroying them.

The conch Kihapū

Hio and Nana nui Luanuʻu's ghost marshals told their chief about the events at Puʻuomoeʻawa, and Luanuʻu blew the conch Hā-nō, also called Kiha-pū, which was the conch that the supernatural dog Puapualenalena stole from the ghosts of Waipiʻo. Hearing the call of the conch, the remaining ghosts fled from Puʻuomoeʻawa, leaving Ka-Miki who returned to Lanimaomao. Ka-Miki presented the sacred *ʻawa* container Kapāpāiaoa and *ʻawa* to his ancestress, and she bathed him in her rains, and caused lighting and thunder to praise his accomplishments.

Hōkūʻula Lono-Makahiki water of Kāne (Mauna Kea)

Lanimamao then gave Ka-Miki the *kānoa ʻawa* (*ʻawa* bowl), Hōkūʻula—with the *kapu* of Lono-Makahiki—so that he could go get the *wai kapu* (sacred water) of Kāne and Kanaloa (at Mauna Kea). [March 5, 1914]

Ka-Miki then leapt and disappeared in the mists that seem to crawl upon the forest growth. Arriving at the spring, Ka-Miki began dipping the ladle into the sacred water of Kāne, to fill the *ʻawa* bowl Hōkūʻula…

Naming of Ka-wai-hū-a-Kāne

…a ia wā i ʻike mai ai ua wahi akua kiaʻi i ka ʻale o ka wai a hū aʻe lā mawaho o ka pūnāwai. A iā lāua i holo mai ai, o ka māʻalo o ke aka ka lāua i ʻike a nalo aku lā. A ua kapa ʻia ka inoa o ua pūnāwai ala o "Ka Wai Hū a Kāne," a hiki i kēia lā. No ka hū ana i ke kīʻoʻe ana a Ka-Miki i ka wai iloko o ke kānoa ʻawa o ke akua.

…at that time, the guardians [Pōhakuakāne and Pōhakuloa] saw the water rippling, and overflowing from the spring. As they went to investigate, they saw a shadow pass them by. Because of the overflowing of the water, the spring came to be called ***Ka-wai-hū-a-Kāne*** (The-overflowing-waters-of-Kāne), and so it remains named to this day [*Figure 6*]. It overflowed because Ka-Miki scooped the water, filing the *ʻawa* bowl of the god.

Holoholokū; the wind goddess Waikōloa;

Pōhaku-a-Kāne; naming Waikiʻi; Puʻu Kekeʻe

Pōhaku-a-Kāne & Pōhakuloa, deity of Mauna Kea make other springs

Ka-Miki then joined Maka-ʻiole at ***Holoholokū*** on the plain of Waikōloa. As they traveled along the hill tops, the wind goddess ***Wai-kō-loa*** (Water-carried-far) caused the water to splash over the brim of Hōkūʻula. Some of the water was carried afar by the wind and fell, forming a new spring. When the spring appeared, Pōhaku-a-Kāne fetched some of the water. Because Pōhaku-a-Kāne fetched some of the water, that place is called ***Wai-kiʻi*** (water fetched) to this day. This happened near the hills of ***Puʻu Kekeʻe***. ***Pōhaku-a-Kāne*** took the water he retrieved to the base of the cliffs of ***Mauna Kea*** and dug into the earthen plain of ***Pōhakuloa*** and placed the water there. From Pōhakuloa, the water flowed underground and appeared as springs at several other places, including ***Ana-o-Hiku*** at ***Hanakaumalu***, Honuaʻula, and ***Kīpaheʻe-wai*** on the slopes of Hualālai…

…Having successfully completed their tasks, and collected the necessary items, the brothers returned to Kalamaʻula. Ka-uluhe performed the *ʻawa* and *ʻailolo* ceremonies, marking the completion of their *ʻōlohe* training, at Kaukahōkū. The ghost king and his hordes had followed after Ka-Miki, thinking they would trap him, but Ka-Miki ensnared the king and his ghost hordes in the supernatural net Kuʻukuʻu.

ʻAilolo and *ʻawa* ceremonies Luanuʻu killed by Ka-Miki

Luanuʻu was bound so tightly that his eyes bulged out and they were used for the *pūpū ʻawa (ʻawa* drink condiment) for the ceremony. After the *ʻailolo* ceremony was completed, Ka-Miki took the net filled with the bodies of Luanuʻu *mā* and deposited them in the ocean of Makalawena… [March 12-19, 1914]

In a later section of the tradition of Ka-Miki, we find that Ka-Miki and his companions have traveled around the island from Kona, and arrived at Waiākea in the District of Hilo. During competitions on the *kahua* (arena) of Kalepolepo, Ka-Miki defeated all challengers. One last hope was held out for the *ʻōlohe* of the region, and a message was sent into the uplands of Piʻihonua, at Kīpuka-ʻāhina, to call Kālanakāmaʻa, the *ʻōlohe*-ward of Kīpuka-ʻāhina(k), Hale-aloha (w), and Hale-loulu(k). The names of the these guardians of Kālanakāmaʻa are all commemorated as places on the mountain landscape. The narratives record:

Figure 6. Hā Wai (Water Channel) from Waiau to Pōhakuloa Gulch, above Ka Wai Hū a Kāne (Photo KPA-3733)

Waiākea
Piʻihonua
Panaʻewa
Kalepolepo
ʻŪpēloa
Kapunakō
Kaūmana
Kalanakāmaʻa
Kīpukaʻāhina
Hale-aloha
Hale-loulu

…The lands of Waiākea were named for the high chief Waiākea-nui-kumuhonua, the brother of Piʻihonua-a-ka-lani [k] and Panaʻewa-nui-moku-*lehua* [w]. After departing from Panaʻewa, Ka-Miki *mā*[11] met Haili-kula-manu, who was a guardian of Waiākea. Haili led Ka-Miki and his companions to his chief's compound at Kalepolepo [February 17, 1916]. Arrangements were made for Ka-Miki to compete with the *ʻōlohe* – experts of Waiākea, with the events to be held at the *kahua* of Kalepolepo…

Ka-Miki—"the image of the war club of Ka-uluhe-nui-hihi-kolo-i-uka"—entered the *kahua* and the contest rules were set. It was agreed that the method of competition would be *ʻōkaʻa lāʻau* [war club fighting], and that the loser would be killed and baked in an *imu*… Ka-Miki and the champion ʻŪpēloa competed, and to everyone's amazement, ʻŪpēloa was defeated…

Hearing that his foremost champion had been defeated by Ka-Miki, Waiākea called to his messenger, Kapunakō to go get Kaūmana the foremost teacher of *lua, haʻihaʻi, kākā lāʻau* [bone breaking, fighting, and spear fighting], and all other manner of fighting, and bring him to the *kahua*. Upon arriving before his chief, Kaūmana asked Waiākea to send his messenger Kapunakō, to bring Kalanakāmaʻa, Kaūmana's foremost student to join him at the *kahua* of Kalepolepo.

[The place called] Kalanakāmaʻa was named for Kalana-kāmaʻa-o-uli, the foremost *ʻōlohe* student of Kaūmana, and champion of Waiākea. Kalanakāmaʻa was the ward of ***Kīpuka-ʻāhina***[k], ***Hale-aloha***[w], and ***Hale-loulu***[k], who dwelt above Hilo at places which now bear their names. When Kapunakō arrived before Kīpuka-ʻāhina, he spoke about the great rains and rivers of Hilo; a poetic reference to the many skilled *ʻōlohe* for which Hilo was famed. It was in this way that Kapunakō described the overwhelming skills of Ka-Miki and his victory over ʻŪpēloa. Kīpuka-ʻāhina then asked—

Māmā Hilo i ka wai? – Is Hilo [without] lightened of its water?

[11] *Mā* – a Hawaiian word used to indicate and companion, or associates.

Describing Hilo rains and the mountain terrain

Kapunakō responded – *‘Ae māmā Hilo i ka wai ‘ole, ua kau i ka lani ka holo [wa‘a] ua o Hilo, na ka Mālualua e ki‘i ala i pulu ka liko o ka lehua a me ka māmane!* Indeed one can move swiftly through Hilo, for the streams are without water, the water trough [figuratively the clouds] of Hilo are set in the heavens, it is the Mālualua which fetches moisture for the budding *lehua* and *māmane*. ***Kīpuka-‘āhina*** then asked in amazement – *Nawai e nele o Hilo i ka wai? He lau ka pu‘u, mano ka ihona, he kini nā kahawai o Hilo, e ‘au i ka wai o Hilo a pau ke aho!* – Who could possibly make Hilo destitute of water? There are 400 hills, 4,000 places to descend, and 40,000 streams to cross, indeed one is worn out swimming through the waters of Hilo!

It was in this way that ***Kīpuka-‘āhina*** learned that a master *‘ōlohe* had come to Hilo challenging it’s many *‘ōlohe*. Using his *ipu hōkiokio* (gourd nose flute), ***Kīpuka-‘āhina*** awakened Kalanakāma‘a, for this was the only way in which Kalanakāma‘a could be safely awakened, or he would kill whoever awakened him [February 24-March 2, 1916].

Kalanakāma‘a and Ka-Miki compete

Kalanakāma‘a joined his teacher Kaūmana, and met with the assembly at Kalepolepo. Carrying his club *Pūpū-kani-oe-i-ka-ua-o-Hilo* (Land snails singing in the rain of Hilo), Kalanakāma‘a entered the kahua with Kaūmana and a great cry arose praising the abilities of these Hilo champions. Ka-Miki and Kalanakāma‘a exchanged taunts, Ka-Miki stated that Kalanakāma‘a would become the *kāma‘a lau-‘ī i hili kuanaka ‘ia* (twined *ti* leaf sandals) which Ka-Miki wears upon his feet. Outraged, Kalanakāma‘a leapt to attack Ka-Miki with his club *Pūpū-kani-oe-i-ka-ua-o-Hilo*, Ka-Miki leapt out of the way, and took ‘Ūpēloa’s club from Maka-‘iole. Seeing his student miss, Kaūmana called out to Kalanakāma‘a telling him how to strike Ka-Miki—

Placed in the heavens is the water trough of Hilo, entwined in the cordage of the rains, *‘Io* [Hawk] is the war club strike to use, for there is no place that can‘t be hit. Strike at the head and reach to the feet, for once struck, there will be no movement. If there is any movement, he is indeed a skilled expert of the depths [deepest knowledge], then return and strike again in the manner of the wind swept *koa* trees [March 9, 1916].

Kaūmana and Ka-Miki compete

Ka-Miki then attacked Kalanakāma‘a and quickly over came him, Kaūmana then leapt to the *kahua* and was beaten as well. After Ka-Miki defeated Kaūmana, word spread throughout the region, and Pi‘ihonua, Waiākea’s brother called his council together wondering how they might help regain the honor of Hilo from this stranger… [March 16, 1916]

This section of the account ends with Ka-Miki meeting the chief Hanakāhi—for whom the section of Hilo called Hilo Hanakāhi was named—in honorable competition at Kalepolepo. Because of the honest and humble nature of Hanakāhi, Ka-Miki befriended him and peace was restored in the region of Hil*o-o*ne and Hilo-Hanakāhi.

Boundary Commission testimonies of 1873 (cited later in this study), and the writings of E.D. Baldwin (1890) give us the locations of three of the upland residential sites referenced in the narratives above (see also Register Map No. 1718). In summary, we find:

> ***Kīpuka-‘āhina*** is situated on *pāhoehoe* flats, crossed by the boundary of Pi‘ihonua and Waiākea (Kainoa Boundary Commission, 1873:57). In drawing near to ***Kīpuka-‘āhina***, Baldwin reports, “We are now nearing the main base of ***Mauna Kea***,” and once at ***Kīpuka-‘āhina***, he states, “We are now on the slopes of ***Mauna Kea***” (Baldwin 1890:55).

Hale-aloha is situated at approximately the 4,050 foot elevation. Baldwin noted: "the trail leaves the woods about two miles from ***Halealoha***," and he states that ***Halealoha*** is about "five miles from ***Kīpuka-ʻāhina***" (Baldwin 1890:55).

Hale-loulu was identified as being near the boundary of ***Humuʻula***, where ***Kaʻula*** gulch meets ***Kaʻala*** (below ***Ahu-a-poʻo-puaʻa*** and near the mountain road) (Waiki Boundary Commission, 1873:41).

Travel Across the ʻĀina Mauna in the Time of Kamehameha

Stephen Desha, Sr., editor of the native newspaper, *Ka Hoku o Hawaii*, and a group of his peers published many historical accounts for the education of Hawaiian readers in their native history. One account, "*He Moolelo Kaao no Kekuhaupio, Ke Koa Kaulana o ke Au o Kamehameha ka Nui*" (A Tradition of Kekuhaupio, the Famous Warrior in the time of Kamehameha the Great[12]), describes the time leading up to Kamehameha's securing his rule over the island of Hawaiʻi (Desha, translated by Frazier, 2000). When Kamehameha (Paiʻea) inherited the god Kūkāʻilimoku from Kalaniʻōpuʻu, there was dissension among some of the chiefs. Fearing that treachery might arise, Kekūhaupiʻo traveled with Kamehameha from Kaʻū towards Kīlauea, to ʻŌhaikea, and then went on to Mauna Kea and Lake Waiau, where Kamehameha made a ceremonial offering:

> …When Pai'ea had completed the ceremonial offering, Kekūhaupi'o encouraged them to go, as it was not known what secret harm might come after them, as some of the chiefs had treacherous thoughts. Because of this thought by Kekūhaupi'o he directed them to leave the customary pathway, and to travel where they could not be followed. They climbed straight up from that place to a certain part of Mauna Loa and came down seaward at a certain part of Ka'ū named ʻŌhaikea. They spent the rest of that night in a cave called Alanapo. *The next morning, after Kamehameha had made [page 93] his ceremonial offering and prayer to Kūkāʻilimoku, they left that place and climbed up another mountain trail till they reached the summit of* ***Mauna Kea****. At a place close to Lake* ***Waiau****, Kamehameha again made an offering. They were unable to remain there for long because of the cold, and so they descended to Waimea at a place called Moana by the ancients, going straight down to the wide plain of Waimea*… [Desha, 2000:94]

Following the battle of Mokuʻōhai in ca. 1782, we find again reference to travel across the *ʻāina mauna*. Kamakau (1961) reported that the sacred chief, Keawemauhili, his wife, Ululani, and their daughter, Kapiʻolani, traveled from Kona to the uplands, across Mauna Kea, and down to Pāʻauhau (Kamakau 1961:122). Desha (2000) elaborated on the account, by which the small party traveled for safety, to the mountain lands, passing the slopes of Mauna Kea and continued on the mountain trail to Hilo.

After the battle ended at Mokuʻōhai, Keawemauhili and his family were held captive, and transported to the Kaumalumalu section of Kona. Then, with the help of faithful friends, they escaped, traveling to the uplands of Kona, past Mauna Kea, and on to Hilo. It was reported that:

> …Keawemauhili, Ululani his wife, and their small daughter Kapi'olani were secretly helped to flee. They were taken to Kaumalumalu, North Kona, by Kaleipaihala as ordered by the *ilāmuku* Kanuha. When Keawemauhili went ashore at that place of North Kona, he sought escape for them by a mountain trail which ascended to the gap between Hualālai and ***Mauna Kea***, taking that path in order to arrive at their home in Hilo. The pathway was very tangled with forest growth. There were five of them on this journey, with Keawemauhili choosing the way, and Ululani following her husband, and the *kahu* [servants] who were carrying Kapi'olani. There were many impediments in the path but the important thing was to survive. The chill and bitter rain and entanglement of ferns and

[12] *Ka Hoku o Hawaii*, December 16, 1920 to September 11, 1924.

other obstructions were disregarded. At times Ululani carried her beloved daughter because their personal servants were heavily burdened with their bedding which was carried in calabashes on carrying sticks. While they were patiently ascending, Kapi'olani cried because of the strangeness of this mountain way. This grieved the parents of the beloved child but they were unable to help. When they entered into the fern wilderness, Kapi'olani wailed loudly because of this troublesome pathway, causing them to have qualms, because when Kīwala'ō's forces were put to flight, many people had fled into the forest and were being widely sought by the victorious warriors of Kamehameha's side. At this time they were climbing in darkness because they had fled at nightfall. However dawn was breaking at the time they entered the fern wilderness and were pushing through it. When it was full daylight and while they were moving on the mountain trail, the wailing of Kapi'olani was very loud which burdened the minds of Keawemauhili and his wife. At this time, the wails of Kapi'olani guided some of Kamehameha's warriors who were Kohala people, and they met the escapees. The leader of these warriors saw this distinguished man of noble stature, and the thought came to him that this must be the *ali'i* Keawemauhili of whom they had only heard. The leader said to Keawemauhili: "Stand and speak! Are you perhaps Keawemauhili, the *ali'i* of the Hilo districts…?" [Desha, 2000:153]

The account is continued with the eventual safe return of Keawemauhili *mā* to Hilo, and little other mention of the journey over the mountain lands.

Kūkahau'ula and Lilinoe

An undated account from the archive collections of the Bernice Pauahi Bishop Museum, translated by Mary Kawena Pukui, provides us with further details regarding Lilinoe, and her husband Kūkahau'ula (Kukahaula). The narrative also records that Kauikeaouli (King Kamehameha III) visited the graves of Lilinoe and Kūkahau'ula (Kukahaula), and tells us that Pōhe'epali, a descendant of the retainers of Kūkahau'ula, hid their bodies following the visit of Kamehameha III.

A Tale of a Royal Couple who Froze on Mauna Kea

Kukahaula was a chief of Waimea, So. Kohala. He took to wife, Lilinoe of Kau and because his people resented her, chief Kukahaula went to dwell on ***Mauna Kea***, above Lake ***Waiau***. They died there and their bodies were wrapped for burial.

When King Kauikeaouli (Kamehameha III) reigned, he went there to visit them and was the last ruler to see these chiefs who had practically turned to stone because they were frozen and so remained. It was believed that they were a good likeness of themselves when they were alive, except that their bodies were so stiff.

After this visit of King Kamehameha III (Kauikeaouli) the bodies of Kukahaula and Lilinoe were hidden by the attendant of Kukahaula, Poheepali, who was the very last of the family of retainers who upheld their chiefs. It is said that these chiefs lived in a cave and it was in this cave that their bodies remained until Poheepali hid them away.

It is said that when these chiefs lived on ***Mauna Kea***, two strangers went up there on a visit. They became thirsty and discovering a woman wrapped in several layers of *tapa*, they asked where they could get some water to drink. The woman answered, "There is no water now." The sun was shining brightly at the time and they saw the reflection of water on the woman's chest. They said, "There is the water you are hiding, reflected on your chest." The woman was Lilinoe and the water she was hiding was the water of Poliahu. (Bishop Museum, Hawaiian Ethnological Notes; Legends Vol. II:149)

"Lilinoe and Nuu"

Abraham Fornander, a prominent foreign historian, was married to a Hawaiian woman of chiefly rank from the Kāne'alai line of Moloka'i. During his residence in the Hawaiian Islands (c. 1830-1887),

Fornander compiled a great collection of Hawaiian history, much of it directly from native informants. While he worked closely with prominent native historians like Kamakau and Kepelino, he also had contact with many individuals from remote areas, who retained personal family accounts and knowledge. Over the years, it has also become clear that some of the work that Fornander did, also incorporated knowledge or concepts that were foreign to the native Hawaiian experience—his accounts would sometimes link Christian and other religious philosophies into Hawaiian lore and genealogies.

Among the accounts that blended Christian concepts with Hawaiian tradition is a narrative about Lilinoe, her husband Nu'u, and their children, in the time of a great flood. Fornander (1973) wrote:

> Nuu, by command of his god, built a large vessel with a house on top of it, which was called and is referred to in the chants as He Waa-Halau-Alii o ka Moku, "the royal vessel," in which he and his family, consisting of his wife Lili-noe, his three sons, and their wives, were saved. When the flood subsided, "Kane," "Ku," and "Lono" entered the "Wa'a Halau" of Nu'u and told him to go out. He did so and found himself on top of ***Mauna Kea*** the highest mountain on the island of Hawaii), and he called a cave there after the name of his wife [Lili-noe], and the cave remains there to this day… [Fornander 1973:91]

Fornander's narratives were in part constructed from texts recorded previously by native historians, though he added details which none of the earlier versions of the account included. Indeed, native historians, David Malo (1951:234-237) and S. M. Kamakau (1964:13-14:)[13], refer to a great flood caused by the rising sea (not an inundation of rainfall). Neither of the earlier narratives mention Mauna Kea or sites known to be associated with the mountain. The account collected by Ellis, cited above, conforms with the early Hawaiian accounts, and in reference to Mauna Kea, may reflect localized embellishments to the account.

The Rivalry Between Poli'ahu and Pele

One of the prominent late historic writers, was W. D. Westervelt, who resided in Hawai'i between 1889-1939. Westervelt wrote of the conflicts between Pele and Poli'ahu, and told them how Poli'ahu came to gain control over northern portion of Hawai'i, while Pele retained dominance over the arid and volcanically active southern part of Hawai'i. In his tradition of "Pele and the Snow-Goddess," Westervelt reported an eruptive event that took place after Hawaiian settlement (contrary to geological research) of the island group, explaining how Laupāhoehoe and Onomea Arch were formed. Westervelt writes:

> ***Poliahu***…loved the eastern cliffs of the great island Hawaii—the precipices which rise from the raging surf which beats against the coast known now as the Hamakua district. Here she sported among mortals, meeting the chiefs in their many and curious games of chance and skill. Sometimes she wore a mantle of pure white *kapa* and rested on the ledge of rock overhanging the torrents of water which in various places fell into the sea… [Westervelt 1963:55]

Westervelt then tells readers that once, when Poli'ahu and her companions were competing in the sport of *hōlua* (sledding), on the slopes of Mauna Kea, south of Hāmākua. There appeared among them a beautiful stranger, who was invited to participate in the sport with them. But, the woman instead:

> …threw off all disguise and called for the forces of fire to burst open the doors of the subterranean caverns of ***Mauna Kea***. Up toward the mountain she marshaled her fire-fountains. ***Poliahu*** fled toward the summit…Soon she regained strength and threw the [snow] mantle over the mountain…the lava chilled and hardened and choked the flowing,

[13] It is noted here, that in his "*Na Hunahuna no ka Moolelo Hawaii,*" Hawaiian historian, John Papa I'i, made no direct references to Mauna Kea (cf. I'i, 1959, in "Fragments of Hawaiian History").

> burning rivers… The fire-rivers, already rushing to the sea, were narrowed and driven downward so rapidly that they leaped out from the land, becoming immediately the prey of the remorseless ocean.
>
> Thus the ragged mass of ***Laupahoehoe*** was formed, and the great ledge of the arch of Onomea, and the different sharp and torn lavas in the edge of the sea which mark the various eruptions of centuries past [Westervelt 1963:61-63]

The Love of Poli'ahu and Kūkahau'ula

In 1931, Emma Ahu'ena Taylor (Ahu'ena), a Hawaiian historian of royal lineage, published an account of the gods Poli'ahu and Kūkahau'ula (Ahuena Taylor in Paradise of the Pacific, July 1931). Descended from the Hoapili-Beckley line (the chiefess Ahiakumaikalaniki'eki'e and Geo. Beckley), she had a direct genealogical relationship to the Waimea lands, that were nestled on the slopes of Mauna Kea. Indeed, while introducing her account, she tells readers of her youth and a beloved *kahu* hānai (guardian), who told her stories of ancient times (Ahu'ena 1931:13). In this particular narrative, Ahu'ena speaks of the sacred nature of Poli'ahu, and describes the various attributes of Waiau, Lilinoe, and Kūkahau'ula. She also reports that a *mo'o* (a deity of ponds, capable of taking human and other forms), named Mo'o-i-nanea, was placed at the pool of Waiau, by Kāne, as a guardian of Poli'ahu and Waiau.

> ***Poliahu***, the snow goddess of ***Mauna-kea***, was reared and lived like the daughter of an ancient chief of Hawaii.
>
> She was restricted to the mountain ***Mauna-kea*** by her godfather Kane. She had a nurse ***Lihau*** (the chilling rain) who never left her for a moment.
>
> Kane created a silvery swimming pool for his daughter at the top of ***Mauna-kea***. The pool was named ***Wai-au***. The father placed a supernatural guard at that swimming pool so that ***Poliahu*** could play at leisure without danger of being see by a man… [Ahuena Taylor July 1931:13]

Ahu'ena tells us that the god Kū-ka-hau-'ula ("the pink tinted snow god") had been selected as a husband for Poli'ahu, and that he appeared:

> …every morning with the rising of the sun and again every afternoon with the setting of the sun. He saw the secluded water pool ***Wai-au*** and the lovely ***Poliahu***… Each day he became more fascinated and made every effort to reach her abode and win her for his bride.
>
> Poliahu's attendants drove him away. ***Lili-noe*** (fine mist rain), ***Lihau*** (chilling frost) and ***Kipu'upu'u*** (the hail) drove him from the mountain… [Ahuena TaylorJuly 1931:13-14]

As the story continues, we learn that eventually Mo'o-i-nanea determined that Kūkahau'ula's love was true, and she allowed the god-chief to embrace Poli'ahu. And to this day, "Ku-kahau-ula, the pink snow god, and Poliahu of the snow white bosom, may be seen embracing on Mauna-kea" (Ahuena Taylor July 1931:14-15).

II. Ka ʻOihana Kilokilo Hōkū (The Practices Associated With Observing Stars)

As described earlier, in the prayer chants like the *Kumulipo*, the stars and heavenly bodies were significant in Hawaiian beliefs and traditions. Thus, as was the case in all facets of Hawaiian life, the traditions, customs and practices associated with the *ʻoihana kilokilo* (astronomy) and *kilo hōkū* (observing and discerning the nature of the stars) were deeply tied to the spiritual beliefs of the Hawaiian people. The stars were physical manifestations of the gods who created the heavens, earth, and humankind, or forms granted to select individuals or beings of nature (Malo, 1951 and Beckwith, 1951). One of the *mele pule* (prayer chants) from the class of Lono priests, states "*ʻOi hoʻokui aku o Lono nā hōkū e mihai ka lani!*" (Behold Lono places the stars that sail through the heavens.!) (*Pule Hainaki* in Malo, 1951:145).

The greatest accounts of Hawaiian knowledge of the stars—their seasons, the paths followed, and how to mark locations on the earth by them—are found in the traditions of the *poʻe hoʻokelewaʻa* or *poʻe holomoana* (navigators). Through such knowledge, combined with knowledge of the ocean winds, allowed the *poʻe kahiko*—and in the present day, modern wayfinders—to successfully travel the vast expanse of the Pacific Ocean, and settle on the islands of Hawaiʻi. Knowledge of the stars and movements of the heavens, was also applied to many facets of life. Such knowledge could ensure success in any undertaking. When planting or fishing during seasons in which certain stars appeared, or on specific nights of the moon, crops and fish would be plentiful. A child born under a certain star was predestined to be a great leader, and the alignment of stars in a manner determined to be inauspicious, could herald the fall of a kingdom.

The earliest recorded accounts of Hawaiian navigation lore were recorded in 1823 by British missionary, Wm Ellis, who conducted a tour of Hawaiʻi, in the company of missionaries of the American Board of Commissioners of Foreign Missions, who had settled in Hawaiʻi in 1820. Ellis learned of voyages between Hawaiʻi and other islands of Polynesia that were made in antiquity. He also named the navigator, and his god. Ellis reported:

Traditions of Voyages to Marquesas and Tahiti

> In this part of the island there is another tradition very generally received by the natives, of a somewhat more interesting character; and as it may tend to illustrate the history of the inhabitants, and the means by which the islands were peopled, I shall introduce it in this place.
>
> These traditions respect several visits, which in remote times some of the natives made to Nuuhiva and Tahuata, two islands in the Marquesan group, and to Tahiti, the principal of the Society Islands.
>
> One of these accounts the natives call, "The Voyage of Kamapiikai," in which they state that Kamapiikai (child running or climbing the sea—from *kama*, a child, *pii*, to run or climb, and *kai*, the sea) was priest of a temple in Kohala, dedicated to Kanenuiakea.
>
> The exact period of their history when he lived, we have not been able to ascertain; but it is added, that the god appeared to him in a vision, and revealed to him the existence, situation, and distance of Tahiti, and directed him to make a voyage thither. In obedience to the communication, he immediately prepared for the voyage, and, with about forty of his companions, set sail from Hawaii in four double canoes. [page 284]
>
> *After an absence of fifteen years, they returned, and gave a most flattering account of* ***Haupokane****, the country which they had visited. We know of no island in the neighbourhood called by this name, which appears to be a compound of Haupo,*

sometimes a lap, and Kane, one of their gods. Among other things, they described the one *rauena*, a peculiar kind of sandy beach, well stocked with shell-fish, &c. The country, they said, was inhabited by handsome people, whose property was abundant, and the fruits of the earth delicious and plentiful. There was also a stream or fountain, which was called the *wai ora roa*, (water of enduring life).

Other Voyages to Tahiti

Kamapiikai made three subsequent voyages to the country he had discovered, accompanied by many of the Sandwich Islanders. From the fourth voyage they never returned, and were supposed to have perished at sea, or to have taken up their permanent residence at Tahiti. Many were induced to accompany this priest to the country he visited, for the purpose of bathing in the life-giving waters, in consequence of the marvelous change they were reported to produce in those who used them; for it was said, that however infirm, emaciated, or deformed they might be when they went into the water, they invariably came out young, strong, and handsome.

Without making further remarks, these traditions furnish very strong evidence that the Sandwich Islanders were acquainted with the existence of the Marquesan and Society Islands long before visited by Captain Cook; and they also warrant the inference, that in some remote period the Sandwich Islanders have visited or colonized other islands in the Pacific… [Ellis, 1963:285]

We note here that Ellis' reference to "Haupokane" a form of the name Houpo Kāne (also Houpo-a-Kāne), is an important one, as a place of that name is also situated on Mauna Kea, in the vicinity of the springs—which in native tradition are fed by the waters of Waiau. Houpo-a-Kāne, erroneously written as "Hopukani," on maps dating from the 1930s, demonstrates the association of Hawaiian gods with places, and traditions of star lore, and tie the same gods to the celestial bodies. We also see in this one name that there is a depth of relationship and knowledge shared between the native peoples of Polynesia.

Several accounts describing traditional knowledge of the stars have been located. In the 1800s, several native writers described the importance and relationship of *hōkū* (stars) in Hawaiian beliefs, culture and practices (Malo 1951, I'i 1959, and Kamakau 1964 and 1976). Kamakau (1964) tells us that there were many orders of *kāhuna* (priests and expert practitioners). He also recorded that generally, those practitioners in the various orders of the priesthood were of the *papa ali'i*, or chiefly class (Kamakau 1964:7). Among the *kāhuna* were several classes of priest-experts, who specialized in learning about the heavens—both near earth and in the distant night skies. Those *kāhuna* belonged to the classes of:

Papa kilokilo lani, those who could read the signs, or omens, in the sky; the *kilo hoku*, those who studied the stars; the *kilo 'opua*, those who studied and read the omens in clouds… [Kamakau 1964:8]

There follow below, several historical articles on the practices of the *'oihana kilokilo* and *kilo hōkū* of ancient Hawai'i, as recorded by both native writers, and foreign writers, who relied on native informants as their sources. Two of the articles are translated here for the first time, in their entirety, from the original Hawaiian texts. We note that some of the language from the Hawaiian texts was beyond our knowledge base—sometimes presented in metaphorical or esoteric language, or in descriptions that exceed our limited knowledge of the science of astronomy. Thus, we have included the original Hawaiian texts with our translations, to allow readers with greater skill than ours, to delve into the depths of the information conveyed by those who recorded the histories. The combined writings—collected from the 1830s to 1935—provide us with a list of more than 270 Hawaiian names for stars (not including alignments of stars which marked the heavens and pathways of traditional navigators).

"Moolelo Hawaii"

Among the earliest native traditions recorded by Hawaiian writers, are those compiled by Davida Malo, who was of chiefly lineage, and who was among the first students to attend Lahaina Luna seminary. A part of the program at the seminary, included the collection and writing of native traditions and lore—documenting beliefs, practices and customs, of the Hawaiians. In the work compiled by Davida Malo, we find examples of the intimate knowledge and integrated approach of Hawaiians, in observing the relationships of the stars, planets, and heavenly bodies, to the occurrences of natural phenomena—such as the annual position of stars in correlation with annual seasons, and periods of weather—and in the planning of all facets of life, from the most sacred, to the most utilitarian.

In a chapter compiled by Malo, translated by Nathaniel Emerson (ca. 1898), and published in 1951, we find the following account of the pattern of Hawaiian life based on knowledge of the heavens and the earth around them. Readers are requested to keep in mind that Malo's account, while one of the earliest, is but one of many recorded by native writers and others interested in traditional lore. Thus, other variations of the subject matter exist.

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, *makani moae*, 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 hoku*, set at sunrise. *Kaa-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-eleele*, answering to July, the month in which the *ohia* fruit began to ripen; *Mahoe-mua*, 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 *Welehu*, answering to November, which was the season when people, for sport, darted arrows made of the [page 30] flower stalk of the sugar-cane; *Makalii*, corresponding to December, at which time trailing plants died down and the south wind, the *Kona*, prevailed; *Kaelo*, corresponding to January, the time when appeared the *enuhe*, when also the vines began to put forth fresh leaves; *Kaulua*, answering to February, the time when the mullet, *anae*, 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 huhui*) 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 *Hoaka*; 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*, 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 [page 31] night, by which time the shape of the moon had become distinctly round, was called *Akua* (God), this being the second night in which the circular form of the moon was evident.

16. The next night, the fifteenth, had two names applied to it. If the moon set before daylight *ke ao ana*—it was called *Hoku palemo*, sinking star, but if when daylight came it was still above the horizon it was called *Hoku ili*, stranded star.

17. The second of the nights in which the moon did not set until after sunrise—sixteenth—was called *Mahea-lani*. When the moon's rising was delayed until after the darkness of night had set in, it was called *Kulua*, and the second of the nights in which the moon made its appearance after dark was called *Laau-ku-kahi* (eighteenth); this was the night when the moon had so much waned in size as to again show sharp horns.

18. The nineteenth showed still further waning and was called *Laau-ku-lua*; then came *Laau-pau* (twentieth), which ended this group of compound names, three in number. The name given to the next night of the still waning moon was *Ole-ku-kahi*. Then in order came *Ole-ku-lua* and *Ole-pau*, making three of this set of compound names (twenty-first, twenty-second and twenty-third).

19. Still further waning, the moon was called *Kaloa-ku-kahi*; then *Kaloa-ku-lua*; and lastly, completing this set of compound names, three in number, *Kaloa-pau* (twenty-fourth, twenty-fifth and twenty-sixth).

20. The night when the moon rose at dawn of day (twenty-seventh) was called *Kane*, and the following night, in which the moon rose only as the day was breaking (twenty-eighth), was called *Lono*. When the moon delayed its rising until daylight

had come it was called *Mauli*—fainting; and when its rising was so late that it could no longer be seen for the light of the sun, it was called *Muku*—cut off. Thus was accomplished the thirty nights and days of the month.

21. Of these thirty days some were set apart as *tabu*, to be devoted to religious ceremonies and the worship of the gods. There were four *tabu* periods in each moon.

22. The first of these *tabu* periods was called that of *Ku*; the second, that of *Hua*; the third, that of *Kaloa* (abbreviated from Kana-loa); the fourth, that of *Kane*.

23. The *tabu* of *Ku* included three nights; it was imposed on the night of *Hilo* and lifted on the morning of *Kulua*. The *tabu* of *Hua* included two nights; it was imposed on the night of *Mohalu* and lifted on the morning of *Akua*. The *tabu* of *Kaloa* included two nights; it was imposed on the night of *Ole-pau* and raised on the morning of *Kaloa-ku-* [page 32] *lua*. The *tabu* of *Kane* included two nights; being imposed on the night of *Kane* and lifted on the morning of *Mauli*.

24. These *tabu* seasons were observed during eight months of the year, and in each year thirty-two days were devoted to the idolatrous worship of the gods.

25. There were now four months devoted to the observances of the *Makahiki*, during which time the ordinary religious ceremonies were omitted, the only ones that were observed being those connected with the *Makahiki* festival. The prescribed rites and ceremonies of the people at large were concluded in the month of *Mahoe-hope*. The keepers of the idols, however, kept up their prayers and ceremonies throughout the year .

26. In the month of *Ikuwa* the signal was given for the observance of *Makahiki*, at which time the people rested from their prescribed prayers and ceremonies to resume them in the month of *Kau-lua*. Then the chiefs and some of the people took up again their prayers and incantations, and so it was during every period in the year. [Malo, 1951:33]

Hawaiian Astronomy and Navigation
The Journal of William Richards (1841)

The following narratives are excerpted from an 1841 manuscript written by William Richards, in answer to a series of questions asked by Captain Charles Wilkes, Commander of the United States Exploring Expedition. While Richards comments are at times bigoted and minimize the extent of traditional Hawaiian knowledge of the universe around them, the documentation pertaining to aspects of native knowledge of the skies and navigation, is of historic value. His manuscript offers readers one of the earliest written accounts of such knowledge and the documentation of native customs and practices.

Wm. Richards was among the party of first American missionaries to arrive in the Hawaiian Islands (in 1820), and by the death-bed request of the sacred chiefess Keōpūolani (in 1823), he raised Kauikeaouli (Kamehameha III) and his sister, Nahi‘ena‘ena. In his life time, Richards served in many official capacities in the Hawaiian Kingdom. Richards identified the chief, Hoapili, counselor to the first three Kamehamehas, as the primary source of his information, which was also corroborated by Kamehameha III, prior to Richards sending it to Wilkes (in text below).

Ulumaheihei Hoapili was the son of Kame‘eiamoku, one of the “four Kona uncles” and confidants of Kamehameha I. Kame‘eiamoku and his twin brother Kamanawa were of a line of priests of the “class of Ka-uahi and Nahulu” (Kamakau 1961:188, 190, 231); these lines of priests were noted for the knowledge of the stars and heavens. When Kame‘eiamoku died in 1804, his son Hoapili, inherited his position, which he retained until his death in 1840. It was also Hoapili, who in 1819, cared for and hid

the bones of Kamehameha I (Kamakau 1961:211, 212, 215). Even this was done, in association with the stars, it being said "*O ka Hoku o ka malama ke ike ia Kamehameha*" (The morning star alone knows where Kamehameha's bones are guarded) (Kamakau in *Nupepa Kuokoa* September 28, 1867).

Wm. Richards; to Charles Wilkes ESQ., Commander
of the U.S.A. Exploring Expedition
Lahaina March 15—1841:
Previous to your departure from the Islands, I must acknowledge the reception of yours of the 9th. But, in which you have done me the honor to propose several very important questions in relation to these Hawaiian Islands.

I beg you to receive this rather as an apology, than as a full reply to those questions, for though I feel the deepest interest in the subject of them, and the strongest wish that they should be correctly answered, yet your very limited stay at this place removes all possibility of doing justice to a reply. The simple subject of the Government would require a volume to give a full view of it. I can not even enter up on the theory of it in its various branches but simply state a few facts representing it... [page 1]

…"10th If any knowledge of Astronomy."
Of the system by which the heavenly bodies are regulated, the Hawaiians had no knowledge. With a few of the most noticeable facts in relation to the planets they were acquainted. *They were some what accurate observers of some of the phenomina [sic] of the heavens. There was a clan of persons whose profession it was to watch the motions of the stars. The late Hoapili with whom I have often conversed on the subject was accounted one of their most skillful astrologers. From him I learned that they had names for many of the largest stars, and principle constellations. They were acquainted with five planets, which they called "traveling stars." Hoapili was much in the habit of observing these that he could at any moment tell the then present positions of each.* [Page 37]

Their names were as follows:

Kawela — Mercury.

Naholoholo —Venus.

Hoomanalonalo — Jupiter.

Holoholopinaau — Mars

Makulu — Saturn.

Hoapili said he had heard from others that there was one more traveling star, but he never recognized it, and was acquainted with only these five. The more distinguished fixed stars and constellations not only had their distinct names, but the people were in the habit of observing them so accurately that they judged the hours of the night quite as correctly as they did the hour of the day. This remark applies most particularly to the fishermen and those persons whose employment called them to be out considerably in the night.

It was by the particular positions of the planets in relations to certain fixed stars and constellations, that the prophets grounded their predictions in relation to the forte of battles, the success of new enterprises [page 38] &c, &c. The contiguity of their planets to certain fixed stars was considered to be a real indication of the pending death of some high chief. The goddess of the Volcano was also supposed to hold intercourse with these traveling stars, and from their movements therefore, the people often predicted hers.

The motions of the stars in the vicinity of the north pole, attracted their attention considerably and were often a subject of dispute among the astrologers. These they said were “traveling stars, but they travel regularly, where as the others wander here and there.”

Of the true manner of accounting for these phenomina they had not the most distant conception.

Their best Chronologists, measured time by means both of the moon and fixed stars. They divided the year into twelve months, and each month into thirty days. They had a distinct name for each of the days of the month, and commenced the numbering on the [page 39] first day that the new moon appeared in the west. This course made it necessary to drop a day about once in two months, and thus reduce their year to twelve lunations instead of three hundred and sixty days which they numbered according to their *theory*.

This being about eleven days less than the sidereal year, they discovered the discrepancy, and corrected their reckoning by the stars. In practice therefore, the year varied, having sometimes twelve, and sometimes thirteen lunar months. So also they sometimes numbered twenty nine days in a month.

Though their system was thus broken and imperfect, still as their chronologists could tell the names of the day and the names of the month on which any great event occurred, it was generally easy to revise their time to ours by a reference to the phase of the moon at the time. But when the change of the moon takes place about the middle of our calendar month, then we are liable to a mistake of a whole month in reducing their time [page 40] to ours. We are also liable to another mistake of a single day from the uncertainty of the day that the moon was discovered in the west. Having nothing to rely upon except merely their memories, they were also liable to numerous mistakes even in their own method.

Eclipses were uniformly considered to be brought about by an attack of the gods on the sun & moon, and always presaged a war, the death of some high chief, or some other disaster.

The ability of foreigners to predict eclipses, and other astronomical phenomina at first created the highest astonishment. The first almanac published by the American missionaries predicting the phases of the moon, eclipses, tides &c., in 1834, was received by them with great interest, and tended much to confirm their belief in the testimony of the missionaries on every subject.

They were however themselves, in the habit of referring the tides to the actions of the moon, and when they could see the moon, were able to tell the state of [page 41] the tides.

Though they thought much of their success depended on their acting on it were in unison with the heavenly bodies, yet as they were unable to calculate even the most simple of all the movements of the planets for any length of time before hand, they were unable to plan their battles or their enterprises with reference to any particular positions of those planets, and therefore, when the time arrived and they saw that position to be what they supposed unfavorable, they were often at once discouraged and gave up their enterprise, or fled from their enemies even though not pursued.

Could one of their ancient warriors have known enough of astronomy to have calculated even a few of the more simple celestial phenomina, it would have given him vast

advantage over those who had not that knowledge; for he might then have planned his attacks and his enterprises in conjunction with the heavenly bodies, and his followers seeing their positions favorable would [page 42] have been inspired with undaunted courage, while his enemies would have fled in dismay, thinking that they were contending not only with human enemies but with the stars in their course too.

The first little book which was published containing some of the true principles of astronomy awakened their surprise and they at once brought forth the common vulgar objections to it.

Hoapili the astrologer mentioned above, said however, respecting the figure of the earth, "Stop, do not be so quick with your objections to the foreign theory. Fact is look at it. This is what I have always seen. When I have been far out at sea on fishing excursions, I always first lost sight of the beach — then the houses and trees — then the low mountains and last of all the high ones. So, when I returned, I first saw the high mountains, then the lower ones, then the trees and houses, last of all, the beach. I think these foreigners are right, and that the earth is round." [page 43]

11th If any knowledge of Navigation.

The Hawaiians were in the habit of sailing frequently from one Island to another in the group, and were frequently out of sight of land, both on these voyages and on their fishing excursions, but still they can hardly be said to have any knowledge of navigation. They were pretty accurate observers of the weather, and of certain atmospheric phenomina, & their observations of these together with the heavenly bodies, when in sight, enabled them to sail a little distance from land with considerable safety.
They usually never went out of sight of land except by accident.

When they found themselves in these circumstances, they rely mostly on the heavenly bodies if in sight. If not, they were able to judge of the points of compass by the winds and state of the atmosphere, there being considerable difference in the appearance of the weather ac- [page 44] -cording to the direction of the wind. The appearance of the clouds in the vicinity of or in the direction of land afforded them another beacon. Probably very few Hawaiians have ever been lost at sea by mistaking the points of compass and sailing away from land. Their disasters arose from the frailty and smallness of their canoes, which being in some manner disabled by stress of weather, they were prevented from shaping their coarse in the direction they desired.

Their skill in the management of canoes was perhaps unexampled, especially in the surf. But since the high chiefs have possessed foreign vessels, there is sailing to a distance in canoes, and the people are probably losing a portion of their skill.

They do well in the management of their own vessels. No one has ever been lost by being driven away from land. The science of navigation is now taught in the seminary and a considerable number have made proficiency in the study… [page 45]

…Thus Sir, in a very hasty and imperfect manner have I attempted the near outline of a reply to your important questions. I regret my inability to do it in a more perfect manner.
Several of the subjects were too extensive to allow even an outline of an answer in this letter. But what I have written you may rely upon as correct, for you have it not on my authority only but also on the King's as I have read the above to him and he pronounces it the truth.

Be pleased Sir to accept the assurance of the high considerations and esteem with which I remain very truly your most obedient servant. [Hawaii State Archives, Series M-126:58]

"A History of the Sandwich Islands"
(Sheldon Dibble, 1843)

Sheldon Dibble, a member of the American Mission company, arrived in the Hawaiian Islands in June 1831. He remained in the islands most of the time until his death in 1845. After serving a short time in Hilo, Dibble was stationed on Maui, where he had charge over the Lahaina Luna Seminary. While at Lahaina Luna, Dibble undertook a program of collecting Hawaiian histories, with the help of select native students, who were sent out to speak with elder Hawaiians. Describing this effort, Dibble (1843) reported:

> The method which I took to collect facts was as follows: I first made out a list of questions, arranged chronologically according to the best of my knowledge. I had continual occasion afterwards to add to the questions, to vary and to change them. I then selected ten of the best scholars of the Seminary [Lahaina Luna], and formed them into a class of inquiry. I met them at an appointed hour, gave them the first questions and conversed freely with them upon it, that they might understand fully and distinctly what was sought for. I then requested them to go individually and separately to the oldest and most knowing of the chiefs and people, gain all the information that they could on the question given out, commit each his information to writing and be ready to read it on a day and hour appointed. At the time of meeting each scholar read what he had written—discrepancies were reconciled and corrections made by each other and then all the compositions were handed to me, out of which I endeavored to make one connected and true account… [Dibble, 1843:iii-iv]

The result of his efforts, led to the collection of significant Hawaiian histories. Among the students were the well known Hawaiian historians, Davida Malo and Samuel Mānaiakalani Kamakau, and a number of lesser-known individuals who in subsequent years, contributed many important historical accounts to the native language newspapers. The above said, we note here, that the writings of the reverend Dibble, while recording significant Hawaiian information, that may have otherwise been lost, also demonstrate an almost unparalleled level of bigotry towards the people he had come to "save."

Because of the sources of information, and the early date in which much of it was recorded, we include Dibble's compilation of Hawaiian reckoning of time by nights of the moon, and the Hawaiian calendar—a system reportedly established by Wākea, for whom Mauna Kea is named; and his narratives on concepts of Hawaiian astronomy, which follow closely, those reported by William Richards above, being based in part on the authority of Hoapili.

> ***Native Division of Time,***
> ***Phases of the Moon, and the Hawaiian Calendar***
>
> It is said that their division of time was made by their first progenitor Wakea at the time of his domestic quarrel… Be this true or false, the tradition shows that their division of time was very ancient. [page 13]
>
> In their reckoning, there were two seasons, summer and winter. When the sun was perpendicular and moving toward the north and the days were long, and the trees bore fruit, and the heat was prevalent,—that was summer [*Kau*]. But when the sun was perpendicular and moved towards the south, and the nights were lengthened, and the trees without fruit, and the cold came,—that was winter [*Ho'oilo*]. There were also six months in each season. Those of the summer were, *Ikiki, Kaaona, Hinaiaeleele, Kamahoemua, Kamahoehope,* and *Ikua*. The winter months were, *Welehu, Makalii, Kaolo, Kaulua, Nana,* and *Welo*. These twelve months united constituted one year. *Welehu* was the completion of the year, and from *Makalii* the new year was reckoned. In one year there were nine times forty nights. The nights were counted by the moon. There were thirty nights in each month, seventeen of which were not very light, and thirteen were; the different nights (and days) deriving their names from the different aspects of the moon, while increasing, at the full, and waning. The first night was called *Hilo* (to twist), because

the part then seen was a mere thread; the next, a little more plain, *Hoaka* (crescent); then *Kukahi, Kulua, Kukolu, Kupau, Olekukahi, Olekulua, Olekukolu, Olekupau*. When the sharp points were lost in the moon's first quarter, the name of that night was *Huna* (to conceal); the next on its becoming gibbous, *Mohalu*, then *Hua*; and when its roundness was quite obvious, *Akua*. The nights in which the moon was full or nearly so, were *Hoku, Mahealani*, and *Kolu*. *Laaukukahi* was the name of the night in which the moon's decrease became perceptible. As it continued to diminish the nights were *Laaukulua, Laaupau, Olekukahi, Olekulua, Olepau, Kaolakukahi* [*Kaloakukahi*], *Kaloakulua, Kaloapau*. When the moon was very small the night was *Mauli*, and that in which it disappeared, *Muku*. The month of thirty days is thus completed.

From each month four periods were selected in which the nights were consecrated, or *tabu*. The following are the names: *Kapuku, Kapuhua, Kapukaloa,* and *Kapukane*; the first consisted of three nights; commencing with *Hilo* and [page 14] terminating with *Kulua*; the second was a period of two nights, beginning with *Mohalu* and ending with *Akua*; the two nights, from *Olepau* to *Kaloakulua*; the fourth from *Kane* to *Mauli*.

It is mostly in reference to the sacred seasons that I have here introduced their division of time. The method of reckoning by the moon, led, of course, to many irregularities. On a future page I may, perhaps, notice some of them…

In the regular division of time already mentioned and the occurrence of sacred seasons at intervals four times a month there may be some trace of an ancient weekly Sabbath. There were also yearly feasts, and feasts of the new moon, which were observed with much religious ceremony… [page 15]

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…Of geography they knew nothing beyond the limits of their own islands. Some names of foreign islands were indeed used in their songs and in their numerous legends, but no distinct knowledge of them existed among the people, at least as late as the days of Kamehameha.

Of astronomy they knew somewhat more, as I think is true of savage nations generally. They knew nothing of course of the system by which the heavenly bodies are regulated, but with a few of the most noticeable facts in relation to the planets they were acquainted. There was a class of persons whose profession it was to watch the motions of the stars. These astrologers, among whom Hoapili, the late Governor of Maui, was particularly skilled, had names for many of the largest stars and principal clusters. They were acquainted with five planets which they called traveling stars. Hoapili was so much in the habit of observing these, that he could at any moment tell the position of each. Their names for these five planets were as follows: *Kawela*–Mercury, *Naholoholo*–Venus, *Hoomanalonalo*–Jupiter, *Holoholopinau*–Mars, *Makulu*–Saturn. Hoapili said that he had [page 89] heard from others that there was one more traveling star, but he had never recognized it and was acquainted with only these five. The more distinguished fixed stars and clusters had their distinct names, and the people were in the habit of observing them so much that they judged of the hour of the night about as accurately as of the hour of the day; this was especially true of fishermen and those persons whose employment called them to be out considerably in the night.

It was by the particular position of the planets, in relation to certain fixed stars and clusters of stars, that the prophets grounded their predictions in relation to the fate of battles, the success of new enterprises, etc. The contiguity of these planets to certain fixed stars was considered to be a sure indication of the speedy death of some high chief. The goddess of the volcano was also supposed to hold intercourse with these traveling stars and from their movements therefore the people often predicted volcanic eruptions.

The motions of the stars in the vicinity of the north pole attracted their attention considerably and were often the subject of dispute. These they said were traveling stars, but did not wander here and there like the others, but traveled regularly.

Those who took the most care in measuring time, measured it by means both of the moon and fixed stars. They divided the year into twelve months, and each month into thirty days. They had a distinct name for each of the days of the month, as has been shown on a former page, and commenced their numbering on the first day that the new moon appeared in the west. This course made it necessary to drop a day about once in two months, and thus reduce their year into twelve lunations instead of three hundred and sixty days. This being about eleven days less than the sidereal year, they discovered the discrepancy and corrected their reckoning by the stars. In practice, therefore, the year varied, being sometimes twelve, sometimes thirteen lunar months. So also they sometimes numbered twenty-nine and sometimes thirty days in a month.

Though their system was thus broken and imperfect [page 90] yet, as they could tell the name of the day and the name of the month when any great event occurred, their time can be reduced to ours by a reference to the phase of the moon at the time. But when the change of the moon takes place about the middle of our calendar month, then we are liable to a mistake of a whole month. We are liable to another mistake of a day, from the uncertainty of the day that the moon was discovered in the west. Having nothing to rely upon except merely their memories, they were also liable to numerous mistakes from that source.

Eclipses were uniformly considered to be an attack of the gods on the sun and moon, and always presaged war, the death of some high chief or some other great disaster.

The ability of foreigners to predict eclipses and other astronomical phenomena, created at first the greatest astonishment. The Almanac published by the Mission, predicting the phases of the moon, eclipses, tides, &c, was received by them with much interest, and tended somewhat to confirm their belief in our testimony on every subject. It is worthy of remark, however, that they themselves were in the habit of referring the tides to the action of the moon and when they could see the moon were able to tell the state of the tides.

Though they thought that much of their success depended on their acting in unison with the heavenly bodies, yet as they were unable to calculate even the most simple of all the movements of the planets for any length of time beforehand, they were unable to plan their battles and their enterprises with reference to any particular position of these planets; and therefore when the time arrived and they saw that position to be what they supposed unfavorable, they were often at once discouraged and gave up their enterprise, or fled from their enemies, even though not pursued. Could one of their ancient warriors have known enough of astronomy to have calculated even a few of the most simple celestial phenomena it would have given him a vast advantage, for he might then have planned his attacks and his enterprises in conjunction with the heavenly bodies, and [page 91] his followers, seeing their position favorable, would have been inspired with undaunted courage, while their enemies would have fled in dismay, thinking that they were contending, not only with human armies, but also with the stars in their courses.

The first little book which was published in their language, containing some of the true principles of astronomy, awakened their surprise, and they at once brought against it the common vulgar objections. Hoapili, the astrologer before mentioned, when others were disputing about the figure of the earth, said: "Stop; do not be so quick with your objections to the foreign theory. Let us look at it. This is what I have always seen. When I have been far out at sea on fishing excursions, I first lost sight of the beach, then of the houses and

trees, then of the hills, and last of the high mountains. So when I returned, the first objects which I saw were the high mountains, then the hills, then the trees and houses, and last of all the beach. I think therefore that these foreigners are right, and that the earth is round."

Of navigation they could hardly be said to have any knowledge. They were in the habit, however, of sailing frequently from one island to another in the group, and were frequently out of sight of land both on these voyages and on their fishing excursions. In some instances they sailed intentionally out of sight of land, from one extreme point of the group to the other. There are numerous traditions also, of voyages performed even to and from foreign islands. When out of sight of land, they sailed by the sun and stars, which in this climate are rarely obscured. The direction of the wind was also another guide, the weather undergoing an entire change on an interruption of the trade winds. Their skill in the management of canoes was perhaps unexampled, especially in the surf. Excepting, however, this practical and common sense sailing they had no knowledge whatever of navigation… [page 92]

"No ke Ao Hoku" (About Astronomy)

In July 1865, native historian, Samuel Mānaiakalani Kamakau, wrote an article which he submitted for publication in the native newspaper, *Kuokoa* (issue of August 5, 1865:4). His account was apparently in response to some narrative or discussion of astronomy and navigation skills being practiced, and in the following article, he provided a detailed explanation of Hawaiian knowledge of the stars. W.D. Alexander, a missionary descendant, and surveyor general of the Kingdom of Hawai'i published a translation of Kamakau's article in the Hawaiian Annual of 1891. Below, follow the original Hawaiian texts of Kamakau, and a modified version of Alexander's translation. The accompanying translation, modified by Maly, attempts to provide readers with a more accurate account of Kamakau's texts. The Hawaiian is included in order that readers of the Hawaiian language may compare and clarify the actual meaning of Kamakau's narratives.

No ke Ao Hoku
Na S.M. Kamakau
Honolulu, Iulai 26, 1865
Ua kulai waiho molaelae ae au i ka moolelo o na wahi keiki hookele hoku holo moana, ai ko manao o Mokuleia; noweo maka uawahi kai o Elokupaoa.

Ua ike ae au i ka lakou Kumu Ao Hoku holo moana. He wahi keiki i umi makahiki a oi ae paha, oia ka lakou kumu holomoku.

O Kanowa ke kahua o Hanai, ka halekula o Pekue, ka nalu o Kalakiki, ke kumu o Kanekahoowaha me na haumana.

No Ke Aohoku Ana.

1. *E lawe ae ke kumu i ka ipu hokeo loihi me he pauku olokaa la ke ano. Ua kunikuni ahi ia he mau alanui. Oia hoi na alanui o na hoku hookele, ua kapaia na Hoku Aiaina.*

   A mawaho o na alanui ekolu na hoku ua kapaia na Hoku o ka Lewa.

2. *Hookahi alanui e moe ana mai ka Hokupaa Akau; a hiki aku i ka Hoku Welelau Hema o Newe. O ka aoao akau o keia alanui; ua kapaia o "Kealaula a Kane." A o ka aoao hema; ua kapaia o "Ke alanui Maaweula a Kanaloa."*
3. *O na kaha hikina ekolu. O ke kaha hikina ma ka aoao akau; oia kahi e ku ai ka la i ka akau i ka la 15 me ka 16 o Kaulua, ua kapaia alanui "Ke alanui Polohiwa a Kane."*

4. O ke kaha hikina ma ka aoao hema, oia kahi e ku ai ka la i ka aoao hema i la 15 me ka 16 o Hilinama. Ua kapaia ia alanui o "Ke alanui Polohiwa a Kanaloa."

5. O ke alanui iwaenakonu i kupono i ka lolo, ua kapaia o "Ke alaula a ke Kuukuu;" a o "Ke ala i ka piko o Wakea."

6. Mawaena o keia mau alanui na Hoku paa o ka Aina; i kapaia na Hoku hookele moana. Ua kilokilo ia kela hoku keia hoku maluna o ka ipu.

7. I ke ao ana, kuhikuhi mai la ke kumu i na hoku. Eia o Humu me kona mau lala iwaho, a me na loina i ka akau, a me ka hema; ke kulepe, ka puahiohio, ka waipuilani a pau ke ano. Pela no o Keoe, o Nuuanu, o Kapea, o Kokoiki, o Puwepa, Nakao, Nalalani, o Pililua, Mananalo, Kaawela, Naholo, Pinaau, Polohilani, Kaweo, Hokuloa, Ukali.

[8.] Ua makaukau oe no ka pauku olokaa. Alaila e ao oe i na mea o loko o ka hale, i na ipu o loko, i na mea o ka hale a pau i na loina a pau; he mau hoku kiai ia, ua pau na mea o loko i ke ao ia.

9. Mai na po i na Kaloa, a hiki i o Mauli. E lawe ae ke kumu i ka moena puao maikai, a hohola ae iwaho ka hua, a e moe iho oe, a e huli ae ko alo iluna; a e loaa ia oe Ke Alapolohiwa a Kane me Kanaloa aia malaila, na hoku hookele; oia hoi na Hoku Ai-Aina. Akaka ia oe na la kupono o ka moana, mala o ke Kau me ka Hooilo.

10. I ko holo ana i ka pae Aina o Kahiki ua loaa ia oe he lalani hoku hou me na hoku i ka lewa a me ka lepo.

11. I ko hiki ana i ka piko o Wakea e nalowale ia oe ka Hokupaa Akau. Alaila e lilo Newe i hoku alakai hema, a o ka pae hoku o Humu ma na koa alakai maluna. I ka pau ana o na loina ia oe o ka lani.

12. E ao oe i na loina o ka moana, i na la e pii ai ke au iluna, a me na e moku ai ilalo, a me na la inoino o ka wili-au, me na la haumalu newenewe malie, a ku o ke au.

13. E ao oe i ke Kamaikihulipu i makaukau oe i ka hoolana, i pau ka loina o ke kaula hoolana ai. E ao oe i ka au mai kekahi mokupuni, a i kekahi mokupuni.

14. E lolo oe i kau mau oihana i ao ai i paanaau ia oe; i kokua mai ai ke Akua i kona mana Hemolele. I kou holo ana iloko o ke kupilikii a me na kai lipolipo o ke aloha ole.

O ka Kanekahoowaha aoao Aohoku keia. He mau elemakule Aohoku o Kahipoliau, o Namaka, o Pai, o Kahipooula, he poe Aohoku keia. Ua maopopo ia lakou na loina; ua aneane e like no lakou me ka mua, ua oi loa'ku no nae ia o ke komo ana o Kaiahuna maloko o Kuaiako. Aole au i lohe i kekahi mea like me ia ma ke ao nei. O oukou paha kai lohe e hai iho. [S.M. Kamakau in Nupepa Kuokoa, Aukake 5, 1865:4]

Translation of Kamakau – August 5, 1865 (based on Alexander, 1891:142-143)

About Astronomy

I hereby set aside, and clarify the stories of some youth who sail the ocean, the thoughts of Mokuleia, whose eyes are blurred by mist on the sea of *Elokupaoa*.

I knew their astronomy teacher and sail instructor. I was a child of perhaps ten years, and it was he who was their sailing teacher.

Kanowa was the site, at Hanai, the school of Pekue, the waves of Kalakiki, and the teacher was Kaneakahoowaha and his students.

Instructions in Astronomy.

1. Take the lower part of a gourd or *hula* drum (*hokeo*), rounded as a wheel, on which several lines are to be marked (burned in), as described hereafter. These lines are called, "*Na alanui o na hoku hookele*" (the highways of the Navigation stars), which stars are also called "*Na hoku ai-aina*" (the stars which rule the land).

   Stars lying outside of these three lines are called "*Na hoku o ka lewa*," *i.e.*, foreign, strange or outside stars.

2. The first line is drawn from the "*Hoku paa*" (North Star), to the most southerly of "*Newe*" (Southern Cross). The portion to the right or east of this line is called "*Ke alaula a Kane*" (the dawning, or the bright road of Kane); and that to the left or west is called "*Ke alanui maaweula a Kanaloa*" (the much traveled highway of Kanaloa).

3. Then three lines are drawn east and west (latitudinally), one across the northern section, indicates the northern limit of the sun, about the 15th and 16th days of the month *Kaulua*, and is called "*Ke alanui polohiwa a Kane*" (the black shining road of Kane).

4. The line across the southern section indicates the southern limit of the sun, about the 15th and 16th days of the month *Hilinama*, and is called "*Ke alanui polohiwa a Kanaloa*" (the black shining road of Kanaloa).

5. The line exactly in the middle of the sphere (the drum, the *Lolo*), is called "*Ke alanui a ke Kuukuu*" (the road of the Spider), and also "*Ke alanui i ka Piko o Wakea*" (the way to the navel of Wakea).

6. Between these lines are the fixed stars, "*Na hoku paa o ka aina;*" which are called the stars by which one navigates on the sea. The teacher will mark the position of all these stars on the gourd.

7. Thus he will point out to his scholars the situation of *Humu* (Altair), and its associates on the outside, and to the north and south, with the winds *Kulepe, Puahiohio, Waipuilani,* and of all types. The stars are *Keoe* (Vega), *Nuuanu*, *Kapea*, *Kokoiki*, *Puwepa*, *Nakao* (Orion), *Nalalani, Pililua*, *Mananalo*, *Kaawela*, *Naholo*, *Pina-au*, *Poloahilani*, *Kaweo, Hokuloa* (Venus), *Ukali* (Mercury).[14]

[8.] Now you are prepared with the gourd container. Now you are taught of the things within the "house," those things of the *ipu*, all the things of the house, all the customs; there are many guardian stars, all of these things are found in the teachings.

9. During the nights from *Kaloa* to *Mauli* (the dark nights of the moon), are the best times for observation. Spread out a mat, lie down with your face upward, and contemplate the dark-bright sections of Kane and Kanaloa, and the navigating stars contained within them; that is of the *Hoku Ai-aina*. The good days for the ocean, in the seasons of *Kau* and *Hooilo*.

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[14] To the list originally recorded by Kamakau in 1865, Alexander (1891) added several additional star names and their English equivalents. Alexander translated the paragraph as:

Between these lines are the fixed stars, "*Na hoku paa o ka aina*." On the sides are the stars by which one navigates. The teacher will mark the position of all these stars on the gourd. Thus he will point out to his scholars the situation of *Humu* (Altair), *Keoe* (Vega?), *Nuuanu*, *Kapea*, *Kokoiki*, *Puwepa*, *Na Kao* (Orion), *Na Lalani o Pililua*, *Mananalo*, *Poloahilani*, *Huihui* (the Pleiades), *Makalii* (the Twins), *Ka Hoku Hookelewaa* (Sirius), *Na Hiku* (the Dipper), and the planets, "*hoku hele*," *Kaawela* (Jupiter), *Hokuloa* (Venus), *Hokuula* (Mars), *Holoholopinaau* (Saturn), *Ukali* (Mercury), etc. [Alexander, 1891:142-143]

10. If you sail for the Kahiki groups, you will discover new constellations and strange stars over the deep ocean, "*hoku i ka lewa a me ka lepo*."

11. When you arrive at the "*Piko o Wakea*" (Equator), you will lose sight of the "*Hoku-paa*" (North Star). Then "*Newe*" will be the southern guiding star, and the constellation of "*Humu*" will stand as a guide above you, "*Koa alakai maluna*." That is when you have mastered all the customs of the heavens.

12. You will also study the regulations of the ocean, the movements of the tides, floods, ebbs and eddies.

13. You will also study the art of righting upset canoes, "*ke kamaihulipu*," and learn the currents that run from one island to another.

14. All this knowledge contemplate frequently, and remember it by heart, that the God will empower you. So that it may be useful to you on the tough, the dark and unfriendly ocean.

Thus are the Astronomy teachings of Kaneakahoowaha. There are still several old men who know Astronomy, they are Kahipoliau, Namaka, Pai, and Kahipooula, they are Astronomers. They know the customs, and they are of almost the same skill as the first. But he was the foremost, in the skill of entering Kaiahuna and in Kuaiako. I have not heard of any other like him on earth. If perhaps you have heard, say so. [Translation of W.D. Alexander, in the Hawaiian Annual, 1891:142-143; modified by Maly to reflect the original text of S.M. Kamakau]

Nā Hōkū o ka Hoʻokelewaʻa (Stars of the Navigators)

In December 1865-1866, Kupahu, contributed a series of articles to the native newspaper, *Kuokoa*, discussing Hawaiian religion. One article in the series (*Kuokoa*, December 30, 1865:4), was dedicated to the practices of those people who knew the stars, and their importance in Hawaiian beliefs and customs. Kupahu's article is of particular importance, as it names many stars of the Hawaiian skies, and also provides us with some traditions associated with their names and with whom they were associated. The original Hawaiian texts, as published in the *Kuokoa*, and an English translation, prepared by Maly, follow below. As in the account above, we note that some of the concepts and use of language were confusing to us. Thus, readers more expert in the field of language and astronomy may be able to clarify the meaning of Kupahu, through their own careful review of the narratives.

Hoomana Kahiko.
HELU 33.

Na inoa a ka poe kahiko i kapa ai i na Hoku a me ke kilokilo ana i na Hoku.
Ua oleloia e ka poe Ao-Hoku o Hawaii nei mai kinohi mai, ua lawa pono na kanaka a pau i na hoku, mai ka mea e noho ana ma ka nohoalii, a hiki loa i ka mea i kapaia he kauwakuapaa. Nolaila, eia malalo iho nei kekahi mau hoku, a me ko lakou ano, a me na hana a lakou.

1. O na hoku kokua i ka hookelewaa ana.
Aia ma ka aoao akau kekahi hoku i kapaia e ka haole he Hokupaa Akau, a i kapaia hoi e ko Hawaii nei poe Ao-Hoku i na inoa ekolu; o Kiapaakai, Noho-loa ame Kumau. Ua kapaia keia mau inoa [illegible] no kona panee ole iluna [illegible] aole no hoi ma o, aole [illegible] ma kekahi wale no wahi e no [illegible] e akaka ai kona kokua no na poe hookelewaa. Ina e noho no kekahi kanaka ma Hawaii, a makemake e holo i Maui, alaila, o kana hana no ia, o ka hoomakaukau i na mea e pili ana i ka waa, a makaukau ia mau mea; i ke ahiahi ana aku, o ka hoomaka mai la no ia i ka holo ana mai Hawaii mai, me ka hoopololei i ka ihu o ka waa i kahi o ka hoku i kau ai, nona na inoa ekolu i haiia malunaʻe. A pela mau no hoi e hoopololei ai a hiki i kahi i makemake ai e holo. I ka hoi ana hoi i Hawaii, e

hoopololei no i ka hope o ka waa i kahi kupono i ua hoku la. Aia hoi mawaho ae o keia hoku, i kapaia i na inoa ekolu, kekahi mau hoku ehiku e poai mau ana ia ia, i ka po a me ke ao; a pela mau aku no. O ke kau ana o keia mau hoku, aia no ia ma ka lalani kekee. Ina e ikeia keia mau hoku ehiku e kau ana maluna pono iho o keia hoku, i ka wa mahope iho o ka napoo ana o ka la, alaila, e maopopo no i ka poe i ike i ke Ao-Hoku o Hawaii nei. Aia a kau hou keia mau hoku i ko lakou poai ana ia ia, alaila, e kokoke ana i ke ao.

2. Kekahi mea e kokua ai i ka poe e hookelewaa ana.

Aia ma kahi i kapaia e ko Hawaii nei poe ao-hoku, o Kuamoo kekahi mau hoku he lehulehu, aka, o ko lakou kau ana, ua kau no ma ka lalani poepoe. He nui na hoku ma kauwahi, a kakaikahi ma kauwahi, a hookahi no ma kauwahi. Ua kapaia na inoa o na hoku o keia lalani, ke nana iho no hoi kakou malalo nei. O ka nui o ko lakou mau inoa, he iwakalua kumamaono. A eia no hoi ka mua: O Ikaika, oia no ka inoa i kapaia e ko Hawaii nei poe ao-hoku, a i kapaia hoi e ka poe akeakamai o Iubita, Kaawela. Eia kona wehewehe ana: Ua kapaia aku kona inoa mamuli o kona ano malamalama, oia kela inoa i hoikeia'e nei maluna. O keia hoku no hoi kekahi mea nona i hoike mai ka lilo wale ana mai o Kauai ia Kamehameha I., me ke kaua ole ia. I ka wa e noho alii ana o Kaumualii no Kauai, ua kaua mai o Kamehameha I, me ke alii o Maui nei, ua lanakila no o Kamehameha, a pela no i ko o Oahu. Noho iho la o Kamehameha ma o Oahu, a kupu ae la kona manao e ku e kaua ia Kaumualii, ke alii o Kauai. Mamua ae nae o ka holo ana o Kamehameha i Kauai, hoomaka kona kilokilo hoku, e nana i na ouli o ka lani ma ka mea e pili ana i kana oihana he kilo hoku, aka, i kona nana ana, ike aku la oia i keia hoku i kapaia o Ikaika, a me ko Kaumualii hoku e kau pu ana.— Ia manawa no, pane ae la ua kilo hoku nei ia Kamehameha, "E lilo ana o Kauai ia oe, no ka mea, ke hoike ia mai la, ua lilo ka Aina nou; a e lilo wale mai aka no ka Aina ia oe, me ke kaua ole mai o ke alii o Kauai, a pela aku no hoi oe."

Mahope mai, kena ae la o Kamehameha i kona mau waa kaua, e holo aku i Kauai e kaua ai. Ia lakou i hiki ai ma Kauai, hoomaka lakou no ka hoonoho ana i ke kaua, me ka manao no hoi e kaua koke no. I ko lakou hoomaka ana e kaua aku, ia manawa, pane aku o Kaumualii, "O hoi, a nana mai oe, a uhi ae kapa eleele, a kau ka puna i ka nuku, alaila, kii mai i ko Aina." Ia manawa, akahi no a hoomaopopo o Kamehameha i ka olelo mua a kona kilo hoku i hai mua aku ai ia ia, mamua ae o ko lakou holo ana i Kauai, me kona olelo iho iloko ona. Ua ko io no ka ike a kona kilo hoku i hai aku ai ia ia ma Oahu. Eia ka lua o na inoa o na hoku o keia lalani hoku. O Mulehu, aole nae oia inoa wale no, aka, he mau inoa e ae no kekahi o keia hoku, oia hoi o Poloahilani, a me Poloula. O ke ano o keia hoku, he hoku makapo, a he pohina no kona ano ke nana aku kakou i ka po. Ua kapaia no hoi ka inoa o keia hoku mamuli o kekahi alii o Hawaii nei, oia hoi o Poloahilani, a o kona ano o ka noho ana, he alii makapo, elua mea nona ia e alakai iwaho, a iloko; e paa ana kekahi ma ka lima akau, a pela no hoi ma lima hema. A no ka makapo o keia alii, ua lele kona hauli iluna o ka lani, a kau i kela mau hoku i kapaia i na inoa ekolu maluna ae. O ke kau ana o keia mau hoku, hookahi mawaena, oia ka hoku pohina, a o kekahi hoku ma kekahi aoao, a o kekahi no hoi ma kekahi aoao, e like me keia kii molale iho, a pela ko lakou ano ke nana aku i ka po.

* * * *O keia hoku ua pili ia Kuakini a me kana mau mamo.*

Eia ke kolu o na inoa o keia lalani, oia hoi o Nanamua ma. Elua nae keia mau hoku, aole nae i ike ia ko laua mau moolelo.

Eia hoi ka ha o na hoku o keia lalani. O Nanaakeauhaku; elua no mau hoku laua, aole no hoi i ikeia ko laua moolelo.

Eia ka lima o na hoku o keia lalani, o Kupuku; ehiku mau hoku ko lakou nui, a ua kau paapu lakou ma kahi hookahi. A nolaila mai ke kumu o ko lakou inoa, o Kupuku, no ka paapu loa ma kahi hookahi.

Eia ke ono o na inoa o na hoku o keia lalani, o Haunakelekele; hookahi no hoku ia, aole no hoi he lehulehu ae, aole no hoi i ikeia kona moolelo. Ka hiku o na inoa o na hoku o keia lalani, oia hoi o Makaimoimo. 8. O Makaamoamo. 9. O Makaalohilohi. 10. O Makaholowaa. Aole nae i ike ia ko lakou mau moolelo.

11. O Kanukuokapuahi. Ua like kona ano me keia kii e kau nei ke nana'ku ka kakou i ka po.

A o ka hoku maluna loa, oia hoi ka mea i kapaia kona inoa o Kanukuokapuahi. [Aole nae i pau pono loa na hoku i ke kauia, aka, pela nae ke ano o ke kii i ka nana aku.]

Eia ka umi kumamalua o na inoa o na hoku o keia lalani, o Kapuahi. 13. O Paeloahiki. 14. O Anianikalani. 15. O Pulelehuauli. 16. O Pulelehuakea. 17. O Pulelehuakawaewae. 18. O Makahaiaku. 19. O Makahaiwaa. 20. Kahaikanai. O keia mau hoku, ua kau pakahi no lakou, aole nae hoi i ikeia ko lakou mau moolelo. Eia ka iwakalua kumamakahi; o Kupualaloakalani ma, aole no i ikeia ko lakou mau moolelo. 22. Ekolu o Humu ma, a o ko lakou nui iho la no ia. O ke kumu i kapaia'i o ka inoa o keia mau hoku, mamuli no ia o kekahi hookelewaa akamai o Hawaii nei ka wa kahiko. Penei e maopopo ai; i ka wa kahiko, kupu ae la ka manao o kekahi alii, e holo i Wailuanui i Kauai. Ia manawa, hoomakaukauia na waa, na kanaka, na kaukaualii, na'lii a me ka Moi. I ke ahiahi oia la, hoomaka na kanaka e holo mai Oahu aku, a o na keiki a Humu, o laua ke holo pu. Ua ao ia kekahi i ke kilo hoku, a ua akamai loa, oia hoi ka hiapo. I ka holo ana o na keiki elua a Humu me na kanaka ma ko lakou waa. I ka holo ana nae a waena o ka moana, nana ae la ua keiki mua nei, ua hala loa ka waa i ka lepo, pane ae la oia me ka olelo ae i ka mea nana e hookele ana ka waa, "Hoihoi ia ae ka waa iluna o Humu ma." Pane mai no hoi ka mea nana e hookele ana ka waa, "ua ike no olua." Me ke kuamuamu aku no hoi i na hua ino. A pela mau no ko laua pane ana, a hiki loa iwaena o ka moana, kua ukiuki loa iho la na kanaka maluna o ka waa, a kiolaia aku la laua iloko o ke kai. Ia laua e lana ana iluna o ka ilikai, pane aku la ke keiki muli i kona kaikuaana, "E make paha auanei kaua, no ka mea, ua pau loa aku nei na auwaa i ka hala mamua o kaua." Pane mai hoi ke kaikuaana, "Au ae paha kaua a kupono malalo o Humu (hoku) ma, a malaila kaua e lana ai." Ae a-e la no hoi kona pokii. Au aku la no hoi laua a kupono malalo o ua hoku nei, a lana iho la laua. O Humu oia no ka makuakane o ua mau keiki nei, he hookelewaa kaulana oia no ke akamai. Ua noho no oia a mahope mai ma ka waa o ke alii; oia hookahi no hoi ka waa i koe mahope mai, aole he waa e ae.

Mamua o ka holo ana mai o ua mau keiki nei, aole no i holo mai ko laua makuakane ma ka waa o ke alii. A hala aku la lakou, a liuliu, holo mai la ko laua makuakane me ke alii. I ka wa a ka makuakane e holo aku nei me ke alii, aia no kana mau keiki e lana ana i ka ilikai. Ia wa koke no ike mai la kana mau keiki i keia mea nui e holo mai ana, alaila, pane ae la ka hanau muli i kona kaikuaana, "E, he waa la, eia'e ke holo pololei mai nei la i kahi a kaua e lana nei." Pane aku la ka hanau mua, "o ko kaua papa (makuakane), ae keia me ke'lii." A hiki mai la ka waa i kahi a laua e lana ana, hookui ae la ka hanau mua i kona mau lima ma ka ihu o ka waa; a lohe ae la ke kanaka ma ka ihu o ua waa nei, pane ae la oia me ka leo nui, "E! He mau kakanaka, eia la ke hookui ae nei malalo o ka ihu o ka waa." A lohe o Humu no keia leo, puiwa koke ae la oia, a hookaa ae la i ka ihu o ka waa i ka makani, me ka manao no nae iloko ona, o kana mau keiki no. Ia manawa, hooiliia ae la hoi ua mau keiki nei iluna o ka waa, a ikeia iho la o na keiki no a Humu. Lele aku la nae o

Humu, a honi aku la i na ihu o kana mau kama aloha, a uwe iho la. A no ko lakou hauwalaau nui, puoho ae la ka hiamoe o keʻlii, a ninau ae la i ke kumu o ko lakou walaau ana. Pane ae la kana hookele oia hoi o Humu, "o kuu mau keiki hoi paha, ua kiolaia iloko o ke kai, a loaa mai la ia kakou." Ninau ae la ke alii ia Humu, "Pehea aku la ko lakou pono?" Pane aku o Humu, "aole lakou e pae i ka Aina, no ka mea, ua hala i ka lepo ko lakou holo ana." Ninau hoi o Humu i kana mau keiki, "Iluna owai ko olua kiolaia ana?" Iluna o Humu ma wahi a na keiki. Pane hou mai keʻlii ia Humu, "E pae pono ana anei lakou i ka Aina?" Aole e pae pono aku lakou, o i holo auanei lakou a launa lihi aku i ka Aina, a pa mai ka makani mai ka Aina mai, hala hou no i ka moana, a o ka make no ko lakou hope;" pela aku o Humu i keʻlii. Pane hou aku o Humu, "Ina no auanei kakou e holo aku a pae i ka Aina, a hele aku e imi ma kahakai, aole no e loaa aku kekahi auwaa, aole no hoi o kekahi kanaka hookahi." Ma ko lakou nei pae ana aku hoi i Wailua, a ninau aku hoi i kamaaina no na auwaa i holo mua aku ai, aole no he waa hookahi i pae aku, aole no hoi he kanaka hookahi a lakou i ike ai mai ka moana aku. Wahi a kamaaina.

Eia hoi ka iwakalukumamakolu o na hoku o keia lalani: Eha Keoe. O ka nui o keia mau hoku, eha no lakou, a o ke kau ana, ua like no ia me keia ano kii e kau nei. Ua kau no hoi kekahi mamua o ke kahi, me ke kowa loihi ma waena, a pela no hoi kekahi mau hoku, e kau ana kekahi ma kekahi aoao, a o kekahi ma kekahi aoao. Eia hoi ka iwakaluakumamaha, o Kaluaokaoka,

25. O Kawaomakaʻlii.. 26. O Lehuakona. O ko lakou mau moolelo nae, aole no ia i ike ia.

O keia mau hoku nona na inoa i hoikeia ae nei maluna, he mau hoku no lakou e kokua ana i ka mea hookelewaa. Penei nae hoi e maopopo ai. Ina e manao ana kekahi e holo i Oahu mai Maui aku nei, a i ole, mai Hawaii mai paha, a pae aku i Kauai, alaila, e hoopololei ana no oia i ka ihu o kona waa i kahi a ka hoku e napoo ai, oia no hoi ka lalani hoku i hoikeia ko lakou mau moolelo maluna ae nei. Pela mau no e holo ai a hiki i ka wa e napoo ai kekahi hoku, alaila, e nana ae no i kona hope iho, a pela wale no e holo ai a hiki i kahi e makemake ai. A pela no hoi i ka wa e hoi mai ai, e hoopololei no i ka ihu o ka waa ma kahi e puka mai ai ka hoku, a o ka hope hoi o ka waa, ma kahi e napoo ai ka hoku. Pela mau iho la no hoi e holo ai a hiki wale i kahi e pae ai.

3. O kekahi poai hoku, a me kekahi hoku hele, o Holoholopinaau kona inoa.

Aia ma ia mau hoku kahi nana e hoike mai i ka pomaikai a me ka poino hoi o ke Aupuni. He umikumamalua ka nui o na hoku ma keia poai. O ko lakou kau ana, aia no ia ma ka lalani poepoe. Eia no hoi ka mea e ikeia ai ka pomaikai a me ka poino o ke Aupuni. Ina e kau ana o Holoholopinaau ma ka Hema, a o keia poai hoku hoi ma ka Akau, alaila, hookokoke mau ae kela i na po a pau, a aneane ae e hiki i kahi o keia poai hoku, alaila, hele hou no i kahi ana e makemake ai, i ka Hikina paha, a i ke Komohana paha, a i ka Hema paha, a ma na wahi e ae paha o ka lalani, aole e poino ke Aupuni. Penei no hoi e maopopo ai ka poino o ke Aupuni, e like no me ka mea i hoikeia ae nei maluna, e hele ae ana no oia mai ka Hema ae i na po a pau, a kokoke i kahi o keia mau hoku o kau ana, a komo ae oia mawaena o kekahi mau hoku, a hele iwaho, a komo hou mawaena aku o ka hoku elua, a me ka hoku ekolu a hemo hou iwaho mawaena o ke kolu a me ka ha; a pela mau aku no a pau na hoku he umikumamalua o keia poai. A ma keia hana ana, ua akaka lea i ka poe kilokilo hoku, he poino nui no ia no ke Aupuni holookoa mai o a o, aka hoi, ina e komo hapa ae o Holoholopinaau iloko o kela poai hoku, alaila, e poino hapa no ke Aupuni.

4. O ka Huhui a me na Kao, a me na hoku e ae a pau, ua oleloia, aia a pii mai na hoku a ike ia aku, alaila, pii pu mai me na kikiao makani. O ka nui o na hoku ma ka Huhui, eono lakou, a pela no hoi na Kao, eono no. Ua kau pupupu ka Huhui i kahi hookahi, a o na Kao no hoi, elua lalani e kau hio ana, ekolu ma kekahi lalani, a pela no hoi ma kekahi.

Kupahu.

Ancient Religion.
Part 33.

The names given by the people of old to Stars and about the observing of Stars.
It has been said by the Astronomers of Hawaii, from the beginning, that all of the people knew about the stars, from the people who lived in the presence of the chiefs, all the way to those who were called outcasts (*kauwa kuapaa*). There follows below here, names of some of the stars, their nature, and the things done by, or known about them.

1. Stars which assist the Navigators.
There in the north, is a star called by the foreigners, *Hokupaa Akau*, and known by three names by the Hawaiian Astronomers; they are *Kiapaakai, Noholoa*, and *Kumau*. It was given these names [illegible] because it does not move above [illegible], not from one place to [illegible], it remains in one place [illegible]. (Here, I will) explain how it helps the navigators. Say, if there is a man residing on Hawaii, and he wants to go to Maui, then his task is to make ready the things for the canoe, and when everything is ready, in the evening, he begins to sail from Hawaii, with the nose of the canoe aligned straight on the place where the star, with the three names given above, is situated. That is how he gets straight to the place he desires to sail to. Upon returning to Hawaii, the stern of the canoe is aligned straight where the same star is situated. There are, outside (beyond) this star, known by the three names, seven stars which encircle it, in the day and night, and so on. These stars arise in a crooked alignment. If the seven stars are seen rising above this star, it is at the time that the sun is setting (at its extremity). Such is the knowledge of the Hawaiian Astronomers. When these stars are seen as if encircling it, then the day light is close at hand.

2. Some things which help the Navigators.
There is a place, called by Hawaiian astronomers, *Kuamoo*, with many stars, but as they rise, they are in a circular alignments. There are many stars in one area, a few stars in another area, and one star in another place. All of the stars of this alignment are named, as we look below here. The total of their names is twenty-six. Here is the first: it is *Ikaika,* the name given by Hawaiian astronomers, and it is called Jupiter, by the scientists, also *Kaawela*. Here is its explanation: its name is given because of its bright nature, that is the name (*Ikaika*) made known above. This star is the one that foretold the taking of Kauai, without battle, by Kamehameha I. At the time that Kaumualii ruled as king of Kauai, Kamehameha I was in battle with the king of Maui, and Kamehameha was victorious, it was also the same for Oahu. Kamehameha then resided on Oahu, and there arose in his thoughts the idea of fighting against Kaumualii, the king of Kauai. But before Kamehameha traveled to Kauai, his astronomer sought to discern the signs of the heavens, through the arts of observing the stars. As he observed, he saw this star called *Ikaika*, and the star of Kaumualii, rising together. — At that time the astronomer-seer told Kamehameha, “You shall take Kauai, for it is shown that the land shall be yours; but the lands shall come to you without a war with the king of Kauai. Thus it shall be for you.”

Kamehameha then ordered his war canoes to sail to Kauai for battle. When they arrived at Kauai, they made their preparations for battle, thinking that the battle would soon ensue. At the time they began the fight, Kaumualii said, “ Return (to Oahu), until you see the black *kapa* cover (me), and the coral is placed in the mouth, then you may fetch your land.” It was at that time, that Kamehameha understood the words spoken to him previously, by his astronomer-seer, prior to their sailing to Kauai. Thus fulfilled, were the words spoken to him by the astronomer-seer on Oahu. Here is the name of the second star in this alignment of stars. It is *Mulehu*, but, its not only that one that is named. There are many other names as well, such as *Poloahilani* and *Poloula*. The nature of this star is that it is a star of the blind, it appears to be gray when we look at it in the night. The name of this star

was given for one of the chiefs of Hawaii, that is *Poloahilani*, and his manner of living, for he was a blind chief, with two people who helped to guide him outside. One person grasped him by the right hand, and one also by the left hand. Because this chief was blind, his spirit ascended into the heavens, and rests at the place of the three stars named above. The position of these three stars is that one is between—that is the gray one—with one star on one side, and another star on the other side, like the adjoining image. That is how they look in the night.

This star is associated with Kuakini and his descendents.

Here is the name of the third star in this alignment. It is *Nanamua ma* (and companion). There are two stars, but their story is not known.

Here is fourth of the stars in this alignment, *Nanaakeauhaku*. There are also two stars, but their story is not known.

Here is the fifth set of stars in this alignment, *Kupuku*. There are seven stars altogether, and they are tightly clustered together in one place. Thus the reason for their name, *Kupuku* (standing together), because they close together in one place.

Here is the sixth star in this alignment, *Haunakelekele*. This is one star, there are no others, and its story is not known. The seventh name of the stars in this alignment is *Makaimoimo*. 8. Is *Makaamoamo*. 9. Is *Makaalohilohi*. 10. Is *Makaholowaa*. Their stories are not known. 11. Is *Kanukuokapuahi*. Its nature is like the drawing here, when we see them in the night.

The star at the top, is known by the name, *Kanukuokapuahi*. [That is not all the stars that are set there, but it appears something like the picture when viewed.]

Here is the twelfth of the named set of stars in this alignment, *Kapuahi*. 13. Is *Paeloahiki*. 14. Is *Anianikalani*. 15. Is *Pulelehuauli*. 16. Is *Pulelehuakea*. 17. Is *Pulelehuakawaewae*. 18. Is *Makahaiakau*. 19. Is *Makahaiwaa*. 20. Is *Kahaikahai*. All of these stars are set together, and their stories are not known. Here is the twenty-first, *Kupualaloakalani ma* (and companions), and their story is not known. 22. Is *Humu ma* (and companions), there are three together. The reason that this name is given to them is because of one of the skilled navigators of ancient Hawaii. Here is what is known. In ancient times, the thought arose in the mind of a certain chief to sail to Wailua-nui, Kauai. So at that time, the canoes were made ready, along with the people, the lesser chiefs, the higher chiefs, and the King. On the evening of the appointed day, the people began to sail from Oahu, and the two children of *Humu* went along as well. One of them had been instructed in the skills of astronomy, and was very smart, this was the first-born. The two children of *Humu* went along with the people in their canoes. Having sailed into the mid-sea (between the islands), the elder youth observed that the canoe had traveled past the earth alignment. He then said to the one who was navigating the canoe, “Turn the canoe towards *Humu ma*.” The navigator-steersman of the canoe replied “as if you two know.” Disparaging words were exchanged between them, and when they reached the middle of the ocean, the men aboard the canoe were enraged, and they threw the two youth off, into the ocean. While the two were floating there on the ocean’s surface, the younger brother said to his elder brother, “ “Perhaps we two are going to die, for the canoe fleet has passed before us.” The elder brother replied, “Let us two swim to a place below the star of *Humu ma*, and there, we two can float.” The younger brother agreed. They swam to a point directly below that star, and there they floated. Now *Humu*, who was the father of these youth, was a famous canoe navigator. He had remained behind, in the canoe of the king; it was the only canoe that had remained behind, there were no others.

The youth had gone ahead, they did not sail with their father on the canoe of the king. They had passed by, and their father had sailed with the king. At the time that the father (*Humu*) sailed with the king on his canoe, his two children were already floating on the ocean's surface. A short time later, the two youth saw a great thing sailing towards them, and the youngest one said to his elder, "Say, there is a canoe, coming directly here, to the place where we are floating." The first-born said, "It is our father with the king." When the canoe arrived at the spot where they were floating, the first-born hooked his arm over the nose of the canoe; the men at the front of the canoe heard this and called out in loud voices, "Say, there are men who have latched onto the nose of the canoe." *Humu* heard the voices, and was exceedingly startled, and turned the nose of the canoe into the breeze, thinking that these must be his children. At that time, the two youth boarded the canoe, *Humu* saw them. *Humu* leapt forward and kissed his beloved children, crying. Their loud talking disturbed the sleep of the king, and he inquired why they were talking so. His navigator, *Humu* replied, "These are my two children who were thrown into the ocean, and they have been gotten by us." The king asked *Humu*, "Where are those they were with?" *Humu* relied, "They will not land on the shore, for they passed beyond the position in their sailing." *Humu* then asked his children, "Was it Iluna, who threw you overboard?" It was Iluna, said the youths. The king then asked *Humu*, "Will they land properly on the shore?" (*Humu* responded) "They will not arrive safely, for as they approach the side of the land, the wind will blow from the land and drive them again to the ocean, and thus your people will die." Thus *Humu* spoke to the king. *Humu* then told the king, "If we go and land on the shore, and go search on the beach, we shall not find one of the canoes of the fleet, nor even one of the men." When they landed at Wailua, they asked the natives there if they had seen the canoe fleet, that preceded them, and not one canoe, nor any people had landed. They had not even been seen on the ocean, so said the natives.

Here is the twenty-third set of stars in the alignment, the Four *Keoe*. There are a total of four stars, and they are situated as shown in this diagram. One is set before the other, with a long space between them; there are several stars, situated on one side, and then on the other side, and so on.

Here is the twenty-fourth of the stars in this alignment, *Kaluaokaoka*.
25. Is *Kawaokamaka'lii*. 26. Is *Lehuakona*. Their stories are not known.

All of the stars whose names are known above, are stars which help the navigators. That is how they are known. So if one has the idea of sailing to Oahu from Maui, or perhaps from Hawaii, to land on Kauai, then he shall set the nose of his canoe on the place where the stars set. That is of the alignment of stars, whose stories have been given above. That is how it was done, sail till the decline of certain star. Then you sight the next one in the alignment, and so forth, until you reach the place you desire. It is the same for your return. You set the nose of the canoe at the place where the stars appear, and the stern of the canoe, where the stars set. So it was the custom of traveling and reaching the selected place of landing.

3. Stars in a circle, and the traveling star, Holoholopinaau is its name.
There are among these stars, those by which you may know of blessings or ill-luck for the Kingdom. There are twelve stars in this circle. They rise in a circular alignment. Here is how one may know of the well-being, or the ill-luck of the Kingdom. If *Holoholopinaau* rises on the South, and the circle of stars is to the north, then it shall be drawing nearer to it on each night, and when it is almost to the place of this circle of stars, then you go to the place desired. Perhaps to the East, maybe the West, perhaps the South, or other places of the alignment, and the Kingdom will not have ill-luck upon it. Then, how one will know that ill-luck will come upon the Kingdom, is, as shown above, is if it travels from the South on all nights, and draws near to the place where these stars are situated, and it goes

between them, then goes out, and enters between the third and fourth ones; that is how it is for all of the twelve stars in this circle. Through this action, the astronomers and seers, understood that there would be great trouble befalling upon the entire Kingdom. But, if *Holoholopinaau* only partially entered the circle of stars, then there would be misfortune for only a part of the Kingdom.

4. About *Huhui, Na Kao*, and the other stars, it is said that when the stars ascend, and are seen, then the sudden, stormy winds will blow. There are six stars in the *Huhui*, and six also in *Na Kao*. The stars of *Huhui* are clustered together, and also, those of *Na Kao*. They are in two lines that lean to the side, three on one line, and so on the other side.

Kupahu. [Maly, translator]

"Oihana Kilo Kilo" (1920)

In 1920, W.D. Westervelt published a brief article in the Paradise of the Pacific magazine, describing the *'oihana kilokilo*, explaining why knowledge of the stars was important in Hawaiian navigation practices, and the larger beliefs and customs of the people. Westervelt (Paradise of the Pacific, December 1920:99-101), observed:

Oihana is a word applied to the regular ordinary customary duties of an individual. It belonged also to the family or nation as having their individual customs or duties.

Kilo-kilo is a doubling up of the word *kilo*, which in ancient times meant to "look deeply" or to "look far away." It was applied to the star students who knew the positions of various constellations and could pilot the large canoes for many days in one direction over the great ocean. They were the wonder-men, the sorcerers, the magicians of the past. They were "*Kilo-kilo*," or men who understood mysteries. They prepared a network of strings which outlined to them a kind of map. This they used by placing it in certain relations to the stars which they were sure they knew. Probably the strings were somewhat like the points of a compass, showing the direction the boat should take. Such a net was for a long time in the care of the Hawaiian Board, but when the present building was erected it was lost or broken and thrown away by someone who did not understand its value.

Oihana kilokilo represented the customs of the ancient Hawaiian astronomers and finally came to mean any mysterious or magical customs. The words were applied to the ordinary superstitions of the Hawaiians and meant any sorceries and enchantments practiced among the people or the priests… [page 99]

"Hawaiian Names of Stars and Planets" (1924)

Bishop Museum researcher, Kenneth Emory undertook a project to compile a list of names known to the Hawaiians, for stars and planets. In January, 1924, he completed his notes, observing that he had compiled the list—consisting of 142 names—from previously published sources, native informants, and a manuscript of the *Kumulipo* (from the papers of King Kalākaua and Queen Lili'uokalani), in the collection of the late, Prince Jonah Kūhiō Kalaniana'ole (and turned over to the Bishop Museum in 1922). Emory reported that his list was:

Largely from Thos. G. Thrum's MSS which material is largely from Dibble's History of Hawaii, 1843, and W.D. Alexander's translation of Kamakau's notes, which translation in the Hawaiian Annual for 1891, p. 142. The underscored names are one added from a MSS in Kuhio's collection, dated 1885, and titled "*Na Hoku a me na Lii nona na Hoku o ka Lewa*," (The stars and the chiefs having these stars as their own).

1. *A'a.* Sirius according to Kalokuokamaile of Napoopoo (1924).
2. *Au'a.* Betelgeux according to Kalokuokamaile of Napoopoo (1924).

3. *Anianekalani.*
4. *Aohuku*. Jupiter, see Parker's dictionary under *Kaawela*.
5. *Hakupokano.*
6. *Hanakalani.*
7. *Hanakalauai.*
8. *Haunakelekele.*
9. *Hikikaulia.*
10. *Hikikaulono.*
11. *Hikikaulonomeha.*
12. *Hiku (na)*. The Great Dipper. *Hiku kahi*, *Hiku lua*, etc. 1st star in Hiku, etc.
13. Hinaiaeleele.
14. *Hinamalailena*. *Ko Hana Hoku* (Star of Hana); star of *alii* Kekaaniau.
15. *Hoku-ao*. The planet Venus when it is the morning star; also *Hokuloa* and *Manalo* (Venus).
16. *Hokulea.*
17. *Hoku Hookelewaa*. Canoe guiding star, often applied to Sirius.
18. *Hokuloa*. Morning star; Venus, when morning star.
19. *Hoku-paa*. North star.
20. *Hokuula.* Aldebaran, also Mars and Mercury?
21. *Holoholopinaau*. 12 stars. Mars according to Parker.
22. *Holu.*
23. *Hooleia.*
24. *Hoomanalonalo.* Star of Puna, Kauai; and Queen Emma. (See *Mananalo*) Jupiter?
25. *Hookelewaa.* See *Hoku hookelewaa.*
26. *Hua.*
27. *Huhui* or *Huihui*. The Pleiades. Full name: *Huihui a Makalii.*
28. *Humu*. Altair. *Humu-ma*, the constellation Aquilla.
29. *Iao*. Eastern Star. Jupiter when a morning star. In the story of Hawaii-loa, he is related as being out on one of his long voyages when Makalii, the principle navigator, said to him, Let us steer the vessel in the direction of *Iao*, the eastern star, the discoverer of land (*hoku hikina kiu o na aina*).
30. *Ihuku.*
31. *Ihumoa.*
32. *Ikaika*. Jupiter
33. *Ikawaolani.*
34. *Ikiiki.* Jupiter.
35. *Kaalolo*. Star of Niihau Island, and of Kalanianaole.
36. *Kaawela.* Mercury. (Jupiter, and Venus when evening stars) Star of the King. Jupiter according to Parker's Dictionary.
37. *Kaaona*. Name of one of the months in the Hawaiian calendar.

38. *Kaekae.*
39. *Kaelo.* Name of one of the months in the Hawaiian calendar.
40. *Kahaikahai.*
41. *Kahoea*. Star of Puna, also of Kawananakoa.
42. *Kahela* or *Kuaia*.
43. *Kekekapue*. Star of Kahoolawe Island, also of Lanihau.
44. *Kailiula*. Star of Kau District, also of Kaiulani.
45. *Kalalani*. Star of Lanai, also of Keaau.
46. *Kaluaokaohe.*
47. *Kamaile mua.* Star of Kona, Oahu, and of chief Auhea.
48. *Kamaile hope*. Star of Koolau, Oahu, and of Kamakahukilani.
49. *Kamaio.*
50. *Kanamee.* Star of Kauai, and of Keliiahonui.
51. *Kanihaalilo.*
52. *Kanoemakalii.*
53. *Kanukuokapuahi.*
54. *Kao*. Red Star (Aldebaran ?) 6 Stars. *Kao Maaiku*, Aldebaran in horns of bull. (*Na Kao* has been called Orion).
55. *Kaoea*. 4 stars. Hanalei, Kauai. Chief Kamauleule.
56. *Kapawa.* A period of time in the early morning.
57. *Kapea*. Cross stars. (Kalokuokamaile)
58. *Kapuahi.*
59. *Kau*. *Kau* = the Milky Way (also *Leleiona*). North Star which served the ancient Hawaiians as a guide in navigation. *Aia a puka o Kau holo kakou* (When *Kau* appears we sail). See *Hokukelewaa*. (Parker's Dictionary)
60. *Kauakapuu*. Star of Kohala, Hawaii; also for the chief (*kahooilina Moi*).
61. *Kaukamalama.*
62. *Kaulanaakalana.*
63. *Kaulu (Na Hui).*
64. *Kaulia.*
65. *Kaulua.*
66. *Kauluakaoko.*
67. *Kaululena.* Star of Kaupo, and of chief Owana.
68. *Kauopae*. Rigel, at whose appearance in the evening, the people went after the little red shrimp (*opae*) for *opelu* bait.
69. *Kawae*.
70. *Kawaomakalii.*
71. *Kawela*. (Mercury)
72. *Kaweo.*
73. *Kealakaa.*
74. *Keoe* or *Keowe*. (Vega ?)

75. *Kiapaakai.* North Star.
76. *Kokoiki.*
77. *Konamaukuku.*
78. *Kukui.*
79. *Kumu* or *Hokupaa.*
80. *Kumau*. North Star.
81. *Kumuko'a.*
82. *Kupualaloakalani.*
83. *Kupuku* (7 stars)
84. *Lanakamalama.*
85. *Lanikuhana.*
86. *Laelae.*
87. *Lehuakona.*
88. *Lewa.*
89. *Mahapili*. Star of Kekaha, and of the chief, Kekahuna.
90. *Makaalohilohi*. Kalokuokamaile says of this star *Hokualinolino.*
91. *Makahaiaku*. Says Kalokuokamaile, "*I ka wa puka aku keia hoku oia ka wa e holo ai e lawaia aku*." (When this star comes out, then the *aku* fishermen go out.)
92. *Makaamoamo*. Twinkling eye.
93. *Makahaiwaa.*
94. *Makaholowaa.*
95. *Makaimoimo.*
96. *Makalii.* Pleiades, also applied to Aldebaran in horns of the bull, and the twins.
97. *Makaunulau*. Star of Molokai, and of chief, Koakanu.
98. *Makeaupea.*
99. *Makulu*. Saturn.
100. *Malana.*
101. *Maliu.*
102. *Manalo* or *Hoomanalonalo.* Jupiter. *Mananalo=Hokuloa* or Morning Star according to Parker's Dictionary.
103. *Melemele.*
104. *Mohai*.
105. *Mulehu.*
106. *Na Hiku*. Great Dipper.
107. *Nahuihui* or *Nahui*. Pleiades.
108. *Naholoholo.* Venus when evening star. (Saturn according to Parker)
109. *Na Kao*. Six stars.
110. *Na Lalani o Pililua*.
111. *Nanamua* me *Nanahope.* Castor and Pollux.
112. *Napeha.*

113. *Nauaakeahihaku.*
114. *Newa* [*Newe*]. A southern constellation, possibly the Southern Cross.
115. *Noholoa*. North star.
116. *Naholoholo*. Venus.
117. *Nuuanu.*
118. *Ololu (Omalo).*
119. *Paeloahiki.*
120. *Pauahi.*
121. *Pililua.*
122. *Pipa.*
123. *Polapola. Poloahilani* (same as Poloula).
124. *Poloula* or *Pohina*.
125. *Puanakau*. West Maui star, star of Chiefess Kekuiapoiwa.
126. *Puanene*. Hamakua, Hawaii star; star of Chiefess Likelike.
127. *Pukolua.*
128. *Pulelehuakaaweawea.*
129. *Pulelehuakea.*
130. *Pulelehuauli.*
131. *Puuwepa.*
132. *Ukali*. Mercury, from its following close after the sun.
133. *Ukalialii.*
134. *Uliuli*.
135. *Ulukoa*.
136. *Uu*.
137. *Waileia*. Star of Maui and of Chiefess, Kalola.
138. *Wainaku*. Star of Hilo, and Chiefess, Poomaikalani.
139. *Welo*.

Wehewehe or *Wewehe*. Kalokuokamaile says: "*O ka hoku ia i koe i ka wehewehe kai ao*." (These are the stars left in the sky after the first light of dawn.)

Kane. "*He hoku maluna o ka mahina a malaila e ike ia ai o Kane ia po.*" (A star above the moon, by it is known the night of Kane.)

Lono. "*Hoku nui loa i ka wanaao. Keia hoku malalo o ka mahina, maopopo ka po ia o Lono*." (A bright star in the morning. When this star is below the moon, then it is the night of Lono.)

Terms:
Hikialoalo = zenith.
Hoku aea, hoku hele, hoku o kaei = planets.
Hoku lele = comet or meteor; also, *hoku puhi baka* (tobacco smoking).
Hoku welowelo = a comet. [Compiled by K.P. Emory, January1924. BPBM – MS. SC Emory, Grp. 8 Box 4.7, pp. 1-6. Courtesy of B.P. Bishop Museum]

Hawaiians as Navigators and Seamen (1925)

In 1925, the journal of the Hawaiian Historical Society published an article by Samuel Wilder King, in which he discussed the knowledge and accomplishment of Hawaiian navigators and astronomers. King acknowledges the great skill of the ancient Hawaiian navigators, and included a description of their use of stars in their practices:

> I was reading recently an article that advanced the proposition that the man who first made use of a rude paddle to propel a crude raft was essentially a greater inventor than the many who later developed the rowing boat to its present mechanical excellence. So, in other fields the first germ of an idea was the most important, the big step forward, the later improvements following as a matter of course, inevitable as midday after morning. Our complicated modern civilization gives us immense knowledge, the use of all the stored experience of thousands of years of people of many races; but the big new ideas are still few and far between. It is doubtful if we excel our ancestors in intellect, however much we may be their superiors in knowledge.
>
> Judged on their grasp of the fundamentals, the ancient Hawaiians had a splendid foundation in seamanship and navigation. Remote and isolated as they were, and had been for years, what they knew was either part of the scanty heritage brought with them from their ancient home in the west and treasured through all the thousands of miles of eastward migrations, and generations of residence on the fair isles of Polynesia, or was of their own devising. Perhaps some unrecorded Galileo or Lord Kelvin added a mite or two to their original store of knowledge. At any rate we know that the Hawaiians could not benefit from the discoveries and improvements being made in the European world, that the narrow limitations of their islands confined their progress in countless ways, and that the lack of writing made it extremely difficult to standardize their knowledge and keep it clear of error.
>
> When the *Haole* first came to Hawaii it was a source of wonder to them how the Hawaiians got here. Further acquaintance with the meles of old voyages increased the wonder. Finally it was borne upon them that the Hawaiians, like their [page 11] kin throughout Polynesia, were great seamen, with a clear knowledge of the prevailing winds, the moods of the sea, and the signs and portents that foretold the weather. In their canoes, the greatest of which were frail craft compared with the vessels of Cook or Vancouver, they traveled the seas of Hawaii daringly, braving the currents and tempestuous waves of the island channels, and making far trips beyond the horizon. With mat sails and paddles they accomplished voyages upon which we moderns would hesitate to venture. With neither compass nor chart, sextant nor chronometer, but with mind filled with the ancient lore, handed down through the generations, the lore of wind and sea and sky, they set out, and counted not the mischance of failing to make a land-fall.
>
> A priestly astrologer, the *kilo hoku*, would give the more important of the prospective trips a good clearance, or hold the boat for a better day; and mixed with his rites there were always the realties of keen weather observing. Of course the pig must be baked, the *awa* chewed and mixed, the gods propitiated with offerings and prayers, and then the heavens and sea scanned for portents. If the rainbow stood arched in the wrong quarter, if the clouds were flying in scattered fragments, the wind and sea from the wrong direction, the sailing was delayed. But if the indications were fair the astrologer completed the prognosis with an inspired dream, and the voyage was well begun.
>
> The canoe captain, the *hookele*, then took command. He knew the different waves with their specific names, equivalent to our own cross sea, following sea, head sea, etc.; and the winds of many kinds, each with its name and peculiar characteristic; and he knew his boat, and how it should be handled under every condition, even to righting it if overturned.

To make the land-fall desired the *hookele* first located the North Star, in Hawaiian, *Hokupaa*, or fixed star, and kept it on the proper bearing; and then selected from the heavens the steering star, the star from among many that would carry him safely to his port. If the little star near *Na Hiku*, The Dipper, was seen to wink frequently, or if other signs were present, a storm was approaching, and he steered for a safe haven.

In this manner the Polynesians populated every habitable [page 12] rock and coral island in an area of ocean greater than a continent. There is no record of those who failed; but of those who achieved a new land-fall, and carried the news back to their kinfolk, we have some record, fragmentary it is true, because the Polynesians lacked the art of writing. From what we have we can piece together epic poems of great journeys, sagas of our Pacific Vikings less known perhaps than those of their Norsemen brothers of the sea, but of equal daring and romance, a tribute to the virility and courage of that ancient Polynesian race.

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

For the long trips, the great voyages to the far off islands of the South Pacific, the navigator knew his astronomy, *Ka oihana kilokilo*, and his geography, *kukulu o kahiki*, and became *he hookele-moana*, a deep water sailor. His chart might be the circular base of a gourd, lines burnt in to show the meridian of Hawaii, and the tropics. From *Hokupaa*, the North Star, to *Newe*, the Southern Cross, was the Hawaiian Greenwich; the northern tropic was *Kealanui Polohiwa a Kane*, the black shining highway of the sun; the southern tropic was *Kealanui i ka piko o Wakea*, the highway to the middle of the earth. The east was *Keala ula a Kane*, the red way of the sun; and the west was *Kealanui maaweula a Kanaloa*, the much traveled highway of the Fallen One. In the celestial sphere so bounded moved the stars, *na hoku paa o ka aina*, among them the navigational stars, *na hoku hookele*; and the planets, *na hoku hele*, moving stars. Beyond were strange stars, *na hoku o ka lewa*. Of the planets the Hawaiians knew five; Mars as *Hoku ula*, the Red Star; Venus as *Hoku loa*, the Great Star; Jupiter as *Kaawela*, the Brilliant One; Mercury as *Ukali*, the Sun Follower; and Saturn as *Makulu*.

Of the stars a great many were listed in the old instructions and meles, many not identified today. Besides the North Star and the Southern Cross, Altair, Vega, Sirius, Orion, the Pleiades, the Dipper, Castor and Pollux, and others were known and studied. [page 13]

With this stock of knowledge, the Hawaiians used a calendar based on the moon, knew and corrected its error by reference to the stars, named each month, each night of the month by the characteristics of the moon, and judged the hour closely by the stars at night, or the sun by day.

Thus equipped many brave chieftains of the olden times made the great voyage to Tahiti and back. How they provided sufficient food and water, how they survived storms and calms and submerged reefs and lee shores, is but briefly known from the chants that have come down to us. What captains failed and died unsung will never be known. But we do know of many who succeeded, and brought back new chiefs and priests to Hawaii, new customs and ideas, dances and drums, plants and dresses, and started ferment in Hawaii nei that did not end until Kamehameha the Great ruled supreme over the eight islands.

Of Hawaii specifically, such names as Paao, Kaulu a-Kalana, Paumakua, and the famous old sea-going family headed by Moikeha and including his foster son Laa, named Laa-mai-kahiki, the son Kila, and the grandson Kahai, have come down to us as great

voyageurs of a later period, when Hawaii and the southerly islands revived the old bond, and exchanged ideas and peoples, after several centuries had been allowed to elapse since the original settlers had come north to "Green-backed Hawaii" as they called it.

The exploits of these Hawaiian Vikings surpass in daring and danger that of the Norsemen. Among those who go down to the sea in ships the ancient Hawaiians hold a high and honorable place; and the seamen's bent and flavor holds with their children today. [Journal of the Hawaiian Historical Society, 1925:14]

"The Morning Star Rises"

In 1935, Maud Makemson, PhD., at Vassar College, conducted first-hand research and interviews with elder *kama'āina*, in Hawai'i. The purpose of her work, being to collect Hawaiian lore pertaining to stars, and native practices associated with them as manifested in the life of the people. The research was conducted as a part of a larger program of documenting the scope of Polynesian knowledge of the heavens, demonstrating the continuity of such knowledge across Polynesia, and how localized knowledge diverged from that of the larger social group. In her work, Makemson, had access to several elder native Hawaiians—among whom were George Kalama of Moloka'i, David Malo Kupihea ("Kupehea") of Honolulu, and M.K. Pukui, at Bishop Museum—who still possessed knowledge of Hawaiian skies. She also accessed a wide collection of archival sources—many translated by Mary Kawena Pukui. She cites accounts as those given earlier in this section of the study, and through her combined research, lists the names and character of at least 208 stars and constellations—often giving translations of the Hawaiian names[15], and their corresponding western names—known to the Hawaiian people.

Makemson's research was published under the title "*The Morning Star Rises*" in 1941, and is a significant work in this field. Selected excerpts follow below, focusing on material not previously cited, or expanding upon such information. Makemson reported that:

Among the Hawaiian stars listed by Kamohoula, Auhaele and Paikauhale were said to patronize beggars, vagabonds, and thieves. Two other stars, *Makaha* and *Makohilani*, situated near the Pleiades, were benevolent toward thieves and murderers. The star *Makahai-aku* informed fishermen of the proper time to go out shark *(aku)* fishing.

Kaukamalama, a so-called "royal star" of Hawaiian astrologers, is said to have shone all night during the month *Ikuwa*, October, and to have disappeared on the first night of the following month. *Kaukamalama* may have been situated so far south in the Hawaiian sky that it enjoyed only a short diurnal path and was visible only for a month, but in that case it could not have shone all night long. At any rate, its appearance was the omen of rain, lightning, thunder, earthquake, wind, high surf, and storm. As a Hawaiian sage explained, "the ancient people said that *Ikuwa* was the husband of *Puaikaiaualewa*, who gave birth to men of loud voice, and contentious."

Kamalama, the other "royal star" of Hawaiian astrologers, shone nightly during *Hilinehu*, which was a rainy, windy month but not as violent as the previous one, *Ikuwa*, and was [page 139] the sign of abundant fish *(nehu)* which could be caught with the net during the rule of *Kamalama*.

Kane was a star which appeared above the Moon and was listed by Kamohoula as a "star of the third class." Whether the classification referred to its brightness or its position in the sky was not defined. The interesting fact about *Kane* was that it was visible only at certain times and then only to priests and astrologers. When it was seen, it foreboded the death

[15] We note that readers of Hawaiian will find that some of the translated Hawaiian names may have more appropriate translations. We leave those translations to the readers.

of the king or a high chieftain. The description suggests a variable star such as Mira. [page 140]

Planets or wandering stars were of interest mainly for astrological purposes or as weather indicators, as in the case of Saturn or Jupiter whose misty aspect forewarned of storms. In modern times much confusion prevails regarding the identification of the ancient names with individual planets. *Naholoholo*, for example, was applied to both Venus and Saturn by various Hawaiian authorities, although their natures are quite distinctive. Since the name signifies swift-moving, the identity with Venus is the more logical as Saturn is the slowest of the planets. *Holoholopinaau* was said to be Saturn by one, Mars by another; the name which means "weaving to and fro" is most appropriate to Mars. It is possible, however, that the same name was applied to different planets in the various islands of the same archipelago. [page 192]

Known Hawaiian Names of Planets:

Mercury
Ukali or *Ukali-alii*, Following-the-chief (i.e., the Sun).
Kawela, Radiant.

Venus
Hoku-loa, Great Star.
Hoku-alii, Chiefess-star.
Naholoholo, the Swift-running-one. [page 193]

Mars
Hoku-ula, Red-star; also a name for Alderbaran and other conspicuous red stars.
Holoholo-pinaau, Weaving-to-and-fro.

Jupiter
Ikaika, Brilliant.
Ikiiki, a goddess; a Hawaiian month name and therefore probably a fixed star rather than a planet. [page 194]
Kaawela or *Kawela*, Burning.
Hoomanalonalo.
Iao, Of-the-dawn; Jupiter as morning star.

Saturn
Naholoholo, Swift-running; not applicable to Saturn.
Makulu, Dripping-water; referring to the planet as a weather indictor. [page 195]

Identifying the sources of her Hawaiian information on stars and lore, Makemson, wrote:

In the following pages are to be found names of most of the Polynesian stars which have been remembered until recent years. The Hawaiian list was compiled from native writings of Kamakau, Kepelino, Malo, Kupahu, and the Kumulipo as translated by Liliuokalani and such foreign authorities as Fornander, Dibble, Emerson, and Thrum, from a star list collected by Mary Pukui and E. H. Bryan, Jr., of the Bishop Museum from Hawaiian newspaper articles and other sources, and from another compilation by Professor Donaghho of the University of Hawaii. [page 197]

Aa, Glowing; a Hawaiian star identified as Sirius by Emory.

Aikanaka, Man-eater; a Hawaiian star of the southern sky named for a legendary figure…

Ke Alii-o-kona-i-ka-lewa, the Chief-of-the-southern-expanse; a very bright star which, with the Southern Cross, acted as a guide to Hawaii-loa and his brother on their voyage of exploration to the far southern ocean where they were turned back by ice barriers. It is probably Canopus or Argo… [page 198]

Anianekalani, a Hawaiian star said to be in the Milky Way, named for the father of Hawaii-loa and Ki [Ki'i]. Both Hawaiians and Tahitians call *Anianekalani* the progenitor of their nations, saying, "In his time, the race had come far from its original homeland."

Ao-hoku, Au-huku, and *Au-haku* appear to be variants of a Hawaiian name possibly for Jupiter. [page 200]

Aua is a Hawaiian named for Betelgeuse, according to Emory…

Auhaele is a Hawaiian star, the patron of vagabonds and beggars and associated with *Paikauhale* in the couplet:

> There are the eyes of *Hoku-ula* (red Star)
> *Auhaele* and *Paikauhale*.

Hoku-ula was described as a large, bright, beautiful red star visible in the month of *Welehu* and the three were thought by some to be Altair and its two companion stars in Aquila. The identification is incorrect, since Altair is a white star. *Hoku-ula* is probably Antares in this connection and *Auhaele* and *Paikauhale* are its companions, Sigma and Tau Scorpii. [page 202]

Hakalauai, a Hawaiian star associated with *Hanakauluna* in the southern sky. When these stars rose it was an omen of pestilence and other calamities according to Kamohoula.

Haka-moa, Chicken-roost; A Hawaiian constellation important to the astrologers.

Hakupokano, a Hawaiian star, is an example of stars named for islands to which they had served as guides to the mariner, in the past history of the Polynesians.

Haloa, a Hawaiian star probably in the southern sky. Kamohoula said of it: This is a large star between *Kane* and *Iwikauhikaua*, with which it forms one row. *Haloa*, which means "long taro stalk," was the son of Wakea (Atea, Vatea) and Hoohokukalani… The star was thus named because it was one of the stars known to the people who lived about the time of Wakea and Papa." [page 205]

Hanaia-kamalama, Light of the Heavens; a Hawaiian name for the Southern Cross. According to an old story Hina-hanaia-kamalama was the wife of Aikanaka and fell in love with the moon. As she was about to ascend the Moon, Aikanaka pulled off one of her legs…

Hana-kalanai or *Hana-kalani*, a Hawaiian star…

Hana-kalauai may be a variant of *Haka-kalauai*. It is a geographical name which has come to be applied to a navigation star.

Hana-kauluna, a Hawaiian star. See *Hakalauai*.

Hao, a Hawaiian star and also a place name.

Hauna-kelekele; a single star in the Milky Way found in Kupahu's list of Hawaiian stars. [page 206]

Hiki-analia, a Hawaiian star found in several lists. Ninety-one year old George Kalama of Molokai described it to Kelsey as a medium bright star near the equator, visible from April to September. He said that the first evening rising is accompanied by strong winds; but as it rises higher after sunset the winds become favorable for sailing and the star acts as a guide to the mariner and fisherman.

Hiki-au-moana, Swim-the-ocean, enables the shipwrecked sailor to swim home and is said to be the equivalent in Kauai of *Hiki-analia* in Molokai.

Hiki-kauelia (Liliuokalani) and *Hiki Kauilia* (Kamohoula) are variants of a Hawaiian star name which the latter authority gives as one of the numerous names for Sirius, when used as a guide in navigation.

Hiki-kau-lono-meha, Star-of-solitary-Lono; the Hawaiian name for Sirius when observed for astrological purposes according to Kamohoula. [page 207]

Na Hiku, the Seven; Hawaiian name for the Big Dipper. Donaghho gives the full title as *Na Hiki-ka-huihui-a-Makalii*, the Cluster-of-the-seven-of-*Makalii*. The stars of the Seven are individually designated by numbers: *Kahi, Alua, Kolu, Hana, Lima, Ono,* and *Pau*, "finished," according to Liliuokalani.

Hilinama is a Hawaiian star and month name…

Hilinehu, contracted from *Hilina-ehu*, is the Hawaiian star and month name which is paired with *Hilinama*.

Hinaia-eleele, is a Hawaiian star and month name…Liliuokalani translated it as "Black Hina…"

Hina-lani, Hina-of-the-sky; a Hawaiian star. [page 208]

Hoeu, Stir-up, is a Hawaiian star. Hoeu was a chief of Kula, Maui, who deserted his wife *Kawaunuiola* for another woman. Thereupon his wife placed a strict *tapu* about her house which prevented interruption of her complete seclusion. At mealtimes, she petitioned her absent husband as a god and asked and answered questions until passing neighbors carried news to *Hoeu* that his abandoned wife had secured a new husband. Whereupon *Hoeu* hastened home and a reconciliation was effected.

Hoku-alii, Chiefess Star; a Hawaiian named for Venus.

Hoku-hookelewaa, Star-which-causes-the canoe-to-sail; a Hawaiian named for Sirius, as star of the mariner.

Hoku-iwa, Stars-of the-frigate-bird, is a Hawaiian constellation which guided Hawaii-loa back to Hawaii after a voyage to the south Pacific and must therefore be situated in the northern sky… *Hoku-iwa* is probably the constellation Bootes which passes overhead in the latitude of Hawaii.

Hoku-kea, Stars-of-the-cross; a Hawaiian name for the Southern Cross. In the legend of Hawaii-loa it was by these stars, *Hoku-kea-o-ka-mole-honua*, Star-cross-of-the-barren-land, and by *Ke Alii-kona-i-ka-lewa*, that the course was shaped for the southern ocean.

Hoku-komohana, Star-of-the-setting-Sun; a Hawaiian name for Venus as evening star. [page 209]

Hoku-lea, Star-of-gladness; a Hawaiian star, possibly Arcturus.

Hoku-lei, Star-wreath; a Hawaiian name for Capella or the whole constellation of Auriga. We are told that Hoku-lei was chosen by Pualoa, the "people promoter," and Kawelolani the astrologer from the stars remaining after the people's stars and those of the steersmen had all been enumerated. *Hoku-lei* was one of the wives of *Makalii* (Pleiades), the other being *Hoku-ula*, Alderaban.

Hoku-loa, Great Star; a Hawaiian name for Venus.

Na Hoku pa, Stars-of-the-palisade; a Hawaiian constellation which Kamohoula's translators interpreted as Leo. From the statement that the *Pa* stars were sometimes "paralleled" (i.e., lay on the same diurnal path) with Humu, Altair, 8º north of the equator, it is more likely that they form the head of Cetus.

Hoku-paa, Immovable Star; one of several Hawaiian names for the North Star.

Hoku-poho-ka-Aina, is probably a general Hawaiian term for the star seen over the stern of the canoe when land disappears.

Hoku-ula, Red Star, was applied by the Hawaiians to Aldebaran, Mars, Antares, and possibly Betelgeuse. Kamohoula describes *Hoku-ula* as a very bright star of the month *Welehu*. Since the order of the month names varied considerably in different islands and since the time of night is not specified, the statement is of no value in identifying the star. He also says that *Na Kao-Makalii*, the Darts of *Makalii*, are on the same plane as *Hoku-ula*. *Na Kao* is generally accepted as Orion's Belt which is situated in the same declination as Betelgeuse, a conspicuous red star in Orion.

Hoku-ula is mentioned in the following couplet:

> In the month of *Welehu* my child was born;
> Born was a star, *Hoku-ula* by name.

In another statement that the stars *Auhaele* and *Paikauhale* [page 210] are called the right and left eyes of *Hoku-ula*, reference is undoubtedly made to Antares and its two companions.

Na Holoholo, Run-to-and-fro; a Hawaiian planet, probably Venus.

Holoholopinaau, a Hawaiian name for Mars. The name may also have been applied to a fixed star since Kaleikupua described it as "a land star, a people's star, which travels a regular course during the month *Ikuwa* with its leader *Omao*, which the astrologers observe as they proudly enter the winter season."

Holu, Deep-ocean; a Hawaiian fish god and star of fishermen.

Hoo-kele-ale, Sailing-master; a Hawaiian navigation star.

Hooleia, a Hawaiian star; apparently named for the mother of the famous legendary beauty, Luukia...

Hoo-manalonalo or *Homanalonalo*; a name for Jupiter in Hawaii.

Hua, Fruit or Egg; the Marquesan name for Jupiter as well as a Hawaiian star. It is also the name for the day of the full Moon and a personal and geographical name.

Na Huihui, the Cluster, usually stands for the Pleiades [page 211] in the Hawaiian, the full name being *Na Huihui-a-Makalii*. Kalama and Kamohoula also give *Ka Huihui-pa-ipu-a-Makalii* as a variant, referring to the calabash *ipu* in which Makalii stored the food supply, according to one story.

Humu, a kind of fish, is the Hawaiian name for Altair, in Aquila, while *Humu-ma*, the Humu-cluster, probably includes neighboring stars. The astrologers were said to be "under the influence of *Na hoku a Humu-ma*."

Humu was the name of a Hawaiian navigator known far and wide for his great skill. [page 212]

Ia, Fish; a Hawaiian term for the Milky Way. The phrase *ua huli ka ia,* "the fish has turned," denoted that the hour of midnight had passed.

Iao, Of-the-dawn; a Hawaiian term for Jupiter as morning star.

Ihuku, Peaked-nose (Liliuokalani); a Hawaiian star which Emory suggests may be the same as *Aohuku*, a planet name. Since, however, *ihu* may mean the "bow of the canoe" as well as a "nose," and *ku* is to "stand erect," it is probable that *ihuku* is a general term applied to any guiding star which the steersman in the stern sees standing above the bow.

Ihu-moa, Chicken-nose (Liliuokalani); a Hawaiian star. *Moa* signifies the "stern of a canoe" as well as the domestic fowl.

Ikaika, Brilliant; a Hawaiian name for Jupiter.

Ikiiki, Pinched (for lack of food), is a Hawaiian star and month name…

Iwikauikaua is a Hawaiian star, probably named for the [page 213] son of Makakaualii, although Kamohoula remarked concerning it: "It is not known when this star was first seen and recognized by Hawaiian astrologers, but no doubt it was seen 17 generations ago."

Kaakaa, Radiant, is a Hawaiian star name… said to be a constellation on the border of the Milky Way.

Kaalolo was the tutelary star of Niihau in Hawaii. Donaghho interprets it as any morning star.

Kaaona, a Hawaiian star and month name, said to be called after a brother of Hawaii-loa.

Kaawela or *Kawela*, Radiant; a Hawaiian name for Venus or Jupiter and possibly also for a fixed star.

Kaekae, Smooth and Plump; a Hawaiian star named for one of the men brought by Paumakua from a distant foreign land. In a legend related by Fornander they are described as "white men and sorcerers." The time was about A.D. 1100.

Kaelo, a Hawaiian star and month name… The Hawaiian *Kaelo* may stand for Betelgeuse, a brilliant red star, since it "blazes in the *Makalii* or winter season."

Kahaikahai is the twentieth star in the *Kuamoo* or Milky Way listed by Kupahu and may have been named for the legendary character Kahai…

Kahai-lono is classified by Liliuokalani as one of the Hawaiian "stars of fighting omen." [page 214]

Kahela; a Hawaiian "people's star," presiding over the month *Ikuwa*.

Kahiki-nui, a Hawaiian navigation star said to be named for one of the eight steersmen of Hawaii-loa. It was also an ancient geographical name.

Kahoea; tutelary star of Puna, Kauai.

Kaholo, the Coconut-fiber-lashing-of-the-royal-canoe, is a star of Puna.

Kailiula, Red Skin (Liliuokalani); a tutelary star of Kau, Hawaii.

Kakae, a Hawaiian star; possibly a variant of Kaekae.

Kalaniopuu is said to be an alternative name for Kawela. [page 215]

Kalua-okaoko is a star in the Milky Way known to the Hawaiians of old.

Kamahana, a Hawaiian star; probably a variant of *Mahana*, Gemini.

Ka Maile-mua, the First Wreath; a Hawaiian star name.

Ka *Maile-hope*, Last Wreath. Taken with the preceding name this suggests a pair of bright stars such as Castor and Pollux or Alpha and Beta Centauri. They were patron stars of Oahu.

Kamaio, a Hawaiian star.

Ka Maka-ululau, the Star-of-innumerable-breadfruit…

Ka Malama, the Light; a "royal" star of Hawaii.

Ka Malie, Calmness, or *Ka-malie-mua*, First Calm, is a Hawaiian star, evidently the token of quiet seas…

Kanamee was the tutelary star of King Kaumualii of Kauai. A conjunction between Jupiter and *Kanamee* foretold the fall of Kauai to King Kamehameha. *Kanamee* must thus be a star close to the ecliptic.

Kane is a sacred Hawaiian star name for the great Polynesian deity. It could only be seen by priests and astrologers and then only rarely and its appearance was the portent of great misfortune. The description suggests a variable such as Mira or Algol, or even a nova.

Kanihaalilo, a Hawaiian star.

Kanikaniaula is a Hawaiian star, named for the woman who is credited with introducing the first feather cape from [page 216] Hawaii to Maui. Although descended from a line of chiefs, she concealed her high rank when she settled in Maui and married a lowly man

from the back country who was unaware of her lofty station. Legend also attributes to her, the erection of a unique pyramidal tomb built of poles.

Ka-noe-Makalii, the Eyes of *Makalii*, is a Hawaiian star whose parents were *Hoku-ula*, Aldebaran, and *Makalii*, Pleiades.

Ka-nuku-o-kapuahi, the Land-of-sacred-fire, is the Hawaiian term for the Hyades. Mr. Kupehea of Honolulu believes the name to be modern.

Na Kao, the Darts; the Hawaiian name for the Belt and Sword of Orion, stars much used in inter-island navigation… Liliuokalani translated *Na Kao*, the Goat, an obvious anachronism.

Kaoea, Darts-thrown-upward; a Hawaiian constellation presiding over the destiny of Hanalei, Kauai.

Kaopua, listed by Donaghho as a Hawaiian star, may be a variant of *Kauopua*.

Kapawa or *Kapawe* is found in more than one Hawaiian star list, but is also a term for a period of the night.

Ka-pea, the Cross; a Hawaiian name for Crux… [page 217]

Kapuahi, Sacred Fire; a Hawaiian star possibly Aldebaran in the constellation *Ka Nuku-a:-kapu-ahi*, the Hyades.

Kupua-lalo-a-kalani, Wizard-in-the-lower-heavens; a Hawaiian star name…

Kau, Summer or Dry Season; a Hawaiian star of the northern sky, which served as guide to mariners. “When *Kau* appears we sail.” *Kau* was also a name for the Milky Way.

Kau-aka-puu, Dawn-suspended-destiny; a Hawaiian star which presided over the fortunes of Kohala.

Kaua-mea, Sacred Circlet; a Hawaiian constellation, possibly Corona Borealis…

Kau-ano-meha, Standing-alone-and-sacred; one of the many Hawaiian names for Sirius.

Kau-kalia, Sojourning; a Hawaiian star which was the patron of foreigners.

Kau-ka-malama, Suspended Light; a Hawaiian “royal” [page 218] star paired with *Kamalama*. As a month-ruling star it was said to be the cause of *Ikuwa*, being such a “bursting, contentious month.”

Kaulana-o-ka-la, Resting-place-of-the-Sun, does not sound like a star name but is found in Hawaiian lists.

Kaulia; a Hawaiian “people’s star,” serving as ruler of the month *Ikiiki*.

Kaulua; one of the many Hawaiian names for Sirius… It is also a Hawaiian month name.

Kaulua-ihai-mohai, Flower-of-the-heavens (Liliuokalani); a Hawaiian star listed in the Creation Chant; possibly the full name for Sirius.

Kaulua-koko, Brilliant-red-star, is in the same zone of the Hawaiian sky as *Humu*, Altair, and is probably Betelgeuse.

Kaulua-okaoka, Star-dust; a Hawaiian star or perhaps a star cloud.

Kaulua-lena, Yellow Star; a Hawaiian astrological name for Sirius, and also the name of a wind.

Kaulua-mohai; a Hawaiian star, possibly the same as *Kaulua-ihai-mohai*.

Kauopae, Shrimp Star; a Hawaiian name for Sirius as patron of shrimp fishing.

Kauopua; a Hawaiian navigation star.

Kawai, the Sea; a Hawaiian navigation star. [page 219]

Kawa-o-Makalii; Precipice of *Makalii*; a Hawaiian constellation in the Milky Way.

Kawau; a Hawaiian star.

Kawaunuiaola, a Hawaiian star shining in the month Hilinama, named for the wife of Hoeu in the legend previously cited. “At the end of its course in benefiting the people, *Kawaunuiaola* disappears and *Hookelewaa* (Sirius) then appears.”

Kawela, a name for Jupiter in the Hawaiian Islands. See *Kaawela*.

Kaweo, an unknown Hawaiian star.

Ke Ala-kea, the Shining Road; a Hawaiian star probably used in navigation.

Keawe; a star in the southern Hawaiian sky named for an ancient king.

Kehepue; a Hawaiian star name, possibly a variant of Kekekapue.

Kehooea; a Hawaiian star.

Kekai-hili; a star of the southern sky of Hawaii.

Keke-kapue, a Hawaiian astrological star.

Ke-lala-kea; a Hawaiian star; possibly misspelled for Ke-ala-kea.

Keoe or *Keoea*; a Hawaiian name which Alexander believes was applied to Vega; but Kupahu describes it as a group of four stars forming a diamond. Hence it probably stood for the entire constellation of Lyra, in which Vega is situated. *Kehooea* may be a variant of *Keoea*.

Keola; patron star of Lanai in the Hawaiian group.

Kiki-ula, Red Skin; a Hawaiian star.

Kiaha, Radiant; a Hawaiian name for the Big Dipper (Donaghho). [page 220]

Kiopaa, “eternally fixed in the heavens to guide the sea man” (Kepelino); one of the Hawaiian names for the North Star.

Koko-iti, Little Blood (Liliuokalani); the bright star or comet which heralded the birth of Kamehameha I of Hawaii. It was named for a district in the northern part of the Island.

Kona-maukuku, Their Spikes (Liliuokalani); a well known Hawaiian star. See *Kukui-a-kona-maukuku*. [page 221]

Kukui, Torch; a Hawaiian star… *Kukui* may be an abbreviated form of *Kukui-a-kona-maukuku*.

Kukui-a-kona-maukuku; a Hawaiian star or constellation name.

Kumau, Standing-perpetually; a Hawaiian name for the North Star.

Kuaie, a month-ruling Hawaiian star also called *Kahela*.

Kumukoa; a Hawaiian star of the astrologers observed in the morning sky during the month *Hilinehu*.

Kupua-lalo-a-kalani is evidently the same as *Kupua*- [page 222] *lalo-a-kalani*…

Kupuku, Cluster; described by the Hawaiian sage Kupahu as "seven stars placed in a cluster together in one place."

Laelae, Brightness; a Hawaiian star.

Lalani, the Heavens; a Hawaiian expression for the Milky Way, and also said to be the name of a single star, the patron of Lanai.

Na Lalani-a-Pililua; a Hawaiian double star. Mr. Kupehea interprets *pililua* as "two close friends."

Lani-kuhana, Sky-standing-erect; a Hawaiian star name.

Lana-kamalama, Floating Light; a Hawaiian star perhaps associated with *Kamalama* and *Kau-kamalama*.

Lealea; a Hawaiian star, named for Lea the goddess of shipbuilders.

Lehua-kona, *Lehua*-of-the-south; a Hawaiian star in the Milky Way. It may stand for Antares…

Lena, Glowing; a Hawaiian star… It is also found in the compound name *Kaululena*.

Lono; a bright star named for the Hawaiian god *Lono* (Maori Rongo). The statement, "When this star is below the Moon it is the night of *Lono*," indicates that *Lono* may be the name of any bright star below the Moon on the night of *Lono*, when the Moon is in the waning crescent phase, since no single star could regularly enjoy that distinction. [page 223]

Mahana or *Na Hoku-mahana*, Summer or Stars of Summer; a Hawaiian name for Castor and Pollux which are also known as *Nana-mua* and *Nana-hope*.

Maha-pili, Twins; a double star said to have been observed by Hawaiian astrologers…

Mahau, Twins; a Hawaiian name for Gemini.

Na Ma-hoe, the Canoe-paddle-cluster; said to be another name for Castor and Pollux in the Hawaiian Islands. George Kalama declared that when these stars rise in the east a few hours after sundown, the wind is favorable for inter-island voyages. On the course from Kauai to Hawaii, he said, the bow of the canoe was pointed directly between these stars. Since such a course must lie almost due southeast, the bow-guiding stars [page 225] must have been situated far south of the celestial equator and could not possibly have been Castor and Pollux; but these could have served as guide stars over the stern of the canoe, when near the western horizon.

Maiao, Toward-the-dawn; a Hawaiian navigation star said to be named for one of Hawaii-loa's eight steersmen.

Maia-ku, Stand-bravely; Hawaiian name for the Belt of Orion, also called the Darts.

Maka-alohilohi, Sparkling-eyes; a Hawaiian star. Maka found in many compound names as a synonym for *hoku,* "star," had the original meaning of "point," "eye."

Maka-amoamo, Twinkling-eyes; a Hawaiian star or constellation in the Milky Way… [page 226]

Makaha; a Hawaiian star which Kamohoula paired with *Makohilani* as the patrons of thieves and murderers. They are situated near the Pleiades.

Maka-hai-aku was the sign to Hawaiian fishermen that it was the season for shark, *aku,* fishing.

Maka-hai-a-waa; a Hawaiian star of the *waa,* "canoe."

Maka-holo-waa, Star-of-the-sailing-canoe; a Hawaiian star in the Milky Way, according to Kupahu. Kalama declared that it was visible after sunset the year round, indicating a position within 20º of the north pole. It is probably another name for the North Star.

Maka-ihu-waa, Star-of-the-bow-of-the-canoe; a Hawaiian navigation star said to appear only at times, and to be accompanied invariably by a long, sharp-pointed cloud. The name suggests the star Ihu-ku. Kalama declared that if the star were above the horizon in the evening or morning sky, its position was an indication of weather conditions. If cloud and star were in the south and west it was a sign of calm weather; if in the east or north, a storm was brewing and the canoe remained on shore. This statement is unintelligible except on the suppositions that *Maka-ihu-waa* could be any bright star accompanied by a long sharp cloud, situated in the direction toward which the canoe-men wished to sail.

Maka-imoimo, Twinkling-eyes; a Hawaiian constellation in the Milky Way.

Makaio-lani, Sacred-star-of-heaven…

Makalii, High-born stars; the Hawaiian form of the common Polynesian name for the Pleiades. Kepelino remarked, [page 227] however, that the chief officer of Hawaii-loa's ship gave his name to several stars or constellations and other authorities attach the name *Makalii* to the Hyades and to Gemini.

Makalu appears to be a variant of Makulu, a Hawaiian name for Saturn.

Maka-unulau, Star of Unulau; a Hawaiian star named for one of the navigators of Hawaii-loa. The following lines are from a chant translated by Fornander:

Arise! Arise! Arise!
Hiki Lii (the Pleiades rise)!
Maka-unulau is up,
The star at the end of the land.

Makea-upea, a Hawaiian star or constellation.

Makohilani; a Hawaiian star coupled with *Makaha*.

Makua-kau-mana, Ancestor-girded-with-power; a star in the great Hawaiian constellation known as the Double Canoe, said to be situated below the Pleiades…

Makulu; a Hawaiian name for Saturn.

Malana, Unsteady (Liliuokalani); a Hawaiian star.

Maliu; a Hawaiian star and geographical name…

Malu-lani, Celestial Shadow; a Hawaiian star of the southern sky. *Malu* conveys a sense of the "presence and power of the god." [page 228]

Mananalo; a Hawaiian name for Venus, according to Alexander. [page 229]

Maui, south of the Pleiades, was a star highly esteemed by astrologers of the island of Maui in the Hawaiian group. The hero Maui has been commemorated in such constellations as the Pukapukan Te Kau-o-Maui, the fishhook with which Maui dragged up innumerable islands.

Maukuku; a Hawaiian star name doubtless related to Kona-maukuku. [page 234]

Melemele is a Hawaiian star, possibly Betelgeuse. Kamohoula states that *Melemele* is a "male" and the neighboring *Polapola* a "female" star. [page 235]

Mohai; a Hawaiian star listed in the *Kumulipo* and also found in the compound names *Kauluomohai* and *Kaulua-ihai-mohai*.

Mulehu is one of three Hawaiian stars forming a [page 236] triangle, the others being *Poloula* and *Poloahilani*. Of the last, which was named for a blind king of Hawaii, Kupahu remarks: "The character of this star is blindness, and it shows a whiteness when observed in the night. *Poloahilani* had two attendants to guide him in and out, one to hold him by the right hand, the other by the left. Through the blindness of this king his misfortune is applied to the heavens and placed with those stars of three names mentioned above. This star applied to Chief Kuakini and his descendants."

The three stars may well be Alpha, Beta and Gamma Cassioppeiae. Alpha appears a little in advance of the other two as befitting a chief, and varies half a magnitude in brightness, a phenomenon which may have suggested dimness of vision.

In the legend of Hawaii-loa *Mulehu* is given as an alternative name for Venus, the westward guiding star which led that intrepid explorer to the "land of the people of up-turned eyes."

Naholoholo, Weave-to-and-fro; a Hawaiian name for Venus or Saturn, applying more appropriately to the motion of the former.

Nana; a Hawaiian star name equivalent to the Tuamotuan Ngana and the Tahitian Ana, a "star."

Nana-hope, Last *Nana*; a Hawaiian name for Pollux.

Nana-mua, First *Nana*; a Hawaiian name for Castor. [page 237] Castor and Pollux together were known as *Nana-mua-ma*. In Molokai, according to information received by Kelsey from Kalama, *Nana-mua* and *Nana-hope* were two names for a single star and testified that it "witnessed the last of night and the first of day."

Napehe; a Hawaiian navigation star, tenth in the list of thirteen steersmen's stars given by Kaleikupua. [page 238]

Newa, Newe, and *Newenewe* are Hawaiian names for the Southern Cross.

Noho-loa, Eternal; a Hawaiian name for the North Star.

Nuu-anu, Frozen land; a Hawaiian star and geographical name.

Ololu; a Hawaiian star listed in the *Kumulipo…*

Omao; a Hawaiian star and a bird of the thrush family.

Omao-ku-ululu was a mystical land "on the borders of the world."

Paao; a Hawaiian star mentioned by Kamohoula as one of the large group resembling a double canoe. Paao was a famous priest who conveyed a colony from Central Polynesia to Hawaii during the Middle Ages. [page 239]

Pae-loa-hiki, Long-shining-threshold; said to be a Hawaiian star in the Milky Way but it is more likely the name for the entire Galaxy analogous to the Pae-roa-o-Whanui of the Maori.

Pai-kau-hale; a Hawaiian star name… See *Auhaele* with which *Pai-kau-hale* is associated.

In Hawaii the constellation *Na Hoku-pa* appears to be the head of Cetus.

Pauahi; a star of the Hawaiian astrologers which "emerges in the early morn, the morning star being high, during the month *Kaulua*."

Pili-lua, Two-friends-close-together; the Hawaiian form of Pipiri or Pipili, whose myth is told throughout the Polynesian area. The Hawaiian pair of stars was supposed to bring the *opelu* fish to local waters.

Pipa, Sneak (Liliuokalani); a Hawaiian star.

Pohina, Confusion; an alternative name for *Poloula* in the Hawaiian Islands.

Polapola is a Hawaiian star and geographical name. Kamohoula believed it to be in Orion. Since the name is the same as Porapora in the Society group, *Polapola* may have served as guide star on the voyage from Hawaii to this island, in which case it must be situated much farther south than Orion, page 244] *Polapola* and his companion *Melemele* may therefore be names for Alpha and Beta Centauri.

Poloahilani or *Polohilani*; a Hawaiian star associated with *Mulehu* and named for one of Hawaii-loa's mariners. The name means "shining in the heavens…"

Polo-ula, Shining-red; a star of Oahu also known as *Pohina*. [page 245]

Puana-kau, Suspended-blossom; a Hawaiian name for Rigel, the tutelary star of West Maui.

Puanene; a Hawaiian star of destiny.

Pu-koloa, Wild-duck-overhead; a Hawaiian constellation…

Pulele-hua-kea is the Hawaiian name for the Greater Magellanic Cloud.

Pulele-hua-uli, Dark-scattering-mist; the Lesser Magellanic Cloud in Hawaii.

Pulele-hua-kawaewae; the Hawaiian name for Coalsack. [page 247]

Puwepa, a Hawaiian star. [page 248]

Ukali or *Ukali-alii,* Following-the-chief, i.e., the Sun; a Hawaiian name for Mercury.

Uliuli, Blackness; a Hawaiian star in the southern sky. *Uliuli*, like *Polapola* and *Melemele*, were names of lands formerly occupied by the Polynesians in their long migration (Malo). *Uliuli* was also the name of a *tapu* imposed by King Kualii, the breaking of which was punishable by death.

Ulukoa or *Uluoa*, Associated-with-rejoicing; a Hawaiian navigating star… [page 265]

Unulau, Pull-off-leaves; a Hawaiian star and the name of a wind. The star was said to have been named for one of the eight steersmen of Hawaii-loa. *Unulau* was also a geographical name. [page 265]

Wehewehe; a Hawaiian month-ruling star. Makemson, 1941:268]

Mauna Kea, Pā i ka Lani
(Mauna Kea, Touching the Heavens)

It is noted here, that while conducting this study, no specific archival references to *kilo hōkū* on Mauna Kea were located. The association of the gods and deity whose forms are seen in the heavens and whose names are commemorated at locations on Mauna Kea is noteworthy, and may be viewed as manifestations of the cultural attachment and values placed by Hawaiians on the *Mauna a Kea*, and the *kino lani* (heavenly bodies). It is very likely that practices of the native practitioners of the *'oihana kilokilo* and the *kilo hōkū* occurred on Mauna Kea, but, they were either unwritten, or await being brought to light once again.

While today, Mauna Kea is valued as an astronomical center—and this may be rooted in earlier native practices—the ancient Hawaiian practitioners were mindful of their foundation, the *papa honua* (earth) upon which they stood. As noted in the traditions cited above, these islands, the children of the native gods and creative forces of nature, also gave birth to, and life to the *kānaka* (people). Naturally, one could not look heavenward, without first looking down, and being mindful of the responsibility (*kuleana*) that people have to care for the *papa honua*. This is a custom which is of value to all who cherish and touch Mauna Kea.

Native lore and the on-going beliefs of cultural practitioners address Mauna Kea (*Mauna a Kea*) as the *piko* (in this case, not only the summit, but the umbilical cord) that connects Hawai'i, the first-born child of the creative forces of nature, to the heavens. In interviews conducted by Maly in 1999, with native Hawaiian practitioner and educator, Pua Kanaka'ole-Kanahele, readers were provided with detailed narratives of the spiritual significance of Mauna Kea—the Mountain of Wākea, in Hawaiian traditions of creation. It was observed that Mauna Kea is considered to be *kupuna* (elder), the first born, and is held in high esteem. In native traditions, Mauna Kea is identified as "*Ka mauna a Wākea*" (The Mountain of Wākea–traditional god and father of Hawai'i–who's name is also written "Kea"). Mauna Kea is the source of a high sense of spirituality. It is the *'aha ho'owili mo'o* (genealogical cord that ties earth to the heavens) (MKAC meeting Dec. 1, 1998 and interview of December 11, 1998; in Maly 1999).

Kūpuna, who have been interviewed by Maly between 1999 to 2005, shared the view that Mauna Kea is sacred, and that until the development of the observatories, it was a pure and sanctified place, tied to the heavens. It was for this reason that the *piko* of new-born children were taken to the summit region of Mauna Kea. Collectively, the *kūpuna* lament the changes that have occurred on Mauna Kea since the development of the observatories (cf., interviews with Elizabeth Lindsey-Kimura, Teddy Bell, Elizabeth Ruddle-Spielman, and Irene Lindsey-Fergerstrom).

III. Historical Accounts of the ʻĀina Mauna Recorded by Natives, Foreign Residents and Visitors (1778-1899)

The historic records of native writers share that in the Hawaiian mind, Mauna Kea—from shoreline to the dense forests and lofty peaks—was a source of awe and inspiration. The natural resources and mountain itself, were believed to be manifestations of various creative forces of nature, and were revered. Though on a different level, the natural beauty of Mauna Kea and the *ʻāina mauna* also inspired foreign visitors of the eighteenth and nineteenth centuries to wax poetically. In the journals of many eighteenth and nineteenth century visitors, readers can find descriptions of the natural environment and glimpses into the native history of the mountain. Selected narratives penned by a number of early foreign visitors in letters and journals, and the observations of historians, describing first-hand and eyewitness accounts of travel across the mountain lands, and traditions learned from native guides, are cited below. The accounts are presented in chronological order by date of observations and travel to the *ʻāina mauna*.

The Journal of Captain James Cook (1778-1779)

The earliest written descriptions of Mauna Kea and the mountain lands, recorded by a foreigner are found in the Journals of Captain James Cook and his officers (Beaglehole 1967). Cook and his crew visited the Hawaiian Islands in 1778 and 1779, though none of them traveled to the interior lands or ascended Mauna Kea. Although brief, the narratives are notable because they describe the mountain slopes and summit, and present us with one of the earliest maps of the island.

> [December 1, 1778] ...At 7 PM we were close up with the North side of [O'why'he] where we spent the night standing off and on.
>
> Wednesday 2nd. The 2nd in the Morning we were surprised to see the summits of the highest [mountains] cover[ed] with snow; they did not appear to be of any extraordinary height and yet in some places the snow seemed to be of a considerable depth and to have laid there some time… [Cook in Beaglehole 1967:476]
>
> Mon. 7 . . . There are hills in this island of a considerable height whose summits were continually covered with snow [Mauna Kea and Mauna Loa], so that these people know all the climates from the Torrid to the Frigid Zones... [Cook in Beaglehole 1967:478]

In the same time period, Captain King describes, what is believed to be the summit peaks of Mauna Kea from the northwestern side of the island of Hawaiʻi:

> ...the inland country rises gently at first but afterwards abruptly to a mountain, which is broken at the top [presumably Mauna Kea], which must be very high, since we think we can discern a good deal of Snow upon it, some say the appearance is only Clouds hanging on the top, & is also cut into deep Glens. [King in Beaglehole 1967:501]

In March 1779, Cook's officers, Clerke and King, provided additional descriptions of the mountains of Hawaiʻi. King's narrative is of particular interest, because he makes specific use of the name Mauna Kea (Mouna Kāā) in his narrative. Clerke observed:

> ...This isle is one continued Mountain on which are Peaks of various heights, particularly two of vast elevation which were covered with snow all the time we were about the neighbourhood [Mauna Kea and Mauna Loa]; the great altitude of these snow Peaks was by no means striking to the eye, I suppose from the vast base they stood upon, for they must have been of great height as we have seen them very clearly at 26 leagues distance, and then they appeared very high and prominent... [Clerke in Beaglehole 1967:591]

King noted:

> On the NE side is Amacooa [Hāmākua] & A-heedoo or O'heeroo [Hilo], the Snowy mountain which makes in 3 peaks & is called Mouna Kāā (or Mountain Kāā) separates them... [King in Beaglehole 1967:605].

The Journal of William Ellis (1823)

In 1823, British missionary William Ellis, and members of the American Board of Commissioners for Foreign Missions (A.B.C.F.M.) toured the island of Hawai'i seeking out community centers in which to establish church strongholds for the growing Calvinist mission. In Ellis' Journal (1963), we find the first Hawaiian tradition written in reference to Mauna Kea (Mouna-Kea). Following a sermon in the village on Hilo Bay, Ellis learned of a native account of "*kai a kainarii*" in which an ocean flood had inundated all land except for the summit of Mauna Kea (Ellis 1963:321; see account earlier in this study).

Ellis also described his impressions of the mountain lands—their breadth, the nature of the forests and summit of Mauna Kea, and he also recorded that the natives traveled to the mountain lands. Ellis (1963) observed:

> On approaching the islands, I have more than once observed the mountains of the interior long before the coast was visible, or any of the usual indications of land had been seen. On these occasions, the elevated summit of ***Mouna Kea***, or ***Mouna Roa***, has appeared above the mass of clouds that usually skirt the horizon, like a stately pyramid, or the silvered dome of a magnificent temple, distinguished from the clouds beneath, only by its well-defined outline, unchanging position, and intensity of brilliancy occasioned by the reflection of the sun's rays from the surface of the snow.
>
> The height of these mountains has been computed by some navigators who have visited the Sandwich Islands, at 12,000, and by others at 18,000 feet. The estimate of Captain King, we think exceeds their actual elevations, and the peaks of ***Mouna Kea***, in the opinion of those of our number who have ascended its summit, are not more than 1,000 feet high. But admitting the snow to remain permanent on the mountains of the torrid zone at the height of 14,600 feet, the altitude of ***Mouna Kea*** and ***Mouna Roa*** is probably not less that 15,000 feet.
>
> The base of these mountains, is, at the distance of a few miles from the seashore, covered with trees; higher up, their sides are clothed with bushes, ferns, and alpine plants; but their summits are formed of lava, partly decomposed, yet destitute of every kind of verdure.
>
> There are few inland settlements on the east and north-west parts of the island, but, in general the interior is an uninhabited wilderness. The heart of Hawaii, forming a vast central valley between ***Mouna Roa***, ***Mouna Kea***, and ***Mouna Huararai***, is almost unknown, no road leads across it from the east to the western shore, but it is reported by the natives who have entered it, to be "Bristled with forests of *ohia*," or to exhibit vast tracts of sterile and indurated lava… (Ellis 1963:3-4)

Reverend Joseph Goodrich, who accompanied Ellis on part of his journey around Hawai'i ascended to the summit of Mauna Kea from both the Kawaihae-Waimea route, and from Waiākea. On the first trip from Kawaihae-Waimea, Goodrich commented on the numerous wild cattle found on the mountain lands, and also reported on a "heap of stones" on the summit peak, which he presumed was made by a "former visitor" (Goodrich in Ellis, 1963:290). Goodrich reached the snow line and:

> ...directed his steps towards a neighbouring peak, which appeared to be one of the highest; but when he had ascended it, he saw several others still higher. He proceeded

towards one, which looked higher than the rest, and bore N. E. from the place where he was. On reaching the summit of this second peak, he discovered a heap of stones, probably erected by some former visitor... (ibid.:290)

In Goodrich's description of the journey by Dr. Blatchely, Mr. Ruggles and himself across the mountain lands of Pi'ihonua and Humu'ula, to the summit of Mauna Kea, he described the various conditions of the landscape at elevational zones, commented on the presence of wild cattle, sheep, dogs and goats. There was also further discussion on traditions associated with Mauna Kea, as "the abode of the gods," and it was observed that it was the custom of natives they encountered, to refuse to travel to the summit of Mauna Kea:

Other Trips to Mauna Kea

…Dr. Blatchely and Mr. Ruggles ascended Mouna-Kea, from Waiakea bay. After travelling six days, they reached the summit of the mountain, where, within the circumference of six miles, they found seven mountains or peaks, apparently 800 or 1000 feet high; their sides were steep, and covered with snow about a foot thick. The summit of the mountain appeared to be formed of decomposed lava, of a reddish brown colour. The peak in the centre, and that on the western side, are the highest.

The following observations respecting a subsequent visit to this mountain from Waiakea, contained in a letter from Mr. Goodrich to Professor Silliman, of New Haven, are copied from the Philosophical Magazine for September, 1826.

Description of Hilo Slope of Mauna Kea

"There appear to be three or four different regions in passing from the sea-shore to the summit. The first occupies five or six miles, where cultivation is carried on in a degree, and might be to almost any extent; but, as yet, not one-twentieth part is cultivated.

The next is a sandy region, that is impassable, except in a few foot-paths. Brakes, a species of tall fern, here grow to the size of trees; the bodies of some of them are eighteen inches in diameter." [Ellis 1963:291]

"The woody region extends between ten and twenty miles in width.

The region higher up produces grass, principally of the bent kind.

Strawberries, raspberries, and whortleberries flourish in this region, and herds of wild cattle are seen grazing. It is entirely broken up by hills and valleys, composed of lava with a very shallow soil. The upper region is composed of lava in almost every form, from huge rocks to volcanic sand of the coarser kind. Some of the peaks are composed of coarse sand, and others of loose stones and pebbles. I found a few specimens, that I should not hesitate to pronounce fragments of granite. I also found fragments of lava, bearing a near resemblance to a geode, filled with green crystals, which I suppose to be augite."

Wild Sheep, Dogs and Goats

"Very near to the summit, upon one of the peaks, I found eight or ten dead sheep; they probably fled up there to seek a refuge from the wild dogs; I have heard that there are many wild dogs, sheep, and goats. Dogs and goats I have never seen. I was upon the summit about 2 o'clock p.m., the wind S.W., much resembling the cold blustering winds of March, the air being so rare produced a severe pain in my head, that left me as I descended."

Legends of Mauna Kea

In the native language, the word *kea*, though seldom used now, formerly meant, white. Some white men, who are said to have resided inland, and to have come down to the sea

shore frequently in the evening, and to have frightened the people, were called *na kea*, (the whites).

The snow on the summit of the mountain, in all probability, induced the natives to call it ***Mouna-Kea***, (mountain white), or, as we should say, white mountain. *They have numerous fabulous tales relative to its being the abode of the gods, and none ever approach its summit—as, they say, some who have gone there have been turned to stone.* We do not know that any have ever been frozen to death; but neither Mr. Goodrich, nor Dr. Blatchely and his companion, could persuade the natives, whom they engaged as guides up the side of the mountain, to go near its summit.

We could not but regret that we had no barometer, or other means of estimating the actual elevation of this mountain, either here or at Waiakea. [Ellis 1963:292]

Mauna Kea and the Mountain Lands Described by J.F. Goodrich (1823-1825)

The October 1826 edition of the American Journal of Science (Series I, Volume XI), published excerpts of letters from Joseph Goodrich, describing travel around the island of Hawai'i, and to Mauna Kea and the mountain lands. Goodrich, a graduate of Yale, with an interest in geology and mineralogy, arrived in the Hawaiian Islands, in April 1823. Shortly after his arrival, he traveled to the island of Hawai'i as a member of the party on the tour of William Ellis. Subsequent to the tour, in 1824, Goodrich settled in Hilo, where he remained until 1836. Goodrich's first ascent of Mauna Kea was made in August of 1823, and the second, in April of 1824. Goodrich provided readers with important descriptions of the landscape, including the extent of the cultivated and forest zones, from the shore to the mountain regions, and the conditions on the higher mountain slopes and summit region of Mauna Kea (Mouna Kea). Excerpts from the American Journal of Science, and his letter to Professor Silliman follow, below:

Soon after the arrival of this second Missionary family, a tour round the island was resolved upon, with particular reference to the great objects of the Mission. Messrs. Ellis, Harwood, Thurston, Stewart, Bishop, and Goodrich, [Page 1] were charged with the execution of this duty, which they performed with zeal and ability. The result of their observations is detailed in a little volume, ably drawn up by Mr. Ellis, and entitled "A Journal of a Tour Around Hawaii, the Largest of the Sandwich Islands." Besides many interesting statements relative to the paramount objects of the enterprise, it contains a great number more relating to the natural history of the island. From this part of the work, we intend to quote the most important passages, and we conceive that we cannot better introduce them than by the following letter from Mr. Goodrich to the Editor, which, although dated a year ago, has been received only within a few days.

Letter from Mr. Joseph Goodrich, one of the American Missionaries in the Sandwich Islands.

Waiakea, (Hawaii) April 20th, 1825.
To Professor Silliman, New-Haven, (CT.)

My Dear Sir,

I confess I have remained silent quite too long, in not answering your kind request on the eve of my embarkation, although I am better able to state facts now than at any former period. The station which I am called to occupy, on the N. E. Side of Hawaii, (Pronounced Harwye,) at the head of a safe and commodious harbor, yet but little known to foreigners. About forty miles in the interior, in a southwesterly direction, is a burning volcano, that has been in a state of activity from time immemorial. The oldest natives can give no account of a time when it was not burning; they say it is more active now than it was twelve or fifteen years since…

…The summer after my arrival, I spent about ten weeks in making a tour of this Island, in company with several other members of the Mission family. A journal of that tour will probably be published in America. The Island of Hawaii, from the north point to the southern, including all the west side of the Island, is little else than one entire mass or sheet of lava, which has run down from the mountains at different periods. Some of the currents of lava are so recent, that there is no vegetation to be seen upon them; but others are of a much more ancient date, so that bushes and even trees have sprung up among the beds of lava… …There are four high [page 3] mountains in the Island, one back of Toaehae, and another back of Kairua, upwards of 7000 feet high, called Hualulae [Hualalai]; the two others are vastly higher, namely; ***Mouna Kea***, to the northward and eastward part of the Island, estimated to be upwards of 18,000 feet high, and ***Mouna Roa***, in the south-western part, probably near the same height.

I have been twice to the summit of ***Mouna Kea***. The first time I was at the highest peak about three o'clock at night, in the month of August; the thermometer stood at 27 deg, 5 below the freezing point. I passed over several banks of snow, that lay to the northward of the highest peaks, (this mountain rises much more abruptly than Mouna Roa), and the change was so great in passing from a torrid to a frigid zone, that it was under the necessity of travelling all the time I was up there to prevent freezing. The second time that I ascended was in April last. There appear to be three or four different regions in passing from the sea shore to the summit. The first occupies five or six miles, where cultivation is carried on, in a degree, and might be to almost any extent; but as yet, not one twentieth part is cultivated. The next is a sandy region, that is impassable, except in a few foot paths. Brakes, a species of fern, here grow to the size of trees, the bodies of some of them are eighteen inches in diameter. The woody region extends between ten and twenty miles in width. The region higher up produces grass, principally of the bent kind. Strawberries, raspberries, as large as butternuts, and whortleberries flourish in this region, and herds of wild cattle are seen grazing. It is entirely broken up by hills and vallies, composed of lava, with a very shallow soil. The upper region is composed of lava in almost every form, from huge rocks to volcanic sand of the coarser kind. Some of the peaks are composed of coarse sand, and others of loose stones and pebbles. I found a few specimens that I should not hesitate to pronounce fragments of granite. I also found fragments of lava, bearing a near resemblance to a geode, filled with green crystals, which I suppose to be augite. [page 4]

Very near to the summit, upon one of the peaks I found eight or ten dead sheep; they probably fled up there to seek a refuge from the wild dogs; I have heard that there are many wild dogs, sheep and goats. Dogs and goats I have never seen.

I was upon the summit about 2 o'clock P.M., the wind S.W., much resembling the cold blustering winds of March with you, the air being so rare that it produced severe pain in my head, that left me as I descended. Much more might be said, that I must omit for want of room… [page 5, Goodrich Journal in Collection of Bernice Pauahi Bishop Museum]

Prior to their ascent of Mauna Kea, the party visited Kilauea—where they saw flocks of *nēnē*, and were informed that many geese lived on the higher mountain lands, though they were never seen on the coast. Silliman also reported that when Goodrich ascended Mauna Kea, he found a cairn of stones on the summit peak. The account of the ocean flood, and the survival of two individuals on the summit of Mauna Kea was also recorded by Goodrich—

On the 25th of August, Mr. Goodrich commenced his ascent up Mouna Kea. The soil was formed of decomposed lava and ashes. At noon he dismissed his native companion, and taking his great coat and blanket, began to ascend the more steep and rugged parts. The way was difficult, on account of the volcanic rocks and stunted shrubs that covered the

sides of the mountain. On his way up he found a number of red and white raspberry bushes, loaded with delicious fruit. At 5 P.M. having reached the upper boundary of the trees and bushes, that surround the mountain, he erected a temporary hut, kindled a small fire, and prepared for his night's repose. The thermometer, shortly after sun setting, stood at 43º, and the magnet, though it pointed north when held in the hand, was drawn two or three degrees to the eastward, when placed on the blocks of lava; owing, probably, to the great quantity of iron in the mountain. [page 37]

After a few hours rest, he arose at eleven o'clock at night, and the moon shining brightly, he resumed his journey towards the summit. At midnight he saw the snow about three miles distant, directed his steps towards the place, and reached it about one o'clock on the morning of the 26th. The snow was frozen over, and the thermometer stood at 27º.

He now directed his steps towards a neighbouring peak, which appeared one of the highest, but when he had ascended it, he saw several others still higher. He proceeded towards one which appeared highest, and bore north-east from the place where he was. On reaching the summit of this second peak, he discovered a heap of stones, probably erected by some former visitor. From this peak Mouna Roa bore south by west; Mouna Ruarai, west by south; and the Island of Maui, north-west. The several hills or peaks on the summit of Mouna Kea, seemed composed entirely of volcanic matter; principally cinders, pumice, and sand. Mr. Goodrich did not discover any aperture or crater on either of the summits he visited. Probably there is a large crater somewhere on the summit, from whence the scoria, sand and pumice, have been thrown out. The whole of the summit was not covered with snow. There were only frequent patches, apparently several miles in extent, over which the snow was about eight inches or a foot in thickness. The ocean to the east and west was visible, but the high land on the north and south, prevented its being seen in those directions.

Mr. Goodrich commenced his descent about three o'clock, and after travelling over large beds of sand, and cinders, into which he sunk more than ankle deep at every step, he reached, about sunrise the place where he had slept the preceding evening. The descent in several places, especially over the snow, was steep and difficult, the utmost caution was necessary to avoid a fall. On his way down, he saw at a distance, several herds of wild cattle, which are very numerous in the mountains, and inland parts of the island.

The natives said they were informed by their fathers, that all the land had once been overflowed by the sea, except a small peak on the top of Mouna Kea, where two human beings were preserved from the destruction which overtook the rest… [page 38, Goodrich Journal, in collection of Bernice Pauahi Bishop Museum]

The Journal of C. S. Stewart (1823-1825)

In April 1823, New England missionary, C. S. Stewart (1970) sailed into Hilo Bay. His description of Hilo with the backdrop of Mauna Kea (Mouna-Kea), is reminiscent of the scene described in the accounts of Kūkahau'ula cited earlier in this study:

Friday, April 25. The appearance of Hawaii, this morning was exceedingly beautiful. We were within a few miles of the shore; and the whole of the eastern and northern parts of the island were distinctly in view, with an atmosphere perfectly clear, and a sky glowing with the freshness and splendor of sunrise. When I first went on deck, the gray of the morning still lingered on the lowlands, imparting to them a grave and somber shade; while the region behind, rising into broader light, presented its precipices and forests in all their boldness and verdure. Over the still loftier heights, one broad mantle of purple was thrown; above which, the icy cliffs of MOUNA-KEA…blazed like fire, from the strong reflection of the sun-beams striking them long before they reached us on the waters

below. As the morning advanced, plantations, villages, and scattered huts were distinctly seen along the shore… [Stewart 1970:87]

In the evening Hawaii and Mouna-kea again, at a distance, afforded another of the sublimest of prospects;—while the setting sun and rising moon combined in producing the finest effects on sea and land. The mountains were once more unclouded, and with a glass we could clearly discern immense bodies of ice and snow on their summits… [Stewart 1970:89-90]

In June 1825, Stewart returned to Hilo with Lord Byron, who had returned the bodies of Liholiho (King Kamehameha II) and his wife Kamāmalu to Hawai'i from England where they had died. In viewing the district of Hilo, with the back drop of Mauna Kea, from the deck of the H.B.M. Ship Blonde, Stewart recorded:

The land rose gradually from the cliff, to the distance of ten or fifteen miles, to a heavy wood encircling the base of ***Mounakea***. Though in a state of nature, this large district had the appearance of cultivation, being an open country covered with grass, and beautifully studded and sprinkled with clumps, and groves, and single trees, in the manner of park scenery, with a cottage here and there peeping from beneath the rich foliage. The mountains were entirely covered with clouds, or the prospect would have been rendered more delightful from their sublimity… [Stewart 1970:361]

Botanist, James Macrae and Party Travel to Mauna Kea in 1825

In 1824, Liholiho (King Kamehameha II), his wife, Kamāmalu, and a group of retainers and foreign advisors, traveled from Hawai'i to England. Liholiho and his wife died there, and in May of 1825, their bodies were returned to Hawai'i by Lord Byron (Stewart 1970:338). While preparing for the return voyage to England, Lord Byron had the H.M.S. Blonde port in Hilo Bay for refitting. Several individuals from the Blonde recorded important descriptions of localities visited on the island of Hawai'i as a result of the stop over. One of the crew members, being James Macrae, a botanist, penned detailed narratives of the journey from Hilo, along the coast to Laupāhoehoe, and from there up the mountain trail to the summit of Mauna Kea (Macrae, 1922). Through Macrae's writings, we are provided descriptions of the forests on the slopes of Mauna Kea; the native trail leading upland through Laupāhoehoe; bullock hunting being undertaken by natives and foreigners on Mauna Kea and the mountain lands; the first recording of the Mauna Kea Silver-sword; and that wild dogs were driving sheep to the summit region of the mountain.

The following narratives are excerpted from Macrae's longer narratives:

Arrives at Hilo. Prepares for Ascent of Mauna Kea.

June 12. Sunday. Strong E.N.E. breezes and cloudy. At 10 a.m., church service, the queens, chiefs and missionaries present. Shortened sail and came to anchor in 6 fathoms. I got Lord Byron to gain Queen Kaumanna's [Kaahumanu] consent for me to have 7 or 8 natives to accompany me to ***Mouna Kaah*** [***Mauna Kea***]. After her usual "hesitation to consider," she said I might have as many as I wanted. I also asked her for a hut on shore to which to remove my traps tomorrow, where Mr. Forder will live till I return and where he can dry what plants I may find necessary to send home while on my journey. She desired that I should be informed that she did not know of a hut, but when she went on shore she would enquire of the chiefs.

Rev. Mr. Goodrich, Missionary.

June 13. Went on shore to find the huts of the only two foreigners at this place, besides the missionaries, to procure one of these men as a guide to ***Mouna Kaah***. I met Mr. Goodrich, one of the missionaries from Woahoo [Oahu], who told me that both of the persons of whom I was in search had left the place a fortnight ago, to kill wild cattle near

Mouna Kaah, and would probably not return for some weeks. He said that rather than I should be disappointed, he would willingly accompany me. His kind offer I accepted.

It was thought best to go the first part of the journey by canoe, and to save 30 miles of travel over many deep ravines and large rivers. We might return by land if we wished. For this water plan we had again to apply, through Lord Byron, to Queen Kaumanna for a canoe and also extra natives to man it. This Lord Byron, in his usual pleasant manner, promised to do when he found her (Queen Kaumanna) in such humour as likely not to refuse him, she at present being rather sulky from accounts received of some persons on shore having acted wrongly in her absence.

Lord Byron gave Mr. Talbot, fourth lieutenant, and Mr. Wil- [page 45] son, purser, permission to accompany me on my journey, and also acquainted me that Queen Kaumanna had promised me the canoe and natives for the next day. At noon I went on shore to choose a suitable hut, and met Mr. Goodrich, who went with me to look at the huts round the bay, all pleasantly situated under the shade of breadfruit trees, which in places form woods by themselves, and grow to a great height, producing plenty of fruit, although they possess but little variety and are generally of the small kind…

…The whole of the E. side of Owhyee [Hawaii], which is divided into two districts, belongs to Kaumanna and Pio. When at Heddo [Hilo], their place of residence to receive the rents, is near the east side of the bay, and consists of no more than two huts, one of which is given to Lord Byron as a residence while here.

Returning on board, I heard that the canoe and natives would not be ready until tomorrow. Mr. Young this evening gave me some account of Mr. Menzies' journey to ***Mouna Roah***,[45] next highest to ***Mouna Keah*** to which I am going. During the 26 years that Mr. Young has been on the island, he has never seen ***Mouna Kaah*** [Keah] free from snow, but has not seen snow on ***Mouna Roah*** in summer, and on this he bases his theory of the greater height of ***Mouna Kaah***. [page 46]

June 14. Went on shore with my traps, taking Mantle and another lad Trounce with me. They both belonged to the ship, and are allowed to me as long as I need them. I found that the hut promised me by Manaware was now refused, and only part of another offered, at the other side of the bay, and inhabited by a chief. My traps and provisions now being landed on the beach and surrounded by crowds of natives who would not have hesitated to make free with what they could lay hold of, I begged to be allowed to put them in a corner of his Lordship's house. Lord Byron told me it would make no difference to him leaving any of my things there if I liked till I returned, but if I wanted a place for them and Mr. Forder, I could have the tent put up near his hut for his servants, and this I accepted.

I went with some of the missionaries to Queen Kaumanna's hut to ask her whether I could depend upon the canoe for tomorrow. I found her, as usual, lying on the floor with her face downwards, and several natives round her brushing the flies away from her body. She hesitated in giving an answer until she had surveyed me from head to foot, and then said when she saw one of the chiefs, she would let me know. So I got Mr. Young, who had more influence with her than the missionaries, to tell her I would pay what money she wanted. This offer had the desired effect, for she instantly sent across the bay to the head chief, and when he came it was settled at once that I should have the canoe and natives without paying at all. I sent word to Talbot and Wilson to have everything ready on board

[45] Archibald Menzies, a Scottish surgeon and naturalist, was the first white man to ascend to the top of Hualalai and the first white man and probably the first human being to reach the summit of Mauna Loa. For an account of his trips up these mountains, see “Hawaii Nei 128 Years ago,” Honolulu 1920.

for the morrow's start when I came alongside in the canoe. I dined at 4 p.m. with Lord Byron, the surgeon, chaplain and painter, who are his usual companions while on shore. Mr. Forder joined me at sunset, and we took up our abode in Lord Byron's servants' tent.

Start for Mauna Kea.
June 15. Fine day after a showery night during which the rain poured through the old tent. Mr. Goodrich arrived at daylight with the double canoe and natives, and we immediately began to embark our provisions, etc., for our journey. It was 6 o'clock, however, before we got alongside the ship, for Messrs. Talbot and Wilson, who were ready waiting for us. There were now 17 on board the canoe, eleven natives and six of ourselves. We started with the well wishes of all on board the Blonde for [page 47] our journey of 30 miles to ***Lapahoi***[46] on the E. side of the island.

Favourable light east breezes, which freshened every hour until we landed in a narrow creek at 11 o'clock a.m. The creek was full of rocks, and open to a high surf that is generally found on this coast, and which at all times, except early in the morning, makes landing very difficult and dangerous, as we ourselves experienced. We had the greatest difficulty to prevent our canoe from being dashed on shore, owing to the surf washing over us every minute and filling the canoe with water so fast as to render our efforts in baling it out useless. We got into dry clothes as far as possible and dried our firearms, and then found that the 40 lbs. of salt meat which I had for my share of the provisions was missing, but nothing else.

Laupahoehoe.
Lapahoi [***Laupahoehoe***] is a small stony flat with a few huts and sweet potatoes and taro patches scattered over it. It lies at the extremity of a deep ravine, the declivities on either side nearly 500 feet in height and extending to the sea beach, terminating in a rocky precipice. The coast all the way to ***Lapahoi*** was intersected by many deep ravines, many of which had large rivers forming beautiful waterfalls that fell over the outward cliffs into the ocean, the angry surf of which broke a long way up upon the rocks underneath.

On the upper part of the inclines a species of pandanus grew plentifully. It is commonly used by the natives for making mats for the floors of their huts. It forms thick plantations here, giving the coast a pleasant appearance with their green bushy tops hanging pendant over the rocks where underneath in many places small subterranean streams fall down at no great distance from each other. This species of pandanus is nowhere so plentiful in the Sandwich Islands as on the island of Owhyee. It is cultivated elsewhere frequently for its leaves for mats and pillows for the natives. The tea tree is also plentiful here in the valleys along the coast.

Climbing Mauna Kea.
By noon we had finished taking some refreshments and dividing our baggage into loads for the natives to carry. We [page 48] proceeded on our journey, leaving behind us six natives with orders to remain four days with the canoe in case we might return in that time and select to go home by water. The other five we took with us, making with ourselves eleven. On the summit above ***Lapahoi***, we stopped to draw breath, and then every step became more interesting as we followed the narrow path to the woods above, which were yet four miles away. As we went along, the few native huts on either side were fast disappearing. The whole face of the country from the coast to six miles inland produced various fine prospects which reminded us of home, and if only cultivated, would produce an equal return of crops to any land of similar climate. But it is not even pastured by live stock, being covered with long grass and short stumpy tree ferns belonging to the Cyathea tribe, whose roots afford food for the swine about the huts of the natives.

[46] Laupahoehoe.

These same huts are often inhabited by four generations. huddled together at night time like so many dumb animals, and often without sufficient shelter over them to protect them from the cold heavy dews that invariably fall here at night. We reached the outskirts of the woods between three and four in the afternoon, having on our way crossed three narrow deep ravines, thickly covered with wood, mostly *metrosideros, aleurites*, and a species of *rhus*, but without water except during heavy rains.

Our guide (Mr. Goodrich) recommended us to take up our quarters in these huts for the night, as these were the last inhabited ones on our way to the mountain where we had any chance to procure food to eat now and also to take with us, which on account of our loss on landing in the surf, we should now need.

When about to enter the largest of the huts to prospect its condition, Mr. Goodrich was accosted by a smiling young woman, the wife of one of those Europeans who had come to kill wild cattle. She informed us that she had only left the Europeans yesterday morning, and that they had shot two bullocks the day before. We went and took possession of the cleanest part of the hut for our accommodation, without leave, as is customary with these people themselves, while Mr. Goodrich went in search of a young pig or fowls. All that he could procure, in spite of offering money and looking glasses, were a couple of fowls, owing to the price put upon their pigs, being nearly triple their worth.

Mr. Wilson was found in the midst of a crowd of natives, highly amused and viewing them with surprise. I went to the [page 49] wood, while supper was being prepared, to look for plants, and found several species of ferns not seen before, and a few plants. I only got as far as the outskirts of the wood and the trees, which were of moderate size, consisted mostly of metrosideros and aleurites, with many ferns growing beneath their shade. In addition to the different species of metrosideros in variety of colours of the flowers as well as foliage already met with at Woahoo, there still appears in this island many which will add to their number, one particularly with straw-coloured flowers and white underneath the leaves, met with this evening, although sparingly, adds to my former collection.

When I got back, I found my three fellow travellers sitting on a mat, each holding a piece of fowl in one hand a clasp knife in the other, busy eating in the presence of a number of natives, some of whom had in their hands a light made from the kernels of the *kukui* or candle nut tree (aleurites) several nuts being passed through on a splinter of bamboo cane which gave a greater light than two or three common sized candles.

At 9 p.m. we retired to rest in a corner of the hut on a clean mat brought with us for the purpose, the rest of the hut being filled with the usual medley of men, women, children and dogs.

June 16. Fine but somewhat foggy. Got up at daylight, took the temperature of the air, which stood at 64. We were all ready to start at 5 a.m. in spite of the heavy dew which was still on the grass and bushes, and we were soon wet through by it up to our knees. We entered the wood about a mile from the edge of a small ravine, by a narrow path, where on either side grew a number of strong, healthy banana trees without cultivation and many of them having large bunches of fruit.

John Young and Isaac Davis's First Battle.

Mr. Goodrich informed us that it was at this ravine that Mr. Young and Mr. Davis had fought their first battle in the service of Tamahamaah [Kamehameha] and defeated upwards of 10,000 of the enemy with only 300 on their own side, before their leader came up to their assistance with the main body of the army. The description related to us of this engagement was that when King Tamahamaah had conquered the south side of Owhyee,

he soon after, with his army, marched round to the opposite side of the island by the east, taking with him Young and Davis for the first time, [page 50] to whom he gave command of the chief part of his army. The chief of the Heddo part of the island was prepared to meet Tamahamaah in order to defend his proportion of the island from being subjected to the other's power, but on seeing the superior force of Tamahamaah, this chief kept retreating to the west till overtaken by Young and Davis, who were nearly a day's journey in advance of the main body of the army. The attack took place early in the afternoon from the opposite sides of the ravine in the wood, when after several hours engagement, it was decided in favor of Young and Davis, who alone had firearms. These two killed the enemy in vast numbers from the crowded manner in which they stood to oppose them, being unacquainted with the destructive effects of firearms.

This battle gave Tamahamaah the conquest of Owhyee.

We halted at 9 a.m. for refreshment, having travelled four miles through the wood, and I had the opportunity to ramble a little out of the path while the others rested. The trees now became more lofty, particularly a species of acacia used by the natives for canoes. Ferns of all kinds and sizes covered the ground beneath the trees, and a good many grew as parasites on the tree trunks. A noble species of *Cyathea*, equally numerous with the rest, often attained the height of 25 feet. *Metrosideros* with red bunchy flowering tops, covered with many red birds sucking their blossoms, were here much larger and taller than any seen on Woahoo. *Besterias* of various coloured flowers, and some of a climbing nature, and a numerous tribe of Psychotrias, both shrubby and succulent, as also many lobelias and other plants, aided by their variety to enliven our journey in spite of the many difficulties encountered from trees fallen across the path every other short distance, that had to be scrambled over. The path being slippery from the night rains occasioned many falls.

Wild Raspberries and Strawberries Plentiful.

After travelling another nine miles, we halted to fill our calabashes, this being the last place where we could obtain water till our return from ***Mouna Kaah***. Here again, I took the temperature of the air. It had risen to 69. Towards the end of the wood the path became steeper. Here we found raspberries and strawberries of various kinds covered with fruit which we all ate eagerly to quench our thirst. The raspberries were very large and [page 51] flat at both ends, but round in the middle and not unpleasant in flavour. The strawberries were small and great quantities of fruit grew around us on every side and looked like a neglected garden.

Bullock Hunters.

We reached the end of the wood by 1 p.m., having travelled twelve miles, and above 12,000 feet above sea level. Here we found the two Europeans' temporary hut. They had been killing some of the wild cattle that had originally been introduced by Capt. Vancouver from the N.W. Coast of America and since suffered to remain unmolested for over 20 years. Since the death of King Tamahamaah the government has killed and salted many of the cattle for the supply of its small fleet. In the hut we found both the Europeans at home, asleep, and dressed in the costume of the country. There were also twenty natives, men, women and children outside, some asleep and others roasting pieces of flesh on a stick stuck in the ground slanting over the fire. Both the white men were well known to our guide, and being told of the object of our visit, offered to supply us with what beef we wanted. While the natives were cooking food for us we learned from these two half-naked foreigners, who could speak but little English, although one was a Welshman and the other a Prussian black-smith, and both for some time had been in the English navy, that they had succeeded in shooting several cattle, but with some difficulty, for the cattle often in droves of twenty were always sensible of any person approaching them. If unsuccessful

in killing them with the first shot, it was absolutely necessary to have a place of retreat for their own safety, as they invariably pursued their destroyers with a kind of furious madness while they appear in sight.

Two days before, they had killed an old black bull, which they thought was one of the original number brought from California by Vancouver, from part of the right ear being cut off for a mark. They had been told that this had been put upon the cattle when landed thirty years ago. They have now increased to some hundreds, but it is curious that they have never been seen more than a few miles downwards in the wood from the mountain, and then only in warm weather for the sake of shade and water. Neither has a young one ever been got hold of and [page 52] domesticated, although often attempted, for the mother living with her young, always seeks some retired place till the young ones are old enough to protect themselves.

I placed all the specimens I had collected since the commencement of our journey, in paper to be left till my return, and then went into the wood to look for more. Took the temperature of the air at 3 p.m., and found it was at 69, being the same as at 10 a.m. coming through the wood. Our guide told us we must travel at least 6 miles further towards the mountain to be able to gain the summit at an early hour tomorrow, before the horizon rose to prevent us from seeing the ship at anchor in the harbour. So waking my sleeping companions, we started on our next stage. However, a native unfortunately dropped a calabash of strong brandy and water (two gallons) being the last of my share of the spirits brought on the journey. We had scarcely travelled three miles when a thick fog commenced to roll in over the country which was covered with tufts of dry grass and full of cattle tracks. The soil was chiefly composed of sandy, pulverized lava, with numerous beds of strawberries growing on same. Raspberries grew in great abundance by the sides of the small ravines made by the torrents of water from the melted snow running here at certain seasons. They were of a better flavour than those in the upper part of the wood, being here more exposed to the sun.

By 6 p.m. we had travelled another two miles, when the fog became so thick that we were scarcely able to see ten yards ahead of us, and we were drenched and shivering with cold and almost beyond any vegetation to shelter us for the night. So we cut down boughs of *Acacia* and a species of *Sophora* and erected a hut. This we accomplished in little more than half an hour, and getting plenty of firewood kept a fire burning all night near where we lay. I rambled about till dark among cranberry bushes cutting specimens. The temperature at 7 p.m. was 52.

Too Cold for Natives.

Got up at 2 a.m., started at 3 and began our journey to the mountains leaving the natives behind, who feared the cold and did not want to accompany us. At 5 a.m., daylight began to appear and by then we had travelled three miles over sandy pulverized lava, sinking over our ankles at every step. [page 53]

The Silver Sword Plant.

The last mile was destitute of vegetation except one plant of the Syginesia tribe, in growth much like a Yucca, with sharp pointed sliver coloured leaves and green upright spike of three or four feet producing pendulous branches with brown flowers, truly superb, and almost worth the journey of coming here to see it on purpose.[47] The majestic clouds rising

[47] The Silver Sword plant of Hawaii was first brought to the knowledge of the botanical world by Dr. W.J. Hooker, who described it from specimens collected by David Douglas when he ascended Mauna Kea in 1834. See "David Douglas, Botanist at Hawaii," Honolulu 1919. Macrae climbed Mauna Kea in 1825, i.e., nine years ahead of Douglas, and must be credited with having been the first botanist to notice and collect the silver sword plant. Some modern writers persist in stating that the silver sword plant is found on Maui only. This is not the case, as it also grows on the high mountains of Hawaii.

on the horizon at day-break encircled us all round like an immense wall with towers of various forms and sizes on their tops. They lay at unequal distances along the horizon, gradually rising and changing into fresh shapes at every moment that had the finest effect imaginable.

Talbot and Wilson Unable to Proceed.

The temperature had now fallen to freezing point. Messrs. Talbot and Wilson, overcome by the cold, became so sleepy as to be unable to proceed. We waited by them for some time trying to rouse them without avail, so leaving one of the lads with them, my guide and I with the other lad started out afresh so as to reach the summit and see the ship, we having promised Lord Byron to light a fire that he might see through his glasses how far we had got. As we advanced, every step became steeper and more difficult. All vegetation had ceased, even the yucca-looking plant, but we got up the mountain by 6 a.m., and saw the ship looking to us down there like a 50-ton vessel. Here we collected enough stumps and leaves to light a fire, remaining by it for half an hour, and our companions not overtaking us, we kept on our way, at times over hard uneven lava, at others over sandy lava.

Reaches Main Plateau of Mauna Kea.

The mountain now became divided into several high conical sandy hills with several old small volcanic craters on their sides, forced above the sand for some yards in height and bleached nearly white from long exposure. The air became warmer and more pleasant as the sun rose above the horizon, but we had [page 54] constantly to rest from the difficulty of breathing after stopping to rest. At 8 a.m. we saw the lad, left with Talbot and Wilson, coming after us. Thinking he might have a message from them, we waited, but he had left the others still asleep, and only came to beg to be allowed to return, as he had been so cold waiting by the sleeping men. Giving him some refreshment and spirits, we sent him back to try and meet Talbot and Wilson. The temperature had now risen to 46, the sun shining brightly. We resumed our journey by the bottom of the sandy conical hills, the surface over which we travelled constantly changing and more uneven, sometimes being lava sand intermixed with small broken stones about the size of brickbats, and at other places having to scramble over large sharp-edged granite stones of several tons weight, which have beyond a doubt, been thrown up by some previous convulsion. We came in sight of the snow after 11 a.m. Our guide seemed to suffer more than the lad and myself from headache and inclination to vomit, and we had yet two miles to go over a still more rugged surface to reach the snow.

Mr. Goodrich Collapses.

At a quarter mile from the summit where the snow lay, our guide collapsed and begged us to get him some snow for his thirst.[48] The lad Mantle held out better than I had expected.

Macrae and Boy Mantle Reach Summit.

At 12:30 I reached the snow on the summit, which lay on porous lava of a sponge color, and in places on sand of a red color intermixed with red and black cinders like the conical

[48] Rev. Joseph Goodrich, who, on this occasion, was unfortunately laid up with mountain sickness, had on 26th August, 1823, reached the summit of Mauna Kea. This is the first recorded instance of the ascent of this mountain, although Mr. Goodrich mentions that on reaching the top of one of the terminal cones that encircle the main plateau of Mauna Kea, he discovered a heap of stones, probably erected by some former visitor. Who this former visitor was is unknown, but he was probably one of the white men that in the early years of the nineteenth century got a living by shooting wild bullocks that roved on the side of Mauna Kea. It is very unlikely that any native had reached the top of the terminal cones on the summit, owing to being unprovided with warm clothing to resist the great cold and also to the fact that the natives had a superstitious dread of the mountain spirits or gods. About six months after the date of the first ascent of Mauna Kea by Mr. Goodrich, the peak was scaled by Dr. Abraham Blatchley and Mr. Samuel Ruggles, both connected with the American Mission.

hills we had passed. Some of these cinders had common quartz and two or [page 55] three other kinds of minerals that I am as yet unacquainted with, very often bedded in one lump of lava. The snow in some parts was about three feet deep, congealed into solid ice, excepting from two to three inches at top of rough particles of loose snow. The whole appeared to be melting fast through the porous lava like a sieve, which prevented our being able to fill our vessels with water. We therefore filled our handkerchiefs with snow, taking mouthfuls at the same time to quench our thirst. I sent Mantle with some snow to our guide, and remained to take the temperature in the sun and in the shade. In the former it was 92, and in the latter, in holes beneath the snow, 44. I stayed about an hour admiring the scenery. For a space of about 12 miles around the top of the mountain, it was dreary to a degree, but below that, the pasture where the wild cattle fed had a pleasing effect. The forest which encircles the island of Owhyee below the pasture land, was hidden in fog, so that I only saw about 20 miles in a direct line, but the high land like Mouna Roa and other hills could be easily distinguished above the fog, although none of them were covered with snow.

Sheep Killed off by Wild Dogs.

I saw many skeletons of some kind of animal, devoid of all flesh, but apparently not long dead, and on rejoining our guide, was informed that the wild dogs had almost exterminated the sheep that Vancouver had brought with the cattle, pursuing them beyond the line of vegetation, where they became bewildered and died for want of food.

Begins Return Journey.

It being now after 2 p.m., and still feeling unwell from the same causes as our guide, we left this interesting place and travelled slowly downwards, finding our few specimens of minerals, etc., almost twice their real weight. In this hobbling manner, scarcely able to drag our limbs for the last four miles, we reached our hut, where we found that the lad sent back in the morning to Messrs. Talbot and Wilson had not met them. So fearing they might have succumbed to the cold in their sleep, and knowing they had no provisions, we much repented having left them; but to our joy, in about half an hour, we heard them calling not far distant. When they came to the hut they did not appear so fatigued as we ourselves, in spite of the want of food. They had [page 56] slept for about an hour, then awoke and tried to follow us, but not finding any of our tracks, they gave up the idea of following us, and made for the first of the highest hills. The snow we had brought with us served us well with water, for the natives left behind had drunk all that we left of the latter article except about a pint. The natives rubbed our thighs and legs for us, a practice they often do for themselves in such circumstances. They call it *lummi lummi* [*lomilomi*]. The temperature at 7 p.m. was 50 and at 10 p.m. 48.

We calculated the summit of Mouna Kaah from Byron's (or Heddo) Bay to be about 70 miles by the common path, but in a direct line perhaps only half that distance. We judged the peak could not be under 18,000 feet above sea level.[49] The land along the sea coast from Byron's Bay to upwards of 40 miles to the west and about 6 miles in breadth, was free from wood excepting by the sides and bottoms of the ravines. The forest that surrounds the central part of the island begins here, at the distance of 5 or 6 miles from the coast, and stretches back for a depth of 12 miles, intersected with deep valleys and large rivers of fine water. The outskirts of the forest nearest the sea are chiefly handsome coloured flowering species which entirely disappear after 5 or 6 miles towards the centre of the wood. The commonest species of *metrosideros* often attains a height of 40 feet and are thick in proportion. The wood is hard and durable.

[49] Mauna Kea is 13,825 feet high.

The upper parts above the forest resemble pasture land for 7 miles farther, and are thinly covered with low growing shrubs and abundance of strawberries and raspberries. At a higher elevation, vegetation ceases for the last eight miles towards the summit. The clouds generally rise on the mountains of Owhyee and the other islands in the morning and disperse towards evening. Rain often falls at night and also in the daytime some distance from the peaks, while on the coast the sun may be shining and there is no appearance of rain.

June 18. Got up at daylight, being disturbed in the night by the howling of wild dogs which caused us to keep our fire burning. At six set out on our homeward way, and unknown to us, the natives at once set fire to our discarded hut, a common custom our guide told us. At 12 we had travelled 6 miles and reached the Prussian and Welshman's hut. These men had seen no wild cattle since we left them, the only animals observed having been [page 57] a wild dog and cat. The dog seemed to be the same kind as the domesticated native one of which they eat the flesh, and the cat appeared like the European breed. After a breakfast of plenty of slices of roast beef and abundance of water, my companions spread their mats in the shade and slept till noon. I shifted my specimens that had been left here into dry papers, and gathered others, including strawberry and raspberry plants to take with me to England. At 2 the whole camp was on the move for ***Lapahoi***, where we had left the canoe and the natives. On reaching the first hut, we found only the two foreigners, the rest having gone on to ***Lapahoi***. They promised to have a fire ready for us to dry our clothes at, but although I gave them each a dollar on starting they had nothing ready for us and did not get us any food till 9 p.m.

Natives Object to Sunday Travel.
June 19. Hazy, light showers. Sunday, and on that account the natives refused to accompany me to join the other part of my party with their loads, and said, the missionaries had ordered them not to.

Game of Noa
The blacksmith, however, promised to accompany me with his own people at 11 a.m., but instead of doing so, went and played and gambled at Nooah. This game is one of their most ancient and frequently played pastimes. It consists in placing in a row, five small *tapa* bags stuffed with cotton or the down of ferns, underneath one of which is hidden a stone so as to deceive the parties playing which of the bags it was put under.

The players are seated around in a circle, each armed with a small wand in his hand with which he strikes the bag he supposes the stone to be under. There are generally ten players with different coloured rags tied to their wands. I have been told that at this game they gamble their hogs and all their possessions, even their wives, and are very strict in paying their debts of honor.

Leaving them gambling, I left with the two lads and two natives for ***Lapahoi***, and joined my party there about 3 p.m. They were just about to start for home, having expected me in the morning. The canoe had not waited for us as ordered but had returned home the second day after we started for the mountain. We therefore had to go home by land, and took up our [page 58] quarters for the night about 7 p.m. after having crossed a number of deep ravines, wading through rivers, at times up to our middle… [page 59]

…We arrived opposite the ship at 5 p.m. very tired from our many climbs up and down, since we left ***Lapahoi*** on Sunday, distant 40 miles… [Macrae, 1922:60]

Goodrich's Account of Travel From Hilo Bay to The Mountain Lands in 1829

During Joseph Goodrich's twelve year residency in Hilo, he made several trip across the mountain lands, either to visit the mountain summits, to go bullock hunting, or while traveling between the Hilo mission station, and other stations on the island. In 1829, Goodrich wrote to the mission headquarters, describing activities in which he had participated (some of which were being criticized by other brethren). His letter included a description of the trails taken from Hilo to the mountain lands, and observations of the nature of the landscape around Mauna Kea. Goodrich also reported that the right to hunt bullocks was controlled by Governor Kuakini, at the time:

Saturday, November 22nd, 1829
Journal at Byron's Bay
Joseph Goodrich; to Jeremiah Evarts:
…May 12th, 1829.
By the request of the Gov. together with a desire to ascend the mountain directly from the bay at this place, & also to kill 2 or 3 beef for our own use and that of the Gov., & farther to take up some turnips & set out in a colder climate to see if they would not then go to seed upon the mountains for they do not go to seed down near the shore. Set out about day light to ascend to the higher regions, course about west, the distance from the shore to the woody region is about 5 miles the region that is principally used for the cultivation of *talo*, potatoes, sugar canes, bananas &c. about 3 miles in the woods is one of the highest cataracts in this part of the island. I judge it to be 100 & 90 or 50 feet high in the heavy rains an immense body of water rushes down with tremendous violence at other times the stream of water is quite small, a little farther up the whole bed of the river under ground for about 40 or 50 rods about mid way of which is a dark & dismal hole 30 or 40 feet to the water called by the natives Puka o Maui [page 12] the door, hole or entrance of Maui one of their former gods, the oven of this deity according to the natives is about a mile from the south west shore of the bay it is an old crater 60 or 70 feet deep & about 1/3 of mile in circumference, I now occupy it as pasture for my cows there are 3 craters that are directly back of me another in a right line the lower one is the oven, here he used to cook his food as the natives say.

The road or path more properly lay along the river Wailuku, sometimes it led into the woods, then to the margin again into the woods & back to the river the bed composed entirely of lava, the path was sometimes one side & the other continually crossing & recrossing the woody region, is very timbered many of the trees are 2, 3 & 4 in diameter, the timber consists chiefly of *ohia* & *koa* the former is a species of the apple tree of these islands, the latter seems to be an inferior kind of mahogany, some of makes good furniture, it is also the kind of timber out of which their canoes are made. The ascent in the woody region is very gradual above the woods it is much more abrupt after traveling hard all day with very short spells of resting, about sunset we got through the woods, leaving all the natives behind who did not arrive till the next day. The woods terminate very abruptly they are so thick of trees & under brush that are almost impassable a few rocks only can be seen ahead, on emerging from the woods a wide extended plain presents itself along the side of ***Maunakea***, the plain is 6 or 8 miles wide interspersed with clumps and groves of *koa* trees of stinted growth [page 13] resembling orchards of apple trees with numerous herds of wild cattle grazing in almost every direction. The plain if I may so call it for so it appears at a distance is broken into ridges & valleys, & very stony, the rocks all volcanic, the whortleberry & strawberry here abounds to perfection in the season of them which is from July to Nov or even later especially the whortleberry. In reaching the place of our lodging I found a large fire prepared by Honolii who had proceeded me in opening the path to the mountain, the fire was barely acceptable as I was wet & cold, having traveled most of the way among the clouds which do not commonly extend higher up than the woody region, & are perpetually distilling their water in the woody region below. It was in a cave where we took up our lodgings, in some parts it was quite spacious, in others so

low that we could not sit upright. The place where I laid my head was about 18 inches high, it however was a very comfortable resting place. Early in the morning set out in pursuit of a bullock, they were to be seen in almost every direction. I directed my course toward 2 bulls that were near the skirts of a small grove of *koa* trees, in about half an hour I shot at one who went a few rods & fell dead the other went but a few rods farther & stood watching his fallen companion. I did not succeed in getting near to him but shot at a long distance, the gun being an indifferent one liable of execution & he made off with himself. I sometimes wish that I had a good rifle, as the chiefs had given me [page 14] permission to kill a bull whenever I am so disposed. I have availed myself of the right of killing one or two about twice in the course of a year, the greatest objection to killing oftener is the badness of the road through the woody region, the natives are from a day & a half to two days in coming down with a load of beef. For several succeeding days I was unable to kill any in consequence of the mountain being enveloped in clouds, at length the mountain became clear from clouds I started early in the morning & in about an hours time I was treading frozen ground being near the upper extremity of the region of vegetation, when I soon succeeded in killing a fine cow & towards night I killed another for the Gov. The cows are far better beef than the bull, the latter are uniformly dry or lean, while the cows are almost always as fat as stall fed beef. There is not much danger in killing wild cattle provided I have a good rifle, but with a poor one like the one that I have, it is rather disagreeable shooting & sounding so that they either chase in or I must them & frequently loose them after all. Having spent 4 or 5 days I could not well spare the time to ascend the mountain so we returned having obtained a good supply of beef… [page 15; A.B.C.F.M. Collection, Houghton Library, Harvard]

Gerrit P. Judd's Account of a Visit to the Summit of Mauna Kea And Travel Across Plateau Lands between Mauna Kea and Mauna Loa in 1830

Gerrit P. Judd, was a doctor attached to the Sandwich Island Mission Station, at Honolulu. Because of his medical expertise, he was frequently in the company of the *ali'i* and made tours around the islands. In April, 1830, while on a visit to Waimea, Judd and a native guide, John Honolii, walked to the upper region of Mauna Kea (not reaching the summit). On his return, he brought back snow, which he gave to Governor Kuakini, the first touched by the governor. Later, in June and July of the same year, Judd again traveled across the mountain lands. His narratives describe travel around the Hāmākua-Laupāhoehoe trail to Hilo Bay, skirting the upper forest lands, and travel across the saddle lands between Mauna Kea and Mauna Loa, from the upper region of Keauhou, Ka'ū.

Honolulu, August 19th, 1830
Gerrit P. Judd;
to Jeremiah Evarts, Esqr.
Missionary Rooms, Handover St., Boston:
…[March] 19th. Gov. Adams arrived with all his train, he intends spending some months with us, to catch wild cattle… [page 4]

[April] 4th Sabbath. Gov. Adams having commenced his buildings at Aalii for the sake of being near the wild cattle, & erected large Ranai proposed to hold public worship there. Mr. R. attended today he reports a congregation in the forenoon of 4,000.

[April] 23. Yesterday morning the weather being clear and inviting I set off in company with John Honolii and other natives to visit the top of ***Mauna Kea***. I rode a mule furnished me by the Governor. We ascended until about 2 P.M. when we were overtaken with a violent thunderstorm. We were compelled to take shelter in a cave and the storm continuing to rage, we remained all night. Arose early this morning, left the mule & proceeded on foot. The atmosphere was clear, we had a delightful view of the scenery below, which certainly surpasses anything I have seen before. Clouds soon obscured our sight for the rest of the day. [page 6] Reached the snow about noon, ascended a short distance, but found myself

too much fatigued to ascend the summit. There was indeed little inducement, the prospect was so obscured by clouds. I therefore descended bringing with me a large bundle of snow. Arrived at the cave at 5 P.M. bestrode the mule & reached home about 9 o'clock in the evening. There is little vegetation on this side of the mountain except coarse grass which is plenty, two thirds of the distance. The ascent is not difficult, the cattle ascend to the snow in search of water.

24th. Sent the bundle of snow to Gov. Adams who had never before seen any except on the distant mountain top, he appeared much gratified with tasting & handling it… [page 7]

[July] 3rd. Returned from my visit [to Kilauea]. I left home early on the morning of the 24th travelling towards the eastern side of ***Mauna Kea***, my route the two first days was through thick woods frequented only by sandalwood cutters & wild cattle until I arrived at ***Laupahoehoe***. I then proceeded along the sea shore to Hilo a distance of about 20 miles. The country here is extremely fertile, but rather unpleasant, on account of the almost incessant rains, that it is well watered you will believe when I tell you that I crossed more than 50 streams with banks from one to five hundred feet high on each side. I was forced to ford many that were 2 or 3 feet in depth at the most shallow part that could be found. In one instance was ferried across in a canoe… [page 9]

[June 31; departing from Kilauea] Parted with Mr. & Mrs. Andrews about noon on Thursday in order to return to Waimea by a direct rout over the unfrequented country between ***Mauna Roa & Mauna Kea***. *I found this journey excessively fatiguing. We travelled over rough lava without a path sleeping on the ground & in the huts of sandal wood cutters, without much food or water. The south & western sides of* ***Mauna Kea*** *are altogether unlike the North & East*. The former dry and barren, the latter rich with wooded & susceptible of cultivation one third of the distance upwards… [page 10; A.B.C.F.M. Collection, Houghton Library, Harvard]

The Journal of Hiram Bingham (notes of 1830)

In 1830, Reverend Hiram Bingham and family visited Waimea, and in September they were joined by members of the royal household. It was during the September visit that Kauikeaouli (Kamehameha III) and party, in the company of Bingham, traveled to the summit of Mauna Kea, via the Waimea-Waikiʻi-Kalaiʻeha route. Bingham's journal includes descriptions of the Waimea region, including the community, industry, and landscape, and also documents the royal visit to Mauna Kea:

…Crossing over to Kawaihae…we ascended at evening to the new inland station [Waimea]. When we had escaped from the oppressive heat on the shore, and reached the height of about 2000 feet, we were met by a slight rain and a chilly wind, which made our muscles shiver… …as we came within some twenty-five miles of the snows of the mountain… …The full-orbed moon looked serenely down from her zenith upon the hoary head of ***Mauna Kea***, and the ample and diversified scenery around. The babbling brook [Waikōloa], the sound of a small cataract in a glen, the rustling in the tops of the trees, at a little distance, the scattered huts of the natives in the settlement, while their occupants were hushed at midnight, and the hospitable light of a fire and lamp, beaming from a glass window of the missionary cottage pitched near the north side of the plain, over against ***Mauna Kea***…

…Riding out one day to call on Gov. Adams, who had done liberally for the station by the erection of the buildings, I was delighted, on my way to his temporary residence, with the grandeur and beauty of the scenery around me. The clear rippling streams that wind their way along the verdant plain, through alternate plats of shrubbery, grass, *kalo*, sugar-cane, bananas, flowering bushes, and wild vines, occasionally crossed my path. Beyond the scattered cottages, the wild cattle were grazing unrestrained on their own unenclosed

territories bordering on the mountain. The green hills and mountains of Kohala, crowned with trees and shrubbery, and their sides partly cultivated and partly covered with grass of spontaneous growth, rose on the north side of the plain. The distant hoary Mauna Loa appeared in the south. Much nearer, on the south-east, the majestic ***Mauna Kea*** lifted his snowy summit in his ample form, exhibiting his peaks and precipices and piles of scoria and gravel, and his rocks and forests; and in the south-west, Hualalai, another volcanic mountain, with its terminal quiescent crater [page 374], presented no mean height and dimensions, being 9000 feet high, and forty miles long… [page 375]

Ascent of Mauna Kea.

…The king set out with a party of more than a hundred, for an excursion further into the heart of the island, and an ascent to the summit of ***Mauna Kea***. To watch over and instruct my young pupil, and to benefit my health, I accompanied him. The excursion occupied nearly five days, though it might have been accomplished much sooner. Crossing in a southerly direction the plain of Waimea, some on horseback and some on foot, the party ascended a small part of the elevation of the mountain, and being in the afternoon enveloped in dense fog, they halted and encamped for the night. The next day they passed over the western slope of the mountain to the southern side, thence eastward along a nearly level plain, some seven thousand feet above the level of the sea, to a point south of the summit, and encamped out again, in the mild open air. In the course of this day's journey, the youthful king on horseback, pursued, ran down, and caught a yearling wild bullock, for amusement and for a luncheon for his attendants. A foreigner lassoed and killed a wild cow.

The next day was occupied chiefly in ascending in a northerly direction, very moderately. Our horses climbed slowly, and by taking a winding and zigzag course, were able, much of the way, to carry a rider. Having gained an elevation of about ten thousand feet, we halted and encamped for the night, in the dreary solitudes of rocks and clouds. When the night spread her dark, damp mantle over us, we found ourselves in the chilly autumnal atmosphere of the temperate zone of this most stupendous Polynesian mountain. Below us, towards Mauna Loa, was spread out a sea of dense fog, above which the tops of the two mountains appeared like islands. We found it a pretty cold lodging place. Ice was formed in a small stream of water near us, during the night. *As the company were laying themselves down, here and there, upon the mountain side, for sleep, I observed that the king and Keoniana, subsequently premier, and a few others, having found a cave about four feet high, ten wide, and eight deep, made by a projecting rock, which would afford a shelter from a shower, and partially from wind and cold, had stretched themselves out to sleep upon the ground in front of it. I was amused to see that their heads protruded somewhat more than six feet from the mouth of the cave, and asked, "Why do you not* [page 377] *sleep under the rock, which is so good a sleeping house for you?" Keoniana, always ready, replied, "We don't know at what time the rock will fall." Whether the apprehension that the firm rock might possibly fall upon the head of the king that night or their unwillingness that any ignoble foot should walk above it, or some other fancy, were the cause of his declining the shelter, did not appear.*

In the morning we proceeded slowly upwards till about noon, when we came to banks of snow, and a pond of water partly covered with ice. In his first contact with a snow bank, the juvenile king seemed highly delighted. He bounded and tumbled on it, grasped and handled and hastily examined pieces of it, then ran and offered a fragment of it in vain to his horse. He assisted in cutting out blocks of it, which were wrapped up and sent down as curiosities to the regent and other chiefs, at Waimea, some twenty-eight miles distant… [page 378]

> …We descended hastily to the north-west, about twelve miles, sometimes taking leap after leap boldly down steep places of fragmentary scoria and gravel, and sometimes advancing cautiously among rocks, shrubs, trees, and wild cattle. Towards midnight we came to the place of the king's party, near the plain of Waimea, and the next day returned to the station there. As we crossed the plain, we witnessed several striking exhibitions of seizing wild cattle, chasing them on horseback, and throwing the lasso over their horns, with great certainty, capturing, prostrating, and subduing or killing these mountain-fed animals, struggling in vain for liberty and life... [Bingham 1969:379]

Bingham's record for 1830 also includes descriptions of visits to Kīlauea, and a subsequent journey overland to the plateau lands between Mauna Loa and Mauna Kea, on their way to Waimea. The trip took the group past Kalai'eha, and in the shadow of "Waihalulu" (Waikahālulu) Gulch where water was found. The narrative then describes travel through the Pōhakuloa vicinity and past Waiki'i, and on out to the Waimea plain:

> …After spending about thirty hours at Pele's chief seat, we set off, towards evening, on the 21st, to cross the wilderness to Waimea, which required the time of a little more than two days and two nights. Walking till late, we laid ourselves down where we could find a place. The next day we continued our journey northwardly, towards ***Mauna Kea***, lodging out in the wilderness, in the same manner, at night, the majestic mountain being half a day's walk to the north of us.
>
> Rose at four o'clock from our mountain couch, — a day's journey from any human habitation; saw lightning at a great distance at sea – our elevation being 4000 or 5000 feet; packed our sleeping *kapa*; offered our morning sacrifice in these solitudes of the centre of Hawaii, and as the day dawned, set forward on our journey. We passed over several large tracts of lava, of different kinds, some smooth, vitreous, and shining, some twisted and coiled like huge ropes, and some consisting of sharp, irregular, loose, rugged volcanic masses, of every form and size, from an [page 393] ounce in weight, to several tons, thrown, I could not conceive how, into a chaos or field of the roughest surface, presenting a forbidding area, from one to forty square miles in extent, and though not precipitous, yet so horrid as to forbid a path, and defy the approach of horses and cattle. In the crevices of the more solid lava we found the *ohelo*, somewhat resembling the whortleberry, nourished by frequent showers and dew. *At ten o'clock, we halted for breakfast; raised a smoke, as a signal for the horse keeper, at the watering-place, at the south base of* ***Mauna Kea****,* to approach, and moved on, till twelve o'clock, when I was very glad to see and mount the horse sent over from Waimea to meet me. Our company having become considerably scattered, and pressing on, under a mid-day, tropical sun, were soon collected together by the loud shout, "Here's water," made by the keeper of the horse, who had very considerately brought us a calabash from ***Waihalulu***, cold and sweet, for the refreshment of our weary and thirsty travellers. We drank round, and this gourd bottle soon sounded empty. I mounted and set forward with comfort and revived courage, leaving most of the company to proceed at their leisure.
>
> One of the keepers of the horse wishing to accompany me, girded up his loins, and like Elijah before Ahab, ran cheerfully before me, westward, along the south side of ***Mauna Kea***, about ten miles, then northward, over its undulated, western slope, about the same distance. We halted on the ridge, half an hour, then pressed on till six o'clock, when the sun, having finished his daily race, sank with great grandeur and beauty into the western waters of the vast Pacific, sending back a pleasant farewell to the clouds that hung over Hualalai, Mauna Loa, and ***Mauna Kea***, the three Hawaiian mountains, and shooting upwards his diverging rays with peculiar beauty, after the last limb of his broad, golden disk had disappeared. About seven, we reached Waimea, thus completing my excursion of about 175 miles, with improved health for resuming the labors of the station… [Bingham 1969:394]

"Hua Hekili" A Hail-storm on Mauna Kea in 1830

In 1830, Goodrich again returned to the summit of Mauna Kea, this time, in the company of natives. On the trip, they experienced a hail storm, the hail being called "*hua ke hekili*" (fruit of thunder). Goodrich searched for, but did not find the pond, Waiau, though they did find a stream fed by the melting snow. Goodrich also reported that on the flat lands between Mauna Kea and Mauna Loa, they found many huts, formerly used by the sandal wood cutters:

Byron's Bay, Hawaii
December 30, 1830
Joseph Goodrich; to Jeremiah Evarts:

Being favoured with an associate Mr. Andrews & wife who came up here to spend a season to assist in labouring for the good of souls here, having had a previous request to visit the brethren at Waimea. I thought it desirable to improve the earliest opportunity to comply with their request. I left home the latter part of May in company with 7 or 10 natives. We went directly up the mountain till we reached the upper region of vegetation, then turning to the left of the mountain, as we were passing along to the south east of the summit being probably 12000 feet above the level of the sea, we came in contact with a hail storm. Being the first that I had seen since passing Cape Horn. Here it was quite amusing to see the natives to use their endeavors to catch it as it fell, some with their hats & some with the tops of their callabashes held out to catch it, but they were disappointed for some time saying that it went into their hats or callabashes but that it flew directly out again. At last having collected some they commenced eating them or here they expressed surprise, exclaiming, "*huihui eha loa ka niho*" it was very cold & hurt the teeth. They call hail stones, *hua ke hekili*, a fruit/eggs of thunder. One asked me, "*No ke aha la e noho wale no ke anuanu maluna o ka mauna?*" Why does cold dwell or stay only upon the top mountain? One says that he has no hands, another that his feet are thick, another that [page 1] his nose is numbed. *We descended again into the valley between the mountains, having* ***Mauna Kea*** *on our right, Mauna Loa on the left. Some part of the way is sandy, interspersed with trees & shrubberies & many huts of the sandal wood cutters, though these inhabitants have previously left them. Their present occupant disputed our entrance and we much preferred to recline out in the sun, than to contend with so many formidable oppressors.*

The valley between the mountains is probably 8,000 or 10,000 feet above the level of the sea. Mauna Loa presents a most appalling aspect scarcely any is to be seen but black & weary looking lava; currents of rough & black looking lava commenced at the top of Mauna Loa, & I should think after running a distance of 50 miles or more, fell into the sea Kawaihae. We arrived at Waimea & found all comfortable; after the sabbath we commenced our return. Designing to ascend the summit in search of the pond of water of which I had frequently heard, we followed the same route very nearly that I pursued the first time that I ascended the mountain. When a tour of the island was made by a deputation from the mission. We discovered nothing very special except a beautiful stream of water murmuring from the mountain, it was occasioned by the melting of the snow & had its head in the pond of water for which I was looking, but having no guide we passed within about a half a mile of it as I afterward was informed we have since seen it. It is 40 or 50 rods in circumference as Mr. Bingham has been up there & seen it, I presume that he has given a particular account of it, it is therefore unnecessary for me to do it. I also saw as below fragments of granite imbeded in lava, this cohesion of almost all of it was very feeble which was probably destroyed by the action of volcanic fires. In traveling on the loose masses & fragments of lava, the sound under foot would very nearly resembles that of traveling over plates of iron; solid mound precipices slags, cinder, scoria & sand [page 2] compose the principal part of the summit of ***Mauna Kea***, while Mauna Loa is composed almost entirely of black compact lava of a hard infused mass of jet black appearance, while some inclines to an ebony colour. I find it very interesting to ascend the

summit being afflicted with a severe pain in the head. The natives also complaining of the same, several times, while in the upper regions. I have been attacked with violent vomiting of bilious matter, all these complaints to subside as we descend the mountain… [page 3; A.B.C.F.M. Collection, Houghton Library Harvard]

Mauna Kea and the Mountain Lands Described by David Douglas in 1834

In January 1834, naturalist David Douglas visited the island of Hawai'i, and ascended Mauna Kea. The records of the trip kept by Douglas (published in the Hawaiian Spectator of 1839) provide us with detailed descriptions of the journey from Hilo Bay to the mountain, with discussions on the natural environment, make up of the forests, and changes in the landscape as the elevation was increased. A number of plants collected by Douglas, were subsequently named for him, though his place in history on the mountain lands is more readily remembered by the fact that he died on the mountain while on his second visit to the island. While walking the old mountain trail, skirting the forest zone between Humu'ula and the Waipunalei-Laupāhoehoe boundary, Douglas apparently fell into a dug-out trap meant to catch wild bullocks, and was killed by a trapped animal. The location of this accident was at a place named Keahua-ai, and is in the vicinity of the place known today as "Kaluakauka," The Doctor's Pit, or Douglas Pit (see Register Map No. 667).

Douglas wrote the following account of his first trip to Mauna Kea and the mountain lands:

> …On Tuesday, the 31st of December, we stood in for the island of Hawaii, and saw ***Mauna Kea*** very clearly, a few small stripes of snow lying only near its summit, which would seem to indicate an altitude inferior to that which has been commonly assigned to this mountain.
>
> My object being to ascend and explore ***Mauna Kea***, as soon as possible, I started on the 7th January, 1834, and, after passing for rather more than three miles over plain country, commenced the ascent, which was however gradually entering the wood. Here the scenery was truly beautiful. Large timber trees were covered with creepers and species of *Tillandsia*, while [page 399] the Tree Ferns gave a peculiar character to the whole country. We halted and dined at the saw-mill, and made some barometrical observations, of which the result is recorded, along with those that occupied my time daily during the voyage, in my Journal.
>
> Above this spot the Banana no longer grows, but I observed a species of *Rubus* among the rocks. We continued our way under such heavy rain, as with the already bad state of the path, rendered walking very difficult and laborious; in the chinks of the lava, the mud was so wet that we repeatedly sank in it, above our knees.
>
> Encamping at some small huts, we passed, an uncomfortable night, as no dry wood could be obtained for fuel, and it continued to rain without intermission. The next day we proceeded on our way at eight o'clock, the path becoming worse and worse.
>
> The large Tree Ferns, and other trees that shadowed it, proved no protection from the incessant rain, and I was drenched to the skin the whole day, besides repeatedly slipping into deep holes full of soft mud. The number of species of *Filices* is very great, and toward the upper end of the wood, the timber trees, sixty or seventy feet high, and three to ten inches in circumference, are matted with Mosses, which together with the *Tillandsias* and Ferns, betoken an exceedingly humid atmosphere. The wood terminates abruptly; but as the lodge of the cattle hunter was still about a mile and a half farther up the clear flank of the mountain, situated on the bank of a craggy lava stream, I delayed ascertaining the exact altitude of the spot where the woody region ends, (a point of no small interest to the Botanist) until my return, and sat down to rest myself awhile, in a place where the ground was thickly carpeted with species of *Fragaria* [*'ōhelo papa*] some of which were in

blossom, and a few of them in fruit. Here a Mr. Miles, part owner of the saw-mill that I had passed the day before, came up to me; he was on his way to join his partner, a Mr. Castle, who was engaged in curing the flesh of the wild cattle near the verge of the wood, and his conversation helped to beguile the fatigues of the road, for though the distance I had accomplished this morning was little more than [page 400] seven miles, still the laborious nature of the path, and the weight of more than 60 lbs. on my back, where I carried my barometer, thermometer, book and papers, proved so very fatiguing, that I felt myself almost worn out. I reached the lodge at four, wet to the skin, and benumbed with cold, and humble as the shelter was, I hailed it with delight. Here a large fire dried my clothes, and I got something to eat, though, unluckily, my guides all lingered behind, and those who carried my blanket and tea kettle were the last to make their appearance. These people have no thought or consideration for the morrow; but sit down to their food, smoke and tell stories, and make themselves perfectly happy.

The next day my two new acquaintances went out with their guns and shot a young bull, a few rods from the hut, which they kindly gave me for the use of my party. According to report, the grassy flanks of the mountain abound with wild cattle, the offspring of the stock left here by Capt. Vancouver, and which now prove a very great benefit to this island. A slight interval of better weather this afternoon afforded a glimpse of the summit between the clouds, it was covered with snow. *At night the sky became quite clear, and the stars, among which I observed Orion, Canis minor, and Canopus, shone with intense brilliancy.*

The next day the atmosphere was perfectly cloudless, and I visited some of the high peaks which were thinly patched with snow. On two of them which were extinct volcanoes, not a blade of grass could be seen, nor any thing save lava, mostly reddish, but in some places of a black color. Though on the summit of the most elevated peak, the thermometer under a bright sun, stood at 40º, yet when the instrument was laid at an angle of about fifteen degrees, the quicksilver rose to 63°, and the blocks of lava felt sensibly warm to the touch. The wind was from all directions, east and west, for the great altitude and the extensive mass of heating matter completely destroyed the Trade wind. *The last plant that I saw upon the mountain was a gigantic species of the Compositoe (Argyrophyton Douglasii, Hook. Ic. Plant. t. 75.,) [hinahina, ʻāhinahina] with a column of imbricated sharp pointed leaves, densely [page 401] covered with a silky clothing. I gathered a few seeds of the plants which I met with, among them a remarkable Ranunculus, which grows as high up as there is any soil.* One of my companions killed a young cow just on the edge of the wood, which he presented me with, for the next day's consumption.

Night arrived only too soon, and we had to walk four miles back to the lodge across the lava, where we arrived at eight o'clock, hungry, tired and lame, but highly gratified with the result of the day's expedition.

The following morning proved again clear and pleasant, and every thing being arranged, some of the men were despatched early, but such are the delays which these people make, that I overtook them all before eight o'clock. They have no idea of time, but stand still awhile, then walk a little, stop and eat, smoke and talk, and thus loiter away a whole day.

At noon we came up to the place where we had left the cow, and having dressed the meat, we took a part and left the rest hanging on the bushes. We passed to the left of the lowest extinct volcano, and again encamped on the same peak as the preceding night. It was long after dark before the men arrived, and as this place afforded no wood, we had to make a fire of the leaves and dead stems of the species of *Compositoe* mentioned before, and which together with a small *Juncus*, grows higher up in the mountain than any other

plant. The great difference produced on vegetation by the agitated and volcanic state of this mountain is very distinctly marked. Here there is no line between the *Phenogamous* and *Cryptogamous* Plants, but the limits of vegetation itself are defined with the greatest exactness, and the species do not gradually diminish in number and stature, as is generally the case on such high elevations.

The line of what may be called the Woody Country, the upper verge of which the barometer expresses 21, 450 inch.; therm. 46º, at 2 P.M., is where we immediately enter on a region of broken and uneven ground with here and there lumps of lava, rising above the general declivity to a height of three hundred to four hundred feet, intersected by deep chasms, which [page 402] show the course of the lava when in a state of fluidity. This portion of the mountain is highly picturesque and sublime. Three kinds of timber of small growth, are scattered, over the low knolls, with one species of *Rubus* and *Vaccinium*, the genus *Fragaria* and a few *Gramaineoe Filices* and some alpine species. This region extends to bar. 20,260 inch.; air 40º, dew point 30º. There is a third region, which reaches to the place where we encamped yesterday, and seems to be the great rise or spring of the lava, the upper part of which, at the foot of the first extinct peak is bar. 20,010 inch., air 39º.

At six o'clock the next morning, accompanied by three Islanders and two Americans, I started for the summit of the mountain; bar. at that hour indicated 20,000 inch., therm. 24º, hygr. 20º, and a keen west wind was blowing off the mountain, which was felt severely by us all, and especially by the natives, whom it was necessary to protect with additional blankets and great coats. We passed over about five miles of gentle ascent, consisting of large blocks of lava, sand, scoriae, and ashes, or every size, shape and color, demonstrating all the gradations of calcination from the mildest to the most intense. This may be termed the Table land or Platform, where spring the great vent holes of the subterranean fires or numerous volcanoes. The general appearance is that of the channel of an immense river heaved up. In some places the round bowlders of lava are so regularly placed, and the sand is so washed in, around them, as to give the appearance of a causeway, while in others, the lava seems to have run like a stream. We commenced the ascent of the Great Peak at nine o'clock, on the N. E. side, over a ridge of tremendously rugged lava, four hundred and seventy feet high, preferring this course to the very steep ascent of the south side, which consists entirely of loose ashes and scoriae, and we gained the summit soon after ten. Though exhausted with fatigue before leaving the Table Land, and much tried with the increasing cold, yet such was my ardent desire to reach the top, that the last portion of the way seemed the easiest. This is the loftiest of the chim- [page 403] neys; a lengthened ridge of two hundred and twenty-one yards two feet, running nearly strait N. W.

To the north, four feet below the extreme summit of the Peak, the barometer suspended, the cistern being exactly below, and when the mercury had acquired the temperature of the circumambient air, the following register was entered: at 11 hrs. 20 min.; bar. 18-362 inch.; air 33º; hygor. 0" 5. At twelve o'clock the horizon displayed some snowy clouds; until this period, the view was sublime to the greatest degree, but now every appearance of a mountain storm came on. The whole of the low S. E. point of the island was throughout the day covered like a vast plain of snow, with clouds. The same thermometer, laid on the bare lava, and exposed to the wind at an angle of 27º, expressed at first 37º, and afterwards, at twelve o'clock 41º, though when held in the hand, exposed to the dew it did not rise at all. It may well be conjectured that such an immense mass of heating material, combined with the influence of internal fire, and taken in connexion with the insular position of ***Mauna Kea***, surrounded with an immense mass of water, will have the effect of raising the snow line considerably; except on the northern declivity, or where sheltered by large blocks of lava, there was no snow to be seen; even on the top of the ***cairn***, where

the barometer was fixed, there were only a few handsful. One thing struck me as curious, the apparent non-diminution of sound; not as respects the rapidity of its transmission which is, of course, subject to a well known law. Certain it is, that on mountains of inferior elevation, whose summits are clothed with perpetual snow and ice, we find it needful to roar into one another's ears, and the firing of a gun, at a short distance, does not disturb the timid Antelope on the high snowy peaks of N. W. America. Snow is doubtless a non-conductor of sound, but there may be also something in the mineral substance of ***Mauna Kea*** which would effect this.

Until eleven o'clock, the horizon was beautifully defined on the whole N. W. of the island. The great dryness of the air is evident to the senses, without the assistance of the hygrometer. Walking with my trousers rolled up to my knees, and without shoes, I [page 404] did not know there were holes in my stockings, till I was apprised of them by the scorching heat and pain in my feet, which continued throughout the day, the skin also peeled from my face. While on the summit I experienced violent head ache, and my eyes became blood shot, accompanied with stiffness in their lids.

Were the traveler permitted to express the emotions he feels when placed on such an astonishing part of the earth's surface, cold indeed must his heart be to the great operations of Nature, and still colder towards Nature's God, by whose wisdom and power such wonderful scenes were created, if he could behold them without deep humility and reverential awe. Man feels himself as nothing—as if standing on the verge of another world. A death like stillness of the place, not an animal nor an insect to be seen—far removed from the hustle and bustle of the world, impresses on his mind with double force the extreme helplessness of his condition, an object of pity and compassion, utterly unworthy to stand in the presence of a great and good, and wise and holy God, and to contemplate the diversified works of His hands.

I made a small collection of geological specimens, to illustrate the nature and quality of the lavas of this mountain, but being only slightly acquainted with this department of Natural History, I could do no more than gather together such materials as seemed likely to be useful to other and more experienced persons. As night was closing and threatening to be very stormy, we hastened towards the camp, descending nearly by the same way as we came, and finding my guide Honori and the other men all in readiness, we all proceeded to the edge of the woody region, and regained the lodge, highly gratified with the result of this very fatiguing day's excursion. Having brought provision from the hill, we fared well.

January the 13th. The rain fell fast all night, and continued accompanied by a dense mist, this morning, only clearing sufficiently to give us a momentary glimpse of the mountain, covered with snow down to the woody region. We also saw Mauna Roa, which was similarly clothed for a great part of its height. Thankful had we cause to be that this heavy rain, [page 405] wind and fog did not come on while we were on the summit, as it would have caused us much inconvenience and perhaps danger.

The same weather continuing until the 15th, I packed up all the baggage and prepared to return. It consisted of several bundles of plants, put into paper and large packages tied up in *Koa* baskets, which are manufactured from a large and beautiful tree, a species of *Acacia*, of which the timber resembles mahogany, though of a lighter color, and is beautiful, and said to be durable: also some parcels of geological specimens, my instruments, etc. At seven A.M. I started, having sent the bearers of my luggage before me, but I had hardly entered the wood by the same path, as I took on my ascent, when the rain began to fall, which continued the whole day without the least intermission; but as there was no place suitable for encamping, and the people, as usual, had straggled away from one another, I resolved to proceed. The path was in a dreadful state, numerous

rivulets overflowed it in many places, and rising above their banks, flashed in foam through the deep glens, the necessity for crossing which impeded my progress in no slight degree. In the low places the water spread into small lakes, and where the road had a considerable declivity, the rushing torrent which flowed down it, gave rather the appearance of a cascade than a path. The road was so soft that we repeatedly sank to the knees and supported ourselves on a lava block, or the roots of the trees. Still, violent as was the rain, and slippery and dangerous the path, I gathered a truly splendid collection of Ferns, of nearly fifty species, with a few other plants, and some seeds, which were tied up in small bundles, to prevent fermentation, and these protected by fresh *Koa* bark. Several beautiful specimens of Mosses and Lichens were also collected; and spite of all the disadvantages and fatigues that I underwent, still the magnificence of the scenery commanded my frequent attention, and I repeatedly sat down in the course of the day under some huge spreading Tree Fern, which more resembled an individual of the Pine than the Fern tribe, and contemplated with delight the endless variety of form and structure that [page 406] adorned the objects around me. On the higher part of the mountain, I gathered a Fern identical with the *Asplenium viride* of my own native country, a circumstance which gave me inexpressible pleasure, and recalled to my mind many of the happiest scenes of my early life.

In the evening I reached the saw-mill, when the kind welcome of my mountain friend, Mr. Miles, together with a rousing fire, soon made me forget the rain and fatigues of the day. Some of the men had arrived before me, others afterwards, and two did not appear till the following day; for having met with some friends, loaded with meat, they preferred a good supper to a dry bed. My guide, friend, and well disposed fellow, arrived in great dismay, having in the dark, entered the river a short distance above a chain of cataracts, and to avoid these, he had clung to a rock till extricated by the aid of two active young men. Though he escaped unhurt, he had been exposed to the wet for nearly ten hours. A night of constant rain succeeded, but I rested well, and after breakfast having examined all the packages, we quitted the saw mill for the bay, and arrived there in the afternoon, the arrangement and preservation of my plants affording me occupation for two or three days. It was no easy matter to dry specimens and paper during such incessantly rainy weather. I paid the whole of the sixteen men who had accompanied me, not including Honori and the king's man, at the rate of two dollars, some in money, and some in goods; the latter consisted of cotton cloth combs, scissors and thread, etc.; while to those who had acquitted themselves with willingness and activity, I added a small present in addition. Most of them preferred money, especially the lazy fellows. The whole of the number employed in carrying my baggage and provisions, was five men, which left eleven for the conveyance of their own tapas and food. Nor was this unreasonable for the quantity of food which a native will consume in a week, nearly equals his own weight! A dreadful drawback on expedition. Still though the sixteen persons ate two bullocks in a week, besides what they carried, a [page 407] threatened scarcity of food compelled me to return rather sooner than I should have done, in order that the calabashes might be replenished. No people the world can cram themselves to such a degree as the Sandwich Islanders; their food is however, of a very light kind, and easy of digestion… [Douglas in Hawaiian Spectator, 1839:408]

Having completed his trek to both Mauna Kea and Mauna Loa, Douglas also visited Kilauea and then returned to O'ahu. In July of 1834, Douglas returned to Hawai'i for a second trip to Mauna Kea. This trip was made via Waimea-Laumai'a mountain trail, and was the last trip he made. Circumstances around his last days and death, were written up by reverends Joseph Goodrich and John Diell, published in the Missionary newspaper, *Ke Kumu Hawaii* on November 26, 1834:

Death of Mr. Douglas.

The following letter has been kindly furnished for publication. It may be proper to remark that Mr. David Douglas, whose untimely and tragical death his friends and the community

sincerely deplore, was born at Perth, Scotland, and had travelled in various parts of the world as a naturalist connected with the Horticultural Society of London. It is supposed his age was about 40 years.

The body was examined at Honolulu, Aug. 3, by a number of medical gentlemen, and from the marks found on it, they were unanimous in the opinion that his death was accidental.

Hilo, Hawaii, July 15, 1834.
To Richard Charlton, Esq., his Britannic Majesty's Consul at the Sandwich Islands;

Dear Sir,—Our hearts almost fail within us, as we undertake to perform the melancholy duty which devolves upon us to communicate the painful intelligence of the death of our friend Mr. Douglas, and such particulars thus far, as we have been able to gather.

The tidings reached us when we were every moment awaiting his arrival, and expecting to greet him with a cordial welcome. But alas! He whose ways and thoughts are not as ours, saw fit to order it otherwise; and instead of being permitted to welcome the living friend, our hearts have been made to bleed as we have performed the offices of humanity to his mangled corpse. Truly, we must say that the ways of the Lord are mysterious, and his judgments past finding out. But it is our unspeakable consolation to know that those ways are directed by infinite wisdom and mercy, and that though clouds and darkness are round about Him, yet righteousness and judgment are the habitation of his throne.

But we proceed to lay before you as full information as it is in our power to do at the present time, concerning, this distressing [page 13] event. As Mr. Diell was standing in the door of Mr. Goodrich's house yesterday morning, about 8 o'clock, a native came up, and with an expression of countenance, which indicated but too faithfully that he was the bearer of sad tidings, inquired for Mr. Goodrich; in seeing him, he communicated the dreadful intelligence that the body of Mr. Douglas had been found on the mountains, in a pit excavated for the purpose of taking wild cattle, and that he was supposed to have been killed by the bullock which was in the pit when Mr. Douglas fell in. Never were our feelings so shocked, nor could we credit the report till it was painfully confirmed as we proceeded to the beach, whither his body had been conveyed in a canoe by the native who informed us of his death. As we walked down with the native, and made further inquiries of him, he gave, for substance, the following relation.

That on the evening of the 13th inst. the natives who brought the body down from the mountain, came to his house at ***Laupahoihoi***, about twenty-five or thirty miles distant from Hilo, and employed him to bring it to this place in his canoe. The particulars which he learned from them, were as follows:

That Mr. Douglas left Kohala point last week, in company with a foreigner (an Englishman) as a guide, and proceeded to cross ***Mauna Kea*** on the north side; that on the 12th inst. he dismissed his guide, who cautioned him, on parting, to be very careful lest he should fall into some of the pits excavated for the purpose mentioned above; describing their location as being near the places to which the cattle resorted to drink. That soon after Mr. Douglas had dismissed his guide, he went back a short distance to get a bundle which he had forgotten, and that as he was retracing his steps, at some fatal moment he fell into one of the pits, into which a bullock had previously fallen. That he was found dead in the pit by those same natives, who, ignorant at the time, of his passing, were in pursuit of bullocks, and on coming up to this pit, found a small hole in one end of the covering of it. At first they conjectured that a calf had fallen in, but on further examination, discovered traces of a man’s steps, and soon afterwards saw his feet in the pit, the rest of his body

being covered with dirt and rubbish. They went immediately in pursuit of the guide, who returned, shot the bullock in the pit, took out the body, and hired the natives at the price of four bullocks, which he killed immediately, to convey the body to the sea shore. He himself accompanied them and procured the native who related the affair to us, to bring the body to this place, promising to come on himself immediately, and that he would bring the compass, watch, which was somewhat broken but still going, some money found in Mr. Douglas's pockets, and the little dog, that faithful companion of our departed friend. Thus for the report of the natives who brought the body in his canoe, and who professed to relate the facts to us as he learned them from the natives who came down from the mountain. We do not stop, at present, to examine how far it is consistent or inconsistent with itself, as we have not the means of making full investigation into the matter.

On reaching the canoe, our first care was to have the remains conveyed to some suitable place where we could take proper care of them, and Mr. Dibble's family being absent, it was determined to convey the body to his house. But what an affecting spectacle was presented, as we removed the bullock's hide in which he had been conveyed! We will not attempt to describe the agony of feeling which we experienced at that moment. Can it be he? can it be he? we each exclaimed, can it be the man with whom we parted but a few days before, and who then was borne up with so high spirits and expectations, and whom, but an hour before, we were fondly anticipating to welcome to faithfully contained in the familiar article of dress, in the features, and in the noble person before us. They were those of our friend.

The body, clothes, &c. appeared to be in the same state they were in when taken from the pit. The face was covered with dirt, the hair filled with blood and dirt, the coat, pantaloons and shirt considerably torn. The hat was missing. On washing the body, we found it in a shocking state; there were ten or twelve gashes on the head, a long one over the left eye, another rather deep, just above the left temple, a deep one behind the right ear, the left cheek bone appeared to be broken, and also the ribs on the left side, the abdomen was much bruised and also the lower part of the legs.

After laying him out, our first thought was to bury him within Mr. Goodrich's premises; but after we had selected a spot, and commenced clearing away the ground, doubts were suggested by a foreigner who was assisting us, and who has for some time been engaged in the business of taking wild cattle, whether the wounds on the head could have been inflicted by a bullock. Mr. Goodrich said that the same doubts had arisen to his own mind, while examining the body. The matter did not seem clear; many parts of the story appeared dark. How was is that Mr. Douglas was alone, without any guide, whether foreigner or native? Where was John, Mr. Diell's colored man, who left Honolulu with Mr. Diell, and who, on missing a passage with him from Lahaina, embarked with Mr. Douglas, as we are informed by the captain of the vessel in which Mr. Douglas sailed from Lahaina to Kohala Point, and there left the vessel with Mr. Douglas, on the morning of the 9th inst. in order to accompany him across the mountain to Hilo? How was it that Mr. Douglas should fall into a pit when retracing his steps after he had once passed it in safety? And if a bullock had already fallen into it, how was it that he did not see the hole necessarily made in the covering?—These difficulties occurred to our minds, and we thought it due to the friends of Mr. Douglas, and to the public, whom he had so zealously and so usefully served, that an examination should be made of his body by medical men. The only way to have this effected, was by preserving his body, and it could be examined here. The former method seemed most desirable; accordingly we had the contents of the abdomen removed, the body filled with salt placed in a coffin which was then filled with salt, and the whole enclosed in a box filled with brine. Some fears are entertained whether the captain of the native vessel will carry the body to Honolulu, this will be determined in the morning. After the body was laid in the coffin, the members of the mission family and

several foreigners assembled at the house of Mr. Dibble, to pay their tribute of respect to the mortal remains of the deceased, and to improve the affecting Providence to their own good. Prayers were offered, and a brief address made, and we trust that the occasion may prove a lasting blessing to all who were present. After the services were concluded, the body was removed to a cool native house, where it was enclosed in the box.

16th. As neither the guides nor any other natives have arrived, we have employed two foreigners to proceed to the place where with directions to find the natives who discovered the body, and to go with them to the pit, and after making as full inquiries as possible, to report to us immediately.

So far as we can ascertain, the guide is an Englishman, a convict from Botany Bay, who left a vessel at these islands some years ago; he has a wife and one child with him, and to this circumstance, in part, may be attributed his delay.

There are two native vessels in port, besides the one about to sail to day; by these vessels we shall keep you apprized of all the information we can obtain, and hope that some clear light may yet be shed on a subject now involved in much darkness.

Mr. Goodrich has just returned from the vessel about to sail. The application to convey that remains of Mr. Douglas to Honolulu, we fear will prove unsuccessful, as the vessel is filled with wood, canoes, food, &c. It is barely possible, however, that the captain may yet consent to take the body on board. But if not, it will remain with yourself to determine what course shall be pursued. Should you deem it advisable to come up in person, we think that the body will be in a state of preservation that will admit of it being examined upon your arrival.

In the mean time, until we have advices from yourself, we shall endeavor to procure as full information as it is in our power to obtain. It may be well to mention, that the principal part of Mr. Douglas's baggage, his trunks, instruments, &c. are in possession [page 14] of Mr. Goodrich, who will take all proper care of them, subject to your order.

3 o'clock, P. M. Edward Gurney, the Englishman spoken of before, has arrived. Our minds are greatly relieved as to the probable way in which the fatal event was brought about.

He states, that on the 12th inst. about ten minutes before six o'clock in the morning, Mr. Douglas arrived at his house on the mountain, and wished him to point out the road to Hilo, and to go a short distance with him. Mr. Douglas was then alone, but said that his man had given out the day before; (this man was probably John, Mr. Diell's colored man.) After taking breakfast, Edward accompanied Mr. Douglas about three fourths of a mile, and after directing him in the path, and warning him of the traps, went on about half a mile further with him. Mr. Douglas then dismissed him, after expressing an anxious wish to reach Hilo by evening, thinking that he could find out the way himself.

Just before Edward left him, he warned him particularly of the three bullock traps, about two miles and a half ahead; two of them directly on the road, the other on one side.

Edward then parted with Mr. Douglas, and went back to skin some bullocks which he had previously killed. About 11 o'clock, two natives came in pursuit of him, and said that the European was dead, and that they had found him in the pit in which the bullock was. They mentioned that as they were coming up to this pit, one of them observing some of the clothing on the side exclaimed Lole, but in a moment afterwards, discovered Mr. Douglas within the cave trampled under the feet of the bullock. They went back immediately for Edward, who left his work, ran to the house for a musket and ball, and hide, and on