



ESSAYS IN HAWAIIAN LITERATURE

Part I  
Origin Myths and Migration Traditions

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## Preface

This textbook features through Hawaiian genealogical tradition (*mo'okū'auhau*, *koihonua*) the chronology of precontact origins and migrations of the Polynesians to Hawai'i.

It presents myths of origin of the universe and migration history with legends and chants of voyaging through which Polynesians established a society and culture in Hawaii. These are arranged in the framework of genealogy, so that there is a semblance of history from the time of Wākea, to the end of the migrations about 1300 A.D., or or about fourteen centuries of voyaging between the homeland and Hawai'i.

Two lists of place names are presented, one of ancestral homelands and another with proto-forms for present-day place names. They give some insight as to which island groups influenced the settlement of Hawai'i and from which direction. This age may be called the Polynesian heroic age. The heroes are Polynesian ancestors of the native Hawaiian people. Wākea, the brothers Ulu and Nanaulu, Maui, Nanamaoa, the Paumakua cousins, down through Pa'ao and Pili, to Maweke, Mo'ikeha, Kila, and La'a-maikahiki. Some others who fall in among them are included, the demigod (*kupua*) Kamapua'a descending from the 'Olopana family, well-known among southern groups as Koropanga (Cook Islands), 'Oropa'a (Society Islands) and Ko'opana (Marquesas), through the early migration of Kalana-nu'umamao, Humu and Kamaunuaniho to west Maui, O'ahu, Kaua'i, and Hawai'i.

Temple traditions, myths of the gods and demigods must wait for Part II to present the developing society after the migrations.

For the reader's convenience a list of abbreviations is provided to citations of sources referred to in the text, perhaps more convenient than footnotes at the bottom of the page or at the end of chapters or book.

Aloha no, Ruby Kawena Johnson.

## List of Abbreviations

ca.	circa (about, around)
Cp.; cp.	Compare
g-	great- [in listing generations, as great-grand-parent]
ggg--	great-great-great-[grandparent]
gen.	genealogy
Ibid.	reference cited before
i.e.,	that is to say
(k)	<i>kane</i> , male
N.Z.	New Zealand
tr.	translated by/ translation by
(w)	<i>wahine</i> , female

### References:

- (APR) *Account of the Polynesian Race* (Abraham Fornander)  
 (APR):1:120 *Account of the Polynesian Race*, Volume 1: page 120.
- (AT) *Ancient Tahiti*, (Teunia Henry), 1928.  
 (FC): 6: 1: 3 *Fornander Collection of Hawaiian Antiquities*, Volume 6. No. 1:  
 page 3.
- For.Pol.Race [same as APR].
- (HM) *Hawaiian Mythology* (Martha W. Beckwith)  
 Liliuokalani 1897 *An Account of the Creation of the World*, 1897.  
 PE *Hawaiian Dictionary* (Mary Kawena Puku'i and Samuel H. Elbert)  
 PEM. *Place Names of Hawaii* (M.K. Puku'i, S.H. Elbert and E. Mookini)
- Malo (HA) *Hawaiian Antiquities, Moolelo Hawaii* (translated by Nathaniel B. Emerson)
- Thrum (T) *Hawaiian Folktales*, 1907 (Thomas G. Thrum)  
 Thrum (MT) *More Hawaiian Folktales*, 1923 (Thomas G. Thrum)

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## What is Hawaiian literature?

For "literature" to properly exist, there must be a writing system. There was no writing system in ancient Hawaii. The Hawaiian system of writing was formally introduced by missionaries from New England in 1820, but the sound system was not in place until 1826, when it was determined that certain sounds did not change the meaning of a word, such as: *t* and *k*, i.e., *tāne*, *kāne*, male, man; *d*, *r*, and *l*, i.e., *dani*, *rani*, and *lani*, sky, or chief; *b* and *p*, *barabara*, *palapala*, document.

The missionaries approved the principle of *one symbol for one sound*, selecting certain consonants: *k* rather than *t*; *l* rather than *r*, *d*; and *p* instead of *b*, or there would be too many alternative spellings for one word. For example:

"document"	barabara, badabada, parapara padapada, barapara, barapada padabara, padabada, parabara padapara, badapara, balabala, balapala, palapara, parapala, parapara, palapala, etc.
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The decision was to make it simple for people to learn to read and to write in Hawaiian. It didn't change how people spoke. They continued to use the *t* and the *r*, but as writing influenced speech. *d* and *b* and *r* fell out of use over time.

In the adoption of foreign names and words into Hawaiian, the writing system favored retaining original consonants in borrowed terms and names, such as: *Alekendero* (Alexander), *Timoteo* (Timothy), *Vineiada Maleka* (Martha's Vineyard), *Rahaba* (Rahab), *Lutini* (Russian), *Babulonia* (Babylonia), *Aigupita* (Egypt), *kabiki* (cabbage), etc.

Oral tradition has been called "unwritten literature," "oral literature," "oratorical arts" or "verbal arts", serving (although contrived) to differentiate "spoken" from "written" tradition. When spoken history and chanted poetry became written texts, then there was "literature".

Native Hawaiian traditions were first written down into Hawaiian at Lahainaluna Seminary in 1834, when the Hawaiian language newspaper, Ka Lama Hawai'i printed a short lament (*mele kanikau*) for Ke'eaumoku Kahekili, late governor of Maui. It had been written down earlier and translated by Reverend William Ellis [Narrative of a Tour Through Hawaii in 1823]. So, it was not unknown between 1823 and 1834.

It must have made quite an impression on the students, however, to "see" their chants written across a page in print for the first time at Lahainaluna. They were used to "hearing", not seeing and reading, poems. It was a different physical effort. The marks made with a stylus on a slate and erased became indelible on paper. Like the tattoo, so they called it *kākau*, to tattoo on paper, to print, *pa'i*, as one printed on tapa, and to draw or paint, *kaha*, a picture (*ki'i*) or image in black color over a surface not to be worn as decorated clothing (*kilohana*). To read (*heluhelu*) by a process of counting (*helu*) through numbers (*hua helu*) and letters (*hua helu*) of the alphabet (*piapā*) for which they had no original name, was to *heluhelu*, to "recount" as you did when reciting genealogy in lists of names, *papa helu*. It was a new process, a manual skill using hands with which you tattooed (*kākau*) "documents", *palapala* (< *pala* 'daub, smear') records which did not require memorizing, *ho'opa'ana'au*, "to make fast in the guts" and mimicing with repetition, *ho'opilipili*, so that it "sticks" (*pili*) to you, that there be no forgetting (*poina*) or making mistakes (*hewa*) in public recital, an ordeal for which, in ancient times and on the *heiau* temple a word out of place or the wrong word uttered at the wrong time could cost you your life.

It brought freedom from having to listen to someone else talking, to pay rapt attention to what someone was saying so that you could say it back, perfectly. You could learn in complete silence and know as much in the quiet of your mind. You could retreat from the world and still travel over most of it, with *kākau* and *heluhelu*.

The seminary at Lahainaluna opened its doors to Hawaiian students in 1831. It took a few years for them to acquire the skills necessary to publish their writings. Among the earliest Hawaiian students at Lahainaluna Seminary were David Malo and John Papa I'i.

Malo was from Kona, Hawai'i, and John Papa I'i from O'ahu. They were members of the first council on Hawaiian heritage. Theirs was the task of writing down native traditions from their own recollections or those from learned men of the older generation, such as mentor 'Auwae from O'ahu, whose specialty was genealogy.

Unauna of Maui was another advisor. There were chiefs in the king's cabinet and Kamehameha III himself; Boaz Mahune and Timothy Keawe'iwi. It was Boaz Mahune who wrote the text of the Hawaiian Declaration of Rights (Hawaiian Magna Charta), translating from the Declaration of Independence (1776, Virginia) written by Thomas Jefferson that was in 1840 only sixty-four years old, although the doctrine resonates from the earlier Mecklenburg County Resolutions (1775, North Carolina) and, ultimately, the Magna Charta penned in England in 1215 A.D in the time of King John. Someone at Lahainaluna Seminary, probably the Reverend William Richards, who introduced the 1776 document to the heritage committee in Lahaina, had them. [No copy of the original Mecklenburg draft has ever been found].

The missionaries at Lahaina and in Honolulu bent most of their efforts to translating the Bible (*Paipala Hemolele, Palapala Hemolele*) into Hawaiian. Equally demanding was the writing of the kingdom's Constitution of 1840, creating the first constitutional monarchy in the Pacific. The kingdom of Tonga used it (or the amended constitution of 1852) to form their constitutional monarchy in another corner of the Pacific. In that same year (1840) the Bible was completely translated from Hebrew (Old Testament and Greek (New Testament). Reverend Hiram Bingham was among those who insisted, encouraged by Reverend William Ellis of the London Missionary Society, that the English of the King James version was less amenable to translation into Hawaiian.

Within four years after Lahainaluna opened in 1831, Hawaiian students were publishing their own writings. When the first Hawaiian language newspaper (*Ka Lama Hawaii*) appeared in 1834, an editorial policy to reserve the last page of the paper for student contributions began. This became, after more than a century, a policy resulting in the treasure trove of native Hawaiian literature in journalism (1834-1947). From these came the translated histories we recognize now as the work of David Malo, John Papa I'i, and Samuel M. Kamakau. Lahainaluna Seminary's dedicated Hawaiian scholars. [And, not among them at Lahainaluna but trained in a Catholic seminary in faraway Tahiti, Zepherin (Kepelino) Kalokuokakamaile Keauokalani, author of *Kepelino's Traditions*].

David Malo's *Mo'olelo Hawai'i, Hawaiian Traditions* (translated by Nathaniel B. Emerson) appeared in 1915, and John Papa I'i's *Fragments of Hawaiian History* in 1961 (translated by Mary Kawena Puku'i), almost a half-century later, were the result of Lahainaluna's program in journalism and literature.

David Malo's emphasis was on ancient history, the *mo'olelo* (history) and *mo'o-kū'auhau* (genealogy), material culture, religious ritual, and civil polity, whereas John Papa Ii's emphasis was on the social progress of his own generation, with one foot in taro fields of the countryside and the other in the punctilious courts of the kings, through personal experience as a *kahu* in charge of Liholiho (Kamehameha II) when they were boys. Where there is no autobiographical content except occasional personal opinion on the morality of ancient times versus Christian morality in David Malo's perspective, John Papa Ii's endeavor was his own life-story when he began to work in the king's household at Pakaka, Honolulu, at a very tender age.

Through words of the former we hear about the ancients before discovery by Captain James Cook in 1778-79. Through those of the latter, we gain insight into the effects of European discovery and post-unification of the islands by Kamehameha I. From the attitudes of the two men we sense an altered perspective toward the society's more ancient character, with sympathy for its religious roots but preference for or approval of changes instituted by the overthrow of the tabu system (*'ai kapu*) in 1819, after initial contact with another world infused with Christian morality and a more vigorous democratic conscience.

Their matriculation at Lahainaluna Seminary in 1831 is removed from Captain Cook's first encounter with the Hawaiian people at Waimea, Kaua'i (1778) and Kealakekua, Hawai'i (1779) by about a half century. They were the product of two generations of culture change. They weren't the only native Hawaiians who excelled in writing. They just happened to be the very first.

## Basic Content of Hawaiian Literature

The Hawaiians had two divisions of their entire body of tradition: prose (*mo'olelo*) [including *mo'okū'auhau* and *ka'ao*] and poetry (*mele*).

*Mo'olelo* was considered a true narrative, to be regarded as history, whereas *ka'ao* was a story, legend, tale, having entertainment value, not regarded as true. The most important *mo'olelo* was the genealogy, *mo'okū'auhau*, or "sequence-pertaining-to-bone", the narration of descent lines through periods of history and lineal and affinal relationships. *Mo'okū'auhau* were recited or spoken genealogies with lists of names in sequence by generations (*papa helu*), whereas chanted *mo'okū'auhau* were *kōihonua*, "belonging-to-placenta/earth" series of recitations.

The oratorical and lyrical repertoire may be categorized as:

(1) Sacred literature: temple prayers (*pule*) and ritual chants; versus *profane*, or secular, traditions recited at the court or in less formal surroundings, at work or at home in the country; therefore:

(2) Court traditions (*mo'olelo, mele*) connected with the affairs of the chiefs and nobles of the districts, with political implications; versus *household* tales, legends, anecdotes (*ka'ao*) concerning the common everyday work and life of the society;

(3) Prosaic narration of myths and legends (*mo'olelo, ka'ao*) and genealogies (*mo'okū'auhau, papa helu*) in conversational style or recitation without music or singing (*kepakepa*), versus poetic (*mele*) rendition of traditions, songs, and chants to singing, musical accompaniment, or dance interpretation (*mele 'oli, mele hula*).

(4) Chronological dividing, or pacing, of the progress of traditional written or verbally recited (oratorical) narratives into successive periods, identified within, or belonging to a recognized span of time.

The *mo'olelo, mo'okū'auhau, and kōihonua* were chronologically divided into periods of Hawaiian historical and biographical narration as genealogical narrative:

A. **Mythical**, comprising a pre-human period of activity, involving the birth or creation of the universe (cosmogonic), the works and actions or relationships of the gods, and the creation of an and his early foundations.

B. **Migratory**, comprising a *heroic* period of adventure by navigators and canoe-voyagers (and passengers) in finding a home from ocean wandering and initial settling, and partially *romantic* in the associations or conflicts of the heroes with their women partners or antagonists during their exploits of discovery and exploration. The *epic* tradition belongs to this period, although as a type, the epic is scant (although not entirely vacant) in the surviving heroic lore.

C. **Settlement**, comprising a *heroic/romantic* period of feudal wars, struggles between chiefs to establish political control and social harmony, characterized by tragedy or triumph among antagonists, in the competition for wealth in land, power over people and society, or acquisition of women of rank for the expansion of rank, power, or fame.

These periods may be regarded as exclusively native Hawaiian or pre-contact, whereas the following is post-contact:

4. **Historical**, comprising periods after discovery of Hawai'i by Europeans, reporting of the Hawaiian culture and society by non-Hawaiian authors largely to European audiences after 1778 [Captain James Cook in Hawai'i], and the introduction of writing by American missionaries in 1820.

This period may be qualified by the advent of the dynasties, the Kamehameha and Kalakaua, and by the dual activity of writers who were *observers* (foreign) of Hawaiian society when aboriginally intact and absorbing foreign ideas and customs, thereafter followed by *native reporters or recorders* who had learned to write of their own traditions and experiences from the indigenous background.

*Observers* included European discoverers, visitors, missionaries and late nineteenth century writers and scholars whose interests were literary and historical, or romantic and descriptive.

They now include more serious scholars of anthropology, sociology, and linguistics from a scientific interest, or those who are interested in reconstruction of Hawaiian history

through reanalysis of former writings. In this group belong the early twentieth century collectors (such as Abraham Fornander and Thomas G. Thrum) of traditions and folklore.

*Native reporters/recorders* include the early Hawaiian scholars, such as Henry 'Opūkaha'ia in New England, and the Lahainaluna Seminary (or Catholic seminary) students (David Malo, John Papa 'I'i, Samuel Hale'ole, Samuel M Kamakau and Z K. Kepelino).

These include present-day language scholars (and recently deceased) Mary Kawena Puku'i, Charles Kenn, and others.

For purposes of convenience the history from these periods follows a chronology imposed (roughly) per monarch's reigns since the arrival of Captain James Cook:

1. 1778-1819 [Kalaniopu'u (Hawai'i); Kahekili 2 (Maui); Kamehameha I]

*Observers:* Literature of European discovery and exploration of Hawai'i; ship logs and journals of captains (James Cook, James King) and crew (John Ledyard)

1794-1818 Henry 'Opūkaha'ia, native Hawaiian scholar in New England; aboard the vessel of Captain Brintnall out of Kealakekua Bay, with Thomas Hopu; in Dwight, Edwin, Memoirs of Henry Opukahaja (1818-1819).

1819 (November) Instituting of the 'ai noa (overthrow of the 'ai kapu by high priest Hewahewa and the queens, Ka'ahumanu and Keopuolani, after the death of Kamehameha, May 8, 1819;

2. 1820-1854 [Kamehameha II, *Missionary Period*; reigns of Kamehameha II and Kamehameha III] (Liholiho) and III (Kauikeaouli); codification of the Hawaiian alphabet in 1826;

*(Observers):* Writings (journals, diaries) by missionaries:

1824 Rev. William Ellis, Narrative of a Tour Around Hawaii

1820-1832 First criminal code, called the "Blue Laws", enunciated by Ka'ahumanu, Kuhina Nui; allowing gaming, gambling, including *hula* dancing on six days of the week, disallowing them on the Sabbath Day (Sunday).

1831/1834 Establishing of the mission press at Lahainaluna Seminary (Ka Lama Hawaii) and Honolulu mission press (Ke Kumu Hawai'i);

Composing of Hawaiian hymns (Rev. Hiram Bingham and Rev. William Ellis);

Training of native Hawaiian scholars; a native Hawaiian literature begins as new reporting and recording of history for teaching materials (journalism);

Principal native scholars (David Malo, Samuel Hale'ole, John Papa 'Ūi, Samuel M. Kamakau); Z. K. Kepelino (Catholic seminary in Tahiti);

(*Native reporters, recorders*) First histories, written and edited by Lahainaluna Seminary missionary teachers collected from native Hawaiian students (and native advisors, i.e., Noa Auwae, genealogist):

1838 Rev. Sheldon Dibble, Ka Mo'olelo Hawai'i (Hawaiian Antiquities) (translated by Dorothy Kahananui, 1984)

1839 David Malo, Ka Mo'olelo Hawai'i (Hawaiian Antiquities) (translated by Nathaniel B. Emerson, 1898)

1856 Rev. John F. Pogue, Mo'olelo of Ancient Hawaii (translated by Charles W. Kenn, 1978)

1839-1840 Critical works translated into the Hawaiian language:

1839 Palapala Hemolele, Paipala Hemolele, the complete Bible; Old Testament from Hebrew and New Testament from Greek into Hawaiian;

1839 Declaration of Rights, Hawaiian Magna Charta

1840 Constitution establishing a limited constitutional monarchy, a Privy Council, and a bicameral legislature, the upper House of Lords and lower House of Representatives

1847 Rev. Hiram Bingham, A Residence of Twenty-One Years in the Sandwich Islands

1848 Great Mahele Law and land division establishing fee titles

1852 Amended Constitution, abolishing the power of the monarch to appoint nobles to the upper house

1853 Instituting of the government press, Ka Hae Hawai'i, uncontrolled by the mission presses

Literacy of the Hawaiian people promotes a flowering of native Hawaiian literary composition in the newspapers (*mele inoa*, name songs; *mele 'aimoku*, chants of the chiefs; *mele kanikau*, dirges, laments, eulogies.

3. 1855-1875 [Kamehameha IV, Kamehameha V, Lunalilo]

Rise of competitive Hawaiian journalism in the several mission (Protestant and Catholic) and government presses;

1861 Establishing of the independent press, Ka Nupepa Ku'oko'a (publisher, Henry M. Whitney; commensurate with the growth of an articulate bilingual literate society, having command of Hawaiian and English.

1864 Constitution of 1864 promulgated by Kamehameha V restoring the power of paramount sovereign to appoint members of the upper House of Lords

1866 Native Hawaiian writers of history, biography, and poetry submit their compositions to Hawaiian newspapers as serials.

1866-1868 John Papa I'i, Fragments of Hawaiian History translated by Mary Kawena Puku'i (1959) [from Ka Nupepa Ku'oko'a]

1866-1871 Samuel M. Kamakau, Ruling Chiefs (translated by Mary Kawena Puku'i, 1961; Ka Po'e Kahiko (translated by Mary K. Puku'i, 1964) [from Kuoko'a and Ke Au Oko'a]; also Ka Hana a Ka Po'e Kahiko (1976) and Tales and Traditions of the People of Old (1991).

4. 1875-1900 [Kalākaua, Lili'uokalani]

1875 Reciprocity Treaty, allowed unrefined Hawaiian sugar to enter the United States duty-free, and at the same time limited the refining of sugar to the continent.

1878-1887 Abraham Fornander, Account of the Polynesian Race (3 vols.); history and genealogy; on-going collecting of Hawaiian myths, legends, folklore, and material culture, published after Fornander's death in 1887 as Memoirs and Hawaiian Antiquities (edited and translated by Thomas G. Thrum, 1916-1920).

1887 "Bayonet Constitution" removed the power of the monarch under the Constitution of 1864 to appoint members to the House of Nobles, constituting a return to the principle of the electorate under the Constitution of 1852.

1888 First collection of Hawaiian Myths and Legends (R. M. Daggett and David Kalākaua); in English.

1891 Accession of Queen Lili'uokalani.

1893 Overthrow of the monarchy; interim Committee of Safety and the Provisional Government

1894-1897 Republic of Hawaii  
1895 Counterrebellion

- 1898           Annexation to the United States  
 1900           Organic Act, Territory of Hawaii  
                   Establishing of English standard elementary and secondary  
                   schools  
 1959           Admission Act, State of Hawaii

5. Post-1900           Literary activity characterized by collections and retellings of Hawaiian myths, legends, and folktales: translations from Hawaiian texts into English.

1910-1923    William D. Westervelt: Tales of Maui, Hawaiian Myth and Legend, Hawaiian Legends of Gods and Ghosts, Legends of the Volcano, Legends of Old Honolulu;

                  Thomas G. Thrum: Tales of Hawaii, More Tales of Hawaii

1898-1915    Nathaniel B. Emerson, translation of David Malo, Mo'olelo Hawai'i (Hawaiian Antiquities): Unwritten Literature of Hawai'i; Pele and Hi'iaka

1911-1951    Martha W. Beckwith, translations of Samuel N. Haleole, The Hawaiian Romance of Laieikawai, Kepelino's Traditions; Kumulipo, A Hawaiian Creation Chant; Hawaiian Mythology;

1950 (Bibliography and Anthology) Amos P. Leib, Hawaiian Legends in English (Master's Thesis, University of Hawaii).

1961- 1991   Mary Kawena Pukui, translations of John Papa I'i, Fragments of Hawaiian History; translations of Samuel M. Kamakau, Ka Po'e Kahiko, the People of Old; Ka Hana a Ka Po'e Kahiko, The Works of the People of Old; Tales and Traditions of the People of Old; Ruling Chiefs of Hawai'i (edited by Dorothy Barrere); Translations of Hawaiian chants (with Alfons Korn), Echo of Our Song; Ethnological writings on folkways (with Dr. E. S. Craighill Handy), The Polynesian Family System of Ka'u, Hawai'i, The Hawaiian Planter;

6. Post-1950 (mid-twentieth century):

Literary activity characterized by translations from the works of the missionary period native Hawaiian scholars and writers; comparative literature and folklore studies by ethnologists (University of Hawaii): texts for teaching and studying Hawaiian literature, folklore, and language.

                  Charles Kenn, translation of Rev. John F. Pogue, Mo'olelo Hawai'i;

                  Dorothy Kahananui, translation of Sheldon Dibble, Mo'olelo Hawai'i;

                  Katharine Luomala, comparative folklore studies: the Menehune, the Mythical Little People of Polynesia; Maui-of-a-Thousand-Tricks; Voices On The Wind.

Samuel H. Elbert, Unheroic Hero (of Hawaiian Tales); From the Two Canoes (Rennell and Bellona, Polynesian outliers in the Solomon Islands); comparative folklore and linguistics.

6. 1980 to present:

Literary activity characterized by contemporary ethnic writing, poetry magazines and dramatic writing (Bamboo Ridge) at the University of Hawai'i and creative writing societies (Hawaii Literary Arts Council); Creative Arts Society (University of the South Pacific, Suva, Fiji (Albert Wendt, Pouliuli); modern Hawaiian poetry and drama (Victoria Kneubuhl, Margaret Lei Apo Perkins)

Novels, fiction, and dramatic writing by local Hawaiian authors, John Dominis Holt, Oswald Bushnell;

Re-publication of Hawaiian versions without English translation of original texts: Mo'okini, Esther, Mo'olelo o Kamapua'a, Kuapaka'a; Puakea Nogelmeier, Ke Kumu Aupuni (Samuel M. Kamakau's works in the original Hawaiian);

Recent translations: Patience N. Bacon (with Nathan Napoka Oppeneheimer), Hula Pahu (translations of Hawaiian chants from the Helen Roberts Collection).

Desha, Stephen, Kamehameha and His Warrior, Kekuhaupi'o (translated by Frances Frazier) from Ka Hoku o Hawaii (1920-1924); [draws also from Joseph M. Poepoe, life of Kamehameha I in Ka Na'i Aupuni (1905-1906).

## Literature of the Mythical Period

### *Origin Myths*

Under "Formation of the Land" (Cosmogony) David Malo wrote [Hawaiian Antiquities, Chapter 2]:

"...It is very surprising to hear how contradictory as the accounts given by the ancients of the origin of the land here in Hawaii.

It is in their *genealogies* [italics mine] (*mookuauhau*) that we shall see the disagreement of their ideas in this regard.

In the *moo-ku-auhau*, or genealogy named Pu-anue, it is said that the earth and the heavens were begotten (*hanau maoli mai*).

It was Kumukumu-ke-kaa who gave birth to them, her husband being Paia-a-ka-lani. Another genealogy declares that Ka-mai-eli gave birth to the foundations of the earth (*mole-o-ka-honua*), the father being Kumuhonua.

In the genealogy of Wakea it is said that Papa gave birth to these islands. Another account has it that this group of islands were not begotten, but really made by the hands of Wakea himself.

We now perceive their error. If the women in that ancient time gave birth to countries then indeed would they do so in these days; and at that time they were made by the hands of Wakea, doubtless the same thing would be done now.

In the genealogy called Kumulipo it is said that the land grew up of itself, not that it was begotten, nor that it was made by hand.

Perhaps this is the true account and these Hawaiian Islands did grow up of themselves, and after that human beings appeared on them. Perhaps this is the best solution of the mistaken views held by the ancients; who knows?"

Malo's statement is a summary of creation theories:

#### (1) Direct Creation by a Deity or Deities

Before the gods create man they create the upper worlds of the sky into their dwelling-places, which become afterworlds to which souls of the deceased go to be in paradise.

Some of the gods, usually three (Kū, Lono, Kane) but sometimes four gods of the all-male pantheon (+ Kanaloa) decide to make man in the image of the creator god, Kāne, whose form is male and human. Each of the gods, Kū, Kāne, and Lono go to different parts of the world to obtain soil or clay. The soils and clays are red (*'alaea*,

*honua'ula, lepo 'ula*, white (*palolo*) and dark brown/black mud (*kele*).

"...The head of the first kanaka was created from a whitish clay (*palolo*), which was brought by Lono from the four ends of the world--from Kai Ko'olau, Kai Kona, Kahiki-kū, Kahiki-moe--north south, east, west. The clay from the north and east forming the right-side, and the clay from the south and west forming the left.

"...Kane was the model after which he was made; Ku was the workman who made him, and Lono assisted generally. When the clay image of Kane was made, they three breathed into its nose, and that breath was called *he maule o Lono*. The gods then called on him to rise and become a living being..The image then rose and knelt before the gods and they called his name Honua-ula (Red-Earth)--his body was made of red earth (*Jepo ula*), and spittle (*wai nao*), and his head was made of clay (*palolo*) brought from the four ends of the earth. Another name for him was Ke Lii-Ku-Honua..."  
[Fornander Collection (FC): 6: 267].

The study by Martha W. Beckwith [Hawaiian Mythology, 1940: 43-45], examined three versions of this tradition in which the creation of the sky levels as dwelling-places for the gods (Kū, Lono, Kāne, Kanaloa) precedes the direct creation of the first man, into which they either spit or breathe life. She concluded that there had been too much influence from the Bible, the most obvious elements the creation of a mate, the first woman out of the man's rib, sin against the gods by an act of disobedience of laws, and then expulsion from the paradise.

"The similarities here to biblical stories have made readers suspicious of the stories of the forming of man out of earth and of the fall of man and his being driven out of a sacred garden...has lent a coloring and an emphasis to traditions which were genuinely native...In the southern groups, Tane (Kne) makes a woman out of sand. In Tahiti, although Ta'aroa (Kanaloa) is the first great mover...[*ibid.*: 46].

(2) **The Primal Pair:** Sky Father (Wakea) and Earth Mother (Papa) give birth to lands;

The idea that the sky is masculine, the earth feminine is a dominant religious belief which probably is the outgrowth of watching animals give birth, and plants flower and bring new shoots from seeds, in the process of decay and growth in the patterns of nature. The belief that the power of mate and produce one's own kind has produced a

characteristic dualism out of the creative powers that lie dormant in the elements: the atmosphere above, including its light (sun and moon); and the solid earth below.

Examples, which will be discussed further along are, in which there are a single (or multiple) pairs of world progenitors, whose offspring are lands, upon which their descendants then appear:

- (a) *The Song of Paku'i* - Papa and Wakea cosmogonic genealogy
- (b) *The Song of Kahaku-kū-i-ka-moana*

(3) **Spontaneous Generation:** earth comes of itself, out of the night (cosmogony). Life comes of itself, through being born out of nature's elements (inanimate) into organic life (animate), and through a chain of organic births in a quasi-evolutionary continuum, leading eventually the birth of humankind and gods.

- (a) *Kumulipo* genealogy

The traditions listed above are forms of the *koihonua*, or chanted genealogies which are of a combination of types:

- (a) A list of names, male and female progenitors and their descendants (*papa helu*);
- (b) A series of stories told in poetry intended to be chanted or recited.

## A Brief Introduction to Hawaiian Poetry

The purpose of this brief introduction is to give a general idea of some of the poetic themes that have survived in modern form of the ancient expressive culture of the native Hawaiians. As such, this essay cannot be truly exhaustive of the subject, but if the reader is able to gain some appreciation of the religious power in the poetry of antiquity in contrast to the surviving secular and socially-oriented poems in modern Hawaiian poetry and music, that is a satisfactory expectation.

So far as poetic composition is concerned the Hawaiian word for poem, *mele*, is used to mean 'song' and the act of 'singing' since poetry was not read but sung and heard. It is convenient to divide the poetic repertoire into two major categories:

*mele 'oli*, or chants which were sung, and the  
*mele hula*, or chants which were accompaniment to the hula dance.

Poetry as *mele 'oli*, chanted without dance performance, can be distinguished from the *mele hula* by the more regulated rhythm with which the *mele hula* were performed in time to the measured music of the dance

On the other hand, the chanter who chanted the *mele 'oli* was free to improvise his own style, to depart from an established pattern of phrasing by lengthening or shortening different lines according to his own preference, and to thus vary the rhythm in a less regimented form [Wong, Kaupena, "Ancient Hawaiian Music," The Kamehameha Schools Seventy-Fifth Anniversary Lectures, 1965: 9-15]

There were, however, other styles of presentation as well as functions which may be classified according to the occasions for which poetry was composed. For an evolutionary perspective of the history of Hawaiian poetry to be comprehended, it is necessary to divide it into three time phases:

- 1) the Pre-European, ancient Hawaiian;
- 2) Post-European and American missionary influence, and
- 3) Post-American annexation to the present day.

## Ancient Hawaiian Poetry

Composition of poetry in ancient Hawaii was either by an individual or by a group of individuals. The facts of authorship, in either case, were seldom retained, that is, the identify of the composer(s), a feature which is markedly characteristic of societies with oral, rather than written, literary traditions. Poetry was "owned" by the person honored rather than by the person(s) responsible for composition. This feature of ownership of poetic composition in one's honor is inherent in the grammar of possessives in the Hawaiian language and a dualistic world view.

When one has composed a song for someone else he refers to it as *ka'u mele*; the one honored, as *ko'u mele*. Both expressions mean "my song", but in the first instance, *ka'u mele*, the author indicates temporary possession *by* him, while in the latter, *ko'u mele*, the recipient acknowledges that the song is personally *of* and *about* him. Retention, rather than authorship, determines ownership of a composition about someone. This may account for the obscurity of the *kaona*, or hidden inner meaning, of much poetry appearing in published literature since 1820.

A significant volume of poetry is contained in published books, in newspapers, and in unpublished family manuscripts; a larger portion remains untranslated, while as much of what has appeared in print is either obscure or poorly translated. The obscurity of poetry composed before 1820 and published in these works after that date may be due to the decay of Hawaiian religion and mythology. At one time the many allusions which elude translation were understood within a functioning mythological religious system. While the traditions of the chiefly families were composed and maintained by professional court bards, much of the sacred temple ritual expressed in poetic form is a blank page in history due to the esoteric nature of priestly learning.

Fortunately, a few Hawaiian scholars such as David Malo and Samuel Kamakau, Kepelino Keauokalani, Samuel N. Haleole, and John Papa 'Ti in the late nineteenth century wrote much of what they had observed in the temple and at the court circles where the traditions were preserved. Through their eyes can be witnessed the expressive behavior of the priests and poets of the stone-age Hawaiian society. Our present understanding of the function of poetry in the ancient social setting is largely the result of their contributions, in addition to the more analytical and comparative scholarly work which has since been done by linguists, folklorists, and native Hawaiian scholars in this century.

A composer was called a *haku mele*, a 'weaver' of songs. Implicit in the word *haku* is the metaphor of the method of making *lei*, or wreaths of flowers, leaves, feathers, or other materials. There are three methods for making *lei*:

- 1) *kui*, by which flowers are strung with needle and thread (or threaded through with thin strips of banana sheath;
- 2) *wili* by twisting a thread around the stems, and
- 3) *haku*, by braiding the stems together without any extraneous binding material.

In the act of composing poetry, the *haku mele* behaves as a *haku lei*, a weaver of leis whose technique is so good that the materials are bound together in the design of the *internal* structure and strength of the braid.

Within the *mele 'oli* were subcategories: the *mele kuo*, songs sung as songs of praise and the *mele ka'ao*, songs sung in the recitation of traditional myth and legend as the epic itself or as part of the technique of storytelling. They were functionally recreational or educational in teaching the people the history of the nation. In storytelling as narration and in the recitation of history as poetry, certain minor rules governed the audience participation as listeners were required to refrain from interrupting, making noise, or moving around during the spiel. The length of performance of some cycles could span six hours or several days. Chants as history and genealogy were called *koihonua* when they were recited as poetry; *mo'okū'auhau* (genealogy) as narration. The time period of ancient Hawaiian history in these chants spans the creation of the universe, the early migrations of the people throughout Polynesia, and the settlement of the Hawaiian Islands by rival clans and chiefs.

An example of the creation chant is *Ka Mele a Paku'i* in which Sky Father (Wakea) and Earth Mother (Papa-hānau-moku) create the Hawaiian Islands of their union.

## Ka Mele a Paku'i

1. O Wakea Kahiko Luamea  
O Papa, o Papahanaumoku ka wahine  
Hanau Tahiti-ku,  
Tahiti-moe
5. Hanau Keapapanui  
Hanau Keapapalani  
Hanau Hawaii  
Ka moku makahiapo  
Keiki makahiapo a laua,  
O Wakea laua o Kane
10. O Papa o Walinuu ka wahine  
Hookauhua Papa i ka moku  
Hoioloi ia Maui  
Hanau Mauiloa he moku  
I hanauia he alo lani  
He Uilani-uilani
15. Hei kapa lau maewa  
He nui Mololani no Ku, no Lono  
No Kane ma laua o Kanaloa  
Hanau kapu ke kuakoko
20. Kaahea Papa ia Kanaloa he moku  
I Hanauia he puna he naia  
He keiki ia na Papa i hanau  
Haalele Papa hoi i Tahiti  
Hoi a Tahiti Kapakapakaua
25. Moe o Wakea moe ia Kaulawahine  
Hanau o Lanai Kaula  
He makahiapo na ia wahine  
Hoi ae o Wakea loa Hina,  
Loaa Hina he wahine moe na Wakea
30. Hapai Hina ia Molokai, he moku  
O Molokai a Hina he keiki moku  
Haina e ke kolea o Laukaula  
Ua moe o Wakea i ka wahine.  
O ena kalani kukahaulili o Papa.
35. Hoi mai Papa mai loko o Tahiti  
Inaina lili i ka punaluna  
Hae, manawaino i ke kane, o Wakea  
Moe ia Lua he kane hou ia  
Hanau Oahu-a-Lua
40. Oahu-a-Lua, he keiki moku  
He keiki makana lau na Lua.  
Hoi hou aku no moe me Wakea  
Naku Papa i ke iloli,  
Hoohapuu Papa i ka moku o Kauai
45. Hanau Kamawaelua-lanimoku

## Song of Paku'i

1. Wakea Kahiko Luamea  
Papa who gave birth to islands the wife  
Tahiti east  
Tahiti west
5. Was born the great strata  
Was born the heavenly strata  
Was born Hawaii  
The first-born child  
Their first born child  
Of Wakea and Kane
10. Of Papa, of Walinuu the wife  
Papa conceived an island  
Was sick of child-sickness with Maui,  
Then was born Mauiloa, an island,  
Was born with the countenance of a chief  
A high chief, a handsome chief
15. Sacredly treated as a favorite child  
Mololani was a great one to Ku, to Lono  
To Kane, and also to Kanaloa.  
Was born during the sacred pains.
20. Papa was prostrated with Kanaloa, an  
island  
Was born as a birdling, as a porpoise  
A child that Papa gave birth to  
Then Papa left and went back to Tahiti  
Went back to Tahiti at Kapakapakaua.
25. Wakea then slept with Kaulawahine  
And Lanaikaula was born  
The first born child of that wife.  
Then Wakea turned around and found  
Hina
30. Hina was found as a wife for Wakea  
Hina conceived Molokai, an island  
Hina's Molokai is an island child  
That plover Laukaula told the tale  
That Wakea had slept with a woman.  
Fierce and fiery was the anger of Papa  
Papa came back from within Tahiti  
Was angry and jealous of her rivals  
Was wild and bad-tempered toward her  
husband, Wakea  
And slept with Lua for a new husband,  
Oahu-a-Lua was born
40. Oahu-a-Lua an island child;  
One of Lua's many children  
Went back and lived with Wakea  
Papa wa restless with child-sickness  
Papa conceived the island of Kauai
45. And gave birth to Kamawaeluanimoku

- He eweewe Niihau  
He palena o Lehua  
He panina Kaula  
O ka Mokupapapa  
50. Na papa kahakuakea o Lono  
O Kahakulono o Kapumaeolani  
O Kapuheeuanui o Kahaimakana  
Na Kekamaluahaku, Kaponianai  
55. I ka I, kapu I o Kaponialamea  
Ponihawa, Poniuli, Poniela  
Kaponi, Kaponi, Kaponiponikaua  
O Papa-a, O Papa-a  
O Hoochokukalani  
60. Ka lani, o Hoochokukalani  
He lani hoowawa  
Wawa, wawaka, nihoniho,  
I nihia i kolla,  
I pipai ka lau a lahihi  
65. O Wakea ka hiona  
O Piimai, o Wailoa, O Kakaihihi  
Nononoho kau e ka pueo alii  
Ka pueo makalulu  
70. I loha i ke kaha i ka pea  
I ka lupe o na lani kapu  
I Apikina, i huila lakou a ka wohi kahi  
Ahukalolaa-a, O Laa-a  
O Laamaikahiki ke alii  
75. O Ahukinialaa  
O Kukonalaa  
O Laulia laamakua  
O na pukolu a Laamaikahiki  
He mau hiapo kapu a Laa  
80. Hookahi no ka la i hanau ai  
Naha mai ka nalu, ke ewe, ka inaina  
O Ahulumai ka piko  
Ka piko alii  
Ka pikopiko iloko, ke enaena alii  
85. Ke ewe o Kalani, ka lani  
O Puaakahuoi  
O Kamalea Makahiko o Piliwale  
Kamaolena, Kahaloalena  
Halolenaula, o Kalanimanua,  
O Kaihikapu a Manuia  
O ka illo hulu ii i ula ia  
I mahamahaao  
O Kaunui a Kanehoalani kena  
O Ipuwai a Hoalani ke ai  
95. O Kehokumanawa  
I ka pilina ake i ke kea manawa  
Naa manawa kee  
I na io hoiimo maka  
I huaina i wehea ka naki  
100. Kapuaululana awai ali'i  
Kapuakahi kuaana aua Kane  
Wahine a Iwikauikaua i noho  
Loaa hoi a Kaneikauaiwilani  
Na nalu haki kakala
- Niihau is the last droppings  
Lehua was a border  
And Kaula the closing one  
For the low coral islands  
50. The low white-marked isles of Lono  
The Lord Lono of Kapumaeolani  
The rain-dispelling zenith of Holani  
Kapuheeuanui of Kahaimakana  
Of Kekamaluahaku, Kaponianai  
55. From the I, the sacred I of Kaponialamea  
The dark dye, blue dye, the black dye  
The anointed, the anointed destined to  
war  
That is Papa, Papa.  
Hoochokukalani.  
The high chiefess, Hoochokukalani,  
The chiefess of the loud voice,  
Reverberating, crackling, sharpened,  
That is modified and pared down.  
As leaves are worn to thinness  
65. Wakea was the resemblance  
It was Haloa that was theirs,  
It was Piimai, Wailoa, and Kakaihihi  
That was placed by the royal owl  
The owl of the still eyes  
70. That lowered the height of the sail on the  
course  
At the kite of the sacred chiefs  
That was folded and united in the same  
wohi  
That was Ahukaiolaa and was Laa  
Laamaikahiki the chief  
75. Then Ahukinialaa  
Kukonalaa  
And the parent Laulialaa  
The triplets of Laamaikahiki  
Who were born on the same day  
80. The birthwater broke, gushed forth with  
the afterbirth, the reddish flow  
The navel is Ahulumai  
The royal navel  
The center within, the royal heat  
The afterbirth of the chief, the heavenly  
one  
Was Puaakahuoi  
Kamalea and Makahiko o Piliwale  
Kamaolena, Kahaloalena  
Halolenaula, Kalanimanua  
90. The highly praised one of Manuia  
The yellow dog that was reddened  
To beget full friendship  
That is Kaunui of Kanehoalani.  
This is the water gourd of Hoalani  
95. It is Kaehokumanawa  
At the liver near the chest bone  
The changing thought  
That controls the muscles of the eye

105. Haki kaualua  
I halehale i popoi i na hua alii  
I na hua haki lumilumi i ka hohonu  
Lumilumi ka a Liloa  
I ke kaailani
110. O Liloa ka ike lani i Pakaalana  
Ka oha lani o Hakau  
Ka puakea i waho  
O ka pua kani nana i ka wai a Umi  
He keha ia no Umi, i ka lohelohe lani.
115. Ka lohelohe makomako o Mako  
O Makakaualii alii lani  
O Kamawaelualani  
O Kauinakea, o Kapaikauanalulu  
O Kaalawai, o Hinakuluina
120. O ka olukolika muolau o Kalani  
Loaa mai Kuauwa ka au alii  
Kamehameha, ku kohai i Kawaluna  
Kanipe, Kanipinana i Hakawili  
I luluu kaumaha i ke kapu
125. Kahoukapu o Maheha  
Na Nukuilimahi i Hakau i haka i luna o  
Hawaii.

100. Which is uncovered and unties the knot  
The floating flower on the royal platform  
I am Kapuakahi Kuaana from Kane  
The wife who lived with Iwikauikaua  
Who begat Kaneikauaiwilani  
The crest breaking double
105. That breaks double  
The high-combing wave that broke over  
the royal foam  
The broken waves that suck and draw  
towards the deep  
That twisted and absorbed Liloa  
The one of the royal belt
110. Liloa of Pakaalana the adept in heavenly  
lore  
The royal offspring was Hakau  
The fair flower outside  
The message that wa shot outside the  
claims of Umi  
Which was a bravado of Umi's at the  
royal precincts  
The great precinct of Mako  
Of Makakaualii, the heavenly chief  
Of Kamawaelualani  
Of Kauinakea, of Kapaikauanalulu  
Of Kaalawai, of Hinakuluina
120. The very topmost sprouting leaves of the  
heavenly bud  
From thence sprang Kuauwa, a chiefly  
branch  
Kamehameha that stands alone at  
Kawaluna  
The lower step, the highest step at  
Hakawili  
That is heavy and burdened with tabus.
125. The sacred sweat from Maheha  
The black lips that Hakau hung up on  
Hawaii.  
[Forlander Antiquities]

*The Traditional Background of the Primal Pair Creation Myth in Hawaii.*

From David Malo, Hawaiian Antiquities (1903: 3-6)

"...In the genealogy of *Wakea*, it is said that *Papa* gave birth to these islands. Another account has it that this group of isl

"...Kupulanakehau was the name of Kahiko's wife; they begot *Lihau'ula* and *Wakea*.

"*Wakea* had a wife named *Hau-me*, who was the same as *Papa*.

"...In the genealogy called *Pali-ku* it is said that the parents and ancestors of *Haumea* were *pali*, i.e., precipices. With her the race of men was definitely established.

"...When *Wakea* and *Papa* were divorced from each other, *Papa* went away and dwelt in *Nuu-meha-lani*...

"...It is said that from *Wakea* down to the death of *Haumea* there were six generations, and that these generations all lived in *Lolo-i-mehani*; but it is not stated that they lived in any other place; nor is it stated that they came here to *Hawaii* to live.

"Following these six generations of men came nineteen generations, one of which, it is supposed, migrated hither and lived here in *Hawaii*, because it is stated that a man named *Kapawa*, of the twentieth generation, was born in *Kukaniloko*, in *Waialua*, on *O'ahu*..."

"...[T]he chiefs and the common people of *Hawaii nei* were the same; they were all of one race...Commoners and *alii* were all descended from that couple. There was no difference between king and plebeian as to origin..." [ibid.: 52].

"...*Wakea* had a *kauwa* named

*Haakauilana*. We are not informed in what way *Haakauilana* became a *kauwa* to *Wakea*...After *Wakea* deserted his wife *Papa*, she lived with their *kauwa Haakauilana*...

"In time there was born to the couple a son named *Kekeu*. *Kekeu* lived with *Lumilani* and they begot *Noa*. *Noa* lived with *Papa* the second and they begot *Pueo-nui-welu-welu*, their last K\_\_\_\_\_, and these were the ancestors of the actual and real *kauwa* in the *Hawaiian Islands*" [ibid.:69].

"...The histories of the ancient king, from *Ke-alii-wahi-lani* and his wife, *Lailai*, down, from *Kahiko* and his wife, *Kupulana-ke-hau*, down, and from *Wakea* and his wife, *Papa*, down to the time of *Liloa*, are but scantily and imperfectly preserved. We have, however, it is true, a fragmentary, traditional knowledge of some kings. Of the kings from *Liloa* to *Kamehameha I*, we have probably a fair historical knowledge.

Genealogy of the kings from *Wakea* to *Liloa*.

1. *Wakea*
2. *Haloa*
3. *Waia*
4. *Hinanalo*
5. *Nanakehili*
6. *Wailoa*
7. *Kio*
8. *Ole*
9. *Pupue*
10. *Manaku*
11. *Lukahakoa*
12. *Luanuu* (1)
13. *Kahiko*
14. *Kii*
15. *Ulu* [\*and *Nanaulu*]
16. *Nanaie*
17. *Nanailani*
18. *Waikulani*
19. *Kuheileimoana*
20. *Konohiki*
21. *Wanena/sic/* (*Wawena*)
22. *Akalana*
23. *Maui*

24. Nanamaoa
  25. Nanakulei
  26. Nanakaoko
  27. Nanakuae
  28. Kapawa
  29. Heleipawa
  30. Aikanaka
  31. Hema [\*and Puna]
  32. Kahai
  33. Wahieloa
  34. Laka
  35. Luanuu (2)
  36. Pohukaina
  37. Hua
  38. Pau
  39. Huanuiikalailai
  40. Paumakua
  41. Haho
  42. Palena
  43. Hanalaanui [\*and Hanalaaiki]
  44. Lanakawai
  45. Laau
  46. Pili
  47. Koa
  48. Ole
  49. Kukohou
  50. Kaniuhi
  51. Kanipahu
  52. Kalapana
  53. Kahaimoelea
  54. Kalaunuiohua
  55. Kuaiwa
  56. Kohoukapu
  57. Kauhola
  58. Kiha
  59. Liloa
- [ibid.: 238]

“...We have some traditional knowledge of these kings, but nothing very definite.

“...We have the following traditions about *Wakea*. He was the last child of Kahiko; the first-born of Kahiko and the elder brother of Wakea being Lihau-ula, to whom Kahiko bequeathed his land, leaving Wakea destitute.”

[\*Note: Malo does not mention here the other brother of Wakea and Lihau'ula, who was *Makulukulu* (acc. Kumulipo genealogy)].

From Samuel M. Kamakau, Tales and Traditions of the People of Old. Na Mo'olelo a ka Po'e Kahiko (1991: 125)

“...In the genealogy of Wākea, it is said that his wife Papa gave birth to the islands and so was called Papa-nui-hānau-moku, Great-Papa-who-gave-birth-to-islands.

“It was thus that Papa gave birth; she gave birth to a gourd, a calabash with its cover, *he 'umeke a he po'i*; Wākea threw the cover up, and it became the sky; then Wākea threw out the inner core, *ka haku oloko*, and it became the sun; as he threw it up, the seeds became stars. Wākea saw the whiteness of the soft core, the *pala haku*, of the gourd and threw that up, and it became the moon; the white layer, *papa ke'oke'o*, of the gourd Wākea scraped and threw up into space and it became the clouds; the juice of the gourd he poured into the clouds, and it became rain. The calabash from the separation of the gourd by Wākea became land and ocean.”

(2) *The Primal Pair. Sky Father and Earth Mother*

[Part One, Ka Mele a Pakui (Lines 1-50)]

(a) Wakea as Sky Father.

This idea of the beginning of the world and the universe is Old World mythology with a wide distribution in Indo-European languages from India across the continent to the British Isles and Iceland.

We only have to examine Indo-European languages to see how the concept of mating between male and female cosmic parents leads back to a primary pair.

(The list below gives "Day Father" as Jupiter, the Morning Star, or Father of the Day):

Dyaus Pitar	(Sanskrit)
Day Father	(English)
Tag Vater	(German)
Dios Padre	(Spanish)
Deus Pater	(Latin)
Zeus	(Greek)
Jupiter	(Roman)
Tyr Zio	(Scandinavian)

In the Hawaiian tradition Wakea is not the planet Jupiter. As Sky Father, the daylit or sunlit world (Ao) suffused with daylight (Ao) between sunrise (east) and sunset (west) from horizon to horizon is the visible upper world, connected to the sun.

It also is the midpoint of that space as time marks the sun's position on the meridian at noon, thus *awakea*, "noon".

However, the planet Jupiter in Hawaiian takes several names, the most important in relation to the time before the sun rises, before daylight, is *'iao*, when Jupiter is the Morning Star. It takes the name *Hua* in connection with the moon as the 13th phase (*Hua*).

The midpoint of the day as *awakea* is important because it means that noon, when the sun is on your local meridian is the midpoint of the "day" as time, between midnight and the next midnight. These points were called *kau* in Hawaiian, the initial point at midnight (*kau, aumoe*), to midpoint (*awakea*) back to midnight (*kau*). This concept which measures time between the meridians as the passage of time between the sun on meridian or in our *zenith* on our side of the world, and at midnight when it is opposite our side of the world, or at *anti-zenith*, when it is our midnight is called the *mean day*.

It happens when the society no longer distinguishes "day" from "night" as the time when the sun is shining or not shining, which is variable interval, sometimes longer, in the summer, or shorter, in the winter, when nights are longer.

This "mean day" was quartered at night in the Hawaiian clock, between two "edges" or "corners" (*kihi*), one corner in the evening (*kihi*, about 6:00 p.m.) and another in the morning (*kihi puka*, about 6:00 a.m.) and two *pili*, one between *kihi* and *kau* (midnight) called *pili 'aumoe* (the quarter before midnight, i.e., about 9:00 p.m.) and *pili puka* (about 3:00 a.m.). If you think of this half-circle of time as quartered, then in a 12-hour or 180-degree turn of the clock, each "quarter" of time runs about 45-degrees in 3 hours.

(2) Earth-Mother, Papa-hānau-moku.

Papa-hānau-moku, Papa-who-gives-birth-to-islands is stratum rock, layers of rock, or reef rock (*'apapa*), extending beyond the earth with soil (*honua*). Her basic difference from Wakea as Sky Father is that she is not considered important to the structure of time. Her nature is material, solid, the opposite of air and atmosphere. She is in the rock, mineral element.

When we meet Papa she is the primary wife of Wakea, but when her island child, Hawai'i, is born, the child's parents are three, with use of the pronoun *lāua*, meaning "they-2" referring to Kane as well as Wakea, indicating that Walinu'u was the wife of Kane, but then who was she? If Wakea and Kane were both father to Hawai'i, and Papa was the mother, then she was also Walinu'u, or wife of Kane.

If this is the case then the marriage was polyandrous, in which the wife had more than one husband and the son more than one father, a *po'olua* child having "two-heads".

If it was important to indicate that Hawai'i, as son of Wakea, was also son of Kāne, then the first children of Wakea and Papa were Tahiti-ku and Tahiti-moe, which refer to the land *Tahiti* as east (*-kū*) and west (*-moe*). Tahiti in the Society Islands is "east" of Hawai'i, actually southeast, below the equator, and Viti Levu is another Tahiti below the equator west of the Society Islands and at the same parallel of latitude (18 degrees south) but distant by about 45 degrees of longitude, while Hawaii at 20 degrees north latitude is almost as many degrees north of the equator as Tahiti (*Tahiti-kū*) and Viti Levu (*Tahiti-moe*) are south of the equator.

What then does Sky Father at mid-day of the sun's position in the meridian (or longitude) of Hawaii have to do with the positions of the older sons, Tahiti (east) at about 150 degrees and Viti-Levu at about 180 degrees west longitude? It means that they are distant from each other by nautical space but closer by time in that Tahiti's noon is within the same hour circle (if we use today's navigation strategies), and that the two Tahiti(s) are separated by about three hours, so that when it was noon in Hawaii, it noon was earlier in Tahiti, but about 9:30 a.m. in Suva, Fiji. They are closer in time than they are in nautical space.

This information is not necessary to us at this time because we do not use it,

but ages ago it was survival knowledge: distances in time and space between Tahiti-east, Tahiti-west, south of the equator, and Hawaii, north of the equator.

The poet also lists the next two children, probably sons, of Wakea and Papa as sky levels, *Ke-apapa-nu'u* and *Ke-apapa-lani*, *-nu'u* being closer to the zenith (*-nu'u*) than *-lani*, at another level upward from the horizon. That marks the sky into the horizon level, which is at *-moe*, the horizontal line to the horizon at which point the vertical is *-kū*. This means that the overhead sky levels are marked twice, at *-apapa-lani* (30 degrees), *-apapa-nu'u* (60 degrees), to zenith (*-nu'u*, 90 degrees), through which stars at night will rise and transit the zenith, and descend through the corresponding levels to westward as they decline.

The perspective is a basic sky diagram with rhumb lines drawn to a basic nautical compass tracking the world through which the navigator must pass through the visible world of daylight and night with knowledge of which lands are arranged from the southeast to the northwest. The rhumb line of island births correspond to the wind compass, as the "oldest sons" (*hiapo*, *makahiapo*) are born to several wives of Wakea, not only to Papa-hānau-moku, introducing polygamy, when a man has more than one wife.

Papa has four sons children with Wakea:

1. Tahiti-ku
2. Tahiti-moe
3. Ke-apapa-nu'u
4. Ke-apapa-lani

Papa has a fifth son with Wakea and Kane (with Walinu'u):

5. Hawai'i

Papa has a sixth son with Wakea:

6. Maui (*Ihi-kapu-lau-maewa*, an

older name for the island of Maui)

Papa has two sons with Ku, Kane, Lono, and Kanaloa:

7. Mololani (probably Molokini)
8. Kaho'olawe (named for Kanaloa)

Papa goes back to Tahiti, to a land called Ka-pakapaka-ua, "the pattering rain" (which is usually identified as a land of Kane, Ka-pakapaka-ua-a-Kane).

Wakea has a son with Kaula-wahine:

9. Lana'ikaula

Wakea has a son with Hina:

10. Moloka'i

Alerted by the "bird" prophet (*Lau-kaula*) that Wakea has had other wives and children, Papa returns and has another son by Lua:

11. O'ahu-a-Lua(-nu'u)

Papa goes back to Wakea and they have four more children:

12. Kaua'i (Ka-mawae-lua-lani)
13. Ni'ihau
14. Lehua
15. Kaula
16. Moku-papapa (na papa kahaku-akea o Lono).

Eighteen children are born to ten parents: Wakea, Kane, Kū, Kāne, Lono, Kanaloa, and Lua with Papa-hanau-moku, Kaula-wahine, and Hina; seven males, three females.

[\*Note: Part Two of this *mele* (Lines 51-126) are appropriate to the period of migrations and settlement where it will be more properly treated.

Ka Mele a Kahaku-i-ka  
moana

1. *Ea mai Hawaiiinuiakea*  
*Ea mai loko, mai loko mai o ka po,*  
*Puka mai ka moku, ka aina,*  
*Ka lalani aina o Nuumea,*
5. *Ka pae aina o i kukulu o Tahiti.*  
*Hanau o Maui he moku, he aina,*  
*Na kama o Kamalalawalu e noho.*
- Na Kuluwaiea o Haumea he kane,*  
*Na Hinanuiakalana he wahine*
10. *Loaa Molokai, ke akua, he kahuna,*  
*He pualena no Nuumea.*
- Ku mai ke alii ka lani*  
*Ka haluku wai ea o Tahiti,*  
*Loaa Lanai he keiki hookama.*
- 15 *Na Keaukanai i moe aku,*  
*Moe ia Walinuu o Holani,*  
*He kekea kapu no Uluhina,*  
*Hanau Kahoolawe, he lopa.*
- Kiina aku Uluhina*
- 20 *Moku ka piko o ke kamaiki,*  
*Ka iewe o ke keiki i lele*  
*I komo i loko o ka ape nalu*  
*Ka apeape kai aleale,*  
*Loaa ka malo o ke kama,*
25. *O Molokini ka moku*  
*He iewe ia-a. He iewe ka moku.*
- Ku mai Ahukinialaa,*  
*He alii mai ka nanamu,*  
*Mai ka api o ka ia,*
30. *Mai ka ale poi pu o Halehalekalani,*  
*Loaa Oahu, he wohi,*  
*He wohi na Ahukinialaa.*
- Na Laakapu he kane ia,*  
*Na Laamealaakona he wahine.*
- 35 *Hookauhua, hoiloli i ka Nuupoki*  
*alii,*
- 36 *Ka heiau kapu a Nonea*

1. The arose Hawaiiinuiakea  
Arose from inside, from the inner  
darkness,  
Then appeared the island, the land,  
The row of islands of Nuumea,  
The group of islands on the borders  
of Tahiti,
6. Maui was born an island, a land,  
A dwelling place for the children of  
Kamalalawalu.  
Kuluwaiea of Haumea as the  
husband,  
Of Hinanuiakalana as the wife
- 10 Was born Molokai, a god, a priest,  
The first morning light from  
Nuumea  
Here stands the king, the heavenly  
one,  
The life-giving water drops, from  
Tahiti.  
Lanai was found, an adopted child.  
It was Keaukanai who had married,  
Had married with Walinuu from  
Holani
- 15 The sacred albino of Uluhina  
Kahoolawe was born, a foundling,  
Uluhina then was called upon,  
The navel of the little one was cut,  
The afterbirth of the child that was  
thrown  
Into the folds of the rolling surf,  
The froth of the heaving sea,  
Then was found the loincloth for the  
child.
- 25 Molokini the island  
Is the navel string, the island is the  
navel string.  
Now stands forth Ahukinialaa  
A chief from foreign land,  
From the gills of the fish,  
From the overwhelming billows of  
Halehalekalani,  
Then was born Oahu, a wohi,  
A wohi through Ahukinialaa  
From Laakapu, who was the man,  
From Laamealaakona a woman
- 35 Who sickened of the child concep-  
tion,  
Who sickened carrying the chief  
Nuupoki.

36 The sacred temple of Nonea  
 I kauila i ka po kapu o Makalii.  
*Hanau* Kauai he alii, he kama he  
 pua alii,  
 He huhui alii, a Hawaii,  
 40 Na ke poo kelakela o na moku  
 I paholaia e Kalani  
 Holo wale na moku i Holani,  
 I ka wewehi kapu a ka lanakila,  
 Kulia i ka moku a Kanekanaloa,  
 45 Ka ihe laumaki i Polapola  
 Nana i mahiki Wanalia

O *Wanalia* ke kane,  
 O *Hanalaa* ka wahine  
*Hanau* Niihau he aina, he moku,  
 50 He aina i ke aa i ka mole o ka  
 aina,  
 Ekolu lakou keiki,  
 I *hanau* i ka la kahi,  
 O Niihau, o Kaula, Nihoa pau mai,  
 Pa ka makuwahine,  
 55 *Oili moku ole* mai mahope.

Na Kalani e hoolaa na moku,  
 Kau iluna o Nuumea  
 I ka ahui alii o Kaialea,  
 Na ka lanakila e au na moku.  
 60 I huia na kolu e Kalani;  
 O Hilo, O Puna, O Kau, lelewale  
 Ku mai Kalani me ke Kahuna,  
 Kilohi mai ia Maui a Kama.  
 Aole e u aku puni ka aina  
 65 Ke kalele a Kalanimakahakona,  
 A ka uiaa i kilakila  
 Ke koa nui o lanakila,  
 Nana i keehi Oahu,  
 Nakolo na moku i ka pea  
 70 I ka maha o Kauai, malia.  
 Puna na aina ia Kalani,  
 Ia Kalanialonoapii  
 Ke kumu alii o Haloa,  
 Ea mai Hawaii ka moku;  
 75 Ea pu me ka lanakila--la.

During the lightning in the sacred  
 night of Makalii  
 Then was born Kauai, a chief, a  
 prince, a kingly scion  
 Of the chiefly cluster belonging to  
 Hawaii;  
 40 Hawaii the foremost of the islands  
 That was spread out by Kalani.  
 The ships sailed freely to Holani,  
 To the sacred precincts of freedom  
 Stand firm for the land of Kane  
 Kanaloa  
 45 The barbed spear from Polapola  
 That pricked and uplifted Wanalia.  
 Wanalia was the man  
 And Hanalaa was the woman,  
 Of them was born Niihau, a land, an  
 island,  
 50 A land at the roots, the stem of the  
 land.  
 Born in the same day  
 There were three children among  
 them  
 Niihau, Kaula, ending with Nihoa.  
 The mother then conceived no  
 more,  
 55 No island appeared afterwards,  
 It is Kalani who consecrates the  
 islands,  
 Exalted in Nuumea  
 Among the royal cluster of Kaialea.  
 It is the conqueror who governs the  
 islands,  
 60 The thirds joined together by Kalani,  
 Hilo, and Puna, and Kau were  
 thrown in  
 Kalani stands forth with the priest  
 And inspected Maui of Kama.  
 It was not long when he circuited  
 the island  
 65 Through the support given by Ka-  
 lanimahakona,  
 The young brave that was foremost  
 and highest,  
 The great soldier of victories,  
 The one who conquered Oahu,  
 And the islands heard to their ends  
 70 To the relief of Kauai through peace  
 All the islands were circled by Kalani  
 By Kalanialonoapii  
 From the royal stem of Haloa  
 Then the island became prominent;  
 Became prominent and victorious.

(3) *Cosmogonic Theme in the Birth of Islands, by Multiple Pairs of Primal Progenitors*

(1) The Birth of Islands (Part One (Lines 1-55).

Is there a different story in this chant by Kahakuikamoana?

Hawaii appears or emerges (*ea*) from within or out of the *night* (*pō*) as though spontaneously all by itself. It comes forth, comes out (*puka*) as though it came of itself, until the parents are identified as:

Kuluwaiea of Haumea, husband  
Hinanuiialana, wife  
Obtained Moloka'i, god, priest...

However, these parents are identified after Maui is born (*hānau*).

Inasmuch as Haumea is another name of Papa-hānau-moku and Kuluwaiea is (probably) another name for Wakea, the parents belong in the same set of Sky Father (Wakea) and Earth Mother (Papa) encounter-ed as the primal pair in the Song of Paku'i, with Hina as the *punalua* spouse.

Haumea and Hinanuiialana are females from whom the islands, Hawai'i, Maui, and Moloka'i are born, and Moloka'i more definitely the child of Hina.

Moloka'i is immediately characterized as an island of the priesthood (*kahuna*), the origins of which are in Nu'umea, probably an ancestral land, although Nu'umea will be named as the land of the chief, Kalani, in connection with three districts on the island of Hawaii: Hilo, Puna, and Ka'u [line 57]. [It is also used to indicate a line of chiefs (*ahui ali'i*) descended from *Kaialea*, an ancestor from the migratory period].

Lana'i is adopted (*ho'okama*), as a child by the group of islands that are the

children of Kuluwaiea (of Haumea) and Hina. The adoption term, *keiki ho'o-kama*, used here, rather than *keiki hānai*, suggests that Lana'i was not related by birth or by blood to those from whom the islands of Hawai'i, Maui, and Moloka'i were born.

Keaukanai husband  
Walinu'u-o-Holani wife  
Born Kaho'olawe a *lopa*...  
Molokini, a placenta, navel cord...

Keaukanai (male) and Walinu'u-of-Holani (female) are parents of Kaho'olawe. Their child is a *lopa*, meaning that his rank is that of a *kaukau ali'i*, or among those chiefs who may not hold titles to land but from whose families those with the high-ranking titles (*ali'i nui, ali'i 'aimoku, 'ali'i 'ai ahupua'a*) may choose a chief when the chiefly lines fail to provide successors.

From the birth of Kaho'olawe, comes Molokini, a part of the placenta and navel cord of Kaho'olawe. Molokini is cut away from the *piko* (navel) of Kaho'olawe by Uluhina and becomes a *malo* (loincloth) for the infant.

[If Walinu'u was the wife of Kāne, in the Song of Paku'i, and Papa's other name is Haumea, then these identities, Walinu'u, Haumea (and Papa) are the one wife of Kuluwaiea (Wakea), Kāne, and Keaukanai.

More importantly, however, is the poet's insistence on keeping the islands born to Kuluwaiea (by Haumea) and Hina as well as Walinu'u (with Keaukanai) in group relation, whether born to or adopted into the lineage of *Kaialea*, and isolating that in-group relationship from the *wohi kapu* chiefs of O'ahu. Then, the chiefly line reclaims Kaua'i, although the parent

pairs are not the same, into those of Hawai'i, Maui, Moloka'i, Lana'i, Kaho'olawe, and Molokini, adding Ni'ihau, Kaula, and Nihoa.

It is only O'ahu which is separated from this group, described as an island (not born or adopted into) but *obtained* (*loa'a*) i when Ahukini-a-La'a (son of La'amaikahiki) was born.

[The fact that the rank of O'ahu is that of the *wohi kapu* for chiefs is isolated or separated, i.e., the *wohi* chiefs of O'ahu, from those whose mothers were Haumea, Hina, and Walinu'u, including La'amea-laakona and Hanala'a, must be a recognition of a difference in rank coming from a different lineage (identified as resulting from Luanu'u's marriage to Papa].

Continuing:

La'akapu male,  
La'ameala'akona female,  
Born Kaula'i, a chief...

...

*Of the chiefly cluster belonging to  
Hawai'i...*

Wanalia husband  
Hanala'a wife  
Born Ni'ihau...Kaula...Nihoa.

## (2) The *Wohi* factor.

By comparison, the *wohi kapu* factor did appear in the Papa-Wakea birth of islands (Song of Paku'i) [lines 65-75]:

65. Wakea was the resemblance  
It was Haloa that was theirs,  
It was Piimai, Wailoa, and Kakaihili  
That was placed by the royal owl  
The owl of the still eyes  
That lowered the height of the sail  
on the course  
At the kite of the sacred chiefs  
*That was folded and united in the  
same wohi*

*That was Ahukaiolaa and was  
La'a  
Laamaikahiki the chief  
Then Ahukinialaa.*

What is the *wohi kapu* rank of chiefs which was exclusively that of O'ahu, and how did it differ from the other ali'i kapu?

The *kapu ali'i* were determined by the type of marriage, or relationship between the parents, such that the highest ranking chiefly children were born of full brother and sister, whereby the child was of *pi'o* marriage and *ni'aupi'o* rank, entitled to the prostration tabu (*kapu moe*).

The next highest rank was that of the child born of niece and uncle or nephew and aunt, whereby the child was the issue of a *ho'i*, or 'return' (to the generation above) marriage, however, also of *ni'aupi'o* rank and entitled to the *kapu moe*.

The child of a half-brother with a half-sister was of "split" union, called *nahā*, whereby the child, although of *ni'aupi'o* rank was entitled to the *kapu noho*, or sitting tabu, and not to the *kapu moe*.

Thus, the chief who had the *kapu noho* could not require prostration in instances of protocol, but he would be obliged to perform the *kapu moe* for a chief whose presence and protocol demanded it of him.

Thus was Kamehameha obliged to prostrate himself before his niece (and wife) Keopu olani when he entered her house, although she in return she was not required to perform the same courtesy toward him.

However, Kamehameha was entitled to the *wohi kapu* of the O'ahu chiefs which meant that if he failed to perform the *kapu moe* for any chief, he still would not be in violation of the kapu, because he had a "choice" (*wohi*) of performing either the *kapu moe* or the *kapu noho*:

"The kapu of the *ni'auipi'o* chief was the *kapu moe*, or "prostrating" kapu; of the *naha* chief, the *kapu noho*, of "squatting" kapu; of the *wohi*, the privilege of remaining upright in the present of a chief with the *kapu moe*." [Kamakau, Samuel M., Ka Po'e Kahiko, 1964: 22].

(4) The Genealogical Factor in the Cosmogonic Birth-of-Islands Origin Chants and Myths

The Birth of Islands cosmogony serves two purposes:

(a) To assign origins to cosmogonic birth out of the night or the air (male element, Sky Father) in its proximity to the earth (female element, Earth Mother) solid mineral element.

(b) The link between the earth and sky (and sea) continues into the descent of humans from this fusion of the male and female element.

The continuum from elemental fusion of the universe and its various parts as cosmogonically masculine above the earth and feminine in the material of the earth is into living (animate) from non-living (inanimate) nature, both of which have within them the seeds of germination and reproduction, male and female. or as with human beings, the consequent power to regenerate physically and genetically, that is to say, to *limit* descent from identifiable ancestors, divine and human.

This line of reasoning, which may at first seem infantile, is actually sifting the environment for cause and effect.

It will eventually move away from personification to natural abstraction in the *Kumulipo* cosmogony, but *personification* is at the heart of generating personality into characterizing and humanizing the world, space, and time into the idea of "God" (*Akua*) or the source of the power of regeneration and creation, to multiplying

"gods" (*kini akua*) as "ancestral gods" (*'aumākua*) who were those from which Polynesian chiefs descended as incarnations of god ancestors.

This produced the ritual effect or basis for deification of human beings after death into *'aumākua* as ancestral gods or family guardian gods whose identities were known during their lifetime upon the earth.

It becomes the genealogical and religious factor behind the *aumakua* and *akua* worship in the religious practice and kapu system of ancient Hawaiian society. To what does the law pronounce respect? To the chief. Who is the chief? The son of gods. Who are his offspring? We are. We came from gods. Who is the ultimate god? The first father? The sky, the world of light, the world of air, the atmosphere, the water. The first mother? The earth, the first rock, the soil. Who were the first human children of sky and earth?

(a) The Song of Paku'i [lines 51-66]

- |    |   |
|----|---|
| 51 | Kahakulono of Kapumaeolani<br>The rain-dispelling conch of Holani<br>Kapuheeuanu'i of Kahaimakana<br>Of Kekamaluahaku, Kaponianai   |
| 55 | From the 'I, the sacred 'I of<br>Kaponialamea<br>The dark dye, blue dye, the black<br>dye<br>The anointed, the anointed destined<br>to war<br>That is Papa, Papa.<br>Ho'ohokukalani |
| 60 | The high chiefess Hoohokukalani,<br>The chiefess of loud voice,<br>Reverberating, crackling, sharpened,<br>That is modified and pared down.<br>As leaves worn to thinness           |
| 65 | Wakea was the resemblance<br>It was Haloa that was theirs,<br>It was Pūimai, Wailoa, and Kakaihili  |

(b) The Ulu and Nanaulu genealogies of Hawaiian Chiefs as recitation (Papa Helu)

[From Malo: Chapter 59].

“Genealogy of the kings from Wakea to Liloa” [p. 238]:

1. **Wakea** Papahanaumoku (w)  
[Ho’ohokukalani (w)] Wakea (k)  
Haloa-naka (taro plant)
  2. **Haloa** Hinamanoulua’e (w)
  3. **Waia** Huhune (w)
  4. **Hinanalo** Haunu’u (w)
  5. **Nanakehili** Haulani (w)
  6. **Wailoa** Hikawaipuaiaanea (w)
- [Fornander, Abraham, Account of the Polynesian Race (APR): 1: 190]

The fragment in the Papa-Wakea (*Song of Paku’i*) genealogy lists ancestors in the first five generations from Wakea (or *six generations* including Wakea).

Comments Malo [page 5]:

“It is said that from Wakea down to the death of Haumea there were *six generations*, and that these generations all lived in Lolo-i-mehani; but it is not stated that they lived in any other place; nor is it stated that they came here to Hawaii to live.

“Following these six generations of men came nineteen generations one, of which, it is supposed, migrated hither and lived here in Hawaii...”

This serves to indicate that the recitation in the Song of Kahakuikamoana presented the generations from Wakea to the sixth generation [**Wailoa** ]

Using 25 years per generation as a standard count, it means that from the time of Wakea and Papa to Wailoa was a period of about 150 years.

The Nanaulu recitation is less by a generation, but still comparable:

Wakea	Papahanaumoku had Haloa (k) Ho’ohokukalani (w)
Ho’ohokukalani	Manouluae (k)
Waia (k)	Huhune (w)
Wailoa (k)	Hikawaopualanea (w)
Kakaihili (k)	Haulani (w)

[Fornander, APR: 1: 188]

About the real-life ancestor, Wakea, the chief, the person, not the personified cosmic ancestor, Malo comments [p. 239]:

“We have the following traditions regarding Wakea. He was the last child of Kahiko; the first-born of Kahiko and the elder brother of Wakea being Lihau-ula, to whom Kahiko bequeathed his land, leaving Wakea destitute.

After the death of Kahiko, Lihau-ula made war against Wakea. The counselor of Lihau-ula had tried to dissuade him, saying, ‘Don’t let us go to war with Wakea at this time. We shall be defeated by him, because this is a time of sunlight; the sun has melting power’ (*no ka mea he au keia no ka la, he la hee*).

Lihau-ula, however, considered that he had a large force of men, while Wakea had but a small force; his pride was up and he gave battle. In the engagement that followed, Lihau-ula lost his life, killed by Wakea, the blond one (*ka ehu*), and his kingdom went to Wakea.”

Wakea has a second battle with Kāne-ia-Kumuhonua, which was fought in Hawaii or in Kahiki-kū, during which Wakea’s priest was Komoawa.

Whereas in the standard version of the Papa and Wakea genealogy, Hāloa

was the son of Wakea by Ho'ohokukalani [Wakea's daughter by Papa], having thus a so-called "incest" motif, in the alternative version [Malo: 240], Ho'ohokukalani was the daughter of Wakea's kahuna, Komo-awa by Popo-kolo-nuha-wahine (w), thus lacking the incest motif.

(b) The *Hāloa-naka* taro as the first son of Ho'ohokukalani.

Comments Malo (p. 244):

"...We have a fragment of a tradition regarding Haloa. The first-born son of Wakea was of premature birth (*keiki alualu*) and was given the name of Haloa-naka. The little thing died, however, and its body was buried in the ground at one end of the house. After a while, from the child's body, shot up a taro plant, the leaf of which was named *lau-kapa-lili*, quivering leaf; but the stem was given the name Haloa.

"After that another child was born to them whom they called Haloa, from the stalk of the taro. *He is the progenitor of all the peoples of the earth.*"

The concluding statement above indicates that the cosmogonic origins were not limited to Polynesian or Hawaiian ancestry as an exclusive factor, that the genesis of the taro plant is applicable as a staple for all humankind in general.

#### (4) *Spontaneous Generation and Cosmic Gender*. (Birth of the Universe and Evolution of the Species in the Kumulipo Cosmogonic Genealogy)

When Malo spoke of the Kumulipo as one in which the land grew up of itself, that view of land *emerging* and *rising* as land is seen when you approach a horizon where there is nothing, and the top of a high mountain shows itself as a low mound which grows as it rises above the waves, that concept appeared in the Song of Kahakuikamoana:

*Ea mai Hawaiiuiakea  
Ea mai loko, mai loko o ka pō,*

Then arose Hawaiiuiakea  
Arose from inside, from the inner  
darkness...

David Malo's own Kumulipo chant, the first version of the genealogy, was a *papa helu* listing of names from the beginning of time to that of Ka-lani-nui-'I-a-mamao in the 17th century. It differs from the Lili'uokalani and Beckwith texts which use the poetry of the native account collected from Moloka'i's *kahuna* who recited the *mele* by use of the knotted cord (*hipu'u*). The difference is that Malo's Kumulipo text is strictly a list of names, without poetry.

The chant version, *koihonua*, on the other hand, was translated by several people:

The first by Adolf Bastian into German, and only in part;

Then by Joseph Rock (from Bastian's German version);

Then by Lili'uokalani into English [An Account of the Creation of the World according to Hawaiian Tradition, 1897];

Then retranslated by Martha Warren Beckwith [The Kumulipo, 1951] using (like Bastian and Lili'uokalani) the Moloka'i *koihonua* collected from Moloka'i *kahuna* by the Hale Naua under King David Kalakaua, a fact which surfaces in the histories written by Kathleen Dickinson Mellen.

Lili'uokalani's introduction to her translation mentions:

"This is the very chant which was sung by Puou, the High Priest of our ancient worship to Captain Cook, whom they had surnamed Lono, one of the four chief gods, dwelling high in the heavens, but at times appearing on the earth. This was the cause of the deification of Captain Cook under that name, and of the offerings to him made at the temple or Heiau at Hikiau, Kealakekua, where this song was rendered.

"The chanters of this great poem were Hewahewa and Ahukai, and by them it was originally dedicated to Alapai, our ancestress, a woman-chief of the highest rank, then at Koko, Oahu. Keeaumoku [i.e., Ke'eaumoku-papaiahehe, father of Ka'ahumanu] was lying on his deathbed (1804)...[Lili'uokalani, 1897: 4].

The world in the Kumulipo rises of itself, but not without cosmic gender, in which the night is divided between male (*kāne*) and female (*wahine*), reminiscent of the cosmic primal pair (Wākea and Papa) that unite and foster the birth (*hānau*) in nature of sky, land, and sea, with living things from which other closely related species emerge (*puka*) into existence.

The chant text and translation (with commentary that follow are from the work The Kumulipo Mind: A Global Heritage in the Polynesian Creation Myth [Johnson, Rubellite K., 2000 A.D., distributed by mightywords.com (search under rubellite Johnson).

# KUMULIPO

## KA WA AKAHI

1 O ke au i kahuli wela ka honua  
O ke au i kahuli lole ka lani  
O ke au i kuka'iaka ka la  
E ho'omalalamama i ka malama

5 O ke au o Makali'i ka po  
O ka walewale ho'okumu honua ia  
O ke kumu o ka lipo i lipo ai  
O ke kumu o ka po i po ai  
O ka lipolipo o ka lipolipo

10 O ka lipo o ka la  
O ka lipo o ka po  
Pō wale ho'i.

Hanau ka po  
Hanau Kumulipo i ka po he kane

15 Hanau Pō'ele i ka po he wahine.

Hanau ka 'Ukuko'ako'a  
Hanau kana he 'Ako'ako'a, puka

Hanau ke Ko'e'enuhe 'eli ho'opu'u  
honua  
Hanau kana he Ko'e, puka

20 Hanau ka Pe'a,  
Ka Pe'ape'a kana keiki, puka

Hanau ka Weli,  
He Weliweli kāna keiki, puka

Hanau ka 'Ina ka 'Ina  
25 Hanau kana, he Halula, puka

## FIRST AGE

1 When space turned around the earth  
heated,  
When space turned over, the sky  
reversed,  
When the sun appeared standing in  
shadows  
To cause light to make bright the moon,

5 When the Pleiades are small eyes in  
the night,  
From the source in the slime earth  
formed  
From the source in the dark, darkness  
formed  
From the source in the night,  
night formed  
From the depths of darkness, darkness  
so deep,

10 Darkness of day,  
Darkness of night,  
Of night alone

Did night give birth.

Born Kumulipo In the night, male;

15 Born Pō'ele in the night, female;

Born the coral polyp

Born of him a coral colony emerged

Born the burrowing worm, hilling the  
soil

Born of him a worm emerged

20 Born the starfish  
The small starfish his child emerged

Born the sea cucumber

A small sea cucumber his child  
emerged

Born the coral-dwelling sea urchin  
25 Born of him a short-spiked sea urchin  
emerged

- |   |  |
|---|--|
| <p>26 Hanau ka Hawa'e<br/>O ka Wana-ku kana keiki, puka</p> <p>Hanau ka Ha'uke'uke<br/>O ka 'Uhalula kana keiki, puka</p> | <p>26 Born the smooth-spined sea urchin<br/>The sharp-spiked sea urchin his child emerged</p> <p>Born the unspiked sea urchin<br/>The thin-spiked sea urchin his child emerged</p> |
| <p>30 Hanau ka Pi'oe<br/>O ka Pipi kana keiki, puka</p> <p>Hanau ka Papaua<br/>O ka 'Olepe kana keiki, puka</p>           | <p>30 Born the barnacle<br/>The reef oyster his child emerged</p> <p>Born the large clam<br/>The hinged mollusk his child emerged</p>  |
| <p>35 Hanau ka Nahawele<br/>O ka Unauna kana keiki, puka</p> <p>Hanau ka Makaiauli<br/>O ka 'Opihi kana keiki, puka</p>   | <p>Born the mussel<br/>35 The hermit crab his child emerged</p> <p>Born the dark-fleshed limpet<br/>The limpet his child emerged</p>   |
| <p>Hanau ka leho<br/>O ka puleholeho kana keiki, puka</p>   | <p>Born the cowry<br/>The small cowry his child emerged</p>  |
| <p>40 Hanau ka Naka<br/>O ke Kupekala kana keiki, puka</p> <p>Hanau ka Makaloa<br/>O ka Pupu'awa kana keiki, puka</p>     | <p>40 Born the naka shell<br/>The chama shell his child emerged</p> <p>Born the drupe<br/>The bitter drupe his child emerged</p>   |
| <p>Hanau ka 'Ole<br/>45 O ka 'Ole'ole kana keiki, puka</p> <p>Hanau ka Pipipi<br/>O ke Kupe'e kana keiki, puka</p>        | <p>Born the triton<br/>45 The small triton his child emerged</p> <p>Born the nerita snail<br/>The large nerita his child emerged</p>   |
| <p>Hanau ka Wi<br/>O ke Kiki kana keiki, puka</p>   | <p>Born the fresh-water snail<br/>The brackish-water snail his child emerged</p>   |
| <p>50 Hanau kane ia Wai'ololi<br/>O ka wahine ia Wai'olola</p>  | <p>50 Born male for the narrow,<br/>Female for broad waters;</p>   |

- Hanau ka 'Ekaha noho i kai  
Kia'i 'ia e ka 'Ekahakaha noho i uka
- Born the coralline seaweed living in  
the sea  
Kept by the bird's nest fern living on  
land;
- 55 He po uhe'e i ka wawa  
He nuku, he wai ka 'ai a ka la'au  
O ke Akua ke komo, 'a'oe komo  
kanaka
- 55 It is a night gliding through the passage  
Of an opening; a stream of water is  
food for plants,  
It is the god who enters; not as a  
man does he enter;
- O kane ia Wai 'ololi  
O ka wahine ia Wai'olola
- Male for the narrow,  
Female for broad waters;
- 60 Hanau ka 'Aki'aki noho i kai  
Kia'i 'ia e ka Manienie-'aki'aki noho  
i uka
- 60 Born the 'aki'aki seaweed living in the  
sea  
Kept by the manienie shore grass living  
on land;
- He po uhe'e i ka wawa  
He nuku, he wai ka 'ai a ka la'au  
O ke Akua ke komo, 'a'oe komo  
kanaka
- It is a night gliding through the passage  
Of an opening; a stream of water is  
food for plants;  
It is the god who enters; not as a  
man does he enter;
- 65 O kane ia Wai 'ololi  
O ka wahine ia Wai 'olola
- 65 Male for the narrow,  
Female for broad waters;
- Hanau ka 'A'ala-'ula noho i kai  
Kia'i 'ia e ka 'Ala'ala-wai-nui noho  
i uka
- Born the fragrant red seaweed living in  
the sea  
Kept by the succulent mint living on  
land
- He po uhe'e i ka wawa  
He nuku, he wai ka 'ai a ka la'au
- 70 O ke Akua ke komo 'a'oe komo  
kanaka
- 70 It is a night gliding through the passage  
Of an opening; a stream of water is  
food for plants;  
It is the god who enters; not as a  
man does he enter
- O kane ia Wai 'ololi  
O ka wahine ia Wai'olola
- Male for the narrow,  
Female for the broad waters;
- Hanau ka Manaua noho i kai  
Kia'i 'ia e ke Kalo-manaua noho  
i uka
- 75 He po uhe'e i ka wawa  
He nuku, he wai ka 'ai a ka la'au  
O ke Akua ke komo, 'a'oe komo  
kanaka
- 75 Born the manaua seaweed living in  
the sea  
Kept by the manaua taro living on  
land  
It is a night gliding through the passage  
Of an opening; a stream of water is  
food for plants;  
It is the god who enters; not as a  
man does he enter;

- O kane ia Wai'ololi  
O ka wahine ia Wai'olola
- 80 Hanau ke Ko'ele'ele noho i kai  
Kia'i 'ia e ke ko Punapuna, ko'ele'ele  
noho i uka
- He po uhe'e i ka wawa  
He nuku, he wai ka 'ai a ka la'au  
O ke Akua ke komo, 'a'oe komo  
kanaka
- 85 O kane ia Wai'ololi  
O ka wahine ia Wai 'olola
- Hanau ka Puaki noho i kai  
Kia'i 'ia e ka Lauaki noho i uka
- He po uhe'e i ka wawa  
90 He nuku, he wai ka 'ai a ka la'au  
O ke Akua ke komo, 'a'oe komo  
kanaka
- O kane ia Wai 'ololi  
O ka wahine ia Wai 'olola
- 95 Hanau ke Kakalamoa noho i kai  
Kia'i 'ia e ka Moamoamo noho i uka
- He po uhe'e i ka wawa  
He nuku, he wai ka 'ai a ka la'au  
O ke Akua ke komo 'a'oe komo  
kanaka
- 100 O kane ia Wai'ololi  
O ka wahine ia Wai'olola
- Hanau ka limu Kele noho i kai  
Kia'i 'ia e ka Ekele noho i uka
- Male for the narrow,  
Female for broad waters;
- 80 Born the kō'ele'ele seaweed living in  
the sea  
Kept by the jointed sugar-cane  
living on land
- It is a night gliding through the passage  
Of an opening; a stream of water  
is food for plants;  
It is the god who enters; not as a  
man does he enter;
- 85 Male for the narrow,  
Female for broad waters;
- Born the puaki seaweed living in the  
sea  
Kept by the lauaki sugar cane living on  
land
- It is a night gliding through the passage  
90 Of an opening; a stream of water  
is food for plants;  
It is the god who enters; not as a  
man does he enter;
- Male for the narrow,  
Female for broad waters;
- Born the kakalamoa seaweed living in  
the sea  
95 Kept by the moamoamo plant living on  
land
- It is a night gliding through the passage  
Of an opening; a stream of water is  
food for plants;  
It is the god who enters; not as a  
man does he enter;
- Male for the narrow,  
100 Female for broad waters;
- Born the kele seaweed living in the sea  
Kept by the ekele taro living on land;

- He po uhe'e i ka wawa  
He nuku, he wai ka 'ai a ka la'au
- 105 O ke Akua ke komo 'a'oe komo  
kanaka
- O kane ia Wai 'ololi  
O ka wahine ia Wai 'olola
- Hanau ka limu Kala noho i kai  
Kia'i 'ia e ka 'Akala noho i uka
- 110 He po uhe'e i ka wawa  
He nuku, he wai ka 'ai a ka la'au  
O ke Akua ke komo, 'a'oe komo  
kanaka
- O kane ia Wai'ololi  
O ka wahine ia Wai'olola
- 115 Hanau ka Lipu'upu'u noho i kai  
Kia'i 'ia e ka Lipu'u noho i uka
- He po uhe'e i ka wawa  
He nuku, he wai ka 'ai a ka la'au  
O ke Akua ke komo, 'a'oe komo  
kanaka
- 120 O kane ia Wai'ololi  
O ka wahine ia Wai'olola
- Hanau ka Loloa, noho i kai  
Kia'i 'ia e ke Kalamaloloa, noho  
i uka
- 125 He po uhe'e i ka wawa  
He nuku, he wai ka 'ai a ka la'au  
O ke Akua ke komo, 'a'oe komo  
kanaka
- It is a night gliding through the  
passage  
Of an opening; a stream of water  
is food for plants  
It is the god who enters; not as a  
man does he enter
- 105 It is the god who enters; not as a  
man does he enter
- Male for the narrow  
Female for broad waters
- Born the kala seaweed living in the  
sea  
Kept by the 'akala raspberry living  
on land
- 110 It is a night gliding through the  
passage  
Of an opening; a stream of water  
is food for plants  
It is the god who enters; not as a  
man does he enter
- Male for the narrow  
Female for broad waters
- 115 Born the Lipu'upu'u seaweed  
living in the sea  
Kept by the Lipu'upu'u moss living  
on land  
It is a night gliding through the  
passage  
Of an opening; a stream of water  
is food for plants  
It is the god who enters; not as a  
man does he enter
- 120 Male for the narrow  
Female for broad waters
- Born the long seaweed living in the  
sea  
Kept by the tall ebony living on land
- It is a night gliding through the  
passage  
Of an opening; a stream of water  
is food for plants  
It is the god who enters; not as a  
man does he enter
- 125 It is the god who enters; not as a  
man does he enter

	<p>○ kane ia Wai'ololi ○ ka wahine ia Wai 'olola</p>		<p>Male for the narrow Female for broad waters</p>
130	<p>Hanau ka Ne, noho i kai Kia'i 'ia e ka Neneleau noho i uka</p>	130	<p>Born the ne seaweed living in the sea Kept by the sumach tree living on land;</p>
	<p>He po uhe'e i ka wawa He nuku, he wai ka 'ai a ka la'au ○ ke Akua ke kono 'a'oe kono kanaka</p>		<p>It is a night gliding through the passage Of an opening; a stream of water is food for plants It is the god who enters; not as a man does he enter;</p>
135	<p>○ kane ia Wai'ololi ○ ka wahine ia Wai'olola</p>	135	<p>Male for the narrow, Female for the broad waters;</p>
	<p>Hanau ka Huluwaena, noho i kai Kia'i 'ia e ka Huluhulu 'ie'ie noho i uka</p>		<p>Born the hairy seaweed living in the sea Kept by the hairy pandanus vine living on land;</p>
140	<p>He po uhe'e i ka wāwā He nuku, he wai ka 'ai a ka lā'au ○ ke Akua ke kono, 'a'oe kono kanaka</p>	140	<p>It is a night gliding through the passage Of an opening; a stream of water is food for plants; It is the god who enters; not as a man does he enter;</p>
	<p>○ ke kane huawai, Akua kena ○ kalina a ka wai i ho'oulu ai ○ ka huli ho'okawowo honua ○ paia('a) i ke auau ka manawa</p>		<p>The male gourd of water, that is the god From whose flow the vines are made vigorous; The plant top sprouts from the earth made flourishing To frame the forest bower in the flow of time,</p>
145	<p>○ he'e au loloa ka po</p>	145	<p>The flow of time gliding through the long night;</p>
	<p>○ piha, o pihapiha ○ piha-u, o piha-a ○ piha-e, o piha-o</p>		<p>Filling, filling full, Filling, filling out, Filling, filling up Until the earth is a brace holding firm the sky,</p>
150	<p>○ ke ko'o honua pa'a ka lani ○ lewa ke au, ia Kumulipo ka po Po no.</p>	150	<p>When space lifts through time in the night of Kumulipo, It is yet night.</p>

## KA WA ELUA

## SECOND AGE

- Hanau kama a ka Powehiwehi  
Ho'oleilei ka lana a ka Pouliuli  
O Mahiuma, o Ma'apuia
- 155 O noho i ka 'aina o Pohomiluamea  
Kukala mai ka Haipu-aalamea  
O naha wilu ke au o Uliuli  
O ho'ohewahewa a kumalamala  
O pohouli a poho'ele'ele
- 160 O na wai ehiku e lana wale  
Hanau kama a hilu, a holo  
O ka hilu ia pewa lala kau  
O kau(l)ana a Pouliuli  
O kuemiemi a Powehiwehi
- 165 O Pouliuli ke kane  
O Powehiwehi ka wahine
- Hanau ka i'a, hanau ka Nai'a  
i ke kai la holo  
Hanau ka Mano, hanau ka Moano  
i ke kai la holo  
Hanau ka Mau, hanau ka Maumau  
i ke kai la holo
- 170 Hanau ka Nana, hanau ka Mana  
i ke kai la holo  
Hanau ka Nake, hanau ka Make  
i ke kai la holo  
Hanau ka Napa, hanau ka Nala  
i ke kai la holo  
Hanau ka Pala, hanau ke Kala  
i ke kai la holo  
Hanau ka Paka, hanau ka Papa  
i ke kai la holo
- 175 Hanau ke Kalakala, hanau ka  
Huluhulu i ke kai la holo,  
Hanau ka Halahala, hanau ka  
Palapala i ke kai la holo,
- Born the child of Powehiwehi  
To grace the stature of Pōuliuli  
with a wreath  
Of Mahiuma, of Ma'apuia,  
Living in the land of Pohomiluamea,  
Proclaiming the fragrant stem of  
Mea,  
The split elegance of the branch of  
Uliuli,  
Unrecognized and splintered  
In the night that darkens and  
blackens;
- 160 Through seven currents he floats,  
Born child of the gentle wrasse he  
swims,  
The hilu whose tail fin marks  
The renown of Pōuliuli;  
Pōwehiwehi shrinks away in  
respect (from the presence  
of a chief);
- 165 Pōuliuli the male,  
Pōuliuli the female.
- Born the fish, born the porpoise  
swimming there in the sea,  
Born the shark, born the goatfish  
swimming there in the sea,  
Born the mau, the maumau fish  
swimming there in the sea,
- 170 Born the spawn of yellowfin tuna,  
born the small threadfin  
swimming there in the sea,  
Born the nake, born the make fish  
swimming there in the sea,  
Born the napa, born the nala fish  
swimming there in the sea,  
Born the yellow tang, born the  
surgeonfish swimming there  
in the sea,  
Born the paka, born the papa('a)  
moray eels swimming there  
in the sea,
- 175 Born the porcupine fish, born the  
pufferfish swimming there  
in the sea,  
Born the young of the amberjack,  
born the young barracuda  
swimming there in the sea,

	Hanau ka Pe'a, hanau ka Lupe i ke kai la holo		Born the stingray, born the manta ray swimming there in the sea,
	Hanau ke Ao, hanau ke Awa i ke kai la holo		Born the dolphinfish, born the milk- fish swimming there in the sea,
	Hanau ke Aku, hanau ke 'Ahi i ke kai la holo,		Born the skipjack tuna, born the yellowfin swimming there in the sea,
180	Hanau ka Opelu, hanau ke Akule i ke kai la holo	180	Born the mackerel scad, born the big-eyed scad swimming there in the sea,
	Hanau ka 'Ama'ama, hanau ka 'Ana'e i ke kai la holo		Born the young mullet, born the mature mullet swimming there in the sea,
	Hanau ka Ehu, hanau ka Nehu i ke kai la holo		Born the ehu fish, born the anchovy swimming there in the sea,
	Hānau ka 'Iao, hanau ka 'Ao'ao i ke kai la holo		Born the silverside, born the damsel- fish swimming there in the sea,
	Hanau ka 'Ono, hanau ke Omo i ke kai la holo		Born the wahoo, born the omo swimming there in the sea,
185	Hanau ka Pahau, hanau ka Lauhau i ke kai la holo	185	Born the pahau, born the butterfly fish swimming there in the sea,
	Hanau ka Moi, hanau ka Lo'ilo'i i ke kai la holo		Born the threadfin, born the damsel- fish swimming there in the sea,
	Hanau ka Mao, hanau ka Maomao i ke kai la holo		Born the mao, born the maomao fish swimming there in the sea,
	Hanau ke Kaku, hanau ka 'A'u'a'u i ke kai la holo		Born the barracuda, born the marlin swimming there in the sea,
	Hanau ke Kupou, hanau ke Kupoupou i ke kai la holo		Born the kupou wrasse, born the kupoupou swimming there in the sea,
190	Hanau ka Weke, hanau ka Lele i ke kai la holo	190	Born the mullet, born the lele swimming there in the sea,
	Hanau ka Palani, hanau ka Nuku- momi i ke kai la holo		Born the surgeonfish, born the jackfish swimming there in the sea,
	Hanau ka Ulua, hanau ka Hahalua i ke kai la holo		Born the jack crevally, born the young crevally swimming there in the sea,
	Hanau ka 'Ao'aonui, hanau ka Paku'iku'i i ke kai la holo		Born the young damselfish (kupipi), born the Achilles tang swimming there in the sea,
	Hanau ka Ma'i'i'i, hanau ka Ala'ihī i ke kai la holo		Born the young of the surgeonfish, born the squirrelfish swimming there in the sea,
195	Hanau ka 'O'o, hanau ka 'Akilolo i ke kai la holo	195	Born the O'o fish, born the wrasse swimming there in the sea,

	Hanau ka Nenuē, noho i kai Kia'i 'ia e ka Lauhue noho i uka		Born the rudderfish living in the sea Kept by the gourd-leaf living on land
	He po uhe'e i ka wawa He nuku, he kai ka 'ai a ka i'a		A night gliding through the passage Of an opening; seawater is the food of fish;
200	○ ke Akua ke komo, 'a'oe komo kanaka ○ kane ia Wai'ololi ○ ka wahine ia Wai'olola	200	It is the god who enters; not as a man does he enter; Male for the narrow, Female for broad waters;
	Hanau ka Pahaha noho i kai Kia'i 'ia e ka Puhala noho i uka		Born the young of the mullet living in the sea Kept by the pandanus tree living on land;
205	He po uhe'e i ka wawa He nuku, he kai ka 'ai a ka i'a ○ ke Akua ke komo, 'a'oe komo kanaka ○ kane ia Wai'ololi ○ ka wahine ia Wai'olola	205	A night gliding through the passage Of an opening; seawater is the food of fish; It is the god who enters; not as a man does he enter; Male for the narrow, Female for the broad waters;
210	Hanau ka Pahau noho i kai Kia'i 'ia e ka Lauhau noho i uka	210	Born the pahau fish living in the sea Kept by the hau-leaf living on land;
	He po uhe'e i ka wawa He nuku, he kai ka 'ai a ka i'a ○ ke Akua ke komo, 'a'oe komo kanaka		A night gliding through the passage Of an opening; seawater is the food of fish; It is the god who enters; not as a man does he enter;
215	○ kane ia Wai'ololi ○ ka wahine ia Wai'olola	215	Male for the narrow, Female for the broad waters;
	Hanau ka He'e noho i kai Kia'i 'ia e ka Walahe'e noho i uka		Born the octopus living in the sea Kept by the canthium shrub living on land;
220	He po uhe'e i ka wawa He nuku, he kai ka 'ai a ka i'a ○ ke Akua ke komo, 'a'oe komo kanaka ○ kane ia Wai'ololi ○ ka wahine ia Wai'olola	220	A night gliding through the passage Of an opening; seawater is the food of fish; It is the god who enters; not as a man does he enter; Male for the narrow Female for broad waters;

- |     |   |     |   |
|-----|---|-----|---|
| 225 | <p>Hanau ka 'O'opukai noho i kai<br/>Kia'i 'ia e ka 'O'opuwai noho i uka</p> <p>He po uhe'e i ka wawa<br/>He nuku, he kai ka 'ai a ka i'a<br/>O ke Akua ke komo, 'a'oe komo<br/>kanaka</p>  | 225 | <p>Born the 'o'opu living in the sea<br/>Kept by the fresh-water goby<br/>living on land;</p> <p>A night gliding through the passage<br/>Of an opening; seawater is the food<br/>of fish;</p> <p>It is the god who enters; not as a<br/>man does he enter;</p>  |
| 230 | <p>O kane ia Wai'ololi<br/>O ka wahine ia Wai'olola</p> <p>Hanau ka puhi Kauwila noho i kai<br/>Kia'i 'ia e ka Uwila noho i uka</p>   | 230 | <p>Male for the narrow,<br/>Female for the broad waters;</p> <p>Born the kauila eel living in the sea<br/>Kept by the buckthorn living on land</p>  |
| 235 | <p>He po uhe'e i ka wawa<br/>He nuku, he kai ka 'ai a ka i'a<br/>O ke Akua ke komo, 'a'oe komo<br/>kanaka</p> <p>O kane ia Wai'ololi<br/>O ka wahine ia Wai'olola</p>   | 235 | <p>A night gliding through the passage<br/>Of an opening; seawater is the food<br/>of fish,</p> <p>It is the god who enters; not as a<br/>man does he enter;</p> <p>Male for the narrow,<br/>Female for the broad waters;</p>   |
| 240 | <p>Hanau ka Umaumalei noho i kai<br/>Kia'i 'ia e ka 'Ulei noho i uka</p> <p>He po uhe'e i ka wawa<br/>He nuku, he kai ka 'ai a ka i'a<br/>O ke Akua ke komo 'a'oe komo<br/>kanaka</p> <p>O kane ia Wai'ololi<br/>O ka wahine ia Wai'olola</p> | 240 | <p>Born the umaumalei surgeonfish<br/>living in the sea<br/>Kept by the 'ulei shrub living on<br/>land;</p> <p>A night gliding through the passage<br/>Of an opening; seawater is the food<br/>of fish;</p> <p>It is the god who enters; not as a<br/>man does he enter;</p> <p>Male for the narrow,<br/>Female for the broad waters;</p> |
| 245 | <p>Hanau ka Paku'iku'i noho i kai<br/>Kia'i 'ia e ka la'au Kukui noho i uka</p> <p>He po uhe'e i ka wawa<br/>He nuku, he kai ka 'ai a ka i'a<br/>O ke Akua ke komo, 'a'oe komo<br/>kanaka</p>   | 245 | <p>Born the paku'iku'i surgeonfish<br/>living in the sea<br/>Kept by the kukui candlenut<br/>living on land;</p> <p>A night gliding through the passage<br/>Of an opening; seawater is the food<br/>of fish;</p> <p>It is the god who enters; not as a<br/>man does he enter;</p>   |
| 250 | <p>O kane ia Wai'ololi<br/>O ka wahine ia Wai'olola</p>   | 250 | <p>Male for the narrow,<br/>Female for the broad waters;</p>  |

	Hanau ka Laumilo noho i kai Kia'i 'ia e ka (la'au) Milo noho i uka		Born the laumilo eel living in the sea Kept by the milo hibiscus living on land.
255	He po uhe'e i ka wawa He nuku, he kai ka 'ai a ka i'a  O ke Akua ke komo, 'a'oe komo kanaka O kane ia Wai'ololi O ka wahine ia Wai'olola	255	A night gliding through the passage Of an opening; seawater is the food of fish; It is the god who enters; not as a man does he enter; Male for the narrow, Female for the broad waters;
260	Hanau ke Kupoupou noho i kai Kia'i 'ia e ke Kou noho i uka  He po uhe'e i ka wawa He nuku, he kai ka 'ai a ka i'a O ke Akua ke komo, 'a'oe komo kanaka	260	Born the kupoupou wrasse living in the sea Kept by the kou tree living on land;  A night gliding through the passage Of an opening; seawater is the food of fish; It is the god who enters; not as a man does he enter; Male for the narrow, Female for the broad waters;
265	O kane ia Wai'ololi O ka wahine ia Wai'olola  Hanau ka Hauliuli noho i kai Kia'i 'ia e ka Uhi noho i uka  He po uhe'e i ka wawa He nuku, he kai ka 'ai a ka i'a O ke Akua ke komo, 'a'oe komo kanaka O kane ia Wai'ololi O ka wahine ia Wai'olola	265	Born the snake mackerel living in the sea Kept by the yam living on land; A night gliding through the passage Of an opening; seawater is the food of fish; It is the god who enters; not as a man does he enter; Male for the narrow, Female for the broad waters;
270	O kane ia Wai'ololi O ka wahine ia Wai'olola  Hanau ka Weke noho i kai Kia'i'ia e ka Wauke noho i uka  He po uhe'e i ka wawa He nuku, he kai ka 'ai a ka i'a O ke Akua ke komo, 'a'oe komo kanaka O kane ia Wai'ololi O ka wahine ia Wai'olola	270	Born the weke mullet living in the sea Kept by the paper mulberry living on land;  A night gliding through the passage Of an opening; seawater is the food of fish; It is the god who enters; not as a man does he enter; Male for the narrow, Female for the broad waters;
275	He po uhe'e i ka wawa He nuku, he kai ka 'ai a ka i'a O ke Akua ke komo, 'a'oe komo kanaka O kane ia Wai'ololi O ka wahine ia Wai'olola	275	Born the 'A'awa wrasse living in the the sea Kept by the kava plant living on land
280	Hanau ka 'A'awa noho i kai Kia'i 'ia e ka 'Awa noho i uka	280	Born the 'A'awa wrasse living in the the sea Kept by the kava plant living on land

	<p>O ke Akua ke komo, 'a'oe komo  kanaka,  O kane ia Wai'ololi,  O ka wahine ia Wai'olola</p>		<p>It is the god who enters; not as a  man does he enter,  Male for the narrow,  Female for the broad waters;</p>
285	<p>Hanau ka Ulae noho i kai  Kia'i 'ia e ka Mokae noho i uka</p> <p>He po uhe'e i ka wawa  He kai ka 'ai a ka i'a  O ke Akua ke komo, 'a'oe komo  kanaka,</p>	285	<p>Born the lizardfish living in the sea  Kept by the mokae sedge living  on land;  A night gliding through the passage  Of an opening; seawater is the food  of fish;  It is the god who enters; not as a  man does he enter;</p>
290	<p>O kane ia Wai'ololi,  O ka wahine ia Wai'olola</p> <p>Hanau ka Palaoa noho i kai  Kia'i 'ia e ka Aoa noho i uka</p> <p>He po uhe'e i ka wawa  He nuku, he kai ka 'ai a ka i'a  O ke Akua ke komo, 'a'oe komo  kanaka</p>	290	<p>Male for the narrow,  Female for the broad waters;  Born the sperm whale living in the  sea  Kept by the sandalwood living on  land;  A night gliding through the passage  Of an opening; seawater is the food  of fish;  It is the god who enters; not as a  man does he enter;</p>
295	<p>O ke ka'ina a palaoa e ka'i nei  E kuwili o ha'aha'a i ka moana  O ka opule ka'i loloa</p>	295	<p>In the lead the whales proceed,  Mingling and submerging beneath  the sea;  The 'opule advance in the distance;  The deep ocean is filled with them;  Like kumimi crabs clustered on the  reef,  They swallow on the way,  Along the path of Kolomio,  swiftly darting;</p>
300	<p>Manoa wale ke kai ia lakou  O kumimi, o ka lohelohe a pa'a  O ka'a monimori i ke ala</p> <p>O ke ala o Kolomio o miomio  i hele ai  Loa'a Pimoe i ke polikua</p>	300	<p>Pimoe is found at the bosom of the  horizon</p>
305	<p>O Hikawainui, o Hikawaina  O pulehulehu hako'ako'a  Ka mene 'a'ahu wa'awa'a  O holi ka poki'i i ke au ia Uliuli  Po'ele wale ka moana powehiwehi</p>	305	<p>Of Hikawainui, the strong current,  Of Hikawaina, the calm current,  Where spire myriad corals  From the hollows of blunted reef;  The youngest are carried by the  the current into darkness  Black as night the opaque sea,  Coral sea in dark cliffs of Paliuli,  Land that slid away from them,  Dark shore passing into night--  It is yet night.</p>
310	<p>He kai ko'ako'a no ka uli o Paliuli  O kaha uliuli wale i ka po--la  Po no.</p>	310	

## KA WA EKOLU

## THIRD AGE

- O kane ia, o ka wahine kela  
O kane hanau i ke auau po-  
'ele'ele
- 315 O ka wahine hanau i ke auau po-  
haha,  
Ho'ohaha ke kai, ho'ohaha ka uka  
  
Ho'ohaha ka wai, ho'ohaha ka  
mauna  
  
Ho'ohaha ka po-niuauaeaea
- Ulu ka haha na lau eiwa  
Ulu nioniolo ka lau pahiwa  
320 O ho'oulu i ka lau palaiali'i
- Hānau o Po-'ele'ele ke kane  
Noho ia e Pohaha he wahine  
Hanau ka pua a ka Haha  
Hanau ka Haha
- 325 Hanau ka Huhu he makua  
Puka kana keiki he Huhulele, lele
- Hānau ka Pe'elua ka makua  
Puka kana keiki he Pulelehua, lele
- 330 Hanau ka Naonao ka makua  
Puka kana keiki he Pinao, lele
- Hanau ka Unia ka makua  
Puka kana keiki he Uhini, lele
- Hanau ka Naio ka makua  
Puka kana keiki he Nalo, lele
- 335 Hanau ka Hualua ka makua  
Puka kana keiki he Manu, lele
- Hanau ka Ulili ka makua  
Puka kana keiki he Kōlea, lele
- 340 Hanau ke A'o ka makua  
Puka kana keiki he A'u, lele
- Male this, female that,  
Male born in the time of passing  
darkness,
- 315 Female born in the night feeling  
through,  
The sea reaching on, spreading  
apart the upland;  
Streams coursing, mountains  
rising  
In a time of groping for the way  
through darkness,  
The obscure uncertain;  
The reaching stalk grew nine leaves,  
Grew dark leaves straight upward
- 320 Like regal ferns unfolding.  
  
Born black night the male  
Espoused by dim night, a female;  
Born the blossom on the unfolding  
stem,  
Born the single stem spiral;
- 325 Born the woodborer parent,  
Came his child a flying insect, flew;
- Born the caterpillar parent;  
Came his child a butterfly, flew;
- 330 Born the ant parent;  
Came his child a dragonfly, flew;
- Born the cricket parent,  
Came his child a katydid, flew;
- Born the larva parent,  
Came his child a fly, and flew;
- 335 Born the egg parent  
Came his child a bird and flew;
- Born the wandering tattler parent  
Came his child a plover, flew;
- 340 Born the shearwater parent  
Came his child an a'u bird, flew;

	Hanau ka Akekeke ka makua Puka kana keiki he Elepaio, lele		Born the akekeke parent, Came his child an 'elepaio, flew;
	Hanau ka Alae ka makua Puka kana keiki ka Apapane, lele		Born the mudhen parent, Came his child the apapane, flew;
345	Hanau ka Alala ka makua Puka kana keiki he Alawi, lele	345	Born the crow parent, Came his child an alawi bird, flew;
	Hanau ka 'E'ea ka makua Puka kana keiki he Alaiaha, lele		Born the 'e'ea bird parent, Came his child an 'alaiaha bird, flew
350	Hanau ka Mamo ka makua Puka kana keiki 'O'o, lele	350	Born the mamo honeycreeper parent Came his child an 'o'o honeyeater. flew;
	Hanau ka Moho ka makua Puka kana keiki he Moli, lele		Born the rail parent, Came his child an albatross, flew;
	Hanau ke Kikiki ka makua Puka kana keiki he Ukihi, lele		Born the creeper parent Came his child an 'ukihi bird, flew
355	Hanau ke Kioea ka makua Puka kana keiki he Kukuluae'o, lele	355	Born the curlew parent, Came his child a stilt and flew;
	Hanau ka 'Iwa ka makua Puka kana keiki he Koa'e, lele		Born the frigate bird parent, Came his child a tropic bird, flew;
360	Hānau ke Kala ka makua Puka kana keiki he Kaula, lele	360	Born the tern parent, Came his child a ka'ula bird, flew;
	Hanau ka Unana ka makua Puka kana keiki he Auku'u, lele		Born the Unana parent, Came his child a night heron, flew;
365	O ka lele anei auna O kahakai a lalani O ho'onohonoho a pa'a ka pae	365	They have flown here in flocks, Lining the seashore, Crowding in settlement the beaches,
	Pa'a ka 'aina o Kanehunamoku Hanau manu ka 'aina Hanau manu ke kai		Clutching the land of Kānehuna- moku; The land gives birth to birds, The sea gives birth to birds.
370	Hanau kane ia Wai'ololi O ka wahine ia Wai'olola Hānau ka Lupe noho i kai Kia'i 'ia e ka Lupeakeke noho i uka	370	Born male for narrow, Female for wide streams. Born the stingray living in the sea Watched by the storm petrel living on land,

- He po uhe'e i ka wawa  
He hua, he i'o ka 'ai a ka manu
- 375 O ke Akua ke komo, 'a'oe komo  
kanaka  
O kane ia Wai'ololi  
O ka wahine ia Wai'olola
- Hānau ka Noio noho i kai  
Kia'i 'ia e ka 'lo noho i uka
- 380 He po uhe'e i ka wawa  
He hua, he i'o ka 'ai a ka manu  
O ke Akua ke komo, 'a'oe komo  
kanaka  
O kane ia Wai'ololi  
O ka wahine ia Wai'olola
- 385 Hanau ke Kolea-a-moku noho i  
kai  
Kia'i 'ia e ke Kolea-lele noho i uka
- He po uhe'e i ka wawa  
He hua, he i'o ka 'ai a ka manu  
O ke Akua ke komo, 'a'oe komo  
kanaka
- 390 O kane ia Wai'ololi  
O ka wahine ia Wai'olola
- Hanau ka Hehe noho i kai  
Kia'i 'ia e ka Nene noho i uka
- He po uhe'e i ka wawa  
He hua, he i'o ka 'ai a ka manu  
O ke Akua ke komo, 'a'oe komo  
kanaka
- 395 O kane ia Wai'ololi  
O ka wahine ia Wai'olola
- Hanau ka 'Auku'u noho i kai  
Kia'i 'ia e ka 'Ekupu'u noho i uka
- 400 He po uhe'e i ka wawa  
He hua, he i'o ka 'ai a ka manu  
O ke Akua ke komo, 'a'oe komo  
kanaka
- A night gliding through the passage;  
Fruit and flesh are food for birds;
- 375 It is the god who enters; not as a  
person does he enter;  
Male for the narrow,  
Female for wide streams.
- Born the white-capped noddy living  
at sea  
Watched by the hawk living on land
- 380 A night gliding through the passage;  
Fruit and flesh are food for birds;  
It is the god who enters, not as a  
person does he enter;  
Male for the narrow,  
Female for wide streams.
- 385 Born the glaucous gull living at sea  
Watched by the migratory plover  
living on land.
- A night gliding through the passage;  
Fruit and flesh are food for birds;  
It is the god who enters, not as a  
person does he enter;
- 390 Male for the narrow,  
Female for wide streams.
- Born the Hehe living at sea  
Watched by the nēnē goose living  
on land.
- A night gliding through the passage;  
Fruit and flesh are food for birds;  
It is the god who enters; not as a  
person does he enter;
- 395 Male for the narrow,  
Female for wide streams.
- Born the black-crowned night heron  
Watched by the 'ekupu'u living on  
land.
- 400 A night gliding through the passage;  
Fruit and flesh are food for birds;  
It is the god who enters; not as a  
person does he enter;

	<p>○ kane ia Wai'ololi ○ ka wahine ia Wai'olola</p>		<p>Male for the narrow. Female for wide streams.</p>
405	<p>Hanau ka Noio noho i kai Kia'i ia e ka Pueo noho i uka</p> <p>He po uhe'e i ka wawa He hua, he i'o ka 'ai a ka manu ○ ke Akua ke komo. 'a'oe komo kanaka</p>	405	<p>Born the white-capped noddy living at sea Watched by the owl living on land A night gliding through the passage; Fruit and flesh are food for birds; It is the god who enters: not as a person does he enter.</p>
410	<p>○ ka leina keia a ka manu o Halulu ○ Kiwa'a, o ka manu kani halau</p> <p>○ ka manu lele auna a pa'a ka la Pa'a ka honua i na keiki manu a ka Pohaha</p> <p>He au pohaha wale i ka mu-ka</p>	410	<p>This the perch of the bird Halulu, Of Kiwa'a, bird crying over the canoe house;</p> <p>The flight of birds shuts out the sun, Fledglings who cover the land with growth bursting from night,</p> <p>A time of yielding to those who sip nectar;</p>
415	<p>○ ka haha 'ape manewanewa ○ ka holili ha'ape lau manamana ○ ka manamana o ka hanau po</p> <p>○ po wale kela ○ po wale keia</p>	415	<p>The 'ape taro stalk spirals upward, Thrusting forth tender leaves Branching in the night of birth</p> <p>It is that night still It is this night still</p>
420	<p>○ po wale ke au ia Po'ele'ele ○ poni wale ke au ia Pohaha, ka po Po no.</p>	420	<p>It is still night in the time of Po'ele'ele, black night, Purple-black Pohaha, night of groping through; Still night.</p>

KA WA EHA

- 425 E kukulu i ke 'ahi'a a la'a la  
 O ka 'ape aumoa ka hiwa uli  
 O ho'okaha ke kai i ka 'aina  
 O kolo aku, o kolo mai  
 O ho'ohua ka ohana o kolo  
 O kolo kua, o kolo alo  
 O pane'(e) ke alo, o ho'ohonua ke  
 kua
- 430 O ke alo o ku'u milimili nanea  
 O pani'ia, o panopano  
 O kane o ka Popanopano i hanau  
 O Polalowehi ka wahine  
 Hānau kanaka ho'olu'a hua
- 435 Ho'ohua a lau i ka po a'e nei  
 Ia nei la ho'oku'uku'u  
 Ia nei la ho'oka'aka'a  
 Kaka'a kamali'i he'e pu'eone  
 O kama a ka Popanopano i hānau
- 440 Hanau ka po  
 Hanau ka po ia milinanea  
 Kuka'a ka po ia ki'i nana'a  
 Hanau ka po ia kua nanaka  
 Kulia ka po ia kua neneke
- 445 Hanau ka po ia ka 'ula maku'e  
 Kula'a ka po ia 'ula li'i  
 Hanau ka po ia mo'onanea  
 Kukele ka po ia mo'oni(a)nia  
 Hanau ka po ia pilipili
- 450 Kukala ka po ia kalakala

FOURTH AGE

- 425 Set up the 'ohi'a to be sacred there  
 Black sacredness of the 'ape taro  
 The flowing sea cuts the shoreline  
 Where they crawl away and crawl  
 here,  
 Family of crawlers increasing  
 their kind,  
 Crawling backward or forward,  
 On their front and on their backs,  
 Bosom of those cherished ones  
 with whom they play,  
 Dark ones, distinctly black  
 Male of the night born in  
 Pōpanopano jet black,  
 Female of the night below  
 adorned black  
 Born those who deposit eggs in the  
 earth
- 435 Increasing four-hundred-fold their  
 young by night  
 Released here,  
 Roll about here,  
 On dunes of sand little ones slide,  
 Children born sons of Pōpano-  
 pano
- 440 The night gave birth  
 The night gave birth to the playful  
 The night swelled with big-bellied  
 ones  
 The night gave birth to carapaced  
 turtles  
 The night strove to deliver  
 the hawkbill
- 445 The night gave birth to the dark-red  
 lobster  
 The night expelled the small red  
 lobster  
 The night gave birth to the lizard  
 at rest  
 The night slithered with the lizard  
 of smooth skin  
 The night gave birth to those that  
 cling
- 450 The night proclaimed those with  
 rough skin

	Hanau ka po ia ka'uka'u Kuemi ka po ia palaka Hanau ka po ia ka ihu kunini Ku'eli ka po ia kupelepele		The night gave birth to the hesitant; The night shrank with those indifferent; The night gave birth to the sharp- nosed; The night dug out the indolent; The night gave birth to mud- dwellers; The night paused for track leavers.
455	Hanau ka po ia kele Kali ka po ia mehe(u)he(u)	455	Born male for the narrow Female for wide streams
	Hanau kane ia Wai'ololi O ka wahine ia Wai'olola		
460	Hanau ka Honua noho i kai Kia'i 'ia e ke Kuhonua noho i uka  He po uhe'e i ka wawa He nuku, he la'i ka 'ai a kolo O ke Akua ke komo, 'a'oe komo kanaka	460	Born the turtle living in the sea Kept by the maile vine living on land  It is a night passing through; Quiet the feeding of crawlers; It is the god who enters; not as a person does he enter.
465	O kane ia Wai'ololi O ka wahine ia Wai'olola	465	Male for the narrow, Female for wide streams.
	Hanau ka Wili noho i kai Kia'ia e ka Wiliwili noho i uka  He po uhe'e i ka wawa He nuku, he la'i ka 'ai a kolo		Born the teredo worm living in the sea Kept by the williwili tree living on land.  It is a night passing through; Quiet the feeding of crawlers; it is the god who enters; not as a person does he enter.
470	O ke akua ke komo, 'a'oe komo kanaka O kane ia Wai'ololi O ka wahine ia Wai'olola	470	Male for the narrow, Female for wide streams.
	Hanau ka Aio noho i kai Kia'i 'ia e ka Naio noho i uka		Born the sea worm living in the sea Kept by the williwili tree living on land
475	He po uhe'e i ka wawa He nuku, he la'i ka 'ai a kolo O ke Akua ke komo, 'a'oe komo kanaka O kane ia Wai'ololi O ka wahine ia Wai'olola	475	It is a night passing through; Quiet the feeding of crawlers; It is the god who enters; not as a person does he enter. Male for the narrow, Female for wide streams.
480	Hanau ka Okea noho i kai Kia'i 'ia e ka Ahakea noho i uka	480	Born the okea living in the sea Kept by the ahakea tree living on land

	He po uhe'e i ka wawa He nuku, he la'i ka 'ai a kolo O ke Akua ke komo, 'a'oe komo kanaka		It is a night passing through; Quiet the feeding of crawlers; It is the god who enters; not as a person does he enter.
485	O kane ia Wai'ololi O ka wahine ia Wai'olola	485	Male for the narrow, Female for wide streams.
	Hānau ka Wana noho i kai Kia'i 'ia e ka Wanawana noho i uka		Born the sea urchin living in the sea Kept by the wanawana plant living on land
490	He po uhe'e i ka wawa He nuku, he la'i ka 'ai a kolo O ke Akua ke komo, 'a'oe komo kanaka O kane ia Wai'ololi O ka wahine ia Wai'olol	490	It is a night passing through; Quiet the feeding of crawlers; It is the god who enters; not as a person does he enter. Male for the narrow, Female for wide streams.
495	Hānau ka Nēnē noho i kai Kia'i 'ia e ka Manene noho i uka	495	Born the nene living in the sea Kept by the manene living on land
500	He po uhe'e i ka wawa He nuku, he la'i ka 'ai a kolo O ke Akua ke komo, 'a'oe komo kanaka O kane ia Wai'ololi O ka wahine ia Wai'olola	500	It is a night passing through; Quiet the feeding of crawlers; It is the god who enters; not as a person does he enter. Male for the narrow, Female for wide streams.
	Hānau Liko noho i kai Kia'i 'ia e ka Piko noho i uka		Born the liko living in the sea Kept by the piko taro living on land.
505	He po uhe'e i ka wawa He nuku, he la'i ka 'ai a kolo O ke Akua ke komo, 'a'oe komo kanaka O kane ia Wai'ololi O ka wahine ia Wai'olola	505	It is a night passing through; Quiet the feeding of crawlers; It is the god who enters; not as a person does he enter. Male for the narrow, Female for wide streams.
	Hānau ka Opeope noho i kai Kia'i 'ia e ka Oheohe noho i uka		Born the jellyfish living in the sea Kept by the oheohe tree living on land
510	He po uhe'e i ka wawa He nuku, he la'i ka 'ai a kolo O ke Akua ke komo, 'a'oe komo kanaka O kane ia Wai'ololi O ka wahine ia Wai'olola	510	It is a night passing through; Quiet the feeding of crawlers; It is the god who enters; not as a person does he enter. Male for the narrow, Female for wide streams.

- |     |   |     |   |
|-----|---|-----|---|
| 515 | <p>Hanau ka Nananana noho i kai<br/>Kia'i 'ia e ka Nonanona noho i uka</p> <p>He po uhe'e i ka wawa<br/>He nuku, he la'i ka 'ai a kolo<br/>O ke Akua ke komo, 'a'oe komo<br/>kanaka</p> | 515 | <p>Born the sea spider living in the sea<br/>Kept by the spider living on land.</p> <p>It is a night passing through;<br/>Quiet the feeding of crawlers;<br/>It is the god who enters, not as a<br/>person does he enter.</p> |
| 520 | <p>O hulahula wale ka ne'e [a]na a<br/>kolo<br/>O ka maewa huelo ka loioa<br/>O kukonakona o kukonakona<br/>Hele lu wale i ki'o [a]na<br/>O ka lepo hune ka 'ai, 'ai--a</p>             | 520 | <p>Dancing the movement of crawlers<br/>Swinging the length of the tail,<br/>Unfriendly and threatening,<br/>Shaking as they settle into mud,<br/>Dust of earth the food to eat,</p>  |
| 525 | <p>'Ai a kau, 'ai a mu-a<br/>Ka 'a [a]na a kauwa hewahewa</p> <p>A pilihua wale ka 'ai [a]na<br/>O kele a hana ha-na<br/>O hana mai ulu kunewanewa</p>                                  | 525 | <p>To eat and settle, eat in silence,<br/>Eating like condemned kauwā<br/>outcasts,<br/>To eat in confusion their meals,<br/>To bask in warm mud,<br/>Reeling, unsteady,</p>  |
| 530 | <p>Ke newa nei ka hele<br/>O hele i ka 'aina a Kolo<br/>Hanau ka ohana o Kolo i ka po<br/>Po no.</p>  | 530 | <p>Staggering in the land of Kolo,<br/>Born the family of Kolo in the night,<br/>Still night.</p>   |

## KA WA ELIMA

## FIFTH AGE

- O kuhele ke au ia Kapokanokano  
 535 O ho'omau i ke ahu o Polalouli  
 O ka uli 'iliuli makamaka hou  
 'Iliuli a ka hiwahiwa Polalouli  
 Moe a wahine ia Kapokanokano  
 O ke kanokano o ka ihu nuku 'eli  
 honua  
 540 E'eku i ka moku e kupu a pu'u  
 E ho'opalipali (a)na ke kua  
 Ho'opalipali ke alo  
 O ke karna a pua'a i hanau  
 Ho'ohale uka i ka nahelehele  
 545 Ho'omaha i ka lo'ilo'i o Lo'iloa  
 O umi he au ka moku  
 O umi he au ka 'aina  
 Ka 'aina a Kapokanokano i noho ai  
 Oliuliu ke ala i ma'awe nei  
 550 O ka ma'awe hulu hiwa o ka pua'a  
 Hanau ka pua'a hiwahiwa i ke au  
 Ke au a Kapokanokano i noho ai  
 Moe a poe ia Polalouli  
 Hanau ka po  
 555 Hanau ke Po'owa'awa'a,  
 he wa'awa'a kona  
 Hanau ke Po'opahapaha,  
 he pahapaha laha  
 Hanau ke Po'ohiwahiwa,  
 he hiwahiwa luna  
 Hanau ke Po'ohaole, he haole kēlā  
 Hanau ke Po'omahakea,  
 he keakea ka 'ili  
 560 Hanau ke Po'oapahu,  
 he huluhulu kala  
 Hanau ke Po'omeumeu,  
 he meumeu kona  
 Hanau ke Po'oauli, he uliuli kona  
 Hanau ka hewahewa, he hewahewa kona
- Time goes on into night extremely  
 dark  
 535 Continues into density of dark night  
 below  
 Dark surfaces renew acquaintance  
 again  
 Dark skin of sacred black esteems  
 Polalouli  
 To mate with Kapokanokano in  
 the very dark night  
 Dark black the earth-digging snout  
 540 Uprooting the district into hills  
 Making cliffs in the back  
 Making cliffs in the front  
 Child of a pig born  
 Creates from the bush a dwelling  
 545 To repose in the fields of Lo'iloa  
 Tenfold the yield of the district  
 Tenfold the tribute from the land  
 Land where the Kapokanokano  
 descendants lived  
 A while, through which their tracks  
 made a path,  
 550 Faint tracks of the elders of the pig;  
 Born the sacred black pig in the  
 time  
 When Kapokanokano's descendants  
 lived,  
 When night reposed in Pōlalouli  
 The night gave birth.  
 555 Born the head furrowed, his the  
 strong;  
 Born the head broad, his the proud;  
 Born the shiny-black head, he was  
 sacred black above;  
 Born the white head, that was a  
 foreigner;  
 Born the white faced; he was  
 reserved for breeding;  
 560 Born the receding forehead, he had  
 sharp bristles;  
 Born the flat-head, of dull  
 disposition his;  
 Born the dark-head, his were dark;  
 Born the defective, his were flawed;

	Hanau ka lawalawa, he lawalawa kona		Born the strong, he had the competent;
565	Hanau ka Ho'oipo, he ho'oipo kona	565	Born the affectionate, he had the more beloved;
	Hanau ka Hulu, a he 'a'aia kona		Born the hairy, his were vivid;
	Hanau ka Hulupi'i, he pi'ipi'i kona		Born the stiff-haired, his the ambitious;
	Hanau ka Meleoli, he melamela kona		Born the melodious voice, his the idle;
570	Hanau ka Ha'upa, he ha'upa nuinui	570	Born the heavy eater, he had big eaters;
	Hanau ka Hilahila, he hilahila kona		Born the shy, his the timid;
	Hanau ke Kenakena, he kenakena ia		Born the pessimist, his the nervous;
	Hanau ka Luheluhe, he luheluhe kona		Born the sagging, his the heavy;
	Hanau ka Pi'i'awa'awa, he 'awa'awa kona		Born the sour, his the bitter;
575	Hanau ka Li'ili'i, he li'ili'i kona	575	Born the small, his the tiny;
	Hanau ka Makuakua, he kuakua kona		Born the provider, his the dependable;
	Hanau ka Halahala, he lei hala kona		Born the juvenile, a pandanus lei for him;
	Hanau ka 'Ewe'ewe, he 'ewe'ewe kona		Born the lineal descendant, for him the heirs;
	Hanau ka Huelo-maewa, he aewe kona		Born the end of the tail, of junior rank;
580	Hanau ka Hululiha, he lihelihe kona	580	Born the lice-infested, his the infected;
	Hanau ka Pūkaua, he kaua hope kona		Born the champion, after him comes war;
	Hanau ka Mehe'ula, he 'ula'ula ia		Born the ruddy, of reddish hair, red one(s)
	Hanau ka Pu'uwelu, he weluwelu kona		Born the straggler, of him the poor.
	O kana ia welu kēia		Scarcely clothed is this one,
585	Laha ai kama o Lo'iloa	585	Who as son of Lo'iloa extends
	O ululoa ka 'āina o Mohala		Productive land into cultivated bloom,
	E ku'u mai ana i ka ipu makemake		Letting into the calabash of want
	O makemake kini peleleu		Satisfaction of increasing needs;
	O mele ke amo a Oma kini		Ripe yellow the carrying pole of Oma's descendants,
590	A pili ka hanauna a Kapokanokano	590	Generations closely related
	I ka po nei la--		through Kapokanokano
	Pō no.		In the night now here-- Still night.

## KA WA EONO

- O kupukupu kahili o Kua-ka-mano  
 O kuku ka mahimahi,  
 o ka pihapiha kapu
- 595 O ka holo (a)na kuwaluwalu  
 ka linalina  
 Holi (a)na, ho'omaka,  
 ho'omakamaka ka 'ai
- Ka 'ai ana ka pi'ipi'i wai  
 Ka 'ai ana ka pi'ipi'i kai
- 600 Ka henehene a lualua  
 Noho po'opo'o ka 'iole makua  
 Noho pupi'i ka 'iole li'ilii  
 O ka hulu ai malama
- 'Uku li'i o ka 'aina  
 'Uku li'i o ka wai
- 605 O mehe(u) ka 'aki'aki a nei(a)  
 ha'ula  
 O lihilihi kuku  
 O pe'epe'e a uma
- He 'iole ko uka, he 'iole ko kai  
 He 'iole holo i ka uaua
- 610 Hanau laua a ka Pohiolo  
 Hanau laua a ka Pone'eaku
- He nene'e ka holo a ka 'iole uku  
 He mahimahi ka lele a ka 'iole uku
- 615 He lalama i ka 'ili'ili  
 Ka 'ili'ili hua 'ohi'a, hua 'ole o ka  
 uka  
 He pepe kama a ka po hiolo  
 i hanau  
 He lele kama a laua o ka po  
 ne'e aku  
 O kama a uli a kama i ka po nei la  
 Po no.

## SIXTH AGE

- Countless generations grew up as  
 kinsmen  
 Organized in farming, the quantity  
 of law
- 595 Running eight eight-fold the  
 assessment,  
 Requesting that taxing of the yield  
 begin;  
 Eating the gain from wetland  
 cultivation,  
 Eating the gain from salt pond  
 aquaculture;
- 600 On slopes and in hollow places  
 The rat parent lives in furrows  
 Where little mice crowd together;  
 Caretakers of seasons by moonlight;  
 Small levies on land use,  
 Small levies on water use,
- 605 Bite marks left by brown creatures,  
 Whiskered ones  
 Crouched on their chests;  
 A rat for the upland, a rat for the  
 shore,  
 A determined rat running tough.
- 610 They two born in night declining;  
 They two born in night moving  
 away;  
 Swift the running of a small rat,  
 Dolphin-like leap the jump  
 of a small rat  
 To thief at the rind,  
 615 Mountain apple rind, the tree left  
 bare;  
 The spoil of children born in  
 night's decline,  
 A child of theirs leaping in the night  
 departing,  
 Children of darkness and  
 children of night now here--  
 Still night.

## KA WA EHIKU

- 620 O kau ke anoano ia'u kualono  
He ano no ka po hane'e aku  
He ano no ka po hane'e mai  
He ano no ka po pihapiha  
He ano no ka ha'iha'i
- 625 He weliweli ka nu'u a ho'omoali  
He weliweli ka 'ai a ke'e koe koena  
He weliweli a ka po hane'e aku  
He 'ili'ilihia na ka po he'e mai  
He 'ili(hia) 'ilio kama a ka po  
h(an)e'e aku
- 630 He 'ilio kama a ka po he'e mai  
He 'ilio 'i'i, he 'ilio 'a'a  
  
He 'ilio 'olohe na ka lohelohe  
He 'ilio alana na ka 'a'alua  
  
He manu ke ha'i o Pulepule
- 635 O mihi i ka anuanu, huluhulu 'ole  
O mihi i ka welawela i ke 'a'ahu  
'ole  
  
Hele wale i ke ala o Malama  
Kanaha'i a ka pō i na kama
- 640 Mai ka uluulu a ka welewele--a  
Mai ka nahu (a)na a ka nenehe  
O Hula ka makani kona hoa  
O ke kaikaina muli o ka Lohelohe  
no
- 645 Puka ka pe'ape'a lohelohe  
Puka ka pe'ape'a huluhulu  
Puka ka pe'ape'a manamana  
Puka ka pe'ape'a hane'e aku  
A ka po he'enalu mai i hanau  
Po no.

## SEVENTH AGE

- 620 Awe comes over me on the  
mountaintop  
Awe of the night moving away  
from me  
Awe of the night moving toward  
me  
Awe of the night completed  
Awe of the breaking apart
- 625 Dread of the oracle tower and  
sacrifice  
Dread of the offering and imperfect  
remains  
Dread of the night departing  
Terrified of night returning  
Dog child revered by night receding  
Dog child of the night returning  
A reddish-brown dog, a short-legged  
dog  
A hairless dog for the service  
A dog sacrifice for underground  
fires,  
An animal to offer up in prayer;
- 635 Pity him in the cold, with no  
body hair,  
Pity him in the heat, with no  
covering,  
Going alone on the moonlit path  
Among the youth who by night  
vanished  
From the tangle to the clearing  
640 From the stinging and the rustling  
Of the piercing wind his companion  
A younger brother of obedient ones;  
Descending came down crossing  
branches  
Came forth branches covered with  
down  
645 Came forth subdividing branches  
Came forth spreading branches  
growing out;  
Came forth the sleek bat  
Came forth the fuzzy bat  
Came forth the winged bat  
Came forth the bat moving furtively  
away  
As the night labored to give birth;  
Only the night.

## KA WA EWALU

A kama auli('i), auli'i) anei

650 O kama i ke au o ka po kinikini  
O kama i ke au o ka po he'enalu  
mamao  
Hanau kanaka o mehelaui

Hanau kanaka ia Wai'ololi  
O ka wahine ia Wai'olola

655 Hanau ka po akua  
O kanaka i kukuku  
O kanaka i momoe  
Momoe laua i ka po mamao

660 Ahinahina wale kanaka e kaka'i nei  
Ha'ula'ula wale ka lae o ke akua  
Ha'ele'ele ko ke kanaka  
Hakeakea wale ka 'auwae  
Ho'omalina ke au ia ka po kinikini  
Ho'ola'ila'i mehe ka po he'enalu  
mamao

665 I kapaia La'ila'i ilaila  
Hanau La'ila'i he wahine  
Hanau Ki'i he kane  
Hanau Kane he akua  
Hanau o Kanaloa,

670 O ka he'e hau na wela ia  
Ao

Hanau ka pahu  
O Moanaliha

Kawaoma'aukele ko laua hope mai

675 Ku-polo-li'ili-ali'i-mua-o-lo'i-po  
kona muli  
O ke kanaka ola loa o lau a lau  
ali'i  
O kupo, o kupo  
O kupa, o kupa, kupakupa, ku--pa  
O kupa kupa, keke'e ka noho a  
ka wahine

## EIGHTH AGE

From embryo the infant child  
has formed until now,

650 A child in the time forty-thousand  
times forty-thousand fold  
night(s) ago,  
The child in the time of night that  
passed afar,  
Mankind born by generations;

Born men for the narrow,  
Women for the broad course;

655 Born (in) the gods' night,  
Mankind to stand up  
Mankind to lie down,  
Lying down together in the night  
long ago;

Grey-haired the men who led them  
here,

660 Reddish the forehead of the god,  
Darkened that of the man,  
Bearded white the chin;  
Calm the time of night forty-  
thousand times forty  
thousand nights ago,  
Serenely calm the night that  
passed afar

665 Was La'ila'i then called;  
Born La'ila'i a woman;  
Born Ki'i a man;  
Born Kane a god;  
Born Kanaloa, the octopus (god),  
670 Through the striking heat of  
Daylight.

Born the storms  
In the season of Moanaliha,  
When Kawaoma'aukele came after  
them,

675 (And) Ku-polo-li'ili-mua-o-lo'i-po  
following him,  
A man whose long life produced  
many chiefly descendants,  
Many generations in the night,  
Many who were born as native  
sons who settled and stayed,  
Born of woman

680	O La'ila'i wahine o ka po he'e[nalu] mamao O La'ila'i wahine [o] ka po kinikini Noho i kanaka o ka po kinikini Hanau o Hahapo'ele he wahine Hanau o Hapopo he wahine	680	La'ila'i, woman of the distant night in ages past, La'ila'i, woman who lived many nights ages ago, Lived with men in the nights past, When Hapo'ele was born, female, Hapopo was born, female,
685	Hanau o Maila i kapa o Lopalapala O 'Olohe kekahi inoa Noho i ka 'aina o Lua Kapa ai ia wahi o 'Olohelohe Lua	685	Maila, called Lopalapala, was born, 'Olohe (was) another name for her When she lived in the land of Lua, That place called 'Olohelohe Lua, When men were naked as they worked in daylight,
690	'Olohelohe kane hana i ke ao 'Olohelohe ka wahine hanau i ke au	690	Unclothed the women who bore their children in that time
695	Noho mai la ia kane Hanau La'i'olo ia kane Hanau Kapopo he wahine Hanau Po'ele-i, hanau Po-'ele-a Ko laua hope mai o Wehiloa Na lakou nei i hanau mai Ka kikiki, ka makakaka Ku nu'u muiona ka muimui ana O kanaka lele wale, o kanaka nei la	695	When [La'ila'i] lived with Kane, (And) La'iolo was born to Kane; Born Kapopo, female, Born Po'ele-i, born Po'ele-a, (And) after them, Wehiloa, By whom (more) were born, Little squeaking ones, And more weaned to silence, Who became mature men, Adults, human beings, people here now.
700	Ua a--o--.	700	It was day.

## KA WA EIWA

O La'ila'i, o Ola'i-kū-honua  
 O Wela, o Owe; o owa ka lani  
 Oia wahine pi'ilani a pi'ilani no  
 Pi'iaoa lani i ka nahelehele

705 Onehenehe lele kulani ka honua  
 O kama ho'i a Ki'i i 'o'ili ma ka lolo  
 Puka lele, lele pu i ka lani  
 Kau ka 'omea ke aka 'ula  
 ha'iha'ilona  
 Kau i ka lae, he hua ulu 'i'i

710 Kau i ka 'auwae, he huluhulu 'a  
 Ka hanauna a ia wahine  
 ho'opaha'oha'o  
 Ka wahine no 'Iliponi, no loko o  
 'Iipakalani  
 No ka 'aunaki kuku wela ahi  
 kanaka  
 Oia wahine noho i Nu'umealani

715 'Aina a ka aoa i noho ai  
 I hohole pahiwa ka lau koa  
 He wahine kino paha'oha'o wale  
 keia  
 Me ia ia Ki'i, me ia ia Kane  
 Me ia i Kane a ka po kinikini

720 Moe wale ke au o ia kini  
 He kini ka mamō ka po inaina-u  
 Oia no ke ho'i iluna  
 O ka la'ala'au aoa o Nu'umealani  
 noho mai  
 Ho'okauhua ilaila, ho'owa i ka  
 honua

725 Hanau Hahapo'ele ka wahine  
 Hanau Hapopo ilaila  
 Hanau 'Olohelohe i muli nei  
 O ka 'apana hanauna ia wahine la  
 Ua ao--

## NINTH AGE

La'ila'i serene, 'Ola'ikūhonua,  
 earth calm, placental bond  
 between man and earth,  
 In searing pain, moaning, the  
 chiefess cries out,  
 This woman of highest rank  
 ascending to heaven,  
 In the forest her agony sounds to  
 the sky,

705 Sounds of chiefly birth issue from  
 the placenta,  
 The child of Ki'i appears at the  
 center,  
 Comes out uplifted into chiefly rank,  
 Tinged red the foetal color signs are  
 set,

710 Set on the forehead short infant hair,  
 Set on the chin a hairy down,  
 The generation of this mysterious  
 woman,  
 The woman of 'Iliponi, skin purple-  
 black, in 'Iipakalani,  
 The nether firestick that fires  
 human passion,  
 This woman who lived  
 in Nu'umealani,

715 Land where the chiefly power  
 existed,  
 She stripped the dark leaves of koa,  
 This woman of awesome being,  
 With Ki'i, then with Kāne,  
 With Kāne through the immense  
 night,  
 When these generations slept  
 together,

720 That multiplied in the night  
 descendants compatible with  
 each other,  
 That became the senior line  
 Of titled chiefs who lived in  
 Nu'umealani,  
 Who were conceived there, born  
 alive on the earth

725 Born Hāhāpō'ele, female,  
 Born Hapopo,  
 Born 'Olohelohe after them,  
 On the maternal line of that  
 generation,  
 It was day.

## KA WA 'UMI

- 730 O Maila, o La'ila'i ka paia  
O Kane a Kapokinikini ka pou,  
o Ki'i ka mahu  
Hanau La'i'olo'olo i noho ia Kapapa  
Hanau Kamahaina he kane  
Hanau Kamamule he kane
- 735 O Kamakalua he wahine  
O Po'ele'i e-holo, kama  
O Po'ele-a-hole, kama  
O Wehi-wela-wehi-loa;  
Hoi hou La'ila'i noho ia Kane
- 740 Hanau o Ha'i he wahine  
Hanau o Hali'a he wahine  
Hanau Hakea he kane  
Hanau ka muki, muka, mukekeke  
Muka, kukuku, kunenewa
- 745 Moku, monu, mumule ana  
Mumule wale ana Kane i ka mule  
I mule, i ke'eo, i ka maua  
I ka wahine weweli wale  
Pe'e e Kane ia e ho'ohanau kama
- 750 E ho'ohanau kama i kana keiki  
Ho'ole ka lani ia ia muli wale  
Ha'awi i ka 'ape kapu ia Ki'i  
E Ki'i no ke moe ia ia  
Ha'ili Kane i ka mua, heleu wale
- 755 Ha'ili o Ki'i o La'ila'i i ka muli  
lae punia  
Pehi i ka pohaku hailuku ia Kane  
O kani ka pahu ke wawa nei ka leo  
O ka'u ho'ailona ia, ka ka muli  
Huhu lili Kane moe muli ia mai ia
- 760 O ka ewe o kana muli i muli ai  
Haku ai kama hanau mua  
Imua ia La'ila'i, imua ia Ki'i  
Ka laua kama hanau lani ia  
Puka--

## TENTH AGE

- 730 O Maila, called La'ila'i, the calm  
side (of the house),  
O Kane, pillar of Kapokinikini,  
Ki'i the one undisturbed.  
Born La'i'olo'olo who lived in Kapapa  
Born Kamahaina, male,  
Born Kamamule, male,
- 735 Kamakalua, female,  
Po'ele'i, miscarried, child,  
Po'ele'a, miscarried, child,  
Wehi-wela-wehi-loa;  
La'ila'i went back to live with Kane,
- 740 Born Ha'i, female,  
Born Hali'a, female,  
Born Hakea, male,  
Born those fed at the breast,  
Smacking, sputtering, unsteady ones
- 745 Held up, sulking, speechless ones,  
Kane speechless kept silence,  
Quiet about defeat of his  
succession,  
Because his were only female issue,  
No males having been born to him,  
That descendants born to his  
children  
Would be denied seniority after him;  
(She) had given the sacred 'ape to  
Ki'i,  
It was Ki'i who had slept with her;  
Kane cursed that the first of his  
loins,
- 755 Cursed that Ki'i's by La'ila'i had cast  
them behind,  
They had flung this injury like  
stones at Kane,  
When drumbeats had announced  
the message  
That gave signal his was the junior  
succession,  
Kane was angry that his were later  
On the lineage of those to succeed  
him  
As chiefs of the first-born son,  
The first-born son of La'ila'i was  
first by Ki'i,  
The son of theirs born chief then.  
Came forth.

## Interpretation

1. Structure
2. Style
3. Theme (Levels of meaning)

- (a) Birth of the Cosmos
- (b) Birth of the Chief

### 1. Structure

The Kumulipo has sixteen cantos, seven for the night (Pō), which is a time for beginnings of parts of the larger world:

- |           |   |       |
|-----------|---|-------|
| (a) space | - | au    |
| (b) time  | - | au    |
| (c) earth | - | honua |
| (d) sky   | - | lani  |

and nine for the day (Ao), the world of light, or of the history of mankind.

Each canto (wā) is a length or span of time, a limited segment of the larger abstract of 'time' (manawa).

Each wā is also a 'sounding,' as from an open mouth, in shouting (wā, uwā) when one takes his first breath of life.

To cry, uwē, is probably derived from uwā, as is uwō, and uwi, emphasis changing due to the prevailing vowel sound, ā (back) and fronting of that sound forward, to ē, ō, i.

The sounds of an infant are uwā when taking its first breath, uwē when crying for attention, uwi when in pain, and uwō when calling one's name and expecting a response throughout life. These vowels are open, unobstructed, unconstricted by consonants, as of the open throat and voice, as of life. At death the mouth closes.

The sixteen cantos separate night (pō) from day (ao). Ao (daylight) means 'world', as of daily life in the sunlit world, the natural and social environment.

Each of the wā separate into categories the living beings in the world as though attempting to classify them into groups of related forms. The emergence is through birth (hānau), one identified creature or being giving birth to another which is nearly but not exactly like it.

In this context emergence (hānau, puka) is an evolving of what may be classified into phyla, genera and species, as in our present system of taxonomy, by selecting characteristics based upon likeness of structure, shape, and needs.

As each new form of life appears, it seems to be more complex than its predecessor. The effort to classify and to relate emerging forms into recognized groupings through some common aspect, whether of shape, color, or other unique quality that is an advantage, such as flying (rather than walking), respiring in water rather than in air, is a kind of taxonomy.

The structure of the wā of the Pō through the first four wā, when the night is giving birth, is in four parts:

(1) An introduction (prologue) to the wā, in which the cosmic parents, male and female, are named;

(2) A series of births, relating genera and species;

(3) A refrain (puana) in which more births occur but in which there is also a linking of life in the sea (kai) with another form of life on land (uka) which "guards" (kia'i) it. The land form, in a sense, watches over the other in the sea, suggesting a relationship perhaps due to seasons, periods of gestation (as in fish) and flowering of plants, that when one is in bloom the other may be spawning.

(4) A closing statement (epilogue) that interrupts time and the progression of births and by summarizing the narrative in preparation for the next wā.

The refrain repeats lines which pertain to the feeding and respiring requirements of the prevailing categories of life forms separated by the wā. For that reason the puana of the first four wā cantos differentiates those elements which are fundamentally necessary to sustain life as changes of form or environment evolve, for example, which must respire in salt and fresh water (Cantos 1 and 2), air (Canto 3) or in air and water (Canto 4).

The puana refrain is repeated except for one line that makes the differentiation by singling out the medium in which food is ingested or shifting the habitat required for respiration and food intake and characterizes the limiting factors that separate one category from another in the time frame in which those limitations occur:

Canto 1: He nuku, he wai ka 'ai a ka la'au, 'water is the food of plants';

Canto 2: He nuku, he kai ka 'ai a ka i'a, 'sea (salt) water is the food of fish';

Canto 3: He hua, he i'o ka 'ai a ka manu, 'fruit(s)/seed(s), flesh are the food of bird(s);

Canto 4: He nuku, he la'i ka 'ai a kolo, '(green) leaves are the food of crawlers (insects, lizards, etc.).

The puana is otherwise consistently repetitive as it states the basic theme of generation:

O kāne iā Wai'ololi  
O ka wahine iā Wai'ololā

Male for the narrow waters  
Female for the broad waters  
He pō uhe'e i ka wāwā  
He nuku, he wai ka 'ai a ka lā'au  
[or substitution per canto]  
O ke Akua ke komo, 'a'oe  
komo kanaka

It is a night gliding through the passage  
Of an opening; a stream of water is food for plants;  
It is the god who enters, not as a man does he enter.

The word "god", akua, becomes important in the puana in that "god" (akua) "enters", "comes into" (komo) the world which is forming. The akua comes into the forms as the element in which they respire and also in the body form into which they are born and emerge, with one limitation, that the akua is not entering into elemental living form as a human being. That will not happen until the eighth wā when man is born with the gods in the period of light (Ao).

A pairing of certain opposites is consistent with the idea that the universe is dichotomous, a duality of maleness (kāne) and femaleness (wahine).

The dichotomy should not be thought of as that which pits man (kāne) against woman (wahine). Mankind has not yet entered ('a'oe komo kanaka).

Gender differentiation is not limited to sexuality, to procreation, but to those elements that as yet have no body but operate in nature by creating a balance of extremes in color, temperature, texture, position, shape, manner and sex. While such extremes may exist in the natural order, they are also limited, as in the nature of the objective world itself, and also as a result of perception, presupposing the presence of a silent observer. It is your own infant being that once was not awake. You are the watcher, and you are seeing yourself emerge as the deity (akua) emerges. Consciousness reaches back through time as you reach back to the time when your memory was elsewhere, in your parents and theirs, as it has been developing from the beginning of time. You have entered into the world as all others before you entered, but in another sense

you have always been there, at one time yet unborn.

Perception is inherent in how we react with our senses, and their inherent limitations, i.e., what is hot is not cold, what is liquid is not solid, what is wet is not dry, what is living not dead, what is male not female, etc. We know what is by what something is not, by antithesis, by seeing differences in sets of opposites:

<u>Male</u>	<u>Female</u>
sky	earth
sun	moon
light	dark
air	solid
right	left
up	down
east	west
north	south
odd	even
life	death
seaward	landward
upright	lying down
male	female
narrow	broad
hot	cold
fire	water
etc.	

The fifth, sixth, and seventh cantos do not have this puana. They are a single narrative throughout, with emphasis on one animal per canto: i.e. pig (Canto 5); rat (Canto 6); dog (Canto 7).

(1) pig = "night digger", i.e., farmer, the first tiller of the soil, introducing cultivation of raw land, irrigation in the lo'i taro fields, animal husbandry [Canto 5];

(2) rat = "nibbler", as of fruits on trees, without eating the whole of a single fruit, but small bites out of many on a tree; i.e., the konohiki land managers who levied taxes on the provender of the ahupua'a [Canto 6];

(3) dog = "companion", as of a man going into the next world; a spiritual companion; bat = forest-dwelling,

represents the god of birth, affording security [Chant 7]. [Note: the bat (pe'a, 'ope'ape'a) appears in this chant as an observer];

(4) man = "intelligent being" [Chant 8, daylight (Ao), having na'au ao (daylight-intestines, an inner light), with several gods (akua).

## 2. Style: Parallelism and repetition.

*O ke au i kahuli, wela ka honua*  
*O ke au i kahuli, lole ka lani*

(a) Antithesis (vertical), pairing of opposites:

*O ke au i kahuli, wela ka honua*  
*O ke au i kahuli, lole ka lani*

*O ka lipo o ka la*  
*O ka lipo o ka po*

honua - earth  
 lani - sky

la = day  
 po = night

(b) Assonance (repetition of vowels):

*O ka lipolipo, o ka lipolipo*  
*O ka lipo o ka la*  
*O ka lipo o ka po*

*O piha, o pihapiha*  
*O piha-u, o piha-a*  
*O piha-e, o piha-o*

### 3. Theme (Levels of Meaning): Structure of Time and Space.

This matter, theme, focuses on the subject of the beginning of the universe.

There are key words in the prologue for this level of meaning which specifically pertain to how the creation begins in *spontaneous generation*.

There is a "given", a combined existence of both space and time (au). On another level of meaning this is the "stem" (au) of a lineage, as in genealogy, when the element of human birth is considered, and linear time creates the history of ancestors [Cantos 8 through 16].

On the cosmic level, au is a current or flow, an eddy; a passing of, or movement, a stirring of an otherwise motionless state.

The direction of motion is over and under, *kā + huli* (causative + verb). On another level of meaning it is to turn over the soil and to plant, as the taro top (*huli*).

Motion in space and time effects the heating up of earth (*wela ka honua*). How is such motion visible?

It is seen in the night sky as a reversal or inside-out change (*lole*). But what is changing, what is reversing, turning inside out (*lole*)?

The sun, moon, and stars move, and the combined movement appears as though the whole sky moves over and under. Light brightens (*ho'omalalama*) the moon (*malama*), and it is coming from the sun (*lā*):

O ke au i kuka'iaka ka lā  
E ho'omalalama i ka malama

"At the time when the sun (*lā*) stood shadowed" (*kūka'iaka*), from *kū*, 'stand', *ka'i* 'to lead' (as in a procession, following), aka 'shadow', to actively cause (*ho'o-*) 'light' (*-malalama*) to

'brighten' (*ho'o-malamalama*) the moon" is a statement in which 'moon' is the direct object of the verb *ho'omalalama*, and the verb is prefixed by a causative (*ho'o-*), i.e., the sun caused light on the moon.

To sun and moon is added the 'season of Makali'i' (*ke au o Makali'i*), introducing the concept of a cycle (*au*) of time associated with a specific cluster of stars, the Pleiades (*Makali'i*):

*O ke au o Makali'i ka pō*

The season (*au*) of Makali'i is when the cluster of the Pleiades is visible on the eastern horizon in the evening (after sunset) in early November until they reach maximum height at midnight, about November 17th-18th and transit the zenith. Afterwards they decline until visible on the western horizon before morning sunrise, then go out of sight until seen again on the eastern horizon before sunrise, about April-May.

A table worked out for the cycle of the Pleiades has been done for Latitude 21 degrees north (about the latitude of Moloka'i and O'ahu, between 21 and 22 degrees north) by Johanna Broda [1981: 98]. (The dates at the top are for 1500 A.D. and in parentheses for 1980. The dates have an approximate validity).

26 April-29 May  
(3 May- 4 June)  
*Period of Invisibility*

The Pleiades are not visible. During this period, the first passage of the sun through the zenith occurs at Tenochtitlan [21 degrees north, Moloka'i] (17 May).

29 May  
(4 June)  
*Heliacal rising (dawn)*  
(The Pleiades rise in the east at dawn,  
before sunrise, in parallel with the sun)

This is the first day on which the Pleiades rise in the east before dawn. From this date on they rise earlier than the sun each day until November. During this period they are, at first, seen only at dawn; progressively, they can be seen during a longer span of night until dawn.

1 November  
(7 November)  
*Heliacal setting (dawn)*  
(The Pleiades set in the west before dawn  
and rise after sunset in the east, contrary to  
the sun)

The Pleiades appear after sunset in the east. Between 1 and 18 November they can be seen from sunset (rising in the east) to sunrise (setting in the west), i.e., during this period they are visible throughout the night..

(22 November)  
*Zenith at midnight*

The Pleiades pass the zenith at midnight. This date coincides with the nadir of the sun at Tenochtitlan (six months after 17 May)

18 November  
(25 November)  
*Heliacal rising (dusk)*  
(The Pleiades rise in the east after sunset  
and set in the west before dawn, contrary to  
the sun)

The Pleiades begin to set in the west before dawn. From November to January, they are visible from sunset (rising in the east) until sometime before dawn (setting in the west).

26 April  
(3 May)  
*Heliacal setting (dusk)*  
(The Pleiades set after sunset in the west,  
in parallel with the sun.)

From 18 November until 26 April the Pleiades set earlier each day until, on 26 April, they set in the west before sunset. This means that they disappear from sight for a period of approximately one month, until, on 29 May, they begin to rise again in the east in dawn.

The above suggests the approximate situation also for Hawaii at Latitude 21 degrees north, as for Moloka'i, where the calendar collected by missionaries in the 19th century noted the month of Makali'i (Pleiades) was April-May.

If on Moloka'i the Pleiades had set the calendar for the year (makahiki) to begin in April-May (Makali'i), then the officiating kahuna of that island had been following a practice of beginning the year by the heliacal risings of the Pleiades on the east before sunrise. The calendar has apparently on Moloka'i been appropriately adjusted for the Pleiades a month later, (April-May) after the vernal equinox (March 20-22).

It may not mean that the kahuna knew the precession of the equinoxes, but it does suggest that he, or his ancestors had at one time known the rate of change and when necessary to apply correction.

If the calendar was also set when the sun had entered the vernal equinox when the season of Makali'i was March 20th - April, rather than April 20th to May, it means that several generations of kahunas must have preserved knowledge of the rate of change over a period of 2,160 years while advancing the months later and later in order to keep pace with the precession. Allowing 25 years to a generation, it would have required about 86 generations to maintain the record.

If on Moloka'i the kahuna knew that the Pleiades had been (at one time) on the eastern horizon in March-April at the vernal equinox, the active period when the sun moved into Aries at the vernal equinox began about 1800 B.C. and lasted until about 1 A.D. Because the Pleiades, however, were close to the hind part of the constellation of the Ram, the April-May Pleiades month continued through to about the fourth century A.D. after which it was probably moved to May-June.

We know from the history of astronomy and astrology recorded in the annals of India, Babylonia, and Egypt that constellations in the tropics through which the sun moves during the ecliptic, annually, "precess", move in a regressing circle of time. The zodiac, as it is called, developed beyond the Pacific, in the region of the Indian Ocean and continental expanse between India, the Persian Gulf and Euphrates River into Africa and Egypt before spreading into Greece and Rome. Another zodiac developed in the north, Tibet and China, and still another in Central America.

There is no zodiac in Polynesia, but there are other traditions that indicate a knowledge of the ecliptic and, probably, the shape of the sun's analemma as a track of the cosmic spider coursing north and south called *ke ala a ke ku'uku'u*, an analogy for the sun's motion between the solstices and equinoxes. It spins a web as a grid across the sky in which the stars also course.

Strangely enough, a much older and identical parallel to that analog existed in India with a date for the tradition set in the verses of the Rig Veda to 3517 B.C. [Sengupta, P.C in Johnson, R. K, Kumulipo, 1981: 41].

*"Ordaining the days and  
nights,  
Like a cunning spider,  
For six months south  
constantly,  
For six north the sun goeth"*  
[Kausitaki Brahmana, xix, 3; Rg  
Veda Brahmanas]

The analog is not only present in the formal Rig Veda but also in the folktales of various tribes in India indicating a very old tradition in wide circulation:

*"Long ago, when the earth was covered with water, Rumrok hung a boar in a spider's web up in the sky"*  
[Orissa tale].

Where were Polynesian priests in 3517 B.C.? Polynesian occupation of nuclear West Polynesia is dated by La Pita pottery to about 1100 B.C. in Tonga although occupation dates there may be earlier. A carbon date for the occupation of Samoa is about 1500 B.C.

The Malayo-Polynesian tanged adz appeared about 3000 B.C. on the coast of South China as far north as the Yellow River. The genetic DNA of Indonesian races in Madagascar has been traced to South Borneo. Petroglyphs of a peculiar back-to-back squatting figure have been dated at a stratigraphic level of 6000 B.C. in Indonesia and Melanesia that do not appear in Polynesia until Hawaii in the fourth century and Easter Island in the seventh century A.D. How persistent is human memory that something so minute as a petroglyph is executed in the same detail over a time period of nearly 7,000 years and over an area of nearly 5,000 miles of the Pacific Ocean?

As recently as a week ago it was announced that bone material excavated in Brazil has been dated to about 11,500 years ago [ca. 9,500 B.C.] and assigned to origins in the South Pacific. Brazil is on the Atlantic Ocean, indicating that the route of migration was around the Cape of Good Hope to South America. [See Honolulu Advertiser, May 22, 1998, Page A3, "Fossil Rewrites American Archaeology"]:

"The discovery in southeastern Brazil of an 11,500-year-old skull--the oldest in the new world--may help to rewrite the theory of how the Americas came to be settled. A scientist studying Luzia, as the

fossil is called, says his findings don't fit the old idea that the first Americans crossed the Bering land bridge in a single massive migration between 11,000 and 10,000 years ago. Researchers on separate projects have been coming to similar conclusions."

"Luzia apparently came from the South Pacific...This is the first known American,' [Walter Neves].

"In 1995 Neves began to compare Luzia with modern humans. He found that Luzia's skull and teeth had characteristics similar to people of the South Pacific...That strengthened his belief that Pacific tribes reached the Americas before the Mongoloids, who arrive 8,000 to 9,000 years ago...Neves' theories jibe with the findings of U.S. anthropologists Joseph Powell and Erik Ozolins, who tested samples from North and South America."

To that we add our observation that there is no land bridge between the South Pacific and Brazil for any South Pacific people moving around Africa and Antarctica 11,500 years ago, and what navigational strategies would have been needed to make landfall between the South Pacific and the east coast of Brazil is not difficult when the mass on which to beach the canoe is a continent all the way from north to south.

Let us return, however, to the conservative view that Polynesians invented everything all by themselves in the middle of the Pacific from about 1500 B.C. and that their ancestors developed their navigation and calendrical systems in situ entirely there.

Then there is sufficient time between 1500 B.C. and 1500 A.D. to observe the rate at which stars along the horizon shift their azimuths over 3,000 years, and that the month in which the sun had been rising when a constellation or star was just going out of sight before dawn light at the vernal equinox was at another azimuth consistent with a shift in the precession time of a month away. If that was done,

then, the span of that distance of movement along the horizon would have been measureable.

If this is how the "precession" was discovered or known to Polynesians, then no contact with any other people and no system of keeping a record over 2,000 years would have been necessary to make accurate adjustments at certain times.

It takes about 500 years for the shift to be noticeable. While doing archaeoastronomic guesswork on Kaho'olawe and asking astronomers to bring up the data on more precise instruments in Kilolani Planetarium, it was accurately determined from the computerized Voyager program that the following would have been true for a 500-year rate of shifting in azimuth of zenith stars, as noted for the latitude of Kaho'olawe [20 degrees 34 minutes north latitude]:

#### Zenith Stars for Hawaii

(1) 2000 years ago [ 8 A.D.] Regulus - Alpha Leonis - Magnitude [Mag.] 1.45; Tejat Posterior - Mu Geminorum - Mag. 2.89.

(2) 1500 years ago [ 492 A.D.] Scheat, Beta Pegasi - Magnitude 2.42; Alpheratz, Alpha Andromeda, Mag 2.06.

(3) 1000 years ago [ 992 A.D.] Denebola, Beta Leonis - Mag. 2.13 Pleiades.

(4) 500 years ago [ 1492 A.D.] Arcturus, Alpha Bootes - Mag -.04; Hamal, Alpha Arietis - Mag. 2.01.

(5) Now [ 1992 A.D.] Zosma, Delta Leonis Mag. 2.56; Sharatan, Beta Arietis - Mag. 2.63. [Peter Michaud, December 29, 1992 in Johnson, Rubellite K., 1992 (Kaho'olawe)].

The apparent fixing of the calendar year to April as Makali'i on Moloka'i when missionaries began noting various island calendars in the early 19th century represents a vestige of Polynesian tradition carried out locally of noting horizon positions of rising stars, sun, and moon, the movement of the sun between the solstices and its position at the equinoxes, and the rate at which these changed over long periods of time. It could have been done after the Hawaiians arrived here about the fourth century A.D., but given the fact that their navigational system came from the experienced and practiced wayfinding art that began at least by 3000 B.C. by which West Polynesia was settled by 1500 B.C. would mean their methods of observation were not without precedent elsewhere.

Anthropologists found that Polynesians of Futuna in West Polynesia named the month of May-June for Matariki (Pleiades). This is evidence for the antiquity of a tradition that must have existed in West Polynesia for noting heliacal risings of the Pleiades, presupposing that at one time it had been April-May and March-April between 3000 B.C. (March) and 1800 B.C.

But we must deal with realities about the formation of Polynesian culture in Polynesia. The Polynesian people were not in West Polynesia in 3000 B.C. They may have settled there by 1800 B.C., but dates established by archaeological findings place them there in 1500 B.C. If Polynesians brought the Pleiades agricultural calendar with them, then their ancestors had had it, but not as Polynesians. They came from another place, perhaps several places, along the Indo-Pacific migration routes where their ancestors were quite likely a mixture of South Asians, Southeast Asians, and Malays.

The calendrical computations which were made by Polynesians had antecedent practices in India, Babylonia, and Egypt:

- (1) the precession of equinoxes;
- (2) setting the beginning of the year to the vernal equinox (March-April);
- (3) setting the beginning of the agricultural year to the autumn equinox (September- October);
- (4) locating the azimuths of the sun's rising and setting points along the eastern and western horizon;
- (5) fixing the solstitial azimuths of the sun's risings and settings at the extremes of the sun's northerly and southerly stops, so as to mark the tropics;
- (6) determining the nadir of the sun and zenith passage of the Pleiades per latitude in the tropics, and
- (7) determining the zenith passage of the sun contrary to the Pleiades at nadir.

It may be inferred that the ecliptic and precession of equinoxes were thus known to the Polynesians before European contact.

The longevity and greater age of these traditions and observations in the Indo-Mediterranean since 3517 B.C. allow greater likelihood that the ancestors of Polynesians brought the system in use into the Pacific with them.

The zenith passage of the Pleiades was an observation aligned to the position of Thuban (alpha Draconis) encoded into the alignment of the Great Pyramid of Cheops four thousand years ago for the exact latitude of Giza in 2170 B.C.:

"...Astronomer royal of Scotland C. Piazzi Smyth was able to estimate, for example, that the then pole star, alpha Draconis [Thuban] was in alignment with the Descending Passage of the Great Pyramid at the meridian below the pole in 2170 B.C. when another very important group of stars would have been crossing the meridian above the pole: the Pleiades.

In other words, when alpha Draconis was visible down the Descending Passage, the Pleiades would have been crossing the meridian in the vertical plane of the Grand Gallery at midnight in the season of the autumn equinox..."

"...The heliacal orientation of the Pleiades to the first Babylonian decan and lunar station in the ecliptic, beginning the year at the vernal equinox about March 20-21st, means that the Pleiades would have occupied the first position in the calendar between 2000 and 1800 B.C. About 1800 B.C. the vernal equinoctial position was vacated by the Pleiades and assumed by lambda Arietes, whereupon that point, although now actually in Pisces and soon to be in Aquarius, has since been referred to as the First Point in Aries. At the same time the Pleiades were moved to the second month after the vernal equinox, corresponding to April, or the fourth decan position (April 20th) in the Babylonian calendar..." [Johnson, Kumulipo, 1981: 23; Tompkins, 1971: 86-89]

There is, however, an indigenous feature in calendrical computation that is uniquely Hawaiian.

In pre-contact times the Hawaiian calendar (dedicated to Lono-i-ka-makahiki, god of time), was set, not to the Pleiades, but rather, to the *first new moon after the first evening rise of the Pleiades on the eastern horizon*, presupposing the zenith passage of the Pleiades about November 17th-18th at the latitude of Hawaii.

That would mean that several cycles of time may be involved:

- (1) solar time, daily [rotation]
- (2) solar time, annual [revolution]
- (3) lunar time [synodic]
- (4) lunar time [sidereal]
- (5) sidereal time

The adjustment to several cycles of time may be considered necessary to an understanding of the time frame in which the prologue of the Kumulipo sets the framework for all time (*ke auau ka manawa*) into the first five lines of the prologue.

Insofar as the Pleiades is situated in the prologue, its appearance on the eastern horizon was used generally to fix the beginning of Hawaiian calendars operating on each island between autumn equinox and winter solstice. They are not uniformly identical, although most probably on every island the makahiki festival took place about the same time in November.

But why is the festival of first fruits set in November? There is no frozen winter, and harvest time is variable. Even harvesting of a taro crop is not seasonally determined. A crop may be harvested earlier or later than the full term of maturity.

The season of harvest being thus variable, why is it necessary to declare November as traditional harvest time? Were the ancestors of Polynesians at one time living in a place where it was necessary to harvest before winter began? Did some of them once live farther north where winters are cold, and the crop had to be stored before the frost?

The season of Makali'i, when the Pleiades are on the eastern horizon, is also the beginning of the agricultural year set aside to Lono-i-ka-makahiki, god of annual time. It is also significant that Lono is the star Sirius, and Sirius is the zenith star for Tahiti at a parallel of latitude between 19 and 20 degrees south. Sirius is also zenith star for Fiji [Viti Levu]. The zenith passage of Sirius was as significant to those ancestors of the Hawaiian people as the zenith passage of the Pleiades would have been at 20 degrees north latitude, in 992 A.D.

## Gender in Space

Hānau Kumulipo i ka pō he kāne  
Hānau Pō'ele i ka pō he wahine

The first two "creatures" of cosmic birth have no bodies, shape, or concrete form. They are maleness and femaleness, abstractions of darkness developing from "light-darkness" (Kumulipo) and "dark-darkness" (Pō'ele).

They anticipate Sky-Father (Wakea) and Earth-Mother (Papa), the "primal pair" of world cosmogonies in which sky mates with earth.

Sexual differentiation is a process observed in biology rather than in space or time. We may notice forms in nature that are trying to become something else from what normally has been, trying to metamorphose or bifurcate. Some seaweeds are plants becoming animals, like coralline algae, or vice versa. Ferns go through a metamorphosis, too, between gametophyte and sporophyte generations. We may see animals that during their lifetime change from male to female, as wrasse fishes do. When they are young they are male and fertilize female wrasses, then when they are older they become female and in turn produce eggs to be fertilized by younger males. They are not true hermaphrodites, like worms, having both male and female sexual parts. Flowering plants are also bisexual, with male and female parts in one flower. Then there are lauhala trees that are unisexual, one male (hinano) with flowers and another, female, with fruits.

We may ask a question. When and where does the potential for sexual differentiation exist?

Certain forms of life do not require sexual reproduction. They are of neither sex and reproduce themselves by fissure, by cell division. The new creature is exactly like its predecessor. The process becomes multiplication of one into many

like individuals. They remain very simple, and they replicate asexually.

Being and becoming with unending repetition does not appear, however, to have fostered the development of separate individuals as knowing beings. Had the creation stabilized with life forms never advancing beyond the level of the amoeba, human or animal intelligence would have been non-existent.

It may seem ridiculous to posit that intelligence in the universe has elemental form, unseen form existing as a kind of silent awareness somewhere. When did the "one" become more than one and at what stage of the cosmic process? It divided the darkness between darkness in relation to sight and darkness in relation to time:

Hānau Kumulipo i ka pō he kāne  
Hānau Pō'ele i ka pō he wahine

The "source" (kumu) of darkness is identified as male. The darkness of night as a period of passing time is female.

"God" (akua) does not enter until this stage has been reached and reechoed in the theme lines of the refrain:

O kāne iā Wai'ololi  
O ka wahine iā Wai'ololā.

The rudiments of perception, as it were, precede the "entering" (komo) of "god" (akua).

Where does perception begin in the Kumulipo? In the opening line: O ke au i kāhuli *wela ka honua*.

The effects of motion (kahuli) are felt before they are seen.

Not only 'heat' (wela) is felt, but also 'pain' (wela). How is it felt? By the honua, which is a placenta, as of the earth's placenta and the human placenta.

When the placenta pains (wela) then the "chief" (sky) reverses its position to be born. The spasm of pain (wela) when the human infant is near birth reverses the head so that its position is downward in order to be born.

What are foetal perceptions of the infant environment in the womb like? They are not part of memory. Of what is the infant's memory of time spent in the time of forming? When does his night become daylight? Of himself he is only dimly aware. Is he entirely without the powers of perception? His eyes are unseeing even when he is born into the light, yet all around him is an activity in darkness. Amniotic fluid is moving, warm blood. He comes out of a fluid night into the air to breathe.

What knowledge has he of father or mother? Where did his life truly begin? Was it at the moment of human conception, or at the moment when the cosmos set into motion all of the requisite elements that created him?

How do we come to know all of this? Where do we begin to know?

## Evolution of the species

A rudimentary effort to taxonomize genera and species, or at least to show an evolutionary progression from simple to more complex forms of life, seems to be an important consideration in the Kumulipo.

It dominates the first four cantos, in which may be seen an attempt to lay a foundation for taxonomy, or classification of species in relation to genera.

The Hawaiian poets of the Kumulipo seemed to observe that life had begun near that point where waters of stream and ocean mix, around reefs and mouths of streams flowing into the sea.

*O ka walewale ho'okumu  
honua ia*

From the source in the slime was  
the earth formed...

Walewale is the slime that comes out of living coral to create the skeletal limestone body in which the polyps live:

*Hānau ka 'Ukuko'ako'a  
Hānau kāna he 'Ako'ako'a, puka...*

Born the coral polyp  
Born of him a coral colony emerged

Walewale is also amniotic fluid, as of the human placenta (honua).

The order of births (hānau, puka) produces a general category of classification per canto (wā) or period of time:

- (1) Canto 1 - Marine Invertebrates  
Seaweeds, Land Plants
- (2) Canto 2 - Marine Vertebrates
- (3) Canto 3 - Winged insects, birds  
[Egg-bearing, flying]
- (4) Canto 4 - Reptiles and Animals with  
carapace, [Egg-bearing, crawlers]
- (5) Canto 5 - Pig (mammal)
- (6) Canto 6 - Rat
- (7) Canto 7 - Dog (with bat)
- (8) Canto 8 - Man

The sequence in Cantos 1 and 2 are more developed than those of succeeding cantos 3 to 8.

Cantos 5 to 8 have single animals with some names, especially for the pig, that are attempts to classify them by breed and genetic traits. On another level of interpretation these traits are symbolic of human behavior or position and occupation or status in ancient society.

The information categorized in following indicates how the evolutionary sequence is organized.

Canto 1: Marine Invertebrates

'uku-ko'ako'a ko'ako'a	Phylum Coelenterata	coral polyp [Class Anthozoa] coral colony [Genus Corallium]
ko'e-'enuhe ko'e	Phylum Annelida Phylum Nematoda	caterpillar worm worm of any kind
pe'a 'ope'ape'a 'ape'ape'a	Phylum Echinodermata Class Asteroidea	starfish small starfish (unidentified cephalopod)
weli weliweli	Class Holothuroidea	sea cucumber small sea cucumber (centipede, hairy worm; general Polynesian)
'ina	Class Echinoidea	Echinometra spp. young of the sea urchin class of sea urchin
hālula	Class Echinoidea	sea urchin with longer spikes than wana' (unidentified spp.)
hāwa'e	Class Echinoidea	Tripneustes gratilla short-spiked sea urchin
wana-kū	Class Echinoidea	'long-spined/thorny-spined sea urchin
hā'uke'uke	Class Echinoidea	Podophora atrata
uhalula	Class Echinoidea	'a sea urchin' (unidentified spp.)
pi'oe	Phylum Arthropoda Class Crustacea Order Cirripedia	barnacle
pipi	Phylum Mollusca Class Pelycypoda (bivalves)	'pearl oyster' Pinctada radiata
pāpaua	Class Pelycypoda Isognomon spp.	'hinged mussel'

'ōlepe- pāpaua	Class Pelycypoda	Acar hawaiiensis 'clam' mussel
nahawele	Class Pelycypoda Isogmonidae spp. Pteriidae spp. Pinnidae spp. Perna costellata Atrina saccata	
makaiauli 'opihi	Class Gastropoda (univalves) Class Acmaeidae Class Patellidae	'dark-fleshed limpet' 'limpet'
leho pūleholeho	Family Cypraeidae	'cowry' 'small cowry'
naka- ( 'ōni'oni'o) kūpe'e-kala	Pleurobranchus Chama spp. Nerita polita .	shell large Nerita polita
makaloa	Thais intermedia Drupa horrida	drupe
pūpū'awa 'olē 'olē'olē	Drupa ricinus Charonia tritonis	'bitter drupe' 'conch' 'small conch'
pipipi	Nerita Nerita neglecta	
kūpe'e	Nerita polita	
wi	Neritina	fresh water snail
kiki	Nerita vespertina	fresh water snail

Canto 1: Marine Invertebrates,  
Seaweeds and Land Plants.

'ekaha	Gelidium spp., limu loloa Gymnogongrus spp., limu- uaua-loli	'ekahakaha	liverwort, called limu 'ekaha (green) Asplenium nida, birds'-nest fern
'aki'aki	Ehnfeltia concinna (red sea- weed)	manienie 'aki'aki	Sporobolus virginicus (rush grass)
'a'ala-'ula	Codium edule (green sea- weed), yields red liquid; also called wāwae 'iole	'ala'ala-wai-nui	Peperomia spp., small native succulents, related to 'awa (Piper methysticum).  Also, Plectranthus australis, mint family
manauea	Gracilaria coronopifolia (stiff cylindrical stem)	kalo manauea	variety of wild taro, dusky red stem with yellow- ish shading, long narrow leaf [Handy and Handy, 1972: 87]; [*Note: This variety is planted and allowed to revert to the wild; grown in dryland terraces].
kō'ele'ele	Gymnogongrus spp., small red seaweeds (also called 'awikiwiki, ekahakaha, and kauila)	kō-punapuna	jointed sugar cane
puaki	Liagora decussata, red seaweeds	lau'aki	a rush (grass)
kakalamoa	(probably) limu kala, Sargassum spp.;	moamoa	Psilotum nudum, P. companulatum; also Hawaiian mistletoes, Korthasella.
	Cp. huluhulu-moa, a sea- weed, called hulu manu, green seaweeds, Caulerpa spp.; also called limoa		
kele	(probably) limu kele, or limu 'ele'ele, Enteromorpha spp.	ekele	(probably) limu kele, moss growing on trees in rain forests (no data).

kala	Sargassum spp; also Turbinaria ornata (brown seaweed); limu kala wai, Spirogyra spp.	'akala	Rubus hawaiiensis R. macraei
lipu'upu'u	Valonia utricularis (seaweed)	lipu'u	(no data, but probably a species of land moss)
			[*The term pu'u means knotty, lumpy; is applied to a stage in the growth of taro;
			a white variety of sweet potato;
			the pu'uka'a, a native sedge, Cyperus auriculatus, growing in marshes;
			pu'uko'a, a sedge; pu'ukolea, sweet potato tubers;
			pu'ukonane, a variety of taro.
loloa	Gelidium spp., red seaweeds; also Pterocladia capillacea	kalamaloloa	Diospyros Maba spp., the lama tree
ne	a seaweed (probably) the nehe, same as limu-kala- wai, pond scum; Spirogyra spp.	neneleau	Rhus chinensis var. sandwichensis, native sumach
huluwaena	Grateloupia filicina, red sea- weed, also called pakela-a- wa'a	huluhulu 'ie'ie	Freycinetia arborea, pandanus vine.

## Epilogue.

The epilogue of Wā Akahi, the first epoch of time, serves to identify the "god" (Akua) which has been developing, "entering" (komo) into the world:

*O ke kāne huawai, akua kēnā*

The male gourd of water, that is the  
god.

There are three referents for this male gourd. One is water itself, which is a body form (kinolau) in nature of the creator god, Kāne. Water of itself has no shape, so the huawai gourd used to hold water is a form of the god Lono in the gourd vine (kalina) and vessel (huawai) that holds drinking water. It does not hold food. The calabash gourd ('umeke) with a cover (po'i) is female. It may hold food.

The male gourd of water becomes the gourd image of Lono, Ipu o Lono, called a shrine, unu, Unu o Lono, the place of worship in the men's eating house, hale mua, which may not in ancient times ever be entered by women. Into it the men of the hale mua placed food offerings for consecration to the god Lono. Then they ate the ritual offering themselves, assuming that Lono, also, was eating with them. This joint ritual consumption, like the Christian Eucharist, was called an 'alana. Offerings made to the gods-only were mohai.

The *kāne huawai* male gourd as the akua in hua- is the male testicle containing seminal fluid, wai ola, of the god Kāne which is a power in males for procreation. The female power is in wai 'ololā, broad waters, as in giving birth (hā, to breathe out, + nau, to bite down on pain, to gnash).

Water as a kinolau came under two major gods, Kane and Lono. Lono's wai is the wai of agriculture and irrigation when rain comes down to water the fields. In this form Lono is called Lono-nui-noho -i-ka-wai, Great Lono living in water.

The wai a Kane, wai ola, in water for drinking, wai inu, or wai ola (Kāne-i-ka-wai-ola), as it is taken into the body, is a basic need. Without it we cannot live. Organisms proceed out of air and water, not out of fire.

Land as soil, rock, reef, and stratum rock is female, mother, the mineral element which returns to earth at death. Air and water are constantly being taken in and let out during life. They are not subject to decomposition, as is the flesh or mineral part of the body. Air and water return to atmosphere; flesh to the earth.

In the darkness (Kumulipo) of air and water, in the coral slime (walewale), in amniotic fluid (walewale), is the male source (kumu) of life from which night gave birth (hānau), and which was understood in the prologue. It becomes the kane huawai in the epilogue.

All body fluids are kinolau of akua Kāne: blood, saliva, perspiration, amniotic fluid (as in the placenta), digestive juices, seminal fluid, urine, tears. Body processes that require breathing, flowing of digestive juices, elimination of waste, sexual reproduction are governed by Kāne.

More basic than water is air, what is breathed in (hanu) and breathed out (hā), existing in the atmosphere as ea, living breath of god(s). Without success from the beginning at this exchange, you may not have an independent existence. The infant must breathe on his own, then drink.

Ea, breath of the gods, transcends the natural world of atmosphere into the social and political life of mankind as ea, sovereignty, 'life', as of the whole living world, nationhood, government, people. Vitality, as of the individual and the society, proceeds out of the atmosphere and environment in which all things live. Nothing respire on land except through atmosphere or water,

whether plant or animal. Nothing is more fundamental to existence of living organisms.

The container of drinking water is the hue wai, or male gourd container water made so that it could be slung from the shoulder, carried somewhere to be filled, a portable gourd flask with a narrow neck, the shape of which is implied in the refrain:

*O kāne iā wai 'ololi*

Male for the narrow waters

The word 'ololi is a compound, from 'olo, meaning to gurgle, the sound of water when it is filling up or being poured out, and li, meaning of a high tone, which, as 'ololi, is the sound of water gurgling in and out of the flask. This brings another god into the same water gourd (huewai), Lono, god of sound, in the sound emitted and sound heard as well as the power of hearing. The two akua are in the one vessel, the huewai.

The male gourd of water as seminal fluid, or rather, the power of male procreation, is succinctly introduced in the epilogue as the kinolau akua materializing out of the darkness as or in Kumulipo, a maleness to be found in air and water through which generations will ensue as 'ōhua, offspring and progeny.

Hua, in huawai, is a generic term for all fruits, seeds, products issuing from reproductive organs as male (huahua) testicles, and female ova, eggs (hua) that issue 'offspring' ('ōhua).

Far off in the sky is another body of water, the seminal fluid of the akua, Kāne in Wai Ola a Kāne [Milky Way] a sacred pool of water through which the spirit (maui) of the waning moon (mahina) passes each month at Muku, or 'cut-off' phase, to revive again at Hilo. It is a pool of healing water for resuscitation of souls of the dead in the sky where they go to regain youth and to have everlasting life in Kāne-huna-moku, the afterworld of Kāne

above the clouds in the atmosphere (lewa) beyond earth.

The analogy is not yet complete without growth of a vine (kalina) which, as the kinolau body of Lono in the gourd plant, begins to fill up the earth by branching out:

*O kalina a ka wai i ho'oulu ai*

This vine (hue) in Samoa and Micronesia (bue) was a plant in the Milky Way which could be seen with branches to the north pole and roots to the south, called Yggdrasil in Norse mythology and related mythologies as the world tree at the cosmic axis of earth and sky. The cosmic tree, or vine, grows through earth to the poles.

In or as the Milky Way, the plant moves back and forth across the sky through the year, going off the edge of the horizon, or lying across the sky. The Hawaiians saw it as Niu-loa-i-hiki, a coconut tree that one could climb into the sky world from the earth.

It was also a 'fish' (i'a) that turned (huli) away from the zenith when it passed the meridian, its turning called *ua huli ka i'a*, 'the fish has turned' when it declined. The fish was either a cannibal shark (Kai-tangata) living in Wai Ola a Kāne, or a lizard whose twisting and writhing motion around the pole or on either sides of the horizon, slanting across the sky at opposite ends, the way lizards crawl and stop, was called "ho'owilimo'o", the twisting of the lizard (or reptile).

The metaphor at the human level of growth is the the stalk of the taro plant (huli) ready for planting after the earth has been turned over (kāhuli) in the lo'i (wetland taro field). It represents the first individual stalk from which the lineage of the chief will sprout. The plant growth begins to invigorate and spread until it becomes a 'wall' (paia) and a 'brace' (ko'o) for the earth (honua) against the sky.

## KA WA EIWA

O La'ila'i, o Ola'i-kū-honua  
 O Wela, o Owe; o owa ka lani  
 Oia wahine pi'ilani a pi'ilani no  
 Pi'iaoa lani i ka nahelehele

705 Onehenehe lele kulani ka honua  
 O kama ho'i a Ki'i i 'o'ili ma ka lolo  
 Puka lele, lele pu i ka lani  
 Kau ka 'omea ke aka 'ula  
     ha'iha'ilona  
 Kau i ka lae, he hua ulu 'i'i

710 Kau i ka 'auwae, he huluhulu 'a  
 Ka hanauna a ia wahine  
     ho'opaha'oha'o  
 Ka wahine no 'Iliponi, no loko o  
     'Tipakalani  
 No ka 'aunaki kuku wela ahi  
     kanaka  
 Oia wahine noho i Nu'umealani

715 'Aina a ka aoa i noho ai  
 I hohole pahiwa ka lau koa  
 He wahine kino paha'oha'o wale  
     keia  
 Me ia ia Ki'i, me ia ia Kane  
 Me ia i Kane a ka po kinikini

720 Moe wale ke au o ia kini  
  
 He kini ka mamo ka po inaina-u  
 Oia no ke ho'i iluna  
 O ka la'ala'au aoa o Nu'umealani  
     noho mai  
 Ho'okauhua ilaila, ho'owa i ka  
     honua

725 Hanau Hahapo'ele ka wahine  
 Hanau Hapopo ilaila  
 Hanau 'Olohelohe i muli nei  
 O ka 'apana hanauna ia wahine la  
     Ua ao--

## NINTH AGE

La'ila'i serene, 'Ola'ikūhonua,  
     earth calm, placental bond  
     between man and earth,  
 In searing pain, moaning, the  
     chiefess cries out,

This woman of highest rank  
     ascending to heaven,  
 In the forest her agony sounds to  
     the sky,

705 Sounds of chiefly birth issue from  
     the placenta,  
 The child of Ki'i appears at the  
     center,  
 Comes out uplifted into chiefly rank,  
 Tinged red the foetal color signs are  
     set,

Set on the forehead short infant hair,  
 Set on the chin a hairy down,  
 The generation of this mysterious  
     woman,

The woman of 'Iliponi, skin purple-  
     black, in 'Tipakalani,  
 The nether firestick that fires  
     human passion,  
 This woman who lived  
     in Nu'umealani,

715 Land where the chiefly power  
     existed,  
 She stripped the dark leaves of koa,  
 This woman of awesome being,  
 With Ki'i, then with Kāne,  
 With Kāne through the immense  
     night,  
 When these generations slept  
     together,

720 That multiplied in the night  
     descendants compatible with  
     each other,  
 That became the senior line  
 Of titled chiefs who lived in  
     Nu'umealani,  
 Who were conceived there, born  
     alive on the earth

725 Born Hāhāpō'ele, female,  
 Born Hapopo,  
 Born 'Olohelohe after them,  
 On the maternal line of that  
     generation,  
 It was day.

## KA WA 'UMI

- 730 O Maila, o La'ila'i ka paia  
O Kane a Kapokinikini ka pou,  
o Ki'i ka mahu  
Hanau La'i'olo'olo i noho ia Kapapa  
Hanau Kamahaina he kane  
Hanau Kamamule he kane
- 735 O Kamakalua he wahine  
O Po'ele'i e-holo, kama  
O Po'ele-a-hole, kama  
O Wehi-wela-wehi-loa;  
Hoi hou La'ila'i noho ia Kane
- 740 Hanau o Ha'i he wahine  
Hanau o Hali'a he wahine  
Hanau Hakea he kane  
Hanau ka muki, muka, mukekeke  
Muka, kukuku, kunenewa
- 745 Moku, monu, mumule ana  
Mumule wale ana Kane i ka mule  
I mule, i ke'eo, i ka maua  
I ka wahine weweli wale  
Pe'e e Kane ia e ho'ohanau kama
- 750 E ho'ohanau kama i kana keiki  
Ho'ole ka lani ia ia muli wale  
Ha'awi i ka 'ape kapu ia Ki'i  
E Ki'i no ke moe ia ia  
Ha'ili Kane i ka mua, heleu wale
- 755 Ha'ili o Ki'i o La'ila'i i ka muli  
lae punia  
Pehi i ka pohaku hailuku ia Kane  
O kani ka pahu ke wawa nei ka leo  
O ka'u ho'ailona ia, ka ka muli  
Huhu lili Kane moe muli ia mai la
- 760 O ka ewe o kana muli i muli ai  
Haku ai kama hanau mua  
Imua ia La'ila'i, imua ia Ki'i  
Ka laua kama hanau lani la  
Puka--

## TENTH AGE

- 730 O Maila, called La'ila'i, the calm  
side (of the house),  
O Kane, pillar of Kapokinikini,  
Ki'i the one undisturbed,  
Born La'i'olo'olo who lived in Kapapa  
Born Kamahaina, male,  
Born Kamamule, male,
- 735 Kamakalua, female,  
Po'ele'i, miscarried, child,  
Po'ele'a, miscarried, child,  
Wehi-wela-wehi-loa;  
La'ila'i went back to live with Kane,  
Born Ha'i, female,
- 740 Born Hali'a, female,  
Born Hakea, male,  
Born those fed at the breast,  
Smacking, sputtering, unsteady ones
- 745 Held up, sulking, speechless ones,  
Kane speechless kept silence,  
Quiet about defeat of his  
succession,  
Because his were only female issue,  
No males having been born to him,  
That descendants born to his  
children  
Would be denied seniority after him;  
(She) had given the sacred 'ape to  
Ki'i,  
It was Ki'i who had slept with her;  
Kane cursed that the first of his  
loins,
- 755 Cursed that Ki'i's by La'ila'i had cast  
them behind,  
They had flung this injury like  
stones at Kane,  
When drumbeats had announced  
the message  
That gave signal his was the junior  
succession,  
Kane was angry that his were later  
On the lineage of those to succeed  
him  
As chiefs of the first-born son,  
The first-born son of La'ila'i was  
first by Ki'i,  
The son of theirs born chief then,  
Came forth.

## Interpretation

1. Structure
2. Style
3. Theme (Levels of meaning)

- (a) Birth of the Cosmos
- (b) Birth of the Chief

### 1. Structure

The Kumulipo has sixteen cantos, seven for the night (Pō), which is a time for beginnings of parts of the larger world:

- |           |   |       |
|-----------|---|-------|
| (a) space | - | au    |
| (b) time  | - | au    |
| (c) earth | - | honua |
| (d) sky   | - | lani  |

and nine for the day (Ao), the world of light, or of the history of mankind.

Each canto (wā) is a length or span of time, a limited segment of the larger abstract of 'time' (manawa).

Each wā is also a 'sounding,' as from an open mouth, in shouting (wā, uwā) when one takes his first breath of life.

To cry, uwē, is probably derived from uwā, as is uwō, and uwi, emphasis changing due to the prevailing vowel sound, ā (back) and fronting of that sound forward, to ē, ō, i.

The sounds of an infant are uwā when taking its first breath, uwē when crying for attention, uwi when in pain, and uwō when calling one's name and expecting a response throughout life. These vowels are open, unobstructed, unconstricted by consonants, as of the open throat and voice, as of life. At death the mouth closes.

The sixteen cantos separate night (pō) from day (ao). Ao (daylight) means 'world', as of daily life in the sunlit world, the natural and social environment.

Each of the wā separate into categories the living beings in the world as though attempting to classify them into groups of related forms. The emergence is through birth (hānau), one identified creature or being giving birth to another which is nearly but not exactly like it.

In this context emergence (hānau, puka) is an evolving of what may be classified into phyla, genera and species, as in our present system of taxonomy, by selecting characteristics based upon likeness of structure, shape, and needs.

As each new form of life appears, it seems to be more complex than its predecessor. The effort to classify and to relate emerging forms into recognized groupings through some common aspect, whether of shape, color, or other unique quality that is an advantage, such as flying (rather than walking), respiring in water rather than in air, is a kind of taxonomy.

The structure of the wā of the Pō through the first four wā, when the night is giving birth, is in four parts:

(1) An introduction (prologue) to the wā, in which the cosmic parents, male and female, are named;

(2) A series of births, relating genera and species;

(3) A refrain (puana) in which more births occur but in which there is also a linking of life in the sea (kai) with another form of life on land (uka) which "guards" (kia'i) it. The land form, in a sense, watches over the other in the sea, suggesting a relationship perhaps due to seasons, periods of gestation (as in fish) and flowering of plants, that when one is in bloom the other may be spawning.

(4) A closing statement (epilogue) that interrupts time and the progression of births and by summarizing the narrative in preparation for the next wā.

The refrain repeats lines which pertain to the feeding and respiring requirements of the prevailing categories of life forms separated by the wā. For that reason the puana of the first four wā cantos differentiates those elements which are fundamentally necessary to sustain life as changes of form or environment evolve, for example, which must respire in salt and fresh water (Cantos 1 and 2), air (Canto 3) or in air and water (Canto 4).

The puana refrain is repeated except for one line that makes the differentiation by singling out the medium in which food is ingested or shifting the habitat required for respiration and food intake and characterizes the limiting factors that separate one category from another in the time frame in which those limitations occur:

Canto 1: He nuku, he *wai* ka  
'ai a ka *la'au*, 'water is the food of plants';

Canto 2: He nuku, he *kai* ka  
'ai a ka *i'a*, 'sea (salt) water is the food of fish';

Canto 3: He *hua*, he *i'o* ka 'ai  
a ka *manu*, 'fruit(s)/seed(s), flesh are the food of bird(s);

Canto 4: He nuku, he *la'i* ka 'ai  
a *kolo*, '(green) leaves are the food of crawlers (insects, lizards, etc.).

The puana is otherwise consistently repetitive as it states the basic theme of generation:

*O kāne iā Wai'ololi*  
*O ka wahine iā Wai'ololā*

Male for the narrow waters  
Female for the broad waters  
*He pō uhe'e i ka wāwā*  
He nuku, he wai ka 'ai a ka lā'au  
[or substitution per canto]  
*O ke Akua ke komo, 'a'oe*  
*komo kanaka*

It is a night gliding through the  
passage  
Of an opening; a stream of water is  
food for plants;  
It is the god who enters, not as a  
man does he enter.

The word "god", akua, becomes important in the puana in that "god" (akua) "enters", "comes into" (komo) the world which is forming. The akua comes into the forms as the element in which they respire and also in the body form into which they are born and emerge, with one limitation, that the akua is not entering into elemental living form as a human being. That will not happen until the eighth wā when man is born with the gods in the period of light (Ao).

A pairing of certain opposites is consistent with the idea that the universe is dichotomous, a duality of maleness (kāne) and femaleness (wahine).

The dichotomy should not be thought of as that which pits man (kāne) against woman (wahine). Mankind has not yet entered ('a'oe komo kanaka).

Gender differentiation is not limited to sexuality, to procreation, but to those elements that as yet have no body but operate in nature by creating a balance of extremes in color, temperature, texture, position, shape, manner and sex. While such extremes may exist in the natural order, they are also limited, as in the nature of the objective world itself, and also as a result of perception, presupposing the presence of a silent observer. It is your own infant being that once was not awake. You are the watcher, and you are seeing yourself emerge as the deity (akua) emerges. Consciousness reaches back through time as you reach back to the time when your memory was elsewhere, in your parents and theirs, as it has been developing from the beginning of time. You have entered into the world as all others before you entered, but in another sense

you have always been there, at one time yet unborn.

Perception is inherent in how we react with our senses, and their inherent limitations, i.e., what is hot is not cold, what is liquid is not solid, what is wet is not dry, what is living not dead, what is male not female, etc. We know what is by what something is not, by antithesis, by seeing differences in sets of opposites:

<u>Male</u>	<u>Female</u>
sky	earth
sun	moon
light	dark
air	solid
right	left
up	down
east	west
north	south
odd	even
life	death
seaward	landward
upright	lying down
male	female
narrow	broad
hot	cold
fire	water
etc.	

The fifth, sixth, and seventh cantos do not have this puana. They are a single narrative throughout, with emphasis on one animal per canto: i.e. pig (Canto 5); rat (Canto 6); dog (Canto 7).

(1) pig = "night digger", i.e., farmer, the first tiller of the soil, introducing cultivation of raw land, irrigation in the lo'i taro fields, animal husbandry [Canto 5];

(2) rat = "nibbler", as of fruits on trees, without eating the whole of a single fruit, but small bites out of many on a tree; i.e., the konohiki land managers who levied taxes on the provender of the ahupua'a [Canto 6];

(3) dog = "companion", as of a man going into the next world; a spiritual companion; bat = forest-dwelling,

represents the god of birth, affording security [Chant 7]. [Note: the bat (pe'a, 'ōpe'ape'a) appears in this chant as an observer];

(4) man = "intelligent being" [Chant 8, daylight (Ao), having na'au ao (daylight-intestines, an inner light), with several gods (akua).

## 2. Style: Parallelism and repetition.

*O ke au i kahuli, wela ka honua*  
*O ke au i kahuli, lole ka lani*

(a) Antithesis (vertical), pairing of opposites:

*O ke au i kahuli, wela ka honua*  
*O ke au i kahuli, lole ka lani*

*O ka lipo o ka lā*  
*O ka lipo o ka pō*

honua - earth  
 lani - sky

lā = day  
 pō = night

(b) Assonance (repetition of vowels):

*O ka lipolipo, o ka lipolipo*  
*O ka lipo o ka lā*  
*O ka lipo o ka pō*

*O piha, o pihapiha*  
*O piha-u, o piha-a*  
*O piha-e, o piha-o*

### 3. Theme (Levels of Meaning): Structure of Time and Space.

This matter, theme, focuses on the subject of the beginning of the universe.

There are key words in the prologue for this level of meaning which specifically pertain to how the creation begins in *spontaneous generation*.

There is a "given", a combined existence of both space and time (au). On another level of meaning this is the "stem" (au) of a lineage, as in genealogy, when the element of human birth is considered, and linear time creates the history of ancestors [Cantos 8 through 16].

On the cosmic level, au is a current or flow, an eddy; a passing of, or movement, a stirring of an otherwise motionless state.

The direction of motion is over and under, *kā + huli* (causative + verb). On another level of meaning it is to turn over the soil and to plant, as the taro top (huli).

Motion in space and time effects the heating up of earth (wela ka honua). How is such motion visible?

It is seen in the night sky as a reversal or inside-out change (lōle). But what is changing, what is reversing, turning inside out (lōle)?

The sun, moon, and stars move, and the combined movement appears as though the whole sky moves over and under. Light brightens (ho'omalalama) the moon (malama), and it is coming from the sun (lā):

O ke au i kuka'iaka ka lā  
E ho'omalalama i ka malama

"At the time when the sun (lā) stood shadowed" (kūka'iaka), from kū, 'stand', ka'i 'to lead' (as in a procession, following), aka 'shadow', to actively cause (ho'o-) 'light' (-malalama) to

'brighten' (ho'o-malamalama) the moon" is a statement in which 'moon' is the direct object of the verb ho'omalalama, and the verb is prefixed by a causative (ho'o-), i.e., the sun caused light on the moon.

To sun and moon is added the 'season of Makali'i' (ke au o Makali'i), introducing the concept of a cycle (au) of time associated with a specific cluster of stars, the Pleiades (Makali'i):

*O ke au o Makali'i ka pō*

The season (au) of Makali'i is when the cluster of the Pleiades is visible on the eastern horizon in the evening (after sunset) in early November until they reach maximum height at midnight, about November 17th-18th and transit the zenith. Afterwards they decline until visible on the western horizon before morning sunrise, then go out of sight until seen again on the eastern horizon before sunrise, about April-May.

A table worked out for the cycle of the Pleiades has been done for Latitude 21 degrees north (about the latitude of Moloka'i and O'ahu, between 21 and 22 degrees north) by Johanna Broda [1981: 98]. (The dates at the top are for 1500 A.D. and in parentheses for 1980. The dates have an approximate validity).

26 April-29 May  
(3 May- 4 June)  
*Period of Invisibility*

The Pleiades are not visible. During this period, the first passage of the sun through the zenith occurs at Tenochtitlan [21 degrees north, Moloka'i] (17 May).

29 May  
(4 June)  
*Heliacal rising (dawn)*  
(The Pleiades rise in the east at dawn,  
before sunrise, in parallel with the sun)

This is the first day on which the Pleiades rise in the east before dawn. From this date on they rise earlier than the sun each day until November. During this period they are, at first, seen only at dawn; progressively, they can be seen during a longer span of night until dawn.

1 November  
(7 November)  
*Heliacal setting (dawn)*  
(The Pleiades set in the west before dawn  
and rise after sunset in the east, contrary to  
the sun)

The Pleiades appear after sunset in the east. Between 1 and 18 November they can be seen from sunset (rising in the east) to sunrise (setting in the west), i.e., during this period they are visible throughout the night..

(22 November)  
*Zenith at midnight*

The Pleiades pass the zenith at midnight. This date coincides with the nadir of the sun at Tenochtitlan (six months after 17 May)

18 November  
(25 November)  
*Heliacal rising (dusk)*  
(The Pleiades rise in the east after sunset  
and set in the west before dawn, contrary to  
the sun)

The Pleiades begin to set in the west before dawn. From November to January, they are visible from sunset (rising in the east) until sometime before dawn (setting in the west).

26 April  
(3 May)  
*Heliacal setting (dusk)*  
(The Pleiades set after sunset in the west,  
in parallel with the sun.)

From 18 November until 26 April the Pleiades set earlier each day until, on 26 April, they set in the west before sunset. This means that they disappear from sight for a period of approximately one month, until, on 29 May, they begin to rise again in the east in dawn.

The above suggests the approximate situation also for Hawaii at Latitude 21 degrees north, as for Moloka'i, where the calendar collected by missionaries in the 19th century noted the month of Makali'i (Pleiades) was April-May.

If on Moloka'i the Pleiades had set the calendar for the year (makahiki) to begin in April-May (Makali'i), then the officiating kahuna of that island had been following a practice of beginning the year by the heliacal risings of the Pleiades on the east before sunrise. The calendar has apparently on Moloka'i been appropriately adjusted for the Pleiades a month later. (April-May) after the vernal equinox (March 20-22).

It may not mean that the kahuna knew the precession of the equinoxes, but it does suggest that he, or his ancestors had at one time known the rate of change and when necessary to apply correction.

If the calendar was also set when the sun had entered the vernal equinox when the season of Makali'i was March 20th - April, rather than April 20th to May, it means that several generations of kahunas must have preserved knowledge of the rate of change over a period of 2,160 years while advancing the months later and later in order to keep pace with the precession. Allowing 25 years to a generation, it would have required about 86 generations to maintain the record.

If on Moloka'i the kahuna knew that the Pleiades had been (at one time) on the eastern horizon in March-April at the vernal equinox, the active period when the sun moved into Aries at the vernal equinox began about 1800 B.C. and lasted until about 1 A.D. Because the Pleiades, however, were close to the hind part of the constellation of the Ram, the April-May Pleiades month continued through to about the fourth century A.D. after which it was probably moved to May-June.

We know from the history of astronomy and astrology recorded in the annals of India, Babylonia, and Egypt that constellations in the tropics through which the sun moves during the ecliptic, annually, "precess", move in a regressing circle of time. The zodiac, as it is called, developed beyond the Pacific, in the region of the Indian Ocean and continental expanse between India, the Persian Gulf and Euphrates River into Africa and Egypt before spreading into Greece and Rome. Another zodiac developed in the north, Tibet and China, and still another in Central America.

There is no zodiac in Polynesia, but there are other traditions that indicate a knowledge of the ecliptic and, probably, the shape of the sun's analemma as a track of the cosmic spider coursing north and south called *ke ala a ke ku'uku'u*, an analogy for the sun's motion between the solstices and equinoxes. It spins a web as a grid across the sky in which the stars also course.

Strangely enough, a much older and identical parallel to that analog existed in India with a date for the tradition set in the verses of the Rig Veda to 3517 B.C. [Sengupta, P.C in Johnson, R. K, Kumulipo, 1981: 41].

*"Ordaining the days and  
nights,  
Like a cunning spider,*

*For six months south  
constantly,  
For six north the sun goeth"*  
[Kausitaki Brahmana, xix, 3; Rg  
Veda Brahmanas]

The analog is not only present in the formal Rig Veda but also in the folktales of various tribes in India indicating a very old tradition in wide circulation:

*"Long ago, when the earth was  
covered with water, Rumrok hung a  
boar in a spider's web up in the sky"*  
[Orissa tale].

Where were Polynesian priests in 3517 B.C.? Polynesian occupation of nuclear West Polynesia is dated by La Pita pottery to about 1100 B.C. in Tonga although occupation dates there may be earlier. A carbon date for the occupation of Samoa is about 1500 B.C.

The Malayo-Polynesian tanged adz appeared about 3000 B.C. on the coast of South China as far north as the Yellow River. The genetic DNA of Indonesian races in Madagascar has been traced to South Borneo. Petroglyphs of a peculiar back-to-back squatting figure have been dated at a stratigraphic level of 6000 B.C. in Indonesia and Melanesia that do not appear in Polynesia until Hawaii in the fourth century and Easter Island in the seventh century A.D. How persistent is human memory that something so minute as a petroglyph is executed in the same detail over a time period of nearly 7,000 years and over an area of nearly 5,000 miles of the Pacific Ocean?

As recently as a week ago it was announced that bone material excavated in Brazil has been dated to about 11,500 years ago [ca. 9,500 B.C.] and assigned to origins in the South Pacific. Brazil is on the Atlantic Ocean, indicating that the route of migration was around the Cape of Good Hope to South America. [See Honolulu Advertiser, May 22, 1998, Page A3, "Fossil Rewrites American Archaeology]:

"The discovery in southeastern Brazil of an 11,500-year-old skull--the oldest in the new world--may help to rewrite the theory of how the Americas came to be settled. A scientist studying Luzia, as the fossil is called, says his findings don't fit the old idea that the first Americans crossed the Bering land bridge in a single massive migration between 11,000 and 10,000 years ago. Researchers on separate projects have been coming to similar conclusions."

"Luzia apparently came from the South Pacific...This is the first known American," [Walter Neves].

"In 1995 Neves began to compare Luzia with modern humans. He found that Luzia's skull and teeth had characteristics similar to people of the South Pacific...That strengthened his belief that Pacific tribes reached the Americas before the Mongoloids, who arrive 8,000 to 9,000 years ago...Neves' theories jibe with the findings of U.S. anthropologists Joseph Powell and Erik Ozolins, who tested samples from North and South America."

To that we add our observation that there is no land bridge between the South Pacific and Brazil for any South Pacific people moving around Africa and Antarctica 11,500 years ago, and what navigational strategies would have been needed to make landfall between the South Pacific and the east coast of Brazil is not difficult when the mass on which to beach the canoe is a continent all the way from north to south.

Let us return, however, to the conservative view that Polynesians invented everything all by themselves in the middle of the Pacific from about 1500 B.C. and that their ancestors developed their navigation and calendrical systems in situ entirely there.

Then there is sufficient time between 1500 B.C. and 1500 A.D. to observe the rate at which stars along the horizon shift their azimuths over 3,000 years, and that the month in which the sun had been

rising when a constellation or star was just going out of sight before dawn light at the vernal equinox was at another azimuth consistent with a shift in the precession time of a month away. If that was done, then, the span of that distance of movement along the horizon would have been measurable.

If this is how the "precession" was discovered or known to Polynesians, then no contact with any other people and no system of keeping a record over 2,000 years would have been necessary to make accurate adjustments at certain times.

It takes about 500 years for the shift to be noticeable. While doing archaeoastronomic guesswork on Kaho'olawe and asking astronomers to bring up the data on more precise instruments in Kīlōlani Planetarium, it was accurately determined from the computerized Voyager program that the following would have been true for a 500-year rate of shifting in azimuth of zenith stars, as noted for the latitude of Kaho'olawe [20 degrees 34 minutes north latitude]:

#### Zenith Stars for Hawaii

(1) 2000 years ago [ 8 A.D.] Regulus - Alpha Leonis - Magnitude [Mag.] 1.45; Tejat Posterior - Mu Geminorum - Mag. 2.89.

(2) 1500 years ago [ 492 A.D.] Scheat, Beta Pegasi - Magnitude 2.42; Alpheratz, Alpha Andromeda, Mag 2.06.

(3) 1000 years ago [ 992 A.D.] Denebola, Beta Leonis - Mag. 2.13 Pleiades.

(4) 500 years ago [ 1492 A.D.] Arcturus, Alpha Bootes - Mag -.04; Hamal, Alpha Arietis - Mag. 2.01.

(5) Now [ 1992 A.D.] Zosma, Delta Leonis Mag. 2.56; Sharatan, Beta Arietis - Mag. 2.63. [Peter Michaud, December 29, 1992 in Johnson, Rubellite K., 1992 (Kaho'olawe)].

The apparent fixing of the calendar year to April as Makali'i on Moloka'i when missionaries began noting various island calendars in the early 19th century represents a vestige of Polynesian tradition carried out locally of noting horizon positions of rising stars, sun, and moon, the movement of the sun between the solstices and its position at the equinoxes, and the rate at which these changed over long periods of time. It could have been done after the Hawaiians arrived here about the fourth century A.D., but given the fact that their navigational system came from the experienced and practiced wayfinding art that began at least by 3000 B.C. by which West Polynesia was settled by 1500 B.C. would mean their methods of observation were not without precedent elsewhere.

Anthropologists found that Polynesians of Futuna in West Polynesia named the month of May-June for Matariki (Pleiades). This is evidence for the antiquity of a tradition that must have existed in West Polynesia for noting heliacal risings of the Pleiades, presupposing that at one time it had been April-May and March-April between 3000 B.C. (March) and 1800 B.C.

But we must deal with realities about the formation of Polynesian culture in Polynesia. The Polynesian people were not in West Polynesia in 3000 B.C. They may have settled there by 1800 B.C., but dates established by archaeological findings place them there in 1500 B.C. If Polynesians brought the Pleiades agricultural calendar with them, then their ancestors had had it, but not as Polynesians. They came from another place, perhaps several places, along the Indo-Pacific migration routes where their ancestors were quite likely a mixture of South Asians, Southeast Asians, and Malays.

The calendrical computations which were made by Polynesians had antecedent practices in India, Babylonia, and Egypt:

- (1) the precession of equinoxes;

- (2) setting the beginning of the year to the vernal equinox (March-April);

- (3) setting the beginning of the agricultural year to the autumn equinox (September- October);

- (4) locating the azimuths of the sun's rising and setting points along the eastern and western horizon;

- (5) fixing the solstitial azimuths of the sun's risings and settings at the extremes of the sun's northerly and southerly stops, so as to mark the tropics;

- (6) determining the nadir of the sun and zenith passage of the Pleiades per latitude in the tropics, and

- (7) determining the zenith passage of the sun contrary to the Pleiades at nadir.

It may be inferred that the ecliptic and precession of equinoxes were thus known to the Polynesians before European contact.

The longevity and greater age of these traditions and observations in the Indo-Mediterranean since 3517 B.C. allow greater likelihood that the ancestors of Polynesians brought the system in use into the Pacific with them.

The zenith passage of the Pleiades was an observation aligned to the position of Thuban (alpha Draconis) encoded into the alignment of the Great Pyramid of Cheops four thousand years ago for the exact latitude of Giza in 2170 B.C.:

"...Astronomer royal of Scotland C. Piazzi Smyth was able to estimate, for example, that the then pole star, alpha Draconis [Thuban] was in alignment with the Descending Passage of the Great Pyramid at the meridian below the pole in 2170 B.C. when another very important group of stars would have been crossing the meridian above the pole: the Pleiades. In other words, when alpha Draconis was visible down the Descending Passage, the

Pleiades would have been crossing the meridian in the vertical plane of the Grand Gallery at midnight in the season of the autumn equinox..."

"...The heliacal orientation of the Pleiades to the first Babylonian decan and lunar station in the ecliptic, beginning the year at the vernal equinox about March 20-21st, means that the Pleiades would have occupied the first position in the calendar between 2000 and 1800 B.C. About 1800 B.C. the vernal equinoctial position was vacated by the Pleiades and assumed by lambda Arietes, whereupon that point, although now actually in Pisces and soon to be in Aquarius, has since been referred to as the First Point in Aries. At the same time the Pleiades were moved to the second month after the vernal equinox, corresponding to April, or the fourth decan position (April 20th) in the Babylonian calendar..." [Johnson, Kumulipo, 1981: 23; Tompkins, 1971: 86-89]

There is, however, an indigenous feature in calendrical computation that is uniquely Hawaiian.

In pre-contact times the Hawaiian calendar (dedicated to Lono-i-ka-makahiki, god of time), was set, not to the Pleiades, but rather, to the *first new moon after the first evening rise of the Pleiades on the eastern horizon*, presupposing the zenith passage of the Pleiades about November 17th-18th at the latitude of Hawaii.

That would mean that several cycles of time may be involved:

- (1) solar time, daily [rotation]
- (2) solar time, annual [revolution]
- (3) lunar time [synodic]
- (4) lunar time [sidereal]
- (5) sidereal time

The adjustment to several cycles of time may be considered necessary to an understanding of the time frame in which

the prologue of the Kumulipo sets the framework for all time (*ke auau ka manawa*) into the first five lines of the prologue.

Insofar as the Pleiades is situated in the prologue, its appearance on the eastern horizon was used generally to fix the beginning of Hawaiian calendars operating on each island between autumn equinox and winter solstice. They are not uniformly identical, although most probably on every island the makahiki festival took place about the same time in November.

But why is the festival of first fruits set in November? There is no frozen winter, and harvest time is variable. Even harvesting of a taro crop is not seasonally determined. A crop may be harvested earlier or later than the full term of maturity.

The season of harvest being thus variable, why is it necessary to declare November as traditional harvest time? Were the ancestors of Polynesians at one time living in a place where it was necessary to harvest before winter began? Did some of them once live farther north where winters are cold, and the crop had to be stored before the frost?

The season of Makali'i, when the Pleiades are on the eastern horizon, is also the beginning of the agricultural year set aside to Lono-i-ka-makahiki, god of annual time. It is also significant that Lono is the star Sirius, and Sirius is the zenith star for Tahiti at a parallel of latitude between 19 and 20 degrees south. Sirius is also zenith star for Fiji [Viti Levu]. The zenith passage of Sirius was as significant to those ancestors of the Hawaiian people as the zenith passage of the Pleiades would have been at 20 degrees north latitude, in 992 A.D.

## Gender in Space

Hānau Kumulipo i ka pō he kāne  
Hānau Pō'ele i ka pō he wahine

The first two "creatures" of cosmic birth have no bodies, shape, or concrete form. They are maleness and femaleness, abstractions of darkness developing from "light-darkness" (Kumulipo) and "dark-darkness" (Pō'ele).

They anticipate Sky-Father (Wakea) and Earth-Mother (Papa), the "primal pair" of world cosmogonies in which sky mates with earth.

Sexual differentiation is a process observed in biology rather than in space or time. We may notice forms in nature that are trying to become something else from what normally has been, trying to metamorphose or bifurcate. Some seaweeds are plants becoming animals, like coralline algae, or vice versa. Ferns go through a metamorphosis, too, between gametophyte and sporophyte generations. We may see animals that during their lifetime change from male to female, as wrasse fishes do. When they are young they are male and fertilize female wrasses, then when they are older they become female and in turn produce eggs to be fertilized by younger males. They are not true hermaphrodites, like worms, having both male and female sexual parts. Flowering plants are also bisexual, with male and female parts in one flower. Then there are lauhala trees that are unisexual, one male (hinano) with flowers and another, female, with fruits.

We may ask a question. When and where does the potential for sexual differentiation exist?

Certain forms of life do not require sexual reproduction. They are of neither sex and reproduce themselves by fissure, by cell division. The new creature is exactly like its predecessor. The process becomes multiplication of one into many like individuals. They remain very simple,

and they replicate asexually.

Being and becoming with unending repetition does not appear, however, to have fostered the development of separate individuals as knowing beings. Had the creation stabilized with life forms never advancing beyond the level of the amoeba, human or animal intelligence would have been non-existent.

It may seem ridiculous to posit that intelligence in the universe has elemental form, unseen form existing as a kind of silent awareness somewhere. When did the "one" become more than one and at what stage of the cosmic process? It divided the darkness between darkness in relation to sight and darkness in relation to time:

Hānau Kumulipo i ka pō he kāne  
Hānau Pō'ele i ka pō he wahine

The "source" (kumu) of darkness is identified as male. The darkness of night as a period of passing time is female.

"God" (akua) does not enter until this stage has been reached and reechoed in the theme lines of the refrain:

O kāne iā Wai'ololi  
O ka wahine iā Wai'ololā.

The rudiments of perception, as it were, precede the "entering" (komo) of "god" (akua).

Where does perception begin in the Kumulipo? In the opening line: O ke au i kāhuli *wela ka honua*.

The effects of motion (kahuli) are felt before they are seen.

Not only 'heat' (wela) is felt, but also 'pain' (wela). How is it felt? By the honua, which is a placenta, as of the earth's placenta and the human placenta.

When the placenta pains (wela) then the "chief" (sky) reverses its position

to be born. The spasm of pain (wela) when the human infant is near birth reverses the head so that its position is downward in order to be born.

What are foetal perceptions of the infant environment in the womb like? They are not part of memory. Of what is the infant's memory of time spent in the time of forming? When does his night become daylight? Of himself he is only dimly aware. Is he entirely without the powers of perception? His eyes are unseeing even when he is born into the light, yet all around him is an activity in darkness. Amniotic fluid is moving, warm blood. He comes out of a fluid night into the air to breathe.

What knowledge has he of father or mother? Where did his life truly begin? Was it at the moment of human conception, or at the moment when the cosmos set into motion all of the requisite elements that created him?

How do we come to know all of this? Where do we begin to know?

### Evolution of the species

A rudimentary effort to taxonomize genera and species, or at least to show an evolutionary progression from simple to more complex forms of life, seems to be an important consideration in the Kumulipo.

It dominates the first four cantos, in which may be seen an attempt to lay a foundation for taxonomy, or classification of species in relation to genera.

The Hawaiian poets of the Kumulipo seemed to observe that life had begun near that point where waters of stream and ocean mix, around reefs and mouths of streams flowing into the sea.

*O ka walewale ho'okumu  
honua ia*

From the source in the slime was  
the earth formed...

Walewale is the slime that comes out of living coral to create the skeletal limestone body in which the polyps live:

Hānau ka 'Ukuko'ako'a  
Hānau kāna he 'Ako'ako'a, puka...

Born the coral polyp  
Born of him a coral colony emerged

Walewale is also amniotic fluid, as of the human placenta (honua).

The order of births (hānau, puka) produces a general category of classification per canto (wā) or period of time:

- (1) Canto 1 - Marine Invertebrates  
Seaweeds, Land Plants
- (2) Canto 2 - Marine Vertebrates
- (3) Canto 3 - Winged insects, birds  
[Egg-bearing, flying]
- (4) Canto 4 - Reptiles and Animals with  
carapace, [Egg-bearing, crawlers]
- (5) Canto 5 - Pig (mammal)
- (6) Canto 6 - Rat
- (7) Canto 7 - Dog (with bat)
- (8) Canto 8 - Man

The sequence in Cantos 1 and 2 are more developed than those of succeeding cantos 3 to 8.

Cantos 5 to 8 have single animals with some names, especially for the pig, that are attempts to classify them by breed and genetic traits. On another level of interpretation these traits are symbolic of human behavior or position and occupation or status in ancient society.

The information categorized in following indicates how the evolutionary sequence is organized.

Canto 1: Marine Invertebrates

'uku-ko'ako'a ko'ako'a	Phylum Coelenterata	coral polyp [Class Anthozoa] coral colony [Genus Corallium]
ko'e-'enuhe ko'e	Phylum Annelida Phylum Nematoda	caterpillar worm worm of any kind
pe'a 'ōpe'ape'a 'āpe'ape'a	Phylum Echinodermata Class Asteroidea	starfish small starfish (unidentified cephalopod)
weli weliweli	Class Holothuroidea	sea cucumber small sea cucumber (centipede, hairy worm; general Polynesian)
'ina	Class Echinoidea	Echinometra spp. young of the sea urchin class of sea urchin
hālula	Class Echinoidea	sea urchin with longer spikes than wana' (unidentified spp.)
hāwa'e	Class Echinoidea	Tripneustes gratilla short-spiked sea urchin
wana-kū	Class Echinoidea	'long-spined/thorny-spined sea urchin
hā'uke'uke	Class Echinoidea	Podophora atrata
uhalula	Class Echinoidea	'a sea urchin' (unidentified spp.)
pi'oe	Phylum Arthropoda Class Crustacea Order Cirripedia	barnacle
pipi	Phylum Mollusca Class Pelycypoda (bivalves)	'pearl oyster' Pinctada radiata
pāpaua	Class Pelycypoda Isognomon spp.	'hinged mussel'

'ōlepe- pāpaua	Class Pelycypoda	Acar hawaiiensis 'clam' mussel
nahawele	Class Pelycypoda Isogmonidae spp. Pteriidae spp. Pinnidae spp. Perna costellata Atrina saccata	
makaiauli 'opihi	Class Gastropoda (univalves) Class Acmaeidae Class Patellidae	'dark-fleshed limpet' 'limpet'
leho pūleholeho	Family Cypraeidae	'cowry' 'small cowry'
naka- ( 'ōni'oni'o) kūpe'e-kala	Pleurobranchus Chama spp. Nerita polita	shell large Nerita polita
makaloa	Thais intermedia Drupa horrida	drupe
pūpū'awa 'olē 'olē'olē	Drupa ricinus Charonia tritonis	'bitter drupe' 'conch' 'small conch'
pipipi	Nerita Nerita neglecta	
kūpe'e	Nerita polita	
wi	Neritina	fresh water snail
kiki	Nerita vespertina	fresh water snail

Canto 1: Marine Invertebrates,  
Seaweeds and Land Plants.

'ekaha	Gelidium spp., limu loloa Gymnogongrus spp., limu- uaua-loli	'ekahakaha	liverwort, called limu 'ekaha (green) Asplenium nida, birds'-nest fern
'aki'aki	Ehnfeltia concinna (red sea- weed	manienie 'aki'aki	Sporobolus virginicus (rush grass)
'a'ala-'ula	Codium edule (green sea- weed), yields red liquid; also called wāwae 'iole	'ala'ala-wai-nui	Peperomia spp., small native succulents, related to 'awa (Piper methysticum).  Also, Plectranthus australis, mint family
manauea	Gracilaria coronopifolia (stiff cylindrical stem)	kalo manauea	variety of wild taro, dusky red stem with yellow- ish shading, long narrow leaf [Handy and Handy, 1972: 87]; [*Note: This variety is planted and allowed to revert to the wild; grown in dryland terraces].
kō'ele'ele	Gymnogongrus spp., small red seaweeds (also called 'awikiwiki, ekahakaha, and kauila)	kō-punapuna	jointed sugar cane
puaki	Liagora decussata, red seaweeds	lau'aki	a rush (grass)
kakalamoa	(probably) limu kala, Sargassum spp.;	moamoa	Psilotum nudum, P. companulatum; also Hawaiian mistletoes, Korthasella.
	Cp. huluhulu-moa, a sea- weed, called hulu manu, green seaweeds, Caulerpa spp.; also called limoa		
kele	(probably) limu kele, or limu 'ele'ele, Enteromorpha spp.	ekele	(probably) limu kele, moss growing on trees in rain forests (no data).

kala	Sargassum spp; also Turbinaria ornata (brown seaweed); limu kala wai, Spirogyra spp.	'akala	Rubus hawaiiensis R. macraei
lipu'upu'u	Valonia utricularis (seaweed)	lipu'u	(no data, but probably a species of land moss)
			[*The term pu'u means knotty, lumpy; is applied to a stage in the growth of taro;
			a white variety of sweet potato;
			the pu'uka'a, a native sedge, Cyperus auriculatus, growing in marshes;
			pu'uko'a, a sedge; pu'ukolea, sweet potato tubers;
			pu'ukonane, a variety of taro.
loloa	Gelidium spp., red seaweeds; also Pterocladia capillacea	kalamaloloa	Diospyros Maba spp., the lama tree
ne	a seaweed (probably) the nehe, same as limu-kala- wai, pond scum; Spirogyra spp.	neneleau	Rhus chinensis var. sandwichensis, native sumach
huluwaena	Grateloupia filicina, red sea- weed, also called pakela-a- wa'a	huluhulu 'ie'ie	Freycinetia arborea, pandanus vine.

## Epilogue.

The epilogue of Wā Akahi, the first epoch of time, serves to identify the "god" (Akua) which has been developing, "entering" (komo) into the world:

*O ke kāne huawai, akua kēnā*  
The male gourd of water, that is the  
god.

There are three referents for this male gourd. One is water itself, which is a body form (kinolau) in nature of the creator god, Kāne. Water of itself has no shape, so the huawai gourd used to hold water is a form of the god Lono in the gourd vine (kalina) and vessel (huawai) that holds drinking water. It does not hold food. The calabash gourd ('umeke) with a cover (po'i) is female. It may hold food.

The male gourd of water becomes the gourd image of Lono, Ipu o Lono, called a shrine, unu, Unu o Lono, the place of worship in the men's eating house, hale mua, which may not in ancient times ever be entered by women. Into it the men of the hale mua placed food offerings for consecration to the god Lono. Then they ate the ritual offering themselves, assuming that Lono, also, was eating with them. This joint ritual consumption, like the Christian Eucharist, was called an 'alana. Offerings made to the gods only were mohai.

The *kāne huawai* male gourd as the akua in hua- is the male testicle containing seminal fluid, wai ola, of the god Kāne which is a power in males for procreation. The female power is in wai 'ololā, broad waters, as in giving birth (hā, to breathe out, + nau, to bite down on pain, to gnash).

Water as a kinolau came under two major gods, Kane and Lono. Lono's wai is the wai of agriculture and irrigation when rain comes down to water the fields. In this form Lono is called Lono-nui-noho -i-ka-wai, Great Lono living in water.

The wai a Kane, wai ola, in water for drinking, wai inu, or wai ola (Kāne-i-ka-wai-ola), as it is taken into the body, is a basic need. Without it we cannot live. Organisms proceed out of air and water, not out of fire.

Land as soil, rock, reef, and stratum rock is female, mother, the mineral element which returns to earth at death. Air and water are constantly being taken in and let out during life. They are not subject to decomposition, as is the flesh or mineral part of the body. Air and water return to atmosphere; flesh to the earth.

In the darkness (Kumulipo) of air and water, in the coral slime (walewale), in amniotic fluid (walewale), is the male source (kumu) of life from which night gave birth (hānau), and which was understood in the prologue. It becomes the kane huawai in the epilogue.

All body fluids are kinolau of akua Kāne: blood, saliva, perspiration, amniotic fluid (as in the placenta), digestive juices, seminal fluid, urine, tears. Body processes that require breathing, flowing of digestive juices, elimination of waste, sexual reproduction are governed by Kāne.

More basic than water is air, what is breathed in (hanu) and breathed out (hā), existing in the atmosphere as ea, living breath of god(s). Without success from the beginning at this exchange, you may not have an independent existence. The infant must breathe on his own, then drink.

Ea, breath of the gods, transcends the natural world of atmosphere into the social and political life of mankind as ea, sovereignty, 'life', as of the whole living world, nationhood, government, people. Vitality, as of the individual and the society, proceeds out of the atmosphere and environment in which all things live. Nothing respire on land except through atmosphere or water, whether plant or animal. Nothing is more fundamental to existence of living organisms.

The container of drinking water is the hue wai, or male gourd container water made so that it could be slung from the shoulder, carried somewhere to be filled, a portable gourd flask with a narrow neck, the shape of which is implied in the refrain:

*O kāne iā wai 'ololi*

Male for the narrow waters

The word 'ololi is a compound, from 'olo, meaning to gurgle, the sound of water when it is filling up or being poured out, and li, meaning of a high tone, which, as 'ololi, is the sound of water gurgling in and out of the flask. This brings another god into the same water gourd (huewai), Lono, god of sound, in the sound emitted and sound heard as well as the power of hearing. The two akua are in the one vessel, the huewai.

The male gourd of water as seminal fluid, or rather, the power of male procreation, is succinctly introduced in the epilogue as the kinolau akua materializing out of the darkness as or in Kumulipo, a maleness to be found in air and water through which generations will ensue as 'ōhua, offspring and progeny.

Hua, in huawai, is a generic term for all fruits, seeds, products issuing from reproductive organs as male (huahua) testicles, and female ova, eggs (hua) that issue 'offspring' ('ōhua).

Far off in the sky is another body of water, the seminal fluid of the akua, Kāne in Wai Ola a Kāne [Milky Way] a sacred pool of water through which the spirit (mauli) of the waning moon (mahina) passes each month at Muku, or 'cut-off' phase, to revive again at Hilo. It is a pool of healing water for resuscitation of souls of the dead in the sky where they go to regain youth and to have everlasting life in Kāne-huna-moku, the afterworld of Kāne above the clouds in the atmosphere (lewa) beyond earth.

The analogy is not yet complete without growth of a vine (kalina) which, as the kinolau body of Lono in the gourd plant, begins to fill up the earth by branching out.:

*O kalina a ka wai i ho'oulu ai*

This vine (hue) in Samoa and Micronesia (bue) was a plant in the Milky Way which could be seen with branches to the north pole and roots to the south, called Yggdrasil in Norse mythology and related mythologies as the world tree at the cosmic axis of earth and sky. The cosmic tree, or vine, grows through earth to the poles.

In or as the Milky Way, the plant moves back and forth across the sky through the year, going off the edge of the horizon, or lying across the sky. The Hawaiians saw it as Niu-loa-i-hiki, a coconut tree that one could climb into the sky world from the earth.

It was also a 'fish' (i'a) that turned (huli) away from the zenith when it passed the meridian, its turning called *ua huli ka i'a*, 'the fish has turned' when it declined. The fish was either a cannibal shark (Kai-tangata) living in Wai Ola a Kāne; or a lizard whose twisting and writhing motion around the pole or on either sides of the horizon, slanting across the sky at opposite ends, the way lizards crawl and stop, was called "ho'owilimo'o", the twisting of the lizard (or reptile).

The metaphor at the human level of growth is the the stalk of the taro plant (huli) ready for planting after the earth has been turned over (kāhuli) in the lo'i (wetland taro field). It represents the first individual stalk from which the lineage of the chief will sprout. The plant growth begins to invigorate and spread until it becomes a 'wall' (paia) and a 'brace' (ko'o) for the earth (hōnua) against the sky.

*O ka huli ho'okawowo honua  
 O paia ('a) i ke auau  
                   ka manawa  
 O ke ko'o honua pa'a ka lani*

The analogy extends to the human placenta (honua) in which the foetus floats (lewa), as the atmosphere (lewa) above also floats (lewa):

*O lewa ke au iā Kumulipo ka  
                   pō*

The compound formed by the words pō 'night' and no 'indeed' effect pono when the chant is intoned, emphasizing that the whole is right, proper, fitting, suitable, according to nature's laws, an idea which is also to be found in the motto:

*Ua mau ke 'ea o ka 'āina  
                   i ka pono.*

The life of the land is continued  
 inrighteousness.

If the beginning of the cosmic world came out of a motionless state into a moving world of time and space, to a warming of temperatures on the earth suitable for the life of plants and animals, the 'wall' of the placenta is the growth upward and on the earth into the sky. It also finds the 'heart' or center (manawa) of time (manawa) in relation to the individual's place on earth.

*O paia i ke auau ka manawa*

The stem ('au, 'au'au) of lineage ('au'au ka manawa) as of the chief (lani) is at the 'center', 'core', 'heart', fontanel (manawa), or soft spot of the head of the infant ('au'au ka manawa). This stem is placed also into another center, that of time and space (au, manawa).

When the infant stands up and the spine below the manawa is upright, the zenith above his head marks the center (piko) of his position on the earth in

relation to the sky. He is on meridian, or standing on his own center (manawa) of time and space, his navel (piko).

This point as the vertical piko drawn through the body in line with the genital piko below is his zenith and nadir. When the body is supine, horizontal, the center is at pū, 'ōpū, on the abdomen as it faces the zenith above. When the body posture is vertical, all of the piko and manawa are in line with the center of the earth (piko o ka honua) and the beginning of time (manawa) at midnight and at noon (ka piko o Wākea).

The clock is set to daily time between midnight and noon when the manawa (fontanel) assumes vertical position at the zenith center. At some expected future time either the Pleiades at midnight [November 17th- 18th] at Latitude 21 degrees North (for Moloka'i) or the sun at noon will transit the zenith between May and July between the latitude of Hawaii and Nihoa. Until dawn the night will be long.

*O he'e au loloa ka pō.*

Canto 2 - Marine Vertebrates.

hilu (hinalea)	Labridae <i>Coris flavovittata</i> L. <i>Coris paracirrhites</i> L. <i>Jullius eydouxii</i>	wrasse spp.
i'a	(general term for all edible fish/ sea creatures)	
nai'a	Cetaceae	porpoise
manō	Isuridae spp. (general term for all sharks)	
moano	Mullidae <i>Parupeneus multi-</i> <i>fasciatus</i>	goatfish
mau/maumau	(no data)	
nana	(no data); probably spawn of the 'ahi yellowfin	
mana	(no data); young of the moi threadfin	
nake/make	(no data)	
napa/nala	(no data)	
pala	(no data); probably the la'i-pala, yellow tang	
kala	Acanthuridae <i>Naso unicornis</i>	surgeonfish
paka	(no data); probably the paka, <i>Muraenidae gymnothroax flavi-</i> <i>marginatus</i>	moray eel
papa		moray eel
huluhulu	same as 'o'opu-hue, pufferfish; balloonfish	

kalakala	(no data); probably the ku-kala, Diodontidae, porcupine fish	
halahala	(no data); probably the young of the kahala, Carangidae <i>Seriola dumerlii</i> , amberjack; also <i>C. Seriola aureovittata</i> ; or the young of the akule, kawele'ā ( <i>Sphraena helleri</i> ) barracuda; and young of the 'ahi; all are called hala.	
palapala	Another name for the pualu, <i>Acanthurus fulginosus</i> <i>A. xanthopterus</i> <i>A. mata</i>	
	or ku-pala, stage of the barracuda (yellowish-black)	
pe'a	Hāhālua, Hihimanu; Mobulidae, Myliobatidae; <i>Manta birostris</i>	manta ray
lupe	Dasyatidae; <i>Aetobatus narinari</i>	spotted eagle ray
ao	Coryphaenidae <i>Coryphaena hippurus</i> mahimahi	dolphinfish
awa	Chanidae <i>Chanos chanos</i>	milkfish
aku	Scombridae <i>Katsuwonus pelamis</i>	skipjack tuna
'ahi	Scombridae <i>Neothunnus orientalis</i>	yellowfin tuna
'ōpelu	Carangidae <i>Decapterus pinnulatus</i>	mackerel scad
akule	Carangidae <i>Trachurops crumenophthalmus</i>	big-eyed scad
'ama'ama	Mugilidae <i>Mugil cephalus</i>	mullet
anae	mature 'ama'ama	

'ehu	(no data; reddish fish)	
nehu	Engraulidae <i>Stolephorus purpureus</i>	
'iao	Atherinidae <i>Pranesus purpureus</i>	
'ao'ao	(no data)	
'ono	Scombridae <i>Acanthocybium solandri</i>	
omo	(no data)	
pahau	(no data)	striped flatfish
lauhau	Chaetodontidae <i>Chaetodon fremblii</i> <i>C. setifer</i>	butterfly fish
moi	Polynemidae <i>Polydactylus sexfilis</i>	threadfin
'ālo'ilo'i	Pomacentridae	damselfish
mao	(no data)	
maomao	Pomacentridae <i>Abudefduf abdominalis</i>	damselfish
kākū	Sphraenidae <i>Sphraena</i>	barracuda
a'ū'a'ū	A'ū, Istiophoridae	marlin
kūpou kūpoupou	Labridae <i>Cheilio inermis</i>	wrasse mongoose fish
weke	Mullidae <i>Mullodichthys ssmoensis</i> <i>M. Upeneus arge</i>	mullet
lele	(no data) probably lele-pō, spp. of night-flying malolo, Exocoetidae	flying fish
palani	Acanthuridae <i>Acanthurus dussumieri</i>	surgeonfish
nukumomi	Carangidae <i>Caranx malampygus</i> Cuvier, an ulua	jackfish
ulua	Carangidae <i>Carangoides Ferdau</i>	jackfish

Hāhālua	(probably haha-ulua, young of the ulua, or manta ray)	
'ao'ao-nui	(probably young of the kūpipi, Pomacentridae <i>Abudefduf sordidus</i> )	damsel fish
pāku'iku'i	Acanthuridae <i>Acanthurus achilles</i>	achilles tang
mā'i'i'i	young of the pualu, <i>Acanthurus xanthopterus</i> , <i>A. mata</i>	surgeon fish
'ala'ihī	Holocentridae <i>Holocentrus spinifer</i>	squirrel fish
'Ō'ō	(no data)	
'akīlolo	Labridae: <i>hinālea 'i'iwi</i> , <i>hinālea 'akīlolo</i>	wrasse

List of Paired Species/Plants in the Refrain of Generation.

nenuē	<i>Kyphosus fuscus</i>	rudder fish
lauhue	<i>Lagenaria vulgaris</i>	gourd
pahaha	young of the mullet (Mullidae)	mullet
pūhala	Pandanaceae <i>Pandanus odoratissimus</i>	pandanus
pāhau	(no data)	striped flatfish
hau	Malvaceae <i>Hibiscus tiliaceus</i>	hibiscus (tree)
he'e	Mollusca Cephalopoda	octopus
walahe'e	<i>Canthium adoratum</i> , synonym <i>Plectronia odorata</i>	(shrub)
'o'opu kai	Cirrhitidae <i>Cirrhitus marmoratus</i>	po'opu'a
'o'opu wai	Gobiidae, Eleotridae	goby (freshwater)

puhi kauila	Muraenidae Muraenophis pardalis	eel
kauila	Alphitonia ponderosa	buckthorn
umaumalei	Acanthuridae Acanthurus achilles	surgeonfish
ulei	Osteomeles anthyllidifolia	(shrub)
kukui	Aleurites moluccana	candlenut
laumilo	Muraenidae Gymnothorax undulatus	eel
milo	Malvaceae Thespesia populnea	hibiscus
kūpoupou kou	Labridae Cheilio inermis Cordia subcordata	wrasse (tree)
hāuliuli	Gempylidae Gempylus serpens	snake mackerel
uhi	Dioscorea alata	yam
weke	Mullidae Mullodichthys samoensis	mullet
wauke	Broussonetia papyrifera	paper mulberry
'a'awa	Labridae Bodianus bilunulatus	wrasse
'awa	Piper methysticum	kava
'ulae	Synodontidae spp.	lizardfish
mokae	(no data), a plant resembling the kili'o'opu, a sedge	
palaoa	Cetaceae	whale
aoa	Santalum spp.	sandalwood

Canto 3:	Insects and Birds.	akekeke	<i>Arenaria interpres interpres</i> ruddy turnstone
hāhā	Same as hāhā-'ai-a-ka-manu, or lobelia; <i>Clermontia gaudichaudii</i> (hāhā, food of the birds)	'elepaio	<i>Chasiempis sandwichensis</i> , flycatcher
palai'ali'i	a fern; palai <i>Micrelepidia setosa</i>	'alae	'alae 'ula, <i>Gallinula</i> <i>chloropus sandvicensis</i> , mudhen
huhu	wood-borer (grub), probably a larval stage of a wood-boring beetle	'apapane	'alae ke'oke'o, <i>Fulica</i> <i>americana alai</i> , mudhen
huhu-lele	beetle		
pe'elua	burrowing caterpillar	'alalā	<i>Corvus tropicus</i> , Hawaiian crow
pulelehua	butterfly, <i>Vanessa tameamea</i>	'alawi	<i>Loxops parva</i> , honeycreeper
naonao	wingless wasp, ant	'e'ea	grey bird (unidentified spp.)
pinao	damselfly	'alaihaha	grey bird (unidentified spp.)
unia	adult katydid	mamo	<i>Drepanis pacifica</i> , black honeycreeper
uhini	katydid	'ō'ō	<i>Acrulocercus nobilis</i> , honeyeater
naio	maggot	moho	<i>Pennula millsii</i> , rail
nalo	fly	moli	<i>Diomedea immutabilis</i> , Laysan albatross
hualua	egg	kikiki	a bird resembling the plover
manu	bird; any winged creature	'ukihi	<i>Chlorodrepanis</i> , <i>Loxops</i> <i>virens</i> , 'amakihi; also called 'alawi on Kaua'i
'ulili	<i>Heteroscelus incanus</i> , wandering tattler	kioea	<i>Numenius tahitiensis</i> , bristle- thighed curlew
kolea	<i>Pluvialis dominica fulvus</i> , golden plover	kukuluae'o	<i>Himantopus himantopus</i> , stilt
a'o	<i>Puffinus Newelli</i> , Newell's puffin (shearwater)	'iwa	<i>Fregata minor palmerston</i> , frigate-bird
a'u	<i>Istiophoridae</i> , sailfish [*Note: out of context; more likely a term for a bird, perhaps related to the auku'u night heron; however, some fishes are thought to possess 'wings' such as hihi-manu, rayfish]	koa'e	<i>Phaethon lepturus dorothese</i> , tropic bird
		kala	<i>pākalakala</i> , tern, <i>Sterna lunata</i>

kala (ka'ula)	(unidentified, probably same as koa'e 'ula) <i>Phaethon rubricauda rothschildi</i>	Halulu	(mythical white man-eating bird, the white bird of Kāne, Kāne's booby bird. 'A'a: companion of Kia'i-wa'a. bird that flies over the canoe-house), Kiwa'a (mythical, same as Kia'i-wa'a)
unana	a nesting bird		
auku'u	<i>Nycticorax nycticorax hoactli</i> , black-crowned night heron	hahu'ape	<i>Alocasia macrorrhiza</i> , or <i>Xanthosoma roseum</i> ; 'ape taro seedling.
lupe	kite; sting-ray		
lupe'akeke	<i>Oceanodroma castro cryptoleucura</i> , Hawaiian storm petrel		
noio	<i>Anous minutus tenuirostris melanogenys</i> , black noddy		
'io	<i>Buteo solitarius</i> , hawk		
kōlea-a-moku	plover (land), by the sea; <i>Pluvialis dominica</i>		
kōlea-lele	plover, (flying plover)		
hehe	bird (unidentified)		
nēnē	<i>Branta sandwichensis</i> , goose		
auku'u	black-crowned night heron (second appearance)		
'ekupu'u	probably the nuku-pu'u, <i>Hemignathus lucidus</i>		
noio	tern (second appearance)		
pueo	<i>Asio flammeus sandwichensis</i> , owl		
'ā'ā	red-footed booby, <i>Sula sula rubripes</i> ;		
'ā'ā	masked booby bird, <i>Sula dactylatra personata</i> brown booby, <i>Sula leucogaster plotus</i>		

Canto 4: Egg-bearing Crawlers:  
Lizards and Turtles

ahi'a	probably 'ohi'a, <i>Eugenia</i> spp. and/or 'ohi'a (lehua) taro	nēnē	(probably nēnē-'aukai, sea gull)
'ape aumoa	<i>Alocasia macrorrhiza</i> , or <i>Xanthosoma roseum</i> (dark-leafed 'ape taro plant)	manene	<i>Plantago pachyphylla</i> , a plan- tain (Kaua'i)
honua kua nanaka (green turtle?)	back-marked-in-sections	liko	leaf bud (piko spp. of taro)
honu 'ea kua neneke	hawkbill turtle, <i>Chelonia</i>	piko	common taro
'ula maku'a	purplish-red turtle	opeope	half-leaf, said of a taro plant remaining on the stalk after the top has been cut
'ula li'i	lobster	oheohe	<i>Tetraplasandra oahuensis</i> , a tree; more likely a variety of taro, or sugar cane, ma'oheohe
mo'o nanea	lizard (fascinating, relaxed)	nanana	sea-spider (probably shrimp) an arachnid, <i>Araneida</i> spp.
" niania	smooth lizard	nonanona	variant of nananana, spider; probably ant-like, gnat-like species or spider-like creature
" pilipili	clinging lizard		
" kalakala	rough-skin lizard		
" ka'uka'u	slow lizard		
" palaka	inactive lizard		
" ihu kunini	sharp-nosed lizard		
" kūpelepele	pot-bellied lizard		
" kele	mud-dwelling lizard		
" meheuheu	track-leaving lizard		
honua	turtle		
kūhonua	<i>Alyxia olivaeformis</i> , maile		
wili	bird (?) wood-borer(?)		
wiliwili	<i>Erythrina sandwicensis</i>		
a'io	(probably a booby chick)		
naio	<i>Myporum sandwicensis</i> , false sandalwood		
okea	(probably a variant of a-kea, white booby)		
ahakea	<i>Bobea</i> spp., or white taro		
wana	<i>Echinometra</i> spp.		
wanawana	thorny plants		

## Summary.

The four cantos during which the night advances maintain the same structure of the wā:

(1) Prologue, which states the theme;

(2) Enumeration of births, which is an evolutionary sequence of organisms;

(3) A puana, refrain of generation in which sea (kai) forms and land (uka) forms established an association, perhaps a relationship of blooming and spawning times, and an

(4) Epilogue, in which the theme statement is a juncture between one era and the following era.

The evolutionary sequence brings organic life out of the sea and from the reef and ocean up through the tide flats and littoral into freshwater streams onto land.

Fauna respire in salt water, then in fresh water, then in air, and water and air as flora grow from rhizoid/rhizome seaweeds (Bryophytes) to spore-bearing ferns (Pteridophyceae) to flower/seed-bearing, rooted shrubbery, emphasizing grasses, herbaceous-stemmed plants, and monocotyledons.

The hāhā spiralling stem of the monocotyledon dominates the growth pattern, evolving from the vine of Wā Akahi (Chant One, First Age) to the taro stalk (Chant Four, Fourth Age) as the *Cyrtosperma* species ('ape) which is the staple taro of Polynesians in Tonga, Samoa, and Fiji. (West Polynesia).

The prologue of the wā cantos devotes sensitivity to sight so as to focus upon degrees of developing darkness in the air and water and to liquid tones of water as sounds to which hearing is tuned.

The generating pairs of darkness as male and female forces from which growth evolves into organic forms advance through changing densities of darkness and light, light as the passive light of the moon and stars in the night sky:

(1) Wā Akahi

Kumulipo (male) Darkness-Source  
Pō'ele (female) Black-night

(2) Wā Elua

Pōuliuli (male) Dark-night  
Pōwehiwehi (female) Dark-night

(3) Wā Ekolu

Pō'ele'ele (male) Black-night  
Pōhāhā Groping-night

(4) Wā Ehā

Pōpanopano (male) Black-night  
Pōlalowehi (female) Dark-below-night

English definitions are, in this respect, limited in translation because 'dark' and 'black' are poor equivalents to terms expressed in Hawaiian as:

(1) lipo, darkness in atmosphere and water, but through which light is detected (as by sight);

(2) 'ele, black, as of hue; embryo, embryonic, as of egg, foetus;

(3) uliuli, darkness, as of a range of dark colors, black, blue, purple, brown, green; darkness and dark color, as of sky, foliage, night, ocean, clouds, skin;

(4) wehi, darkness, as an adornment, decorative blackness, as of a suntan on skin due to sun exposure;

(5) pano, jet-black, a darkness through which sight does not detect objects or outlines; darkness of deep water, as in bays of water through which the bottom cannot be seen.

They will continue to evolve in the next series of stages:

(5) Wā 'Elima

Pōkanokano (male) Very dark night  
Pōlalouli (female) Dark-below night

(6) Wā 'Eono

Pōhiolo (male) Falling-night  
Pōhane'eaku (female) Night-moving-away

(7) Wa 'Ehiku

Pōhane'eaku Night-moving-away  
Pohane'emai Night-moving-here  
Pōpihapiha Night-full  
Pōhe'enalu Night slipping

(8) Wa 'Ewalu

Pōkinikini\* Night without count  
Immensity of night  
Pōhe'enalu- Night sliding forward  
(mamao) distant  
(5) kano dense darkness,  
extreme dark (through which  
nothing can be seen)  
(6) hiolo to fall, collapse  
(night declining, moving  
toward dawn)  
(7) hane'e aku to move from  
one side to another  
(8) hane'e mai to move toward  
as to come toward someone

(9) piha full, filled,  
completed, to come to  
term

(10) he'enalu to slide/ roll forward,  
as a 'wave' (nalu),  
to surge, as water, darkness,  
pain; i.e., to lift and  
subside.

Qualities of cognitive awareness are realized gradually in the unfolding night as darkness moves toward light. As space itself is motionless, time is perceived as sight evolves from blind darkness to dim perception, or as darkness diminishes moving through the course of time, or time perceived as a growth of life through evolution of forms in linear time, as mutations metamorphose into variations that are but 'god' (akua) 'entering' (komo). Cosmic time is cyclical (kāhuli), 'caused' (kā-) to 'revolve' (huli), as plant life is 'set' or 'put' (kau) into place, 'planted' (kāhuli).

Birth (hānau) is the means or process by which life forms emerge (puka). When growth has 'filled' (piha) space, the night 'bursts' (pohā). Life is therefore contained, encased within certain limits, and it finds the aperture (puka) or ruptures through. Within the egg (hua) this limitation exists, a confinement, a temporary place (honua, placenta) in which to abide a phase of its passive existence.

Movement in space (au), cosmic motion, is confined within time but in life forms is varied as creatures 'run' (holo), 'fly' (lele), 'swing' (lewa), 'sidle' (ne'e) or 'stay, sit' (noho). Darkness is a current (au) and 'falls', 'collapses' (hiolo) like rain or dewfall or ocean waves (nalu).

These states and actions are also limitations that are conditions defined by the form in which things are born, or as their position and form shape the growth in which those activities and types of motion conform. It is how the god 'enters' or 'comes into' (komo) being.

Plant growth is a 'groping' or 'feeling' through (hāhā), as of a monocot stem (hāhā) unwinding from within as it spirals upward seeking light and air. thus hā 'stem', 'stalk' and hā 'breathe out' 'exhale' is an important expression, as breathing out is part of the process of giving birth (hānau), or as life respire it also develops and gives life, breath, to something else.

As plants 'vine' (kālina) outward and the 'ape' ('ahi'a) taro stem uncoils, unwinding upward like a fern 'regal' (pālaiali'i), 'twisting' (pōniu), analogous to how night spirals, analogous to the upward spiralling of the coconut tree (niu), they represent the primordial stem of chiefly lineage, as well as the kinolau of the god (akua) 'entering' (komo) in the hāhā, taro (Kāne), banana (Kaloa), and coconut (Kū). These advancements in the plant stalk as the god's 'entering' (komo) have come past the vining (kālina) of the gourd (hue), or sweet potato (Lono).

This slow upward growth of plants yet tied to the honua (earth/placenta) contrasts with the freedom of animals that 'run' (holo), 'swim' (holo), 'fly' (lele), 'crawl' (kolo), or 'twist' (kūwili), breaching and descending (ha'aha'a) like whales who 'lead afar' (ka'i loloa), 'swallowing' (monimoni) along the way from Paliuli before they alight upon Kānehunamoku as migrant birds, each group perhaps representing certain clans, as of the aumakua ancestry which was signified by these animals as hō'aiona, emblematic symbols or signatures of clan and family aumakua identifications.

Darkness of Kumulipo is not a pattern in the order of time in the same sense as darkness of the night (pō) is a cycle of rotation. It is entirely a factor of cognition, perception, as of sight which admits a power into animal life, the power to discern, to see, to know.

The spectrum of evolving darkness from opaque to extreme blackness (pano/kano) is not a power existing outside consciousness. Embryonic night (pō'ele), from 'ele, embryo') implies gestation, incubation as female 'adornment' (pōwehi), or on the female side of direction 'below' (pōlalouli, pōlalowehi), meaning on the opposite side of midnight, or perhaps, on the opposite side of the morning sun in the west, or the sun at zenith midday, and the dark of the moon.

The universe travails (wela) 'heat/pain' as night 'glides/slides' (uhe'e) through intervals of time (wā) and open space (wāwā) like 'sounding' (wawā) as through channel deeps, as the first cry of life (uwā), the Alpha 'beginning' of all existence as the child takes his first breath.

That moment is when the human child comes into being through pōkinikini before dawn light of the Eighth Age (Wā Awalu), upon the surging of the great wave (nalu), meaning pain, as labor pangs.

The god then enters into human form, and the daylight dawns into Ao, the time of light, into intelligence of and awareness of the world through consciousness and cognition.

Before this event, during the night moving toward dawn in the fifth, sixth, and seventh ages, the higher mammals are born: the pig (Wā Elima), rat (Wā Eono), and dog (Wā Ehiku). A bat ('ope'apea'), representing, perhaps, the god of childbirth ('Ope'a), comes into the picture just before the human child is born in Wā Ewalu.

## Land and Sea Interaction, *I Kai and I Uka*: Balance Between Ecology and Economy.

There are seasons in which plants sprout, animals give birth, fish spawn, and eggs hatch. Knowledge of these seasons, and how each species of flora and fauna develop and mature at their maximum potential in nature is in the best interest of hunters, fishermen, and farmers.

Is there any indication from the patterns of classification and association between species growing *i kai*, on the coast, and *i uka*, upland, in the four preceding wā cantos of the Pō genesis that this dualistic pattern is an economic approach to the ecology of land and sea?

Fishermen and farmers are interested in optimum catches and optimum yield for effort expended. The questions they would ask are probably these:

(1) Which of the species is in a category of food for human consumption, and which are not?

(2) Which are in the food chain from the the outer reef to the mountains, eventually affecting humans?

(3) If not in the food chain, then which are useful in other areas of economic (physical) human survival, such as medicine?

[Pharmacology is an extremely specialized topic all its own and will not be attempted here].

(4) Finally, which are kinolau body manifestations (akua, 'aumakua ancestral gods) required in the ceremonials of larger *heiau ho'oulu 'ai* or *mapele* agricultural temples dedicated to Lono, or in rituals on the *heiau Kū*?

A picture is drawn of the environment from the coral reef habitat in three directions, one of which leads from the reef zone of intense wave action (surge zone) over the reef edge to the bottom or from the surface of the sea near land to the deep sea. Where the reef surrounds a protected area of water, such as a bay, the reef fauna and flora move from the coral reef zone into estuaries and coastal wetlands. The other moves upshore and inland to lower and upper regions of the dry forest into the wet forest area.

The zone beyond the reef out into the open ocean is the deep sea habitat of offshore pelagic fishes, like flying fish, yellow fin and skipjack tuna, mahimahi dolphinfish, which are surface feeders. Beneath and at greater depths are marlin bigeye tuna, and albacore.

In the First Age (Wā Akahi) the principal area of attention is the coral reef habitat on which marine invertebrates and seaweeds constitute the beginnings of the food chain *i kai* (seaward).

"...Hawaii has three basic types of coral reef environments. The first is dominated by the cauliflower coral, *Pocillopora meandrina*. This coral thrives in strong light and high wave energy...the dominant coral in shallow areas exposed to heavy wave action...

"...The second type of coral reef environment is characterized by the lobe coral, *Porites lobata*. This species is found in calmer water [emphasis mine]. Many species of fishes and invertebrates find food and shelter here... *surgeonfishes...parrotfishes...*"

"...The third coral reef habitat is dominated by the branching finger coral, *Porites compressa*...in the most protected waters...coral-feeding butterfly-fishes... surgeonfishes, damselfishes...." [Fielding, Ann and Ed Robinson, 1987: 21].

The Wā Akahi environment enlarges into that in Wā Elua where the reef fishery extends outward from the reef zone into the deep sea.

The Wā Akahi and Wā Elua describe the range of interaction between *kai* (coastal) and *uka* (inland) economic natural resources of the ahupua'a ecosystem.

However, by study of the common staple plants named in Wā Akahi it appears that staple cultivars from the store of Polynesian food plants introduced by Hawaiians into the *kula*, plain, *i kai* and *uka*, are not strategically involved. The sweet potato, for example, is not included, nor is the banana (*mai'a*), breadfruit, or coconut.

The edible marine invertebrates of the surge zone and coral reef habitat are also few, namely, sea cucumbers, sea urchins, limpets, *nerita* (*pipipi*), and freshwater snails which live, eventually, in estuaries and streams *i uka*, having departed the *i kai* (salt water, coastal) environment for a life inland (*uka*). Edible seaweeds are the green, *'a'ala 'ula*, and brown seaweeds (*Sargassum* spp.), with some red (*manauea*), but they are also very few.

Lacking is any perspective of a thriving agriculture in the settled community of the ahupua'a, which is yet to be.

The impression gained from analysis of the poetry is that of a more pristine natural environment with a vulnerable potential for human life survival, or basic subsistence, potentially, upon the coral reef fauna and ocean fishery, in the absence of a developed

agriculture.

The functioning ecosystem, especially that of Wā Akahi, is as would be found if one had arrived in the islands during the settlement period as one of the initial settlers before substantial human settlement. While everything for survival of animals and plants is, however, basically in place, true survivors adjusted to the prevailing ecology are endemic fauna and flora of the raw environment, rather than human beings.

## Biology and Calendar: Adjustment to Seasonal Changes Above the Equator

Once ancient Hawaiian immigrants had successfully transported the earliest groups of new settlers, the initial colony then faced the related problem of learning about the environment in which they now lived.

Although the Hawaiian islands were still in the tropics, the long days of summer and short days of winter north of the equator were reversed from the pattern of seasons familiar in the south below the equator. So were wind and rain patterns, as well as times for fishing and planting.

In time they rearranged the agricultural calendar to suit the situation with respect to seasons, winter and summer, in accordance with the movement of the sun in the tropics between the north and south through twelve (or thirteen) months of the sidereal (Pleiades) year.

### Months in the Hawaiian Year

1. Makali'i	Nov.-Dec.	Pleiades
2. Ka'elo	Dec.-Jan.	
3. Kaulua	Jan.-Feb.	Gemini/Sirius
4. Nana	Feb.-Mar.	Gemini
5. Welo	Mar.-Apr.	
6. Ikiiki	Apr.-May	Regulus
7. Ka'aona	May-June	
8. Hinaialeele	June-July	
9. Mahoe-mua	Aug.-Sept.	Castor
10. Mahoe-hope	Sept.-Oct.	Pollux
11. Ikuwa	Oct.-Nov.	
12. Welehu	Nov.-Dec.	Antares

This is one recitation of star months in the year, commencing with the Pleiades on the eastern horizon in November, which is the time fixed in the Kumulipo as the time beginning the wā epochs. It fits a general Hawaiian calendar, but each island had its own and none were the same, even though names of months were similar.

The year in the general Hawaiian calendar, however, was divided between two seasons, the dry (kau), summer, and wet (ho'oilo), winter season. Hawaiian historian David Malo, a native of Kona, Hawaii, described these, as follows:

"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.

"Ho'oilo 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..." [Malo, 1951: 30].

That description is both ordinary and profound because Malo was aware that in the summer the sun was nearer the zenith of the latitude of Hawaii, and the Kona winds of the winter were not blowing. He also knew that in the winter the sun was moving back to the south from the north.

But what "vegetation" puts forth "fresh leaves" in the summer? He doesn't say. Nor does he identify what "vines" died in the winter. What did he mean? He continues:

"The six months in Kau were Ikiiki, answering to May, at which time the constellation of the Pleiades, huhui hoku, set at sunrise."

That is also profound, because Malo knew that in May the Pleiades were visible in the sky *setting on the western horizon in the morning* as the sun rose in the east. Who watches stars rising and setting on the horizon throughout the year? Evidently, Malo did.

[Malo, continuing] "...Ka'aona, 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

used in keeping its mouth open...

...Hina-ia-eleeele, answering to July, the month in which the 'ohi'a fruit began to ripen...;

...Mahoe-mua, answering to August--this was the season when the oh'i'a 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" [Malo: 30].

"...The months in Ho'oilo were Welehu, answering to November, which was the season when people, for sport, darted arrows made of the flower stalk of the sugar cane..."

[\*Note: The tassels were made from dried stalks, which, according to Malo were from the cane that had bloomed, beginning in September].

"Makali'i, corresponding to December, at which time the 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;"

[\* Note: Malo does it again. What vines are putting forth fresh leaves in January, during Ho'oilo?]

"...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 months belonging to Ho'oilo" [Malo, 1951: 30-31].

Malo's seasonal calendar began the Ho'oilo winter season in late November, [about November 20th] when Makali'i [Pleiades] per Wā Akahi [Kumulipo] is on the eastern horizon at sunset, and the order of edible cultivars commenced with the manaua wild taro and kōpunapuna jointed stalk of sugar cane in the fall, during November, the month of Welehu, actually mid-October to mid-November:

#### Introduced and Economic Food Plants.

[Wā Akahi]:

- (1) wild red taro (kalo manaua);  
staple root
- (2) sugar cane (kōpunapuna)

"...[A]s an element in the systematic horticulture of the old natives, it [sugar cane] had a *fixed place in relation to taro and sweet potatoes...*" [Handy, E. S. Craighill and Mary K. Puku'i, 1972:186].

"...In lowland planting in Ka'u *November and December* are considered the proper months to plant cane because it will grow quickly with the winter rains, will flourish during the hot summer, and will bloom about a year later..."

...[T]he moon phases named *Kaloa* [24th to 26th moon nights] are favored for planting...

...In general we are told that the native canes mature in from 12 to 15 months in the lowlands, and from 18 to 24 months in the uplands" [ibid.: 186-187].

That would indicate that an arriving canoe of initial settlers, knowing the required growing period of plants would be aware that sugar cane planted in the winter (ho'oilo) or summer (kau) would be ready in one or two years, but sooner harvested near the coast *i kai* than *i uka*. They would have planted cane as soon as possible to have a yield within a year.

[Wā 'Elua]:

- (3) gourd (lauhue) [containers]
- (4) hibiscus (hau) bast fiber for fire-making, and soft wood for canoe outrigger float (ama)
- (5) mallow (milo), hard wood for building material, timber
- (6) heliotrope (kou), hard wood for building material, timber
- (7) yam (uhi), staple tuber

The type of gourd favored for introduction was probably the bottle gourd [*Lagenaria siceraria*], a container for drawing and keeping drinking water. There were multiple uses of gourds as containers for food, bait and fishing gear, storing tapa, and music-making.

"...The proper night for planting gourds (and melons and pumpkins) in Ka'u, Hawaii is *Hua*, because if planted then, there will be good fruit (*hua*)..."

*...The beginning of the rainy season is the proper time to plant; maturing in six months, the gourds will have the hot dry summer to bring them to full size" [Ibid.: 216].*

"...When the stem of the fruit *withered* (the sign of full maturity) the gourd was ready for picking. If picked before this stage the skin would crack when exposed to the sun" [Ibid.: 216].

Perhaps the yam (*uhi*), a vining plant like the gourd (*hue*), would also be one of the "withering" vines Malo talks about as the "dying herbage" of winter (in January):

"..Yams are more definitely seasonal than that of either the taro or the sweet potato...*Toward the end of the rainy season in February or March*, buried tubers begin to sprout; and in the late spring

and summer, strengthened by hot sunlight, the vines festoon the branches of trees, stones, or whatever they can twine around...

*...The foliage matures in October and withers in December...*

*...When the foliage withers, the plant is mature*, but the tuber continues to fill out. The tubers should therefore be left in the ground during the dormant period of the foliage and dug after rains again set in and the new shoot appears from the top of the tuber" [Handy, E.S.C. and Mary K. Puku'i, 176]

"...As planting 'nights' for yams, *Mahealani* (sixteenth night) and *Hua* (thirteenth night) are best" [Ibid.: 179].

It would then appear that the sugar cane [Wā Akahi], preceding the yam [Wā Elua], or planting of sugar cane nodes in early winter in order to mature at the flowering period in the following year, and the yam, planted later in winter [February] into spring [March] would mature (wither) with fruit in December, whereas the gourd would "wither", or be ready for picking in the summer, if planted in the winter.

Then what about the taro species in the third and fourth wā?

[Wā 'Ekolu]

- (8) paper mulberry (*wauke*), tapa cloth
- (9) giant taro ('ape), staple stem

[Wā 'Ehā]

- (101) taro (*ohi'a, lehua* variety); lo'i kalo wetland cultivation
- (11) mountain apple (*ohi'a 'ai*, *Eugenia* spp.)
- (12) taro wild white spp. (*ahakea*); dryland cultivation
- (143) taro (*piko*), lo'i kalo wetland cultivation

Handy lists the piko, lehua, and hakea taros as species allowed to remain in the lo'i after harvest time. The piko taro matured in nine months but could be left in the lo'i another nine; the lehua matured in eight months, or was left for another four, and the hakea, maturing in eight months, could be left another ten.

The presence of these taros, which, although cultivated, were also left to run wild, suggests that ancient Hawaiians were able to augment the ecosystem with species that could assume the wild space of other endemic flora, thereby altering the ecology to enlarge the gathering strategy in the space beyond controlled agriculture, changing the economy without drastic alteration of the indigenous or endemic forest.

A fragile unity then exists in the ecosystem linking species and all life forms from the ocean and reef habitat to the land and wet native forest. This exhibits a parallel in the form of epiphytic growth of plants living on plants in the forest, just as corals live in the reef assembly with other kinds of growth. Nowhere, perhaps, is the symbiotic interdependence of species more evident than the coral reef where wrasses live in toxic folds of some marine invertebrates, or in the epiphytic symbiosis of mosses living on trees.

Endemic (or indigenous) plants inedible or not eaten, nor otherwise used:

[Wā Akahi to Wā 'Ehā:

(1) Coral reef habitat:

searmoss: 'ekaha, 'aki'aki, kele, lipu'upu'u, loloa, huluwaena

(2) Wet forest habitat:

landmoss: 'ekahakaha (epiphyte)  
'ala'alawainui (epiphyte)  
'ekele (epiphyte)  
moamoa (epiphyte)

(3) Marsh and bogs

aquatic: ne (pond scum)  
grass: 'aki'aki (rush)  
lau'aki (rush)  
lipu'u (sedge)  
mokae (sedge)

lobelia: hāhā -'ai-a-ka-manu

Silently, perhaps, the cultivator or husbandman, who is also a fisherman and a birdhunter, enjoys life lived by living creatures, plant or animal, as they are in the wild, so that not every disagreeable thing or form of life otherwise useless to human economy is removed or cut down, that what birds live on, such as the seeds of the lobelia, must then be allowed to flourish in the same way that marine invertebrates or fish toxic or unpalatable to man are allowed to remain for other life forms to subsist. Otherwise, natural beauty dies as they become extinct in the wild.

Native Hawaiian Incorporation of  
Indigenous Food and Utilitarian  
Plants Into the Subsistence  
Economy.

[Wā Akahi to Wā 'Ehā]:

'akala	raspberry	(edible)
lama	wood	implements
neneleau	red fruits	(edible)
	wood	hoops (traps)
'ie'ie	pandanus vine	cordage
		baskets
alahe'e	wood	weapons
kauila	wood	timber
aoa	sandalwood	wood

A development as such honors the adaptability of newcomers to the existing environment, by adopting the endemic (or indigeous) species into religious veneration with the kinolau of existing akua and 'aumakua ancestral gods [italicized names are indigenous]:

[Wā Akahi to Wā 'Ehā]:

- |                            |                         |
|----------------------------|-------------------------|
| (1) coral polyp and coral  | Kanaloa                 |
| (2) worms (ko'e)           | Kū                      |
| (3) caterpillar ('enuhe)   | Kū                      |
| (4) sea cucumber           | Kū                      |
| (5) triton shell           | Lono                    |
| (6) conch shell            | Lono                    |
| (7) grasses                | Kāne                    |
| (8) taro                   | Kāne                    |
| (9) sugar cane             | Kāne                    |
| (10) lipu'upu'u            | Kamapua'a               |
| (11) lama (ebony)          | Lono                    |
| (12) pandanus vine (ieie)  | Kū<br><i>Kūka'ie'ie</i> |
| (13) porpoise              | Kanaloa                 |
| (14) rayfish (pe'a)        | Kanaloa                 |
| (15) gourd (hue)           | Lono                    |
| (16) pandanus (hala)       | Lono                    |
| (17) mallow (kou)          | Lono                    |
| (18) eel (puhi)            | Kū                      |
| (19) octopus (fie'e)       | Kanaloa                 |
| (20) porcupinefish         | Lono                    |
| (21) candlenut (kukui)     | Lono                    |
| (22) yam (uhi)             | Kane                    |
| (23) kava ('awa)           | Kane, Kanaloa           |
| (24) fern (palai)          | Kane                    |
| (25) caterpillar (pe'elua) | Kū                      |
| (26) butterfly, moth       | Kū                      |
| (27) pueo                  | Kāne, Lono, Kū          |
| (28) booby bird            | Lono                    |
| (29) <i>ohi'a</i> (tree)   | Kū                      |
| (29) turtle                | Papa<br>(Earth Mother)  |
| (30) <i>maile</i>          | Kāne                    |
| (31) taro (wild spp.)      | Kāne                    |

The ritual importance of this incorporation gives a sacred character or identity to these plants: the 'ie'ie pandanus vine, the lama (ebony), *ohi'a* (*Eugenia* and *Metrosideros* spp.) trees, and the *maile* (*kuhonua*) vine, respectively, Lono, Ku, and

Kāne. All of these are plants which function in the rituals of the heiau temples of Kū and Lono.

"...The *ieie* (*Freycinetia arborea*) is a common vining epiphyte in the wet forest...flowers of the *ieie* are surrounded by short leaves bright orange in color. These flowers probably attract bats, which are known to pollinate such flowers...

...The trees [*lama*, *Diospyros Maba* spp.] fruit prolifically during the late winter months, especially in the month of February, [*Kaulua*] when the trees are loaded with the bright colored fruits...

...The wood is very hard, close grained, and of a rich reddish brown color when old; it was employed in building houses for the gods...[Rock, Joseph, 1974: 336, 395].

Biology and Time: Seasonal  
Migratory, Breeding, and Nesting of  
Birds and Turtles.

[Wā 'Ekalu to Wā 'Ehā]:

(1) Aquatic Waterbirds:

Birds in this category are wading birds, frequenting freshwater ponds, marshes, reservoirs, taro patches, lagoons, and tidepools, also building nests on folded reeds ('*alae*), shallow depressions (*kukulu'ae'o*), and in trees (black-crested night heron). These include:

- |                 |  |
|-----------------|--|
| ' <i>alae</i>   | mudhen (feeds on mollusks)   |
| ' <i>ae'i</i>   | stilt (feeds on fish, crabs, worms, and water insects)   |
| ' <i>auku'u</i> | blackcrowned night heron (feeds on fish, frogs, mice, insects, and chicks of other birds); nests May-June. |

Included in the waterbird category are Arctic migratory birds, the bristle-thighed curlew (kioea), plover (kolea), ruddy turnstone (akekeke), and the wandering tattler ('ulili).

## (2) Arctic Migrants:

Birds in this category fly south in the winter, alight in Hawaii and remain for a period of time before flying north in the summer, creating no nesting places as tropic seabirds do. They arrive in the islands in August-September and return to the Arctic in April-May to nest, navigating by homing in on the pole star.

'ulili (wandering tattler)  
 kolea (golden plover)  
 akekeke (ruddy turnstone)  
 kioea (bristle-thighed curlew)

Arctic migrants arrive in the islands in August-September and return to the Arctic in April-May to nest.

## (3) Tropic Seabirds:

Birds in this category fly away from the islands to feed on fish over the open ocean. They nest in the islands.

a'o (Newell shearwater);  
 breeding season April-November;  
 breeds on forest slopes on Kaua'i,  
 Hawaii, Moloka'i; arrives from sea  
 after dark, leaves before dawn.

ua'u (Hawaiian petrel); breeding  
 season, March-October; lays one  
 white egg; breeds at high elevation  
 slopes, main islands (formerly),  
 squid-feeding; arrives after  
 dark.

moli (albatross); breeding season,  
 November; birds leave nest by  
 September; nests in exposed sandy  
 areas, northwest leeward islands,  
 Ni'ihau, Moku Manu (O'ahu),  
 Kilauea and Manā (Kaua'i).

'iwa (frigate bird); nests in March  
 or April (single egg) on trees,  
 shrubs; northwest leeward islands,  
 Moku Manu (O'ahu),  
 Kilauea (Kaua'i), Pauwahu (Maui).

pakalakala (gray-backed tern);  
 nests between February-April (single  
 egg) on sand or rock; chicks leave  
 nest soon after hatching; nests on  
 northwest leeward islands, Moku  
 Manu (O'ahu); feed on small fish  
 and squid.

ka'ula [koa'e 'ula] (red-tailed tropic bird);  
 nesting in early spring, return from  
 sea in late February; in northwest  
 leeward islands, under shrubs or  
 rocky ledges; on main islands, in  
 cliffs; fish- and squid- feeding.

lupe'akeke (storm petrel);

sooty storm petrels breed during  
 winter; peak egg-laying December-  
 January, on northwest leeward  
 islands, burrow under beach morn-  
 ing glory, grass; sooties fledge by  
 mid-May

Harcourt's storm petrels breed in the  
 summer; fledge by October, taking  
 58 to 72 days to mature.

noio (black noddy);  
 breeding season winter-spring,  
 nests December-March; egg-laying  
 peaks December-January, fledge by  
 mid-May; on main islands, in caves,  
 cliff ledges; in northwest leeward  
 islands, on shrubs, trees; feeds in  
 brackish ponds (Kaneohe, O'ahu);

'ā'ā (red-footed booby);  
 peak egg-laying season, April-June,  
 single egg; nests in shrubs,  
 northwest leeward islands; Moku  
 Manu (O'ahu), Kilauea (Kaua'i);

(masked booby);  
 nests northwest leeward islands,  
 Moku Manu (O'ahu), on Ka'ula  
 Rock, Ni'ihau;

(brown booby);  
nests on ground, northwest leeward  
islands, Moku Manu (O'ahu), on  
Ka'ula Rock, Ni'ihau; feeds on  
flying fish, squid.

(4) Forest Birds:

'elepaio (flycatcher);  
breeding season, January to June  
(except Kaua'i spp., March to June);  
feeds on insects.

'apapane (honeycreeper);  
breeding season, January to July;  
feeds on ohia lehua nectar

'alala (crow);  
breeds in the spring, hatching  
April-June; feeds on fruit, nectar,  
seeds, insects

'alawi (honeycreeper);  
feeds on insects

mamo (honeycreeper);  
feeds on nectar of the ohia lehua

'o'o (honeyeater);  
feeds on nectar, insects

'ukihi (honeycreeper, Kaua'i);  
[same as 'alawi]

'io (hawk); habitat, Hawaii only;  
feeds on mice, insects, small birds;  
frequents open grasslands, cane  
fields.

pueo (owl); habitat on all islands,  
from sea level to 8,000 feet or more;  
frequents dry and rain forests, lava  
flows, grassy areas; hunts by day  
and night; feeds on mice.

nēnē (flightless goose); forest  
habitat on Hawai'i; begins nesting  
in November; feeds on plants.

(5) Turtles, Lizards

honu (green sea turtle); migrates  
May-August to northwest leeward  
islands; females lay 100-200 eggs,  
50-60-day incubation

honu (hawkbill turtle); main  
islands; females lay 125-175 eggs,  
hatch 52-74 (average 59) days.

mo'o gecko, lizard; habitats vary  
from bark of trees, under stones;  
some lay eggs under rocks; geckos  
feed on insects

Biology and Calendar:

Coordination of Seasons from Coral  
Reef and Open Sea to Land and Wet  
Forest,

The following seasonal calendar has  
been prepared, based on the information  
presented in the Kumulipo [Cantos 1-4].

Welehu [November-December]  
(Hawaii General Calendar)

Ho'oilo (winter, rainy season,  
begins); sidereal calendar set to Pleiades  
about November 20th, on eastern horizon.

A six-month tabu was placed on  
eating the 'opelu (mackerel scad) in the  
winter months,

(1) kōpunapuna (sugar cane),  
lowland planting in Ka'u, Hawaii,  
November and December; mature in one  
year; moon nights of Kaloa (24th to 26th)  
favored for planting.

(2) lauhue (gourd); proper time to  
plant gourds, which will mature in six  
months, fruit ripening over the summer.

(3) uhi (yam); foliage matures  
October-November.

(4) threadfin (moi), still spawning, November to December; fishing season, August to December

(5) a'ua'u (swordfish), end of fishing season in the late fall

(6) ahi (yellowfin tuna); last month of the five-month fishing season in November.

(7) a'o (shearwater), end of breeding season in November

(8) moli (albatross), lays eggs in November

(9) lupe'akeke (stormpetrel), departing nests, October-November

#### Makali'i [December-January]

*Ho'oilo* (winter), season of Kona winds blowing from the southwest, beginning.

(10) moi (threadfin), last month of fishing season, December.

(11) 'ama'ama (mullet), spawning December to January; fishponds, bays.

(12) noio (black noddy), nesting December-March; egg-laying peaks December-January

#### Ka'elo [January-February]

*Ho'oilo* (winter), Kona winds continuing. In February the mullet is still spawning; black noddy nesting.

(13) 'elepaio (flycatcher), breeding season January-June.

(14) 'apapane (honeycreeper), breeding season January-July

(15) 'enuhe (caterpillar) appears

(16) 'ama'ama, anae mullet spawning in February [Kona, Hawaii, acc. Malo].

[\*In Ka'elo tabu was removed from eating aku and laid on eating 'opelu]

#### Kaulua [February-March]

*Ho'oilo* (winter), Kona winds prevailing. End of mullet season (spawning) and nesting of noddy (noio);

'elepaio and 'apapane forest birds, breeding season continuing.

(17) ua'u (petrel), returns to nest between February-April, breeds March-October.

(18) pakalakala (tern), lays (single egg), between February-April

(19) lupe'akeke (storm petrel), returns to nest between February-April.

(20) koa'e-'ula (red-tailed tropic bird), returns from the sea in late February.

#### Nana [March-April]

*Ho'oilo* (winter), strongest Kona storms in March subsiding by April; noddy (noio), storm petrel (lupe'akeke), grey-backed tern (pakalakala), ua'u (petrel), nesting; honeycreeper ('apapane), breeding season.

(21) 'elepaio (Kaua'i flycatcher), breeding season, March-June.

(22) 'iwa (frigate-bird), nests (single egg), between March-April

(23) a'o (shearwater), beginning of nesting season.

(24) akekeke (ruddy turnstone), returns to Arctic to nest.

(25) koa'e-'ula (red-tailed tropic bird), nests in the spring.

Welo [April-May]

*Ho'oilo, last month of winter;*  
end of Kona season and return of normal  
tradewinds.

(26) A'ā (red-footed booby bird),  
lays eggs April-June; nesting season.  
**lkiiki** [May-June] *Kau, summer*  
*season commences.*

During the Kau, a tabu was placed  
on eating the aku (bonito, albacore), and a  
six-month season on 'opelu fishing was  
opened. However, the season on taking the  
aku was still open in the month of June,  
tabu on the eating of aku during Kau  
commencing the next month  
(Hinaia'ele'ele).

The seabirds shearwater (a'o), petrel  
(ua'u) continue to nest; the Arctic migrant  
bird, ruddy turnstone (akekeke) returns  
northward; the 'elepaio ends its breeding  
season in June; the albatross ('ā'ā) ends  
egg-laying, nesting period in June;  
'apapane (honeycreeper), breeding season  
continues.

(1) auku'u (black-crowned night  
heron, nesting season, May-June  
(sometimes in spring).

(2) honu (green turtle), migrate  
May-August to leeward islands to lay their  
eggs.

**Ka'aona** [June-July]  
*Kau, summer.*

(3) 'opelu (mackerel scad);  
fishermen start to make basket traps in  
June in preparation for 'opelu fishing  
season in July-November.

(4) ko'a (coral polyp);

Some coral species spawn after full  
moon, 5-8 p.m., *mid-June* to October  
[e.g. *Fungia scutaria*, mushroom coral];  
other species spawn after new moon, 8-10  
p.m. July-August (intense in July)  
[\*personal communication, David Krupp,

Windward Community College, Kaneohe,  
O'ahu].

(5) moi (threadfin), spawning season  
June-December; not the season for fishing.

(6) 'elepaio (flycatcher), end of  
breeding season in June

(7) 'alala (crow), end of hatching of  
eggs (in June)

(8) auku'u (night heron), end  
nesting period (in June)

(9) 'ā'ā (red-footed booby bird), end  
egg-laying period (in June).

**Hinaia'ele'ele** [July-August]

*Kau, summer.*

The 'apapane (honeycreeper)  
breeding season ends in July;

(10) wana (black sea urchin); period  
of taking the wana is in July, when the  
urchin is momona (fat), full of eggs.

(11) ahi (yellow-fin tuna), fishing  
season opens July-November

**Mahoe-mua.** [August-September]

*Kau, summer.*

The fishing season for ahi (yellowfin  
tuna and 'opelu (mackerel scad) is still  
open.

(12) moi (threadfin); the fishing  
season for moi opens in August-December.

(13) a'ua'u (marlin); fishing season  
for marlin is open later summer to early  
fall.

(14) hāhā-'ai-a-ka-manu  
(lobelia, *Clermontia*); blooms in August;  
plant dies after fruiting.

(15) akekeke (ruddy turnstone),  
arrives in Hawaii August-September from  
the north.

(16) kioea (bristle-thighed curlew), arrives in Hawaii late August, early September.

(17) honu (green turtle), migratory period to leeward islands ends in August.

(18) ohī'a 'ai (mountain, *Eugenia* spp.); "...this was the season when the ohī'a fruit ripened abundantly [Malo: 30].

**Mahoe-hope** [September-October]

*Kau, summer.* [The fishing season for ahi, 'opelu, a'u'a'u and moi continuing; Arctic migrants (akekeke) still arriving.

The annual makahiki tax-collecting festival of first fruits began on the 28th night (Lono) of Mahoe-hope.

(19) kōpunapuna (sugar cane); "...September, the time when the plume of the sugar-cane began to unsheath itself," [Malo:30] i.e. end of the blooming season in the summer.

**Ikuwā** [October-November]

*Last month in the season of Kau.*

Fishing season for the ahi and 'opelu open through November; season ending for moi and marlin fishing in November].

(20) moli (albatross), lays eggs in November.

(21) lupe'akeke (storm petrel), departs nest October-November.

[\*Note: In the Tuamotus, as in Tonga, the classification *manu* includes animals, birds, and insects. It is also a period in the year, *manu*, ranging from December to February. [Cp. *manu* (Kapinga) Sirius; Rigel (Tikopia)]. In Tikopia, *manu* means 'bird', as a constellation, the complete bird is formed by Ti Pakau i ngake (The wing in the east), *Procyon*, and Ti Pakau i ngeiho (The wing in the south), *Canopus*. The bird is complete with Sirius, or otherwise it has a 'broken wing'; another combination is

Sirius, Antares, Betelgeuse, spoken of as a 'bird with a broken wing'].

## Biology in Religion: The Kinolau Concept of Akua and 'Aumakua

The concept of *kinolau* is that the akua (god) manifests what it or he or she is in a perceptible concrete form. Usually, the kinolau is a living thing in which the akua appears, and as a form it also represents him (or her), but kinolau are not restricted to organic life. They may be abstract, such as color, position, or geometric shape.

The 'aumakua is an ancestral guardian, functioning as protector of a family or person in his charge. Akua are aumakua in that they are ancestral protectors of their descendants.

The kinolau concept, therefore, works in such a way as to personify the akua and 'aumakua in nature and to establish an avenue of visible or audible contact with them in the whole of nature. The akua manifests in living forms, plant or animal, by which and in which his form, incarnate, is recognized.

When such forms, particularly those which move in nature, rather than those that are fixed in place, suddenly appear, although but kinolau manifestations, they are *ho'ailona*, a portent with some meaning for you.

The kinolau, however, are not random forms in nature. They have a select character although several akua can be manifest in a chosen thing. The ti plant for example, is several. The stalk, being upright, is Kū, because Kū is vertical and upright structure. The leaves are Lono, because they are used in healing as well as in wrapping food. The coral is Kanaloa but addressed in prayers as Kāne-ko'a, whereas all reef life, marine invertebrates, subject to tides rising and falling are the children of Hina, moon goddess.

Since Kanaloa is not the creator-god, however, of ancient Hawaiians, coral rock ('āko'ako'a) was placed *outside* temple walls of district heiau dedicated to Kū and Lono, whereas in Tahiti, *inside* marae walls, as Ta'aroa [Tangaroa, Kanaloa] is the Tahitian creator-god.

In such kinolau the akua lives in the material with which you build canoes, houses, utensils, beat cloth, and also eat, even the atmosphere which you breathe, the air, is both body of the akua as such and the process of breathing. The akua becomes you.

This was how the creation was depicted as evolving out of the night by the gradual accumulation of life forms, from the power of the cosmos to move from inertia to motion and heat, into air and water, to rock and soil, into organisms breathing in and out of air or water, plants and animals, respiring and ingesting from nature in order to have being and, later, conscious intelligence to know it.

In the Kumulipo this is recognized as *one source of all in the cosmos continuing from inorganic into organic being, as living creatures.*

This was arranged in the religious context of ancient times into a time-space continuum divided into a four-fold male akua space, one-fourth of the *power* existing in nature, as it were, to each of the male akua, Kū, Lono, Kāne, and Kanaloa.

In following is a list identifying the main kinolau of major male akua of the organized Kū and Lono priesthoods.

## 1, Symbolization of god Kū:

a) As god of forest and rain, patronized by canoe-makers and builders of the *luakini* (*po'okanaka* type) human sacrifice temples:

Kū-moku-hāli'i: Kū-spreading over land

Kū-pulupulu: Kū-of-the-under-growth (pulupulu), fern down, used in tinder, fire-making; equated sometimes with Laka, ancestor of the menehune people; hence, with Kū-ka-ohi'a-laka, -in-the-lehua-tree, god of the hula dance, and god in the haku-ohi'a image on the Kū heiau.

Kū-o-lono-wao Kū-of-the-deep-forest (wao, uninhabited by human beings)

Kū-a-lana-wao, Kū-a-ela-na-wao: (Variant of Kū-o-lono-wao, one of the gods of the canoe).

Kū-ka-ohi'a-laka Kū-of-the-ohi'a-laka tree (the lehua tree; see Kū-pulupulu, above).

Kū-ka-'ie'ie Kū-of-the-wild-pandanus-vine (Freycinetia scandens, etc.)

Kū-mauna Kū-of-the-mountain

Kū-holoholo-pali Kū-sliding-down-steeps (God of canoe-hauling over cliffs)

Kū-pepeiao-loa/Kū-pepeiao-poko Kū-of-long-ears/Kū-of-short-ears; gods of the "ears" of the canoe interior, used as handles for hauling and later for seat supports.

Kūpa'aikē'e Kū-adzing-out-corners-(of-canoe) (Kū-in-the-reversible-swivel adze)

b) Kū as god of husbandry; patronized by farmers [at ko'a uka shrines (unu)].

Kū-ka-ō'ō            Kū-of-the-digging-stick  
Kū-kulia            Kū-of-dry-farming  
Kū-ke-olowalu      Kū-of-wet-farming  
Kū-'ula-uka        Kū-of-the-abundance-of-the-uplands

c) Kū as god of fishing; patronized by fishermen [at ko'a kai shrines (unu)].

Kū-'ula-kai        Kū-of-the-abundance-of-the-sea; "red" things in the sea symbolized "abundance" of the sea; sacred to Kū

d) Kū as god of war and sorcery; patronized by warriors/chiefs [heiau Kū, luakini po'okanaka, waikaua temples]

Kū-nui-akea        Kū-the-supreme-god

Kū-ka'ili-moku    Kū-snatcher-of-land; war-god of Hawai'i, cared for by Liloa, handed down to 'Umi as a red feather image carried into war, and inherited by Kamehameha from Ka-lani-opu'u; war god of the 'Umi-Kamehameha line of kings, of the Mahi clan of Kohala-Hāmakua and Kona districts

Kū-ke-oloewa      Kū-the-supporter, war god of Maui kings; captured by Kamehameha the Great

Kū-ho'one'enu'u   Kū-pulling-together-the-earth; god of Pakaka temple of O'ahu chiefs and their war god; captured by Kamehameha

Kū-waha-ilo        Kū-maggot-mouth; god who received human sacrifices, as to gods only (mōhai); symbolized as the tongue (lelo) carrying with it the kapu 'i, invoked by chiefs as

power to speak with authority; kino-lau bodies in whirlwind (puahiohio), earthquake (nei ke ola'i), caterpillar ('enuhe), worm (ko'e), worm (of decay in winter) ilo; coconut sprout (ilo); blood (of sacrifice), koko; lizard, gecko, or reptile "with flashing eyes and thrusting tongue". [reminiscent of larger size such as salt water crocodiles and komodo dragons, in Micronesia, Melanesia, Indonesia, not Hawaii].

e) Kū as god of healing; invoked with the goddess Hina in Kū and Hina worship.

Kū symbolizes the east point of the compass, a cardinal direction as a "pillar" (kūkulu) east (kūkulu hikina) in the middle of the house, fixed (preferably) at the vernal equinox (March 20-22) in the sacred house (hale manā) on the Kū heiau. Hina, as the moon, symbolizes the west (kūkulu komohana) where all celestial bodies set).

f) Kū as god of sorcery.

Kū-koa'e            Kū-red-tailed-tropic-bird; the Kū-koa'e shrine (unu) was built by a chief for his deification (kākū'ai) into an 'aumakua after death, and also for circumcision rites for young chiefs.

g) Kū of bird-catching; patronized by bird-snarers (kāpili manu, kā manu, kia manu).

Kū-huluhulu-manu    Kū-bird-feathers; god of bird-snarers, bird-liners, and all who did featherwork.

h) Kū gods as chiefs' god:

Kū                    Kū-standing-upright  
Kū-maka-iki        Kū-small-eyes  
Kū-maka-nui        Kū-big-eyes  
Kū-makela

Kū-māka'aka'a      Ku-in-the-clearing  
 Kū-holoholo-kaua      Kū-run-wars  
 Kū-koa      Kū-warrior-of-courage

Kū-nui-akea      Kū-of-wide-expanse  
 (the highest form and rank of Kū as  
 a war god)

Kū-kā'ili-moku      Kū-snatcher-of-land

Kū-waha-ilo-o-ka-puni      Kū-maggot-  
 mouth of overcoming

i) Animal form

Kū-ilio-loa      dog  
 Kū-ilio-loa      cloud form, when  
 clouds rest directly upon mountain-  
 tops, especially in dry weather

j) Kū symbolization summary:

1. Fibrous *pulupulu* of fern, used in fire-making (tinder) and for stuffing mummified corpses; *pulupulu* as of coconut sennit, for rope and cordage to wind adz blade to handle (a form of Kū), and for lashing canoe parts and house timbers.

2. 'Ie'ie pandanus vine, used as rope for tying the tops of the felled trees and for girdling the ohī'a lehua tree before cutting it down to make the Kū-ka-ohī'a-laka image central to the semi-circle (or rows) of maka'iwa images in the heiau (luakini po'okanaka); red spathe and brackets of the flower is a phallic symbol of Kū as a male god.

3. The adz (ko'i, pa'ai-ke'e) as used in sacred ceremonies (malu ko'i) on the Kū temple and for cutting wood and adzing out canoes; the primary "tool" form of Kū as used by carpenters (kahuna kālai wa'a).

4. The coconut tree (pūniu) as proceeding out of the head of the eel (kuna, puhī), a form of Kū, related to the caterpillar (Kumuhea, son of Kū), worm (ilo, as worm of corruption in winter, and as the ilo, sprouting shoot of the coconut) and sea cucumber; coconut tree provides the

materials for making sennit, and also provides the drinking nut, the source of sennit fiber having many uses for survival on the ocean and on land.

5. Breadfruit tree ('ulu), wood and flower (as the husband of Haumea, earth mother goddess in the breadfruit tree.

6. Upright stem of the ti plant (*Cordyline terminalis*); or "uprightness" (kū) of solid plant stems and hardwood trees or shrubs, particularly as used in making canoes and building houses.

2. Symbolization of Lono (partial):

a) As god of rain:

Lono-nui-akea      Lono-of-wide-expanse

Lono-nui-noho-i-ka-wai      Great-Lono-  
 dwelling-in-water

1. Visible in cloud and storm phenomena: thunder, rain-clouds; "blood-red rainfall" (ua koko) as flood after storm; rainbow (ua koko); lightning (maka'alohi-lohi, "flashing eyes").

2. Heard as sound of thunder (Lono), thus the verb, *ho'olono*, "to listen" (cause-sound-hearing, *ho'olohe*).

b) As god of the agricultural year (makahiki):

Lono-i-ka-makahiki      Lono-in-the-  
 year; Lono-in-the-first-fruits-  
 season

1. God of first fruits,

tax-collecting, sports, in the makahiki season;

a) Major forms: Ipu o Lono (gourd, hue, ipu); vine (sweet potato, 'uala);

b) Ipu o Lono image (Unu o Lono shrine) in the men's eating house, hale mua

2. God of the ahupua'a image:

a) The boar incarnation of Lono as Kamapua'a, the hog demi-god, symbol of turning the earth and planting (kāhuli); represented as a pig's head carved in kukui wood, a kinolau of Lono as god of agriculture.

b) As the medicine god, Lono-puha, Lono-of-abscess, i.e., curing of infections

c) Plant forms of Lono as Kamapua'a in medicine plants:

ama'uma'u fern, *Sadleria* spp.

hala, *Pandanus odoratissimus*

'uhaloa, *Waltheria americana*

kūkae-pua'a grass, *Digitaria pruriens*

'olomea, *Perottetia sandwicensis*

hapu'u fern, *Cibotium* spp.

lū'au leaf, *Colocasia esculenta*

hinu pua'a banana (black-skinned), *Musaceae* spp.

ki, ti (leaf), *Cordyline terminalis*

3. Images of Lono-i-ka-makahiki (other than Ipu o Lono gourd image)

Lono-makua makahiki image, in the form of standard; Lono-father

a) akua loa - (long god, carried around the island, clockwise;

b) akua poko - (short-log, carried inland and i uka, i kai, counter-

clockwise in the ahupua'a

c) As god of fire-making: Lono-pele, Lono-in-the-lava-flow, and Lono-makua (Lono-father):

1. In firesticks, the 'aunaki (grooved, light wood, as hau, a kinolau of Lono); the 'aulima, held in the hand, a hardwood, such as 'iliahi (sandalwood) in the Polynesian fire-plow technique of fire-making.

4. Other kinolau of the god Lono.

a) "Pig-fish" forms of Kamapua'a (Lono):

1. humuhumu-nukunuku-a-pua'a (triggerfish), *Rhinecanthus aculeatus*; all other triggerfishes, humuhumu

2. kūmū (goatfish), *Upeneus prophyreus*

3. 'ohua palemo; young of the uhu (parrotfishes)

4. paulu (surgeonfish)

5. pawalu (oilfish), *Ruvettus pretiosus*

b) Sacred black color: hiwa, hiwahiwa (as of sacrificial black pig)

Shiny black color: hinu, hinuhinu (as of sacrificial banana, hinupua'a)

c) Lono-muku, Lono-cut-off, the muku phase of the new moon, dark night of the moon, the 29th night of the waning moon; another name for Hina-hānai-a-ka-malama, goddess of the moon (Hina-muku).

3. Symbolization of the god Kāne (the creator-god):

a) Atmospheric and geophysical phenomena:

Kāne-nui-akea Kāne-of-great-expanse; sky god

Kāne-ka-'onohi-o-ka-lā Kāne-in-the-eyeball-of-the-sun

Kāne-i-ka-hōkū-lani Kāne-in-the-stars-of-the-sky

Kāne-hekili Kāne-of-the-thunder

a) Kāne-i-ka-leo-lono-nui, Kāne-in-heavy (loud)-thunder

b) Kāne-i-ka-leo-lono-iki, Kāne-of-small(er)-voice

c) Kāne-i-ka-leo-'ula-nui, Kāne-of-great-sacred-voice

d) Kāne-i-ka-po'o-hūnā-i-ka-lewa, Kāne-head-hidden-in-the-air, (thunderhead)

e) Ke-ao-popolo-hua-mea-ā-Kane, purple thunderhead (winter storm)

Kāne-wāwahi-lani, Kāne-splitting (rending)-the sky, i.e., Kāne-in-the lightning-bolt

a) Kāne-uila-makehā-i-ka-lani, Kāne-in-flashing-lightning-of-the sky (emphasis on the crackling of lightning)

Kāne-i-ka-pōhā(ku)-ka'a, Kāne-in-hailstones

Kāne-i-ka-punohu-'ula, Kāne-in-the-red-rainbow

Kāne-i-ke-anuenuē, Kāne-in-the-rainbow

Kāne-i-ke-pili Kāne-in-the-cloud-burst, atmosphere; sudden rain that comes down to earth and shuts out sight (pili, close-to- earth)

Kāne-i-ka-ua Kāne-in-the-rain

Kāne-i-ke-ao-lani, Kāne-in-(cumulous)-clouds (i.e., float in the sky, not banked on the horizon)

Kāne-i-ke-ao-luna, Kāne-in-the-upper-clouds (probably cirrus clouds, high altitude)

Kāne-i-ke-ao-lewa-lalo, Kāne-in-the-lower-clouds (i.e., affected by the surface wind)

Kāne-i-ka-maka-o-ka-'opua, Kāne-in-the-tips-of-the-horizon-clouds (i.e., showing the direction in which the wind is blowing at that altitude)

Kāne-i-ka-pua-lena, Kāne-in-the-yellow-cloud (as colored by sunlight, or by volcanic eruption)

Kāne-i-ka-pā-kolonahe, Kāne-in-the-gentle-breeze

Kāne-i-ke-aheahe-mālie, Kāne-in-the-calm breeze (light wind, as in sailing, etc.)

Kāne-i-ka-makani-iki, Kāne-in-the-slight-wind

Kāne-i-ka-makani-nui, Kāne-in-the-great-wind (i.e., pushing sails)

Kāne-i-ka-puahiohio, Kāne-in-the-whirlwind

Kāne-i-ke-kiu Kāne-in-the-wind (sharp pointed, i.e., heading into the wind)

Kāne-i-ke-ahi Kāne-in-the-fire

Kāne-i-ka-'ohu Kāne-in-the-light-mist

Kāne-i-ka-noe	Kāne-in-the-mist	Kāne-i-ke-kōkala-ku, Kāne-in-sharp-pointed-coral
Kāne-i-ka-uahi (-nui, -iki)	Kāne-in-the-smoke (great, small)	Kāne-i-ke kōkala-ahe, Kāne-in-wafted-coral (spawning ?)
Kāne-i-ke-aka	Kāne-in-the-shadow	e) Directions (movement, or stationary position)
Kāne-i-ke-aka-o-Kapolei, Kāne-in-the-shadow-of-Kapolei [*Note, Pu'u-o-Kapolei, a small crater in 'Ewa, O'ahu was the stopping place of the winter solstice sun as observed by kahuna at Pu'u Kaki in Moanalua, standing in a circle about two feet in diameter and also aligned to Keaiwa Heiau in Aiea, a few degrees east of north].		Kāne-i-ka-holoholo-uka, -to-run-upland Kāne-i-ka-holoholo-kai -to run-seaward (sailing) Kāne-i-ka-holo-nui -great-travel (long-distance)
		Kāne-noho-uka -living upland Kāne-noho-kai -living onshore (coastal)
Kāne-hulihia- (i-Kahiki) Kāne-in-the-overturning-of-Kahiki (earthquake)		Kāne-hālō-luna -look upward Kāne-hālō-lalo -look downward Kāne-hālō-lewa-lalo -to-look-in-the-lower-space-of-the-sky (altitude, height, distance above the horizon, but not at the zenith)
b) Water		f) Land formations
Kāne-i-ka-pahū-a-nui Kāne-in-the-great-thrust-of-water (i.e., upwelling of springs, dyke water, artesian water welling up below the ocean surface)		Kāne-noho-pali-luna -dwelling-in-the-cliff-above Kāne-noho-pali-lalo -dwelling-in-the-cliff-below
Kāne-i-ka-pahū-wai (-nui, -iki) [same as above]		g) Plants
Kāne-i-ka-wai-ola, Kāne-in-the-water-of-life, i.e., the healing waters of Kāne, fresh water, drinking water		Kāne-i-ka-ho'opuakea -pale flower Kāne-i-ka-pua-lalahua -seed-scattering flower Kāne-i-ka-maile, <i>Alyxia olivaeformis</i> Kāne-i-ka-palai <i>Microlepī setosa</i> (native wild fern, uncultivated) -i-ka-pala'ā <i>Sphenomeris chinensis</i> (lace fern) Kāne-i-ka-pua-'ie'ie -in the flower of the pandanus vine, <i>Freycinetia arborea</i> Kāne-i-ka-pua-lehua -in-the-lehua flower, <i>Metrosideros macropus</i> (yellow spp., lehua kea) Kāne-i-ka-pua-lena -in-the-yellow flower
c) Agriculture		
Kāne-pua'a Kāne-pig		
d) Reef, Coral		
Kāne-kokala Kāne-thorny-coral		
Kāne-i-ke-kōkala-loa, Kāne-in-the-reef		
Kāne-i-ke-kōkala-lū-honua, Kāne-in-the-shaking-coral (spawning ?)		
Kāne-i-ke-kōkala-kū-honua, Kāne-in-steadfast-coral		

Kāne-i-ka-'olapa -in-the-'olapa,  
*Chirodendron* spp.

Kāne-i-ka halapēpē, -in-the-  
dracaena plant, *Dracaena*  
(*Pleomele*) *aurea*

Kāne-i-ke-kalo -in-the-taro  
*Colocasia esculenta*

Kāne-i-ke-kō -in-sugar-cane,  
*Saccharum officinarum* [i.e., in  
jointed stems, as of grasses, 'awa]

Kāne-'ohe -in-bamboo,  
*Graminae bambusa*

Kāne-i-ka-'awa -in-kava,  
*Piper methysticum*

[in plants used in hui kala, cleansing  
and forgiving ceremonies, or medicine]:

(pua-kala), spiny poppy, *Argemone*  
*glauca*  
(limu kala), *Sargassum* spp.

#### h) Birds

Ka-pueo-kaahi lone owl  
Ka-pueo-makalulu owl of peace (still  
eyes)

#### i) Procreation, fertility

Pōhaku-o-Kāne stone-of-Kāne shrine

### 4. Symbolization of the god Kanaloa

#### a) God of the sea

In the octopus, as symbol of the  
eight-eyed, or eight-legged wind compass;  
in radial creatures, or kite-shaped, as  
rayfishes, coral (with Kāne).

In ivory (palaoa) and ivory-tusked  
cetaceans, sperm whales and animals  
that breathe or "sneese" (kihe, kiha) in  
the sea, bearing live young, porpoises  
(nai'a, nu'ao).

#### b) Plants

'awe'awe mai'a banana fiber, roots,  
as used in cordage-making  
(plantains, jute banana)

'uhaloa *Walteria americana*,  
with Kamapua'a/Lono/Kāne  
(medicinal uses of the root)

'awa hiwa black 'awa, with Kāne

#### c) Other

sunlight and white color (with Kāne)  
cross-shapes, as in sails, kites (lupe),  
pe'a, and branching out of  
plants, pe'ape'a, or starfish,  
octopus

Southern Cross, Kape'a, Nape'a

#### d) Animal

'ōpe'ape'a native Hawaiian hoary bat  
(insect-eating), *Lasiurus cinereus*  
*semotus*.

[\*Note: one of the two *alia* poles  
which accompanied the Lono-i-ka-  
makahiki image was called the *alia ope'a*].

## Hawaiian Kinolau and Ancestral Polynesian Affinities.

The base *-puna* in *kō-punapuna* means the section between joints, or nodes, of the cane stalk from which the *maka*, or 'eye(s)' put forth new shoots, and it is a pun on the word for 'grandparent', 'ancestor', *kūpuna*, just as the base *-hulu*, in *huluhulu* 'balloonfish' puns on *-hulu* 'hair', 'down', 'fuzz' on plants, 'feathers' on birds, and 'hair' on animals, then again on *-hulu* as an 'esteemed older relative, as of parents or grandparents' generations'.

The theme of ancestry which becomes the 'stalk', or 'stem' (au) or 'bone, femur' (auhau) of the *mo'okū'auhau* genealogy of ancestors in recitations beginning with lists (helu papa) in the Eleventh Age [Wā 'Umikūmākahi] follows along throughout the enumeration of species, just below the surface theme of akua manifestation (kinolau) and biological taxonomy.

The same theme links with the *kinolau* of deified ancestors as ancestral akua and 'aumākua of generations past..

In particular, the *Lauhue* [Wā Alua] 'gourd-leaf' emblem reasserts the image of the Lono/Kāne *huawai* (= *huewai*) male bottle gourd as the identified creator-god Kāne in the epilogue [Wā Akahi]:

*'O ke kāne huawai, Akua kēnā*

The male gourd of water, that is the  
God

*Lauhue* recalls the importance of the *lpu-o-Lono* [unu o Lono shrine of the gourd in the men's eating house], and the *lpu-makani-a-La'amaomao*, navigation wind gourd of La'amaomao, and the 'broken-vine' *Fuemotu* traditions of West Polynesia (Samoa, Tonga, Uvea). The fly whisk *fue* is the insignia of the *tulafale* orator chiefs of Samoa [Kramer, 1902:1:8:969]. The Samoan epic of the *fue* is a Tagalaoa tradition:

"Tagalaoa sent down the creeping plant *fue*  
To people Tutuila thereby  
And 'Upolu, Atua, and Aana  
Together with the Tuamasaga  
But the bodies moved about soulless  
They could not sit and had no heart  
Tagalaoa above heard  
That mankind had been engendered  
from the *fue-sā*  
That they moved in the sun  
But footless and handless  
Without a head, without a face  
And without a heart;

Tagalaoa came down there in the west  
That he might bring them speech and  
give them form  
The fruits (*fua*) of the creeper were  
maggots (*ilo*),  
He formed the limbs and showed the  
added pieces,  
And he brought down your soul,  
That your bodies might be illuminated  
And that you might expect Tagalaoa  
when he descends, to walk about  
[Kramer, 1902:1:6:770-772]

The *he'e* 'squid, octopus' of the *he'e/walahe'e* pair [Wā 'Elua] was the principal form of the god Kanaloa (Tagalaoa), later referred to as "*ka he'e hauna wela*", the octopus god (as inflicting pain, *wela* 'heat, pain', probably a toxic species) [Wā 'Ewalu, Eighth Age].

Kanaloa was of less importance, ranking last among the akua. The octopus god *Fe'e* (= *Feke*) does not inspire the respect from Hawaiians that is more typical of Samoans and Tongans. Their east Polynesian cousins in Tahiti regard Ta'aroa (= Kanaloa, Tangarua, Tagalaoa) as the original creator god, symbolized in the 'egg' *huoro* of the revolving universe:

"Ta'aroa...was the ancestor of all the gods; he made everything. From time immemorial was the great Ta'aroa, Tahitumu [= Kumukahi 'first foundation', Hawaii] (The Origin)...Ta'aroa developed himself in solitude; he was his own parent, having no father or mother...Ta'aroa's natures were myriads...he was Ta'aroa

above, Ta'aroa below, Ta'aroa in stone (ofa'i) ..." [Stimson, 1964:395].

"...Ta'aroa was a god's house; his backbone was the ridgepole, his ribs were the supporters... Ta'aroa sat in his shell in darkness for millions of ages...The shell was like an egg revolving in endless space, with no sky, no land, no sea, no moon, no sun, no stars...All was darkness, it was continuous, thick darkness. Rumia..was the name of that shell of Ta'aroa...Ta'aroa was quite alone in his shell" [Henry, 1971:336].

How developed is the concept of "embodiments" or "transformations" of a god such as Feke, in several of the Polynesian island groups thus mentioned, both in east (Tahiti, Tubua'i) and west (Samoa, Tonga, Tikopia)?

"...Association of the clans with certain animals or plants, which may be termed totemism, is a very minor feature of Tikopia religion, and has its basis in the belief that the various *atua* of the clan, for their own purposes, sometimes take shape in these birds, fish, crustacea, etc., or enter into them.

"...Normally these creatures are regarded as being purely natural objects; it is only when they behave abnormally, as when a bird runs towards a person in the path instead of away from him, that the presence of an *atua* is deduced, and the thing regarded as really *tapu*..." [Firth, 1967: 26]

This is probably as close as anyone may likely connect with an antecedent Polynesian form of plant and animal affinity with clan recognition of akua forms in nature resembling the Hawaiian concept of kinolau.

Judging by clan organization and prohibitions on eating of the eel, for example, in Tikopia, it is specifically evident that the freshwater eel *Tuna* is allied with the symbolic ancestral coconut tree of the Tafua clan, indicating the typical

dual association of *Tuna* as the eel's head and coconut tree. The combination reflects the Kū and Hina association representative of Puna 'aumākua worship. The following *lā'au kāhea* medicine chant calling on ancestral gods Kū and Hina to heal the sick is of Puna origin:

O Kū, 'o Hina, 'o Kanaka-o-kai,  
O Kani-ka-wi, 'o Kani-ka-wā,  
'O Ka-'ōnohi-o-ka-lā, ho'i nui mai  
E hana i ka ma'i a kākou ia  
Ke 'eha ke po'o, a me ke kumu  
Ua ha'ule i ka llo a ua 'eha  
'Eha no a 'eha loa, no laila  
E lawe i ka 'eha, ka hu'i, ka malele  
Ke koni, lawe no i na 'eha a pau loa

Hō mai ua ola  
Nini aku la, a ola aku la  
Ua pau ka hana, a me 'oukou no  
ke kapu  
Ho'oku'u 'ia ka ma'i a 'oukou  
Me ia ka lanakila a me ka 'olu'olu,  
amene.

O Kū, O Hina, O Kanaka-o-kai  
O Kani-ka-wi, O Kani-ka-wā  
O Ka-'ōnohi-o-ka-lā, (you) must return  
To cure our sick one, (name of person)  
(Insert all of the reasons:)  
Headache and cough/  
He fell from the horse and was hurt/  
Pain, severe pain, sharp aching  
Spread here and there  
Throbbing; take away every pain  
Pour (balm) and let him be cured  
Pour and cure (east)  
Pour and cure (west)  
Pour and cure (north)  
Pour and cure (south)  
Thy will be done, with you is the law  
Let illness be removed by you  
Let (him) have victory over sickness  
Let comfort be with him, amen.  
[Ka'ulili, 1923: 298].

Tikopians have strong aversion to eating the eel. Eel varieties revered by various families represent pertinent clan (Tafua, Kafika, Taumako, etc.) deities:

- (1) Tuna (lake eel), Atua i te Vai, (Tafua)
- (2) Tuna, Atua i te Sao, Tafua (Sao)
- (3) Atua fai (lake eel), Atua i te Vai (Tafua)
- (4) ngatinia, Atua i te ava (Fangarere)
- (5) safuti, Atua i te ava (Fangarere)
- (6) rafua (grey eel), Atua Fiti (Taumako)
- (7) kiau (banded eel), Atua Fiti (Nga Fiti)
- (8) sakusaku, Atua Fafine (Kafika)  
[Firth, 1967: 255-256]

These data indicate that the eel was a common symbolic ancestor of all of the major Tikopian clans:

Tafua	'coconut' clan
Fangarere	'breadfruit' clan
Taumako	'taro' clan
Kafika	'yam' clan

Were the ancient Hawaiian people, as a whole, made to fit into the Tikopian pattern of clan organization, the Taumako would be the most appropriate grouping because of its "taro" identification, i.e., the governing staple and its ancestral akua kinolau.

The ancestral background of chiefs and their families, however, would strongly favor the Tafua for the following kinolau 'aumākua:

- niu (coconut), Kū; Atua i Tafua (Tafua)
- peka (bat), Kanaloa; Atua it te Tai (Tafua and Kafika)
- feke (octopus), Kanaloa; Atua i Faea (Tafua and Kafika)

toki (clam, adze), Kūpa'aikē'e; Atua i Faea (Tafua and Kafika)

tuna (lake eel), Kū; Atua i te Vai (Tafua)  
farafara (sea eel), Kū; Atua i Tafua (Tafua)

unga (hermit crab) (none); Atua i Faea (Tafua and Kafika)

[Firth, 1967: 255-256]

This simulated comparison between Hawaiian and Tikopian symbolism is not intended to imply any direct relationship of Tikopian deities to major east Polynesian gods, Tū, Tāne, Tangaroa, and Rongo [= Kū, Kāne, Kanaloa, and Lono]. It simply yields significant associations deduced by analytical and associative artifice.

The Tafua set which overlaps with the Kafika [= ohi'a (Hawaii)] evinces a complete absence of Kāne worship. The Kafika 'yam' (uhi) clan claims four of the Tafua set: 'bat', 'octopus', 'clam/adz', 'hermit crab'. With the exception of the 'octopus', an aspect of Kanaloa, all Tafua sea-life symbols match Kū forms.

If the system were set up in Hawaii, Tafua symbolization would easily fit into the Kū 'aumākua worship. Reversing the arrangement so that the dominant group is the Kafika adds the Kāne worship through the 'stingray' (fai). Kū, Kāne, and Kanaloa are all represented:

ufi (yam), Kāne; Atua i Kafika (Kafika)

unga (hermit crab), none; Atua i Kafika (Kafika and Tafua)

fai (stingray), Kanaloa; Atua Fafine (Kafika)  
Kāne  
Lō-lupe

feke (octopus), Kanaloa; Atua i Faea (Kafika and Tafua)

toki (clam), Kū; Atua i Faea (Kafika and Tafua)

Implementing Tikopian clan organization into the Hawaiian 'aumakua worship would require that the 'coconut' (Tafua) and 'breadfruit' clan be combined. The Fangarere 'breadfruit' belonging in an isolated set (Fangarere) that forbids the inclusion of the coconut yields only Kū worship:

mei (breadfruit), Kū/Hina; Atua i Fangarere (Fangarere)

ngatinia (eel), Kū; Atua i te ava (Fangarere)

safuti (eel), Kū, Atua i te ava (Fangarere) [ibid.: 255-256].

The distinction between the coconut (Tafua) and breadfruit (Fangarere) clan plant symbolism does not exist in Hawaiian Kū worship but rather in that of his female companion, *Hina*, who planted the eel's head that became the coconut palm, and *Haumea* in the breadfruit tree.

The Tikopian symbolic set of the coconut (Tafua), breadfruit (Fangarere), clam/adz (Tafua/Kafika), and eel comprise the essential equivalent of Kū symbolization.

Kāne worship would involve the taro (Taumako) and Kanaloa, the stingray (Kafika). Through the *pe'a* set (bat, stingray, kite), the Tafua (*peka*), Kafika (*fai*), and Taumako (taro) symbols are united in Hawaiian Kāne (taro) and Kanaloa (octopus, stingray, bat, kite) worship patterns. The octopus (*feke*), jointly claimed by Tafua and Kafika, is Kanaloa.

There is scant evidence of any sacred symbol in the Tikopia clan system that suggests any ancestral link indicative of Lono as the gourd (hue) or sweet potato ('uala). Since it is unlikely that religious symbols as sacred elements, once ingrained in a culture, would completely disintegrate, it is possible that Tikopian religion and social organization branched off from a center of formation before the

sweet potato gained economic status over the yam.

Would this imply that the total absence of the sweet potato among ancestral plants of the Kumulipo is mute testimony to that effect?

Or, does it mean that no social unit representative of Lono ancestry or worship migrated successfully to Polynesian outliers in Melanesia?

This is an interesting historical question, considering the significance of the sweet potato in Lono worship.

On Tikopia the 'yam (ufi) clan Kafika holds primary rank among the chiefs. 'Yam' ancestry, in a symbolic sense, is traditional, as well, on Futuna. The origin of mankind is due to two yams which were laid upon the ground. The next morning one had been transformed into a man and on the following day, a woman was there beside him [ibid.: 255-256]. In Samoa the ancestors of Atiogie-Alali, father of Malietoa Savea I, were generally called *Le Gafa o le Ufi* ('gafa' lineage'; *ufi* 'yam') [Kramer, 1902: 1:3: 422]. The Samoan term *gafa* 'lineage, genealogy' provides the deeper, meaning, perhaps, of the word *naha* in the prologue to Wā 'Elua:

*O naha wilu ke au o Uliuli*

The split elegance of the stem of Uliuli  
An elegant lineage is the stem of Uliuli

The combination of *hāuliuli* (snake mackerel) with *uhi* (yam) in the *kai* and *uka* linkage in which the yam is the *kia'i* or 'guardian' *i uka* relates the 'stem' (*hā*) of *Uliuli* to the 'yam' (*uhi*). *Uliuli* is named on the Kapapaiakea genealogy as father of Kahiko and grandfather of Wākea (Sky-Father).

Kū and Hina appear with some strength with Kafika ('yam') and Tafua ('coconut') clans in connection with birds and lizards:

tavake (bosun bird); Kū (ko'ae); Tafaki and Karisi, Kafika clan;

karae (swamp-hen); Hina ('alae mudhen, ka 'alae nui a Hina, the bird of Hina used as bait by Maui to fish up islands); Tafaki and Karisi, Kafika clan;

keo (heron); Nau Flora, Tafua clan;  
[Cp. 'io (hawk), symbol of the chief; and auku'u, the night heron];

moko (black lizard); [cp. mo'o 'lizard'; Kū];  
Atua i Raropuka (family), Kafika.

With respect, then, to ancestral ties between Hawaiians and Polynesians, the foregoing information is convincing evidence that kinolau clan associations are quite strong between Hawaiians, who are East Polynesians, and West Polynesians, a relationship which was not expected, in the region between Tonga, Uvea, Samoa, and Polynesian outliers in the Solomon Islands, such as Tikopia.

## Summary.

The fifth to eighth cantos (wā) depart from the structural framework of the previous four in that each is a single thematic statement focusing on one animal at a time and in this order:

Canto 5 Pig; Canto 6 Rat; Canto 7 Dog (with Bat), and Canto 8 Man.

Taken together they target warm-blooded animals that give live birth to their young. The factor of taxonomy is of less importance than behavioral traits resembling human ones. They are due in some degree to domestication, to selective breeding.

They are kinolau bodies, as well, of the akua god still "entering" (komo) into the whole of creation through multiple variation. The target akua are Lono (pig), Kū (dog), 'Ope'a (bat god of childbirth), and Kāne (mankind).

There is a greater realization of being from a more elemental source (kumu), elemental being that began in space, time, darkness, light, sky, earth, air, water, heat, motion, color and sound coming into greater visibility and audibility from an abstract, immaterial, perhaps, initially spiritual point.

Transition of type is the result of selective breeding and heredity, having an emphasis on character traits produced as much by training as by genetic heritage.

This is particularly true of the pig, the behavior of which is thematically the obvious metaphor of the maka'ainana farmer. Moral attitudes, values, and behavior are effects due to breeding, family traits (welo), and acquired training. Offspring are recognized by their conduct as demeanor accessed from parents and the social order. To the extent that animal behavior is learned and not entirely instinctive, it is analogous to human

behavior. Human behavior reflects an animal nature reinforced by habit or refined by society.

Cultural and social refinement, added to natural intelligence and physical ability, are the product resulting from the will or need to create from the wild an ordered dwelling place for secure and harmonious living.

When the bird (manu) migrants and mo'o mud-dwellers of the coast and estuaries have inhabited the coast (kai) and uplands (uka), living as recent arrivals on what nature provides hunters and gatherers under rude conditions in a wild state, survival requires that the immigrants do without civility of manners and below subsistence requirements for elegant living:

(Canto 4, Fourth Age, Line 523):  
"Shaking as they settle into mud  
Dust of earth the food to eat,  
To eat and settle, eat in silence,  
Eating like condemned kauwā  
outcasts,  
To eat in confusion their meals"

The economic development of the life of mankind, therefore, is achieved at the apex of the ancient night (Kapōkano-kano) in the Fifth Age before night begins to "decline" (hiolo) toward dawn.

It is characterized by the enterprise of the 'pig' farmer. The pig's head carved in kukui wood marked the stone ahu of the land sections (ahupua'a) within the districts (moku). The strength and perseverance with which the pig, as a manifestation of Lono, god of agriculture, 'uproots' ('eku) the earth and 'walls' (ho'opalipali) terraces to create an abundant yield "tenfold" what raw nature would otherwise yield from uncultivated land is a creative contribution to a lifestyle from which laborers may "rest" (ho'omaha) in security of harvest.

The pig is the symbol of domestic civilization in himself and in his progeny, no matter what their peculiar defects. The taro lo'i is the basis of this cornerstone of civilized economic effort, the byproduct of which is an available surplus wealth through animal husbandry.

Into this environment of productivity, however, in the sixth era "runs" (holo) the rat, another obvious metaphor of a class of land managers (konohiki) who "eat" ('ai), i.e., tax the surplus wealth of the plantation.

The rat is described as having an erratic disposition in that he takes small bites out of the abundant mountain apple tree in the uncultivated wild. The mountain apple ('ohi'a 'ai) is not a staple but wild fruit in season, the enjoyment of which is spoiled by the rat who eats from each fruit on the tree, never satisfying himself with a whole fruit. Nor is it in his nature to change, it has become habitual to take the best at every advantage and opportunity.

The seventh canto wrestles with the problem of the tabu system and temple (heiau) sacrifices, the demands of law enforced by religion. It is one in which the poet enters with his audience, the person to whom he is speaking, into active meditation on the experience of fear of the law, becoming the object and subject of potential human sacrifice.

The dog is important here because dog sacrifices were ritual food for women in the society, pork being confined as men's food to the hale mua, while human sacrifices were ritual food only for gods.

Dog sacrifice of the 'olohe' "hairless" ones, however, is a metaphor of human sacrifice, as the 'olohe were wrestling combatants in the chiefs' armies in ancient times.

The dog is a companion of the dead who conducts them into the afterlife.

The position of the observer is now at the top of the mountain ridge (kualono), from which point the entire canopy of criss-crossed (pe'ape'a) branching (manamana) growth of the forest covers the ground below. It symbolizes a place of camouflage where nature affords a refuge for the hunted or the vulnerable.

The theme of plant growth and animal growth as "branching out" (pe'ape'a, manamana), "drooping down", "hanging" (lohelohe) as with fruit or as rootlets, dense fibrous cover (huluhulu), like human body hair, "forking" (pe'ape'a) and "branching" as with "limbs", appendages, whether of branches, or wings, hands, feet (manamana), the vigorous sweep of the forest conceals the pe'ape'a native bat, a kinolau manifestation of the god of childbirth ('Ope'a), whose flight through the forest goes undetected by those whose eyes are not adjusted to the forest.

The bat presages foetal position of the human infant in its cocoon-like nocturnal sleeping position, attached and folded, dangling (lohelohe), hanging by its feet, 'digits' (manamana), and wings folded. In flight the bat binds its infant young to its bosom, holding it there with its feet, upper arms free to fly, symbolic of independence and strength of parental protection.

The observer feels a kinship with this primitive place of verdure, knowing that under concealment of the forest canopy where few intruders venture, as the jungle has its own dangers, there is respite, however tentative, from the incursion of predatory human laws. This is the wao akua where gods are said to dwell and where wild creatures retreat.

## KA WA 'UMIKUMAKAHI

## ELEVENTH AGE

765	Oia wahine noho lani a pi'o lani no Oia wahine haulani a noho lani no Noho no iluna a iho pi'o ia Ki'i Weli ai ka honua i na keiki			765	This woman lived as chiefss of pi'o rank, This chiefess seated at the rank of ruling chiefs, She lived above, her pi'o rank arching over Ki'i, The children who were the issue from her womb:
770	Hanau o Kamaha'ina, he kane Hanau o Kamamule, kona muli Hanau o Kamamainau, o kona waena Hanau o Kamakulua kona poki'i, he wahine Noho Kamahaina he kane ia Hali'a Hanau o Loa'a he kane			770	Born Kamahaina, male, Born Kamamule, who followed him, Born Kamamainau, between, Born Kamakulua, youngest, female Kamahaina, a male, lived with Hali'a Born Loa'a, male
775	Loa'a ke kane [A'a - Sirius] Le [Ole moon] Kalawe Kulou Nau			775	Nakelea ka wahine Kanu Kamau Haliau Kale
780	'A'a [A'a - Sirius] Pulepule Nahu Pono Kalau			780	Hehe Ma'i Luke Pono'i Ma-ina
785	Kulewa [zenith star] Pou [Kaulua Gemini?] Poulua			785	Kune Kala'i Kukulukulu [Turu Altair,Antares] [Makulukulu Saturn]
	Pae [Paeloahiki = Milky Way] Paeheunui				Ha'a'a [A'a - Sirius] Ki'eki'e
790	Hewa [wa - time] Maku Wala Piha Mu			790	Kulu [Kulu - moon - 17th] Niau Kunewa Pihapiha Kuku
795	Nawai Wawa Kua'i Lu'u Mai			795	Hele Hanehane 'A'anai Lu'ule'a [Le'a - Arcturus (?)] Mai'a
800	Mai'a			800	Paua [clam]

	Lana	[horizon level]		Kilo	['observe']
	Lanalana	[1st level, anu'u]		Paepae	[heiau platform]
	Pulu			Lepe'a	[pe'a, Southern Cross]
805	Puluka		805	Lelepe	
	Pulukene			Lelekau	
	Pulumakau			Lelemau	
	Pulukea	[kea - Venus] [ke'a SouthernCross]		'Urnala	
	Nekue			Mahili	
810	Nakai		810	Napo'o	
	Kuleha			Ma-ka	
	'Ike	[see, know]		'Ao'ao	
	Mala			Hui	[hui - zenith]
	Malama	[malama- moon]		Puiki	
815	Eho		815	Pulama	
	Ehoaka	[hoaka - 2nd moon]		Pulanaia	
	Ehoku [hōkū - 15th moon]			Malala	
	Keoma	[Aldebaran, old name]		Haho'oili	
	Kinohi			Muala	
820	Ponia		820	Luka	
	Meu'a			Mamau	
	Meu'alua			Maukele	
	Ho'olana			Ho'ohuli	
	Ho'omeha			Memeha	
825	Pula		825	Kua	
	Kuamu			Kuawa	
	Ko'u			Ko'uko'u	
	Meia			Pekau	
	Kawala			Mahuli	
830	Huli		830	'Imi	
	Loa'a	[A'a - Sirius]		'Oli'oli	
[*Note: 55 generations elapse between Loa'a (775) and Loa'a (830)]					
831	Huhu			Le'awale	[Le'a - Arcturus]
	Makuma			Manoa	
	Manomano			Lauahi	
	Kini			Mau	
835	Leha		835	Maua	
	Pua			'Ena	
	Pua'ena			'Ena'ena	
	Wela			Ahi	
840	Maiko		840	Kulewa	
	Maikokahi			Kuakahi	
	Maikolua			Pahila	
	Hilahila			Ho'ohila	
	Kelau			Lukau	
845	Paio		845	Haluku	
	Paia			Kalaku	
	Keala			Keala'ula	[ala'ula - dawn]

	Piao		Nai'a [porpoise]
	Niau		Kekumu
	Launie		Huluhe
850	Mono		850 Pa'a
	Hekau		Ka'ili
	Ho'opa'a		Ha
	Kalama		Kapala
	Helu		Namu
855	Paila		855 Opuopu
	Halale		Malu
	Malie		Kalino
	Ma'oki		Hulahe
	Kaiwi		Iwia
860	Kulea		860 Kulia
	Makou		Koulu
	Ia'u		Mahea
	Iaka		Mela
	Makili		Lulu
865	Heamo	[Amo -Orion (Tonga)]	865 Lou
	Heamokau	[Amo- Orion]	Makea
	Pu'ili		Apomai
	Pu'ili'ili		Li'ili'i
	Pu'iliaku		Heleihea
870	Mokukapewa	[Milky Way]	870 Na'alo
	Mokukai'a	[Milky Way]	Naele
	Piala		Heleua
	Kiamo	[Amo - Southern Cross (Tonga)]	Komo
	Koikua		Keaho
875	Ko'iele	[ko'i - solstice (Gilbert Is.) [hidden number]	875 Kauhi
	Pa'ele		Peleiomo
	Keomo		Omo'omo
	Hulimakani	[wind shift]	Nanailuna [observe upward]
	Nanaikala	[observe sun]	Haipule
880	Kalawela	[hot sun]	880 Kalahuiwale
	Kealakau	[sun, zenith passage?]	Hökū [star; 15th moon]
	Kamau		Meu
	'Opala		Wene [Southern Cross]
	Hali		Halima [five]
885	Haliluna		885 Halilalo
	Halimau		Halelo
	Halipau		Muakau
	Nunua		Nene'e
	Nananaka		Lele'io
890	Oamio		890 Ololi
	Omiomio		Wiwini

895	Aila Ailamua Ailakau Ailapau Manu	[Procyon, Canopus] [Rigel, Altair]	895	Kukala Heia Hele Kaiwi Hele'upa	
900	Lilio Leheluhe Kelemau Kaumau Kaukahi Mauka Ohi Ikamu Kalu Kalukalu Lipo Lipowao Pili		900	Makini 'Aina Hinapu Puoho Ma'ele Kai Laulau Namu Moena Hilipo Na'o Naele 'Aiku	
905	Pilimau Kahale Kahale'ai Lawai'a Mauaka Wana Wanawana Wanakaulani Wanamelu Kaulua	[Gemini]	905	Maumaua Mua Nu'u Ka'i'o Lehu Kala Wanakau Melu Hulili Kaohi	[zenith]
910	Wala'au Hanehane Hawane Heleau Hulimea Hulimua 'Ewa Omali Huelo Niolo Pilimai		910	Eiaau Hahane Kuamu Ma'aku 'Aiko Newa 'Ewa'ewa Malimali Kaka'i Eiaku Kona	[Southern Cross]
915	Keanu Ka'io Haluaka Kapuhi Ehio Kakai Arno Armoaku Helemai Onaho	[Southern Cross, Tonga]	915	Peleau Pueo Kaolo [retrograde motion] Mula Emio Alaka'i Ko'iko'i Kuwala Heleaku Keanali'i	[Lehuakona, Canopus] [Mahukona, Magellan [Clouds]
920			920		
925			925		
930			930		
935			935		
940			940		

	Piliko'a		Ukuli'i
	Mahinahina [moon]		Halepo'i
	Po'opo'o		Nawai Manamana
	Omana		
945	Omana'io		945 Huluheu
	Mana'ina'i		Malana'i [east wind]
	Huluemaui		Ka'alo
	Kaluli		Pau
	Nakino		Kinohi
950	Nakinolua [two]		950 'Ewalu [eight]
	Ukiki		Eau
	Uli		Uliuli
	Mele		Melemele [Orion's Belt]
	Lanai		Po'i
955	Ha'o		955 Au
	Pakaikai		Puehu
	Moana		Hilo [1st moon]
	Hulu [ten' = 1 decan week]		Makali
	He		Ho'eue
960	Makilo		960 Mōi
	Naua		'Upa
	Ua		Hama
	Pele'u		Hamahuna
964	Mahina [moon]		964 Hina
965	Mahinale		965 Ulukua
966	Mahinalea		966 Palemo [Ke Kai o Kahinalii]
	[189-191 generations from Loa'a]		[Kahinali'i = Auriga (Tahiti)]
	Pipika		Kuhinu
	Mahele		Pu'unaue [to count, move sums]
	Kaohi		Kaohiohi
970	Kona [Canopus, Magellan Clouds]		970 Konakona
	Iho		Pelu
	Kula'a		Mailu
	Kuama'u		Holehole
	Pahili		Halulu
975	Keia		975 Luluka
	Maki'oi		Meihiolo
	Helehele		Pineha
	'Aukai		Milo
	Moekau [midnight]		Helemau
980	Huluau		980 Pulama
	Melemele [Orion's Belt]		Milokua
	Kumuniu		Pilia
	Amoi		Akua [14th moon]
	Kunewa		Hulema
985	Pahilo		985 Pili'aiku
	Napo'i		Ka'ale
	Kulana		Nawa
	Kakau		Po'ipo'i
	Holeha		Hulupehu
990	Pa'ani		990 Malana'opi

	Lewa		Ho'iha
	Pihaulu		Kinohili
	Kelewa'a	[navigate, steer canoe]	Hiliha
		[Hokukelewa'a = Sirius]	
	Kakio	[Kiopa'a = Polaris]	
995	Hulipena		995 Miko
	Mokiweo		Pakala
	Kapalama		Kepo'oha
	Kapalamalama		Kepo'olimaha
	Wikani		Kamakolu
1000	Kapehi		1000 Kaluku'u
	Hiwa		Kahiwahiwa
	Pano		Kekaliholiho
	Opelau		Maha
	Mahilu		Kaene
1005	Ho'olewa		1005 Waiau
	Kumau		Kahaka
	Papalele		Kukala
	Haole		Kuwahine
	Makua		Kaluakekane
1010	Leho		1010 Holomau
	Opikana		Nahenahe
	Helemaka		Liko
	Kukuhale		Hinaulu
	Pohakukau		Hinamai
1015	Helua		1015 Kalani
	Komokomo		Malie
	Po'ele'ele		Ho'olua
	Nuku'ele'ele		Papakele
	Mama		Papakapa
1020	Hamama		1020 Malele
	Kuemi		Kulua
	Opiliwale		Kapoulena
	Ahulimai		Mahinu'ele
	Maikomo		Pelemau
1025	Hununu		1025 Kamanu
	Ho'olohe		Nawaikaua
	Kumaua		Kulukaua
	Ko'iko'i		Hau
	Mau'awa		Kolokolo
1030	Kelelua		1030 'A'a [Sirius 253 (982-729 gen.)]
	Mukana		Mahi'opu
	Mahili		Wili
	Kukona		Naka
	Kanawai		Hapele
1035	Lohilohi		1035 Hapeleau
	Apikili		Nohilo
	Ho'omaku		Nohalau
	'Olepe		Makau
	Kukelemio		[Scorpius]

1040	Kala Hulipau Makohi 'O'opuola Niuuhuli Ohao	1040	Heleana Hulimakeau Hulimakele Nahalau Nakuli'i Nakumau	
1045	Nu'u Lena Ahiahi Ahihihia Ahiakane [Kāne night, 27th]	1045	Helemai Palemo Opihi Ounauna Wanaku	[moon in daylight] [limpet] [hermit crab] [sea urching]
1050	Ahiakapoloa [long-night] Ahiakapokau [midnight] Ahiakulumau Ahiakamake Ahiaka'olu	1050	Kikala Hapu'u Makani Kilau Honika	[wind]
1055	Pohinakau Moulikaina Ho'oku Manaweulani Ho'omailu	1055	Hilahea Ho'omaka Nanana Laukunu Puluea	
1060	Mailu Polehua [Antares (?)] Pu'ulele Hamohulu I'amama	1060	Lehuane Keahu Noelo Noe'ula Noenoe	
1065	Kuinewa Holopulau Makanewanewa Melia Humuhumu [So. Cross; Altair]	1065	Pilimau'u Hinakona [Canopus, Magellan Cls.] Helepuau Melemele [Orion's Belt] Palamau	
1070	Ukianu Ukinala Ukikamau Ukilelewa Ukinahina	1070	Nenu Ilimaka Keohoko Laumeki Nilea	
1075	Ho'opulu Nahiole Mukiki Kiola Mulemulea	1075	'Olo'olohu Kealapi'i Makino Iaia Helelu	
1080	Kukawa Karnio Ho'omu Hailau Ho'omauke'a	1080	Maika'iwa [frigate-bird] Molemole Unauna Pamakani Muli	
1085	Pulune Kuaua Moeiho Manu'ala Kolealea	1085	Kahe Wailuhi 'Imihia Kawele Kauwewe	

1090	Hilohilo Maluipo 'Awaia Ho'ohinu Eapu		1090	Hokelona Hoki'i Milo Ohouma Uluoha
1095	Ialo Heiau Hei'aumana Pulemo Kaukeoa		1095	Makalewa Pi'ioha Ho'ohiwa Maluolua Hi'ileia
1100	Helemua Kalele Paepae Keoa Kapouhina		1100	Kuainea Wamakona Limaauki Puameli Kuamaulu
1105	Kapouhinahā Ho'opi'opi'o Ho'opi'oaka Ho'olahalaha Ho'omahilu		1105	Hokua'ala Pi'onu'u Pi'oanuenue Pulau Makua
1110	Nanewa Nanawa'a Ho'okilo Kumehehu Leleiluna		1110	Peleuwao Oma Pilikamau Leleawa Mainahu
1115	Halekumu Halepaio Halemoeanu Haleluakini Halekuamu		1115	Kimonaue Holio Ke'oke'o Mali'i Noio
1120	Ha'iola Kalelemauliaka Ko'iniho Po'oku Hale'imiloea		1120	Lauhala Miloha Naku Paleamakau Hilohilo
1125	Pani'oni'o Kealakike'e Oiahu Huini Pa		1125	Liho Maiau Kaniho Naihu Ai'ano
1130	Pana Panakahi Pa'ikekalua Pu'ukolukolu Napu'uehā	1 2 3 4	1130	Koliau Alia'oe Piliwale Heleiamai Ho'okonokono
1135	Palimakahana Waiakea Kaeamauli Kakoi'ele Kahoolooka'iwa	5 6 7 8 9	1135	Helemaia Hepahunu 'Eleiku Maumau Heoioi
1140	Kalelenohinalea	10	1140	Aluaku

	Pana'akahiahinalea	11	Helule	
	Panaikaluakahinalea	12	Painaina	
	Pu'ukoluukukahinalea	13	Noakawalu	
	Napu'uikahākahinalea	14	Piliamoā	
1145	Palimawaleahinalea	15	1145	Manu [Procyon]
	Akahiakaea'akilolo	16 = 1		Lelekeamo [Southern Cross]
	Paluaakaea'akilolo	17 (2)		Kelekeleao
	Pu'ukolukaea'akilolo	18 (3)		'Umikaua
	Pu'uhākahaa'akilolo	19 (4)		Mailo
1150	Pu'ulimakaeaaakilolo	20 (5)	1150	Nihohoe
	Akahike'ewe	21 (1)		Paliiuka
	Paluake'ewe	22 (2)		Paliikai
	Paukolu	23 (3)		Maka'imo'imo [star]
	Pu'uhāke'ewe	24 (4)		Lauohokena
1155	Pulimake'ewe	25 (5)	1155	Piu
	Waiakaeaka'ewe	26 (6)		Nahinahi
	Kamauliakaewe	27 (7)		Kameha'i
	Ko'ieleakaewe	28 (8)		Ulupo
	Kuaiwaaka'ewe	29 (9)		Newaiku [Southern Cross]
1160	Henahuno	30 (10)	1160	Puhemo
	Panakahikenahu	31 (1)		Lahilahi
	Panaluakenahu	32 (2)		Kaukeahu
	Panakolukenahu	33 (3)		'Ulalena [Sirius]
	Panahākenahu	34 (4)		Eiawale
1165	Lewelimakenahu	35 (5)	1165	Konukonu
	Paakaeaaakenahu	36 (6)		Uli
	Omaulikenahu	37 (7)		Na'ina'i
	Ko'ielehakenahu	38 (8)		Pilomoku
	KuaiwaKelekenahu	39 (9)		Nahae
1170	Hekaunano	40 (four)	1170	Welawela
				[1171-966 = 205 generations Kahinali'i]
1171	Papio		1171	Lo'ilo'i [Ka lua o ke kai o Kahinali'i]
	Manu'akele			Kealo
	Kaunuka			Kukamaka
	Maki'i			Auhe'e
1175	Kupololi'ili		1175	Ha'ihae
	Kupoka			Milio
	Kupokanaha			Hamunu
	Kupone'e			Nai'a
	Kupohaha			Pakau [Procyon, Canopus]
1180	Kupoko		1180	Hemolua
	Kupo-e			Naio
	Kupou			Kelekele
	Kupolele			Hapulu
	Kupololo			Napulu
1185	Kupolili		1185	Kuamo'o
	Kuponakanaka			Mu'umu'u
	Kupohilili			Mo'onawe
	Kupohalalu			Helua

1190	Kupohelemai Kupokalalau Kupolahaua Kupoli'ili'i Kupolona'ana'a Kupolomaikau		1190	Poiwa Nana Nakulu [Saturn; Altair, Eiamae [Antares] Lelehewa Kimopu
1195	Kupolohelele Kupolopa'iuma Kupoloha'iha'i [Milky Way] Kupolokeleau Kupolonaunau		1195	Holi Kupolupa'uma Luli Makeamo [Southern Cross, Tonga] 'Imo
1200	Kupoloahilo Kupolomakanui Kupolomaiana Kupolokahuli Kupololili		1200	Lua Hulili [Procyon] Manu Hulu Namaka
1205	Kupololililili Kupololalala Kupolohalala Kupololuana Kupolola'ila'i		1205	Pulupuli Naku Ahi Hoaka [2nd moon] Lelea
1210	Kupolola'iolo Kupolola'imai Kupolola'ia Kupolohilihili Kupolomalimali		1210	Hanau Ilimai Ho'oilo [winter] Makanalau Hulipumai
1215	Kupolo'ale Kupolo'imo Kupolokalili Kupolomene Kupolohulu		1215	Leleiluna Holo'oko'a Uliuli [stars, unidentified] Hiwauli Kinopu
1220	Kupolohulilau Kupolohulimai Kupolokamana'o Kupolokeweka Kupolokulu		1220	Makiao Makiaoea 'Ewa Lukona Eapa'ipa'i
1225	Kupolonehea Kupolohaliu Kupolonakunaku Kupolo'ololo Kupolo'ololi		1225	Hulihele Maliu [Spica (Tahiti)] Uliau Kio'io [Polaris] Holeaku

[Kupololi'ili 1175 - Kupolo'ololi  
1229 = 54 generations]

1230	O Polo Polohili Polokau Polouli Polopolo		1230	Nolu Kau [midnight, noon] Uli Polo Hamu	
1235	Polohamu Polonihi Poloha'iha'i [Milky Way] Poloheihei Polohanuai		1235	Nini Ha'iha'i [Milky Way] Hei Hanu'ai 'Ewa	
1240	Polomahimahi Poloaku Polomai Eliakapolo Ekukukapolo		1240	Kolo Malu'ape Pelepele Pua'a Pua'akame	
1245	Halimakapolo Ho'opoloiho Poloku Polokane Polohiwa		1245	Uluea Hiamanu Paka Leleamia Halu	
1250	Polomua Popolomea Popolohuamea Popolokai'a Polonananana		1250	Menea Miomio Omo Lanaki Manahulu	
1255	Polomakiawa Poloanewa Polohauhau Polohehewa Polomehewa		1255	La'ohe Peleaku Nanale Huamua Hewa	
1260	Poloula'a Poloahiwa Polo'ula Polowena Poloimu		1260	Makolu Hiwa 'Ula We-na Mohalu [Shaula; 12th moon]	
1265	Polokakahia Polo'i Polo'i'i Polohi-pa Polohi-pakeke		1265	Kanakau 'Ti Hipa Pe-pa Meao	
1270	Polohi-pakaka Polohi-helehele-lahiki Polopaukahiki Polohilele Poloahaumea		1270	Lahiki Kahiki Ka'ahiki Haumea [Aldebaran, Austral Is.] Ahiluna	
1275	Poloahiluna Polokaumai Polokaulani Polokamakani Polokai		1275	Kaumai Kaulani Kamakani Ikai Kamehani	
1280	Polokamehani		1280	Maumau	

	Poloimaumau		Mauna	
	Poloimauna		La'au	
	Poloila'au		Kanahale	
	Poloikanahale		Kukulu	
1285	Poloikukulu		1285	Ho'omoe
	Poloiho'omoe			Hanahana
	Poloihanahana			Ka-hai'au
	Poloikahiau	(1)		Luahiko
	Poloikalua	(2)		Hiko
1290	Poloahiko	(3)	1290	Kaha
	Poloikaha	(4)		Lima
	Poloihilima	(5)		Waiku
	Poloioaiku	(6)		Mauli
	Polomauli	(7)		Koiele
1295	Polokokoiele	(8)	1295	'Tiwa
	Polokuaiwa	(9)		Hemo
	Polohemo	(10)		Nahunahu
	Polokina'u			Oli'iloa
	Poloki'i			Mano
1300	Pololi'i		1300	Halula
	Polowaikaua			Pomea

[Polo 1230 - Polowaikaua 1301 =  
71 generations

	Li'ili		Auau	
	Li'iliauau		Kamau	
	Li'ilikamau		Holiholi	
1305	Li'ilili'ili		1305	Nanaahu
	Li'ilihalula			Hole
	Li'ilimama			Holehole
	Li'ilimanua			Pilimau
	Li'ilihakahaka			Ho'ohene
1310	Li'ililha		1310	Iwiaku
	Li'ilihemoaku			Lanikama
	Li'ilikaumai			'Iliuli
	Li'iliaolo			'Olo'olo
	Li'ilipihapiha			Nu'unu'u
1315	Li'ilinu'unu'u [zenith]		1315	Helelima
	Li'ilihelelima			Auli
	Li'iliau			Nolunolu
	Li'ilimiha			Haleakeaka
	Li'ilinania			Puluka
1320	Li'ilipelu'a		1320	Maluli
	Li'ilimahimahi			Makauma
	Li'ilikaliaka			Nahili
	Li'ilimeleau			Poloa
	Li'ilileoleo			Popoko
1325	Li'ililimanu	[Procyon, Altair]	1325	Po'imo'imo
	Li'ilikapili			Poiauwale

	Li'iliholowa'a [sail canoe]		Poilumai	
	Li'iliholomau		Poinanaia	
	Li'ilikalele		Nanana	
1330	Li'ilikalili	1330	Nanaue	
	Li'ilipoipo		Nahuila	
	Li'iliwalewale		Meia	
	Li'ilihanahana		Kulaimoku	
	Li'ilihuliana		Pihi	
1335	Li'iliwahipali	1335	Pililau	
	Li'ilinohopali		Ma'ele'ele	
	Li'ilinohoana		Kauhale	
	Li'ilikauhale		Palia	
	Li'ilipulepule		Pule	
1340	Li'ili-la	1340	Halawai [zenith]	
	Li'ili-hou		Leleipaoa	
	Li'ili-kaki'i		Miliamau	
	Li'ili-kahuli		Kulana	
	Li'ili-homole		'Iwa'iwa	
1345	Li'ili-pukaua	1345	Luna	
	Li'ililolilo		Kaua	
	Li'ililanalana		Lilo	
	Li'ililanakila		Kila	
	Li'ililana-au		Kilaua	
1350	Li'ilimalana	1350	Mana	
	Li'iliahula		Lana	
	Li'ilipukiu		Piko	
	Li'ilipaluku		Hulikau	
	Li'ilima'ema'e		Pakapaka	
1355	Li'ioki'oki [Pleiades]	1355	Li'ilii	
	Li'iali'ilii		Lilioma [Aldebaran]	
	Li'ilikauli'ilii		Manukele [Procyon, Altair]	
	Li'iakamama		Mama	
	Li'iamama		Paepae	
1360	Li'ipaepae	1360	Umu	
	Li'iumu		Ki'i	
	Li'iluaki'i		Kini	
	Li'iluakini		Lohi	
	Li'imolohi		Nahele	
1365	Li'ikau'unahale	1365	'Upa	
	Li'ia'upa		Li'awa	
	Li'imuli'awa		Newaku [Southern Cross]	
	Li'inewaku		Mali	
	Li'ihomali		Pulama	
1370	Li'ipulama	1370	Palama	
	Li'ipalama		'Ohinu	
	Li'iohinu		'Omaka	
	Li'iomaka		Olua	
1374	Li'ipau	1374	Kaneiwa [Ke kolu o ke kai]	

[Li'ili 1302 - Li'ilima'ema'e 1302 =  
52 generations]

[Li'ili 1302 - Li'ipau 1374 =  
72 generations]

1375	'O 'A [Sirius] Ali'i [Pleiades, Milky Way] Ali'ila'a [Raaka 'Pegasus] Ali'iaka Ali'imau	1375	'O Li'i [Pleiades, Milky Way] La'a [Raaka, 'Pegasus'] Aka Mau Ali'i
1380	Ali'iali'i Ali'ipo'i Ali'ikono Ali'ipahu Ali'i'ume	1380	Pohea Mi'i Pahu 'Ume Hala
1385	Ali'ihala Ali'iponi Ali'ilanahu Ali'ikaea [Cp. Keho'oea, Lyra]	1385	Poniponi Kelenanahu Ka'eka'ea Hohonupu'u Kaeahonu [La'aniha ka wahine, see Wa 12]
1389	Ali'ihonupu'u [brother]		
1389	Opu'upu'u [brother]		
1390	Ali'ilehelehe Ali'imakolu Ali'inohouka Ali'ihimuhani Ali'ileleiona	1390	Lehelehe Hinakolu Mauka Hau Lopiana
1395	Ali'iwala'au Ali'ikuwala Ali'ikomokomo Ali'iaku Ali'inewa [Southern Cross]	1395	Kukeleau Mana'a'ala Lupuhi Ikuwā [Sept-Oct., Hawai'i] Mania
1400	Ali'ikuhikuhi Ali'ikilo [observe] Ali'ikiloloa [observe (long, distant)] Ali'ikilopoko [observe (short)] Ali'iemi [observe (shrinking)]	1400	Lahulahu Loa [Hokuloa 'Venus'] Pokopoko Anana 'Ami'ami
1405	Ali'ikolo Ali'ihelu [observe (count)] Ali'iheluone Ali'ipu'uone Ali'ikamanomano	1405	Lepau Lepeake Malamu Nahakea Ho'ouli
1410	Ali'ihukeakea Ali'ipauku Ali'inana Ali'ikilokilo [observe] Ali'ikiloluna [observe (up)]	1410	Pololani Kalakala Huli Kelea Halululu
1415	Ali'ikilolono [observe Sirius] Ali'ikiloau [observe current] Ali'ikilohonua [observe earth] Ali'ikilouli [observe darkness] Ali'ikilokai [observe sea]	1415	Kalahai Kanamu Heanaipu Ho'owili 'Ume
1420	Ali'ikilonalu [observe wave(s)] Ali'ikilohulu Ali'ikiloahu Ali'ikilomakani [observe wind] Ali'ikiloola [observe (life)]	1420	'Ohi Pelapela Oheohe Malumalu Lipoa

1425	Ali'ikilohökū [observe star(s)]	1425	Kanulau	
	Ali'ikilomalama [observe moon]		Nahele	
	Ali'ikilomakali'i [observePleiades]		Ho'opulu	
	Ali'ikilokau [observe midnight, noon, zenith passage, meridian; summer]		Kakeli'i	[Pleiades]
	Ali'ikiloho'oilo [observe winter]		Hulu	
1430	Ali'ika'ana'au [memorize]	1430	Lono	[Sirius]
	Ali'ika'anamalama [moons]		Kea	
	Ali'ika'anaua [star in Milky Way, unidentified]		Papahuli	
	Ali'ikilomo'o [Milky Way]		Mo'olio	[Milky Way]
	Ali'ikilokua [observe back(ward)]		Kilohi	[gaze]
1435	Ali'ikiloalo [observe front(ward)]	1435	Anapu	
	Ali'ikilohope [observe behind]		A-a'a	[Sirius]
	Ali'ikilomua [observe front]		Pehe	[chant (Tahiti)]

[Ali'i 1375 - Ali'ikilomua 1437 =  
62 generations]

[Kupolo - 1175 - 1229 = 54 ]  
[Polo - 1230 - 1301 = 71 ]  
[Li'ili - 1302 - 1374 = 72 ]  
[Ali'i - 1375 - 1437 = 62 ]

[\*Note: From Kupolo 1175 - Ali'i-  
kilomua = 262 generations ]

	Mua		Wanaku	
	Muapo		Haina	
1440	Muahaka	1440	Kulamau	
	Mualele		Hilipo	
	Muakaukeha		Keanukapu	
	Muahale		La'apilo	
	Muahalekapu		Ho'ohali	
1445	Muaanoano	1445	Nauia	
	Muakekele		Ipu	
	Muahaipu		Kahiko	
	Muakahiko		Wa'awa'a	
	Muawa'a		Po'i	
1450	Muapo'ipo'i	1450	Helenaku	
	Muakamalulu		Kaukahi	
	Muahele'i		Lulu	
	Muakohukohu		Mo'olelo	
	Muakahukahu		Kapili	
1455	Muaoma	1455	Kahu	
	Muanalu		Anoano	
	Muanaluhaki		Nalu	
	Muanalupopo'i		Poki'i	

1460	Muanalukalohe Muanaluha'ikakala Mualala Muahaipu Muapule Muahanu'ala			
1465	Muaikekele Muaipoipo Muakalaiki'i Muakawa'a Muaiopele		1465	Nanaku Moku Ho'onahu 'Api'api Mahoa Ahia Mulemule 'Akia Lena [Sirius] 'Auhuhu La'aumele
1470	Mualopola Muapali Muaho'opo Muaunu Muaha'i		1470	La'ala'au Wahine Kikana Ui-a Kahuli
1475	Mualupe Muakala Muawekea Muahilo Muakahu		1475	'Eli'eli Mo'omo'o Kapu Lau Eiwa [nine]
1480	Muakahukahu Mua'ama'ama Muaahilo Muaanoa Muaale'ale'a		1480	Hiliahu Kaomi Auwe Olopule Ka'imai
1485	Muainakalo Muaohupu Muaikauka Muaikumuka Muaikaunukukanaka		1485	Kinika Niniha Niniahu Moemole Mokukaha
1490	Muaokalele Muaokaha'iku [Milky Way (?) Muaokahanu'u [zenith] Muaokalani [sky] Muamamao		1490	Opilopilo Mehei'a [Milky Way] Kamanuha'aha'a [Procyon, etc.] Lele'amio Aumalani
1495	Muanu'unu'u [zenith] Muaokamōi [central image, heiau] Muaokaha'i [MilkyWay (?)] Muaokeoma [Aldebaran (?)] Muaokekaha'i [Milky Way (?)]		1495	Kahakaua Holi Ha'eha'e [east] Mano Opelele
1500	Muaoka'oliko Muaokapahu Muaokahana [Gemini (?)] Muaokahanai Muaokaipu		1500	Ehu Kapilipili Hapoe Hunu Ohekele
1505	Mua'umeumeke		1505	Pukapu

Muapo'i  
Muaahuliau  
Muaipapio  
Muailo'ilo'i

Ponouli  
Lehiwa  
Keleauma  
Pohopoho

[Mua 1438 - Mualo'ilo'i 1509 = 71  
generations]

[Le 776 - Lelepe 803/804 = 27/28  
generations; Le 776 - Lelea 1209 =  
433 generations; Lelea 1209 - Lepau  
1405 Lepeake 1406 = 196/197  
generations; Le 776 - Lehiwa 1507 =  
731 generations]

1510 Lo'imua  
Lo'ikahi  
Lo'ialua  
Lo'ilo'i  
Lo'ikalakala  
1515 Lo'iloloi  
Lo'ilolohi  
Lo'inuilo'i  
Lo'ilo'ikaka  
Lo'iakama  
1520 Lo'iiopoe  
Lo'ilo'inui  
Lo'ipouli  
Lo'imia  
Lo'iapele  
1525 Lo'iahemahema  
Lo'iakio  
Lo'ialuluka  
Lo'iahamahamau  
Lo'i'olo'olo  
1530 Lo'ikolohonua  
Lo'iipulau  
Lo'ianomeha  
Lo'ikinikini  
Lo'imanomano  
1535 Lo'ilo'imai  
Lo'ilo'ikapu  
Lo'ilo'ikala  
Lo'ilo'inahu  
Lo'ilo'ipili  
1540 Lo'iahuahu  
Lo'ikulukulu  
Lo'ipilipa  
Lo'ipilipili  
Lo'ihalalu  
1545 Lo'ihalululu  
Lo'ilo'ilele  
Lo'ilo'ipa

1510 Nanio  
Pae [Milky Way]  
Pilliauhea  
Manukoha  
Kanaia  
1515 Naio  
Puhimaka  
Kalino  
Kalanياهو  
Poepoe  
1520 Hiloauama  
Uhuau  
Moku  
Leleiona  
Haikala  
1525 Nakulu  
Kukala  
Hi'ipoi  
Olo  
Papa'a  
1530 Hano  
Mahoe  
Kaloa  
Pokipoki  
Kinikahi  
1535 Holiolio  
Alohi  
Aheaka  
Niao  
Wali  
1540 Waleho'oke  
Nohopali  
Nohinohi  
Mahealani  
Palimu  
1545 Kahiona  
Lukama  
Kahikahi

	Lo'ilo'ipakeke		Waikeha
	Lo'ilo'ipo		Manini
1550	Lo'ilo'ipololo		1550 Hinalo
	Lo'iipololo		Oamaamaku
	Lo'ikamakele		Lahi
	Lo'ihii'aloa		Keleakaku
	Lo'imanuwa		Lahipoko
1555	Lo'ikalokalo		1555 Pauha
	Lo'iihi'ihii		Kaheka
	Lo'ihilimau		Pi'opi'o [zenith, transit]
	Lo'imoemoe		Ho'okaukau
	Lo'ipilopilo		Ho'oiloli
1560	Lo'iko'iko'i		1560 Puapua
	Lo'iko'i'i'i		Mahiapo
	Lo'ilololo [zenith]		Kulukau
	Lo'ilololo (?)		Kupe'e
	Lo'ilolokapu [zenith]		Kealanu'u [zenith path]
1565	Lo'ilalolo [zenith, sun]		1565 Kinana
	Lo'ilo'inaka		Pulelehu [Magellanic Clouds]
	Lo'ilo'ila [sun]		Milimili
	Lo'ilo'ikope'a [Southern Cross]		Apoapoahi
	Lo'iimauamaua		Pola
1570	Lo'iikūki'i		1570 Houpo [equator]
	Lo'iimanini		Kakiwi
	Lo'ipukapuka		Polinahe
	Lo'iomilu [underworld]		Ipulau
	Lo'iomiliapo		Nahawiliea
1575	Lo'iomakana		1575 Ho'olaumiki
	Lo'iokanalao [compass god, Tropic of Cancer]		Palahalaha
	Lo'ioki'iki'i		Hulikahikeoma [Aldebaran]
	Lo'iihi'ikua		Kahiliapoapo
	Lo'iihi'ialo		Kaheihei
1580	Lo'iokanaha		1580 Hilipalahalaha
	Lo'iikeluea [Keho'oea, Lyra (?)]		Apuwaiolika
	Lo'iopilihala		Ohiohikahanu
	Lo'iomalelewa'a		Palakeaka
	Lo'ii'ele'ele		Mimika
1585	Lo'ipo		1585 Kilika, hānau o
	Pola'a-- [Oraaka, Pegagus (?)]		Pola'a--

[Lo'imua 1510 - Lo'ipo 1585 = 75  
generations, to Pola'a 1586 = 76  
generations]

[Lo'a'a 775 - Pola'a 1586 = 811  
generations; + 2 (La'ila'i) = 813  
generations].

- |      |  |      |   |
|------|--|------|---|
| 1586 | <p>Hanau o Pola'a<br/> Hanau ka 'ino, hanau ke au<br/> Hanau ka pahupahu, ka pohaha</p> <p>Hanau ka haluku, ka haloke,<br/> ka nakulu, ka honua naueue</p> <p>Ho'iloli ke kai, pi'i kua a hale</p> | 1586 | <p>Born the Pola'a, sacred night,<br/> Born the storm, born the current,<br/> Born the thundering wave,<br/> the shattering night,<br/> Born devastation, destruction,<br/> rumbling, the earthquake;</p> <p>The sea chumed inside out,<br/> climbing the ridges,</p> |
| 1590 | <p>Pi'i konikonihia, pi'i na pou o<br/> Kanikawa<br/> Lele na ihe a Kauikaho</p> <p>Apu'epu'e ia Kanaloa, Kanikahoe;</p>   | 1590 | <p>The sea silenced everything,<br/> backing over houses,<br/> Resonating, vibrating, climbing<br/> the posts of Kanikawā,<br/> The spears of Kauikaho flew<br/> Ravaged Kanaloa, Kanikahoe,<br/> rattling canoe paddles,</p>   |
|      | <p>Hanau o Poelua i ke alo o Wakea<br/> Hanau ka po'ino</p>  |      | <p>Born the second night on the<br/> front of Wakea,<br/> Born night of misfortune<br/> Born night of good fortune</p>  |
| 1595 | <p>Hanau ka pomaika'i</p>  |      | <p>Born the titled moa lineage on the<br/> back of Wakea,<br/> Dead Kupolo-li'ili-ali'i-mua-o-lo'ipō,</p>   |
|      | <p>Hanau ka moa i ke kua o Wakea<br/> Make Kupolo-li'ili-ali'i-mua-o-lo'i-<br/> po<br/> Make ke au kaha o piko-ka-honua,<br/> oia pukaua</p>   |      | <p>Dead in the current at the navel of<br/> the earth,</p>  |
| 1599 | <p>Hua na lau la nalo, nalo i ka po<br/> liolio--</p>  | 1599 | <p>Prolific line of chiefs of the day past,<br/> that vanished into night<br/> just before dawn--</p>   |

Canto 11: Ancestors in the Sky by Generations.

The daylight world (Ao) dawns in the Eighth Age (Ka Wā Ewalu). The last births of the night (Pō) occur at dawn light as human and godly (akua) ancestry:

La'ila'i, first woman  
Ki'i, first man  
Kāne, god  
Kanaloa, octopus god; wind compass

From her first marriage to Kāne, La'ila'i gives birth to three daughters:

Hahapo'ele (w)  
Hapopo (w)  
'Olohelohe (Maila) (w)

From her second marriage to Ki'i (k) La'ila'i (w) has five sons and three daughters:

La'i'olo (k)  
Kamahaina (k)  
Kamamule (k)  
Kamamainau (k)

Kamakulua (w)  
Po'ele-i (w)  
Po'ele-a (w)  
Wehi-wela-wehi-loa (k)

Two of La'ila'i's daughters, Po'ele-i (w) and Po'ele'a (w), were miscarried, so of the eight children, six survive, five sons and one daughter.

From these sets, a daughter of Kāne, Halia (w), and a son of Ki'i, Kamahaina, become progenitors of Hawaiian chiefs.

Nothing more is said of the other siblings whose names are merely recorded, but not their generations.

The reaction of Kāne to discovery that his issue would become the junior line is cause for dissatisfaction. They will not hold titles to the paramount sovereignty. A recitation of the line from Kamahaina (k)

and Halia (w) commences with Loa'a (k) in the third generation:

(1) La'ila'i = Ki'i                      Kamahaina  
    La'ila'i = Kāne                     Hali'a (w)

(2) Kamahaina (k) = Hali'a (w) Lo'a'a (k)

(3) Loa'a (k)

The recitations are continuous from Loa'a (Canto 11, line 775) to Pōla'a (Canto 11 line 1585-86).

The total number of generations between Loa'a (775) and Pōla'a (1586) are 811 and including the prior generations, are 813 [from La'ila'i (w) to Pōla'a].

Let us pace these 1,585-1586 lines as names in generations into more easily arranged numerical sets to get a sense of critical alignments, if any exist, to possible celestial phenomena in time and space.

These would be only tentative because they are only extrapolations deduced from approximate translations of the names.

For the moment, however, we may trust this effort to translate names, or parts of names, for this possible level of interpretation, although other intended meanings to each name are also possible.

We are looking for celestial meanings to some of the names, if any may exist, in short, stacking the deck in favor of the celestial suit.

Let us consider, for example, the name Lo'a'a. Loa'a means to 'receive', to 'obtain'. On the surface that would be the right translation. However, it can also be Loa'-'ā, meaning a long burning, a distant fire. It may be Lō- 'A'ā, meaning 'to prop up' (Lō) the star Sirius ('A'ā). All of these meanings for Loa'a are possible.

Evidence exists in other Polynesian languages, such as Tuamotuan, for the identity of the sky-propper, Lō (Cp. Rō).

Rō - an object when first discerned across the sea; as land, a sail; an emerging shape, form.

Rō - a strand of rolled, twirled, cord, rope.

The form *Loa'a* otherwise means 'hard, severe, as of tabu', and his companion, *Nakelea*, based on the root - *kelea* refers to a process by which a priest cleansed himself from impurities (*kele*) due to contact with the dead'. These are surface definitions, and the interpretation may be left there.

In mythology the name *Lō-* in *Lō'a'a* alludes to one of the heroes in Polynesia who prop up the sky and whose name is a title of the high-ranking chiefs from 'Ewa district, O'ahu.

Another was *Rū* whose name is given to *Kau-no-Lū* on Lana'i for the 'stance-of-*Lū*. *Kaunolū* has a clear view of the ocean horizon from west to southeast. *Lū* is the full name of O'ahu as O'ahu-a-*Lū*-a-*Nu'u*. 'O-Ahu-son-of-*Lū*-son-of-*Nu'u* (*nu'u*, zenith) on the latitude of Kualoa in Ko'olaupoko district facing due east [latitude 21 degrees 19 minutes north].

Is the celestial or calendrical consideration tenable? If not, then let us consider how the name *Loa'a* behaves, purely in terms of generation count (*helu papa*), or how many generations elapse between one *Loa'a* and the next *Loa'a*.

Generations are usually counted from 20 to 25 years per generation. Is there a formula within that allowance embedded in the *Kumulipo*?

From *Loa'a* (775) to *Loa'a* (830) are 55 generations, or from *Le* (776) to *Loa'a* (830) are 54 generations;

From *Loa'a* (830) to *Mahinalea* (966) called *Palermo* at the first *Kai o Kahinali'i* tsunami (966) are 135 generations;

From *Loa'a* (775) to *Mahinalea* and *Palermo* at the first *Kai o Kahinali'i* (966) are 191 generations, and from *Le* (776) to *Mahinalea* (966) are 190 generations.

From *Loa'a* (775) to *Mahina* (964) are 189 generations, as from *Le* (776) to *Mahinalea* (966) are 189 generations.

The variation from 54 to 55 generations between *Loa'a* (775) to the next *Loa'a* (83), and the variations from 189 to 190 generations, between *Loa'a* (775) and *Le* (776) and the sequence beginning with *Mahina* (964) to *Mahinalea* (966), where the first tsunami (deluge) *Kai-a-Kahinali'i* (*Auriga* in *Capella*) takes place, are probably the result of accommodating, or juggling, as it were, the small one-third day per month fractions of sidereal lunations that accumulate over time.

We may consider for the moment what these numbers suggest.

The numbers, 54 and 189, are in the basic sidereal lunation count based on 27 and 1/3 days per sidereal lunation, allowing for the one-third of a day remainder to accumulate to approximately a day after three months (sidereal).

A lunation is one lunar month, but the sidereal lunation is different from the synodic revolution of the moon in one month.

The sidereal month, or lunation, is a month of shorter duration than a synodic month, even though the periodic cycle of the moon is involved.

The difference between a sidereal and a synodic lunation is that:

(1) When you watch the moon when you first see it above the western horizon after sunset and again at that point, the lunation is *synodic*;

(2) When you watch a *star* transit the meridian during the month and transit again, the lunation is *sidereal*.

You are actually observing a star at a period of time during the moon's period of revolution, rather than the moon's periodic cycle by itself.

The numerical difference is that the synodic lunation is about 29.5 days per month, and the sidereal lunation about 27 and 1/3rd days per month.

If we assign the number 27 to the 27th night of the moon as Kāne, as ancient Hawaiians did at one time, the 27 nights per month (plus one-third fractional day) will increase from 27 to 189 days in the seventh sidereal lunation.

$$7 \times 27.3 = 189 [+ 2/3rd \text{ day}]$$

The perception of the fraction of time beyond 189 days causes, perhaps, the fluctuation in the generations between 189 and 190-191 generations, indicating that the fraction required an extra day or two to synchronize the generations as well as the moon nights with faster moving stars.

By 81 to 82 sidereal lunations plus the fractional 1/3 day remainder a whole 27-day sidereal lunation will accumulate:

$$\begin{aligned} 81 \times 27.3 &= 2187 + 27 = 2214 \\ 82 \times 27.3 &= 2214 \end{aligned}$$

It takes six years and four sidereal lunar months for 81 sidereal lunations to equal 2,214 days. Then the 81 will become 82 lunations, adding the 27-day remainder,

Was the intent to correlate sidereal with synodic lunations (29.5 days per month) and both to the tropic year of 365.25 days?

In that case, six tropical years of 2,190.5 days will be behind the 2,214-day accumulation by 24 days.

A deliberate arithmetic notation occurs between lines 1129 and 1170 in a series from *Pa* (line 1129) to *Hekaunano* (line 1170) in the generation just before

the second tsunami *Ka lua o ke kai o Kahinali'i* (line 1171), so that 41 generations seem to have been interpolated in the place of true ancestral names, constituting a form of correction.

For convenience let us call this section the *Hekaunano* formula, the sequence of which adds up to the number 40, but there are two places before *Panakahi* (1), allowing the zero place to *Pana*, so that there are 41 places in the decimal notation (or 42 from *Pa* as zero).

The number of days and generations have been accumulating from *Loa'a* to *Poulua* in 12 generations, eventually to 354 generations at *Pa* (line 1129).

The number 354, not as a generation number, but as a calendrical number, is the number of days in a lunar year, reckoning not from sidereal, but rather, from synodic lunations.

The implication, from the standpoint of calendrical analysis of the basis of this alignment, as between generation counts and sidereal (or synodic) lunations, is that the two kinds of calendrical notation have been collapsed into the genealogical formulae so that one (calendrical) is contained within the other (genealogical),

The *Hekaunano* recitation from *Pana* (at zero) to *Hekaunano* (40) is probably a parallel to the 40 sidereal lunations of 1080 (less 15.75 days) in three tropic years (1095.75 days), which is also greater than three lunar years (1062 days) by about 18 days.

The total number of days in 80 such sidereal lunations is 2,160, a number equal to one-twelfth the precession of equinoxes in 25,920 days. Is this a feasible deduction?

The *Pana*, *Hinalea*, *'Akilolo*, and *'Ewe* sets in the *Hekaunano* formula generate the 80th-81st doubling of the enumeration that started with *Loa'a* at the beginning, suggesting, perhaps, a possible

correction required in six tropical years (2191.5 days) to 81 sidereal months, thusly:

(38)	27 and 1/3	=	1026 days
(39)	27 and 1/3	=	1053 + 13 days
(40)	27 and 1/3	=	1080 days
(41)	27 and 1/3	=	1107 days
(78)	27 and 1/3	=	2106 + 26 days
(79)	27 and 1/3	=	2133 days
(80)	27 and 1/3	=	2160 days
(81)	27 and 1/3	=	2187 + 27 days
(82)	27 and 1/3	=	2214 days
(83)	27 and 1/3	=	2241 days
(84)	27 and 1/3	=	2261 + 1 day

The synodic lunations (29.5 days) will reach 2,204 days in 75 such months, at which time they will be behind sidereal lunar time ( 2,214 days = 6 lunar years) by 10 days.

If this period is cut in half, to three lunar years (1,062 days), then 38 synodic lunations (1,128 days), less 1,107 days in 41 sidereal lunations will self-correct., provided those who start the synodic count allow the sidereal lunations a headstart of a given number of days.

The number 2,214 days in six sidereal years and four months occurs by doubling the Hekaunano formula, i.e, 41 (1107 days) to 82 sidereal months (2,214 days), which begins at *Pa* [1129].

The words used in this series imply division (*pana*) and counting by sets, *pākahi*, by ones, *pālua*, by twos, etc. Into this comes *pu'u*, which means to 'hill', as by stacking, or to 'knot' as in a *koko*, netting, or along a knotted string (*hipu'u*):

1129	<i>Pa</i>	
1130	<i>Pana</i>	0
1131	<i>Panakahi</i>	1
1132	<i>Paikekalua</i>	2
1133	<i>Pu'ukolukolu</i>	3
1134	<i>Napu'uehā</i>	4
1135	<i>Palimakahana</i>	5
1136	<i>Waiakea</i>	(6)
1137	<i>Kaeamauli</i>	(7)
1138	<i>Kako'i'ele</i>	(8)

1139 *Kaholooka'iwa* (9)

[*Iwa* is a frigate bird said to "holo", meaning to 'sail', as well as the number nine ('iwa). *Iwa* names the Belt of Orion at the equator and the *maka'iwa* images in the heiau representing Lono. *Iwa* is a name for Jupiter ('Iao, Hua).

1140	<i>Kalelenohinalea</i>	10	(0)
1141	<i>Pana'akahiahinalea</i>	11	(1)
1142	<i>Panaikalukahinalea</i>	12	(2)
1143	<i>Pu'ukolukukahinalea</i>	13	(3)
1144	<i>Napu'uikahiakahina-</i>	14	(4)
1145	<i>Palimawaleahinalea</i>	15	(5)

[*Hinalea* is the wrasse fish, probably involving the moon (*mahina*) or 'fall' (*hina*)]

1146	<i>Akahiakaea'akilolo</i>	16	(1)
1147	<i>Paluaakaea'akilolo</i>	17	(2)
1148	<i>Pu'ukolukaea'akilolo</i>	18	(3)
1149	<i>Pu'uhākahā'akilolo</i>	19	(4)
1150	<i>Pu'ulimakaeaakilolo</i>	20	(5)

[The '*akilolo* is another wrasse species, but '*aki-lolo* means to 'bite-brain' or 'zenith' (*lolo*), implying the zenith sun].

1151	<i>Akahike'ewe</i>	21	(1)
1152	<i>Paluake'ewe</i>	22	(2)
1153	<i>Paukolu</i>	23	(3)
1154	<i>Pu'uhāke'ewe</i>	24	(4)
1155	<i>Pulimake'ewe</i>	25	(5)
1156	<i>Waiakaeaka'ewe</i>	26	(6)
1157	<i>Ko'ieleaka'ewe</i>	27	(7)
1158	<i>Kamauliaka'ewe</i>	28	(8)
1159	<i>Kuaiwaaka'ewe</i>	29	(9)
1160	<i>Henahuno</i>	30	(10)
1161	<i>Panakahikenahu</i>	31	(1)
1162	<i>Panaluakenahu</i>	32	(2)
1163	<i>Panakolukenuhu</i>	33	(3)
1164	<i>Panahākenahu</i>	34	(4)
1165	<i>Lewelimakenahu</i>	35	(5)
1166	<i>Pa'akaeaakenahu</i>	36	(6)
1167	<i>Omaulikenahu</i>	37	(7)
1168	<i>Ko'ielehakenahu</i>	38	(8)
1169	<i>Kuaiwakelekenahu</i>	39	(9)
1170	<i>Hekaunano</i>	40	(10)

[‘Ewe is a string, in particular, the navel string, i.e., of lineages].

The pattern of sidereal numbers is evident in the enumeration, i.e.:

27.3	x	2	=	54
27.3	x	4	=	108
27.3	x	5	=	135
27.3	x	40	=	1080
27.3	x	7	=	189
27.3	x	8	=	216
27.3	x	80	=	2160
		(etc.)		

The sidereal pattern appears in the recitations of generations from *Le* and *Loa’a* to *Mahina*, *Mahinale*, and *Mahinalea* [964-966] at *Kai-o-Kahinali’i* [966]:

Le (776) to Loa’a (830)	=	54
Loaa (775) to Loa’a (830)	=	55

Loaa (830) to Mahina (964)	=	134
Loa’a (830) to Mahinale (965)	=	135
Loa’a (830) to Mahinalea (966)	=	136
Loaa (775) to Mahina (964)	=	189

Le (776) to Loa’a (830)	=	54
Le (776) to Mahina (964)	=	188
Le (776) to Mahinale (965)	=	189
Le (776) to Mahinalea (966)	=	190

Kupololi’ili (1175) to Kupolo- ‘ololi (1229)	=	54
---	---	----

So far the pattern evolving with the generation name *Le* escapes definition of *Le* and *Lea*. It remains on a more esoteric level of the recitation, appearing at strategic places in connection with the moon, *Mahina-le*, *Mahina-lea* (864-966) and the “deluge”, a *Kai o Kahinali’i* event, or first ‘fall’ (*hina*) of the ‘sea’ (*kai*), implying an antediluvian epoch somewhat equivalent to Noah’s ‘flood’ which, in this context, is a tsunami caused by the earthquake, *Pola’a*.

On another level of interpretation, the root *kele-* in *kele-’ā* (rather than *kelea*) means ‘to navigate’ (*kele*) by Sirius, ‘A, if this is a hidden meaning in the

opening recitation of *Lō’a’ā* and *Nakele’ā*. Or, it may be a cycle involving the star *Hōkūle’a*, *Arcturus*.

For the most part all of this is speculation. Until more of the chant becomes tangible through analysis, the present effort proceeds only on theory that the sequence encodes sidereal time, allowing for any other pertinent and demonstrable truth to surface.

If *La’ila’i* was born in the daylight (Chant Eight, 621) after the first evening rise (or zenith passage) of the Pleiades (November 20th), of what significance is *Sirius (A’ā)* at another dawn, or evening appearance, as (perhaps) a sky-propping star, *Lō’a’ā*? Or a ‘long-periof’ (*loa*) cycle of *Sirius (Loa’ā)*?

Navigators ascertain the azimuth, or rising and setting position, of any star by its position on the horizon nearest the time of sunrise and sunset, before the sun rises (east) and after the sun sets (west).

As they rise in the evening, stars are seen eventually higher than that point each day at the same time and are too far above the horizon to find true azimuth (*lua*).

The bearing of any landfall or heading (*ihu*) of a vessel going to a destination whose zenith star is, say, in the direction of *Sirius* over the latitude of *Tahiti*, will better focus on the target if the position of *Sirius* is determined by its rising point on the horizon observed just before sunrise southeast of the latitude of *Hawai’i*.

These were instructions given in the migration legend of *Mo’ikeha* when he decided his son *Kila* should fetch his other Tahitian son, *La’a*, so that *Mo’ikeha* could see him before his own death. *Kila*, however, had never been to *Tahiti* before and didn’t know the way there or back to *Hawai’i*.

The navigator who had come north with *Mo’ikeha* and who knew the way

back to Tahiti rose before morning sunrise to observe Sirius on the horizon in the direction of Tahiti and to take that bearing from the azimuth (lua) to which the canoe would return. When he was satisfied that they had the necessary information required to make landfall, they left in the morning, using Sirius as guiding star (*Hōkū ho'okelewa'a* 'star navigating-canoe').

"When the men who were to accompany Kila were ready, Mo'ikeha took the priests who were versed in the study of the heavens and ordered them to see if the chief's journey would be undertaken in safety. After studying the sky the priests announced that the chief could take the journey in safety. But not wishing to take any risk, *Wanahili*, one of the priests, was selected to accompany him, thus making eleven in the company all told..."

"...In the dawn of the day advised by the priests as the proper time to undertake the voyage, just as the star Sirius, (*ka hōkū ho'okele-wa'a*), Kila set sail for O'ahu" [Fornander, 1974:IV: 122-123].

The word *lua*, meaning 'pit', is the Hawaiian equivalent to azimuth. If, near the latitude of Tahiti, they had then found Sirius rising to the northeast and out of their zenith, they would then know they had gone too far south of their destination. They succeeded, however, in finding and bringing La'amaikahiki to see Mo'ikeha on Kaua'i before Mo'ikeha died. Sirius, perhaps, was the star they observed as Mo'ikeha had done himself when his canoe first came north to Hawai'i:

"One early morning at dawn, just at the rise of the star Sirius (*ka hōkū ho'okelewa'a*) Mo'ikeha boarded his double canoe, taking with him all his attendants and followers, and set out from Tahiti. *From that morn until sunrise* (*mai ia wana'ao a puka ka lā*), when they first beheld Hilo all went well, whereupon Kamahu'alele stood up and prayed by way of a mele their voyage hither." [ibid.: 126].

After a brief visit La'amaikahiki returned to Tahiti to live until word reached him that Mo'ikeha had died, so another canoe must have gone back to tell him. On the second trip back to Hawai'i, La'a sailed his own canoe in order to retrieve his father's bones, returning them to the family burial vault in Moa-'ula-nui-akea in Tahiti. These events took place in the late 12th century A.D.

Let us, however, consider the frequency with which these celestial referents occur as genealogy, as ancestors, rather than star compass instructions.

The stars listed below are actual star names (not parts of other generation names, such as *Loa'a ~ Lo-'A'a*) occurring in the recitation of Canto 11 as genealogy, in the order in which they appear. [\*Numbers on the margin are for chant lines].

- |     |               |  |
|-----|---------------|--|
| 780 | Sirius (1)    | 'A'a<br>[below equator, 18 degrees south lat.]<br>[zenith star, latitude of Tahiti, Fiji;<br>'burning bright']   |
| 788 | Milky Way (1) | Paeloahiki<br>[reaching from north to south, east to west; in a 'long-row' (pae-loa)]  |
| 817 | Aldebaran (1) | Keoma-(aikū)<br>[above equator; the 'oven' (oma) of 'adze' (oma) of 'Aikū]   |
| 870 | Milky Way (2) | Mokukapewa<br>[tail of the fish (i'a), a shark (manō) or 'lizard' (mo'o), 'broken' (moku), i.e., not lying from north to south or east to west, from one end of the horizon to the other; lying around the edge of the horizon]. |
| 871 | Milky Way (3) | Mokukai'a<br>[the fish (shark), broken, lying around the edge of the horizon]  |

883	Southern Cross (1) [south, polar; 'spider's web' (wene-wene)]	Wene	966	Capella (Auriga) [First 'fall of the sea of Kahinali'i; 'fall' (hina)]	Kahinali'i (1)
896	Procyon	Manu (1)	1020	Altar (Aquila) [or Southern Cross]	Humuhumu Humuhumu ['triggerfish' (humuhumu)]
	a) Above equator; forms a hexagon with Capella (Auriga), Gemini, Aldebaran (Hyades in Taurus);		1030	Sirius (2)	'A'a
	b) Below the equator, in which configuration continues (Manu) in a set called 'bird with a broken wing':		1046	Sirius (3) ['yellow-orange' (lena)]	Lena
	Procyon + Rigel (Orion), Sirius, and Canopus in the pole (south);		1068	Orion's Belt (2) [Equatorial]	Melemele
	c) Altair (Aquila)	Manu (forms a triangle with apex facing south above the equator with Deneb (Cygnus) + Vega (Lyra); the Micronesian (Carolinian) 'bird pillar' marking east in that compass, otherwise called <i>Kautoki</i> 'Adz-Handle').	1145	Procyon [See 896 above]	Manu (2)
	d) Ursa Minor/Major	Manu [North, polar, Polaris] and Ursa Major, Great (and Little) Bears, Cp. Marquesas: Manu-kaki-'oa, 'bird-long-neck'].	1171	Capella in Auriga [Second 'fall' of the sea of Kahinali'i]	Kahinali'i (w)
	Canopus	Manu [south, polar; 50 degrees south latitude; lies in the same hour circle with Procyon and Sirius, but rising rising later than Rigel (Orion) and Aldebaran].	1202	Procyon [See 896 above]	Manu
919	Gemini (1)	Kaulua [Castor, Pollux; above Procyon (north) and Sirius (south), the 'twins' (Hanakaulua, Mahanakaulua, Kaulua, Na Mahoe, Mahoe-mua (Castor), Mahoe-hope (Pollux), Mahana, Na Mahana, marking the month, Kaulua, variously: February (Hawaiian), June (Moloka'i)].	1226	Spica (Virgo)	Maliu(a) [maliu 'pay attention to', 'regard']
			1236	Milky Way (4) ['broken' (ha'iha'i)]	Ha'iha'i
			1264	Shaula (Scorpius) (1) [38 degrees south latitude; 12th night of the moon]	Mohalu
			1273	Aldebaran (2)	Haumea
			1368	Pleiades (1) [Hyades in Taurus]	Makali'i
			1374	Capella (Auriga) [Third 'fall' of the sea Kahinali'i]	Kahinali'i (3)
			1374	Sirius (4)	'A
			1375-1437	Sirius + Pleiades	['A + Li'i]
			1375-1437	Pleiades	Li'i
			1436	Sirius (5)	'A'a'a
			1468	Sirius (6)	Lena
953	Orion's Belt (1) [Equatorial, 'yellow(ish)']	Melemele	1531	Gemini [Kaulua (953); 'twin(s)' Mahoe; Castor (Mahoe-mua), 'first'; of the 'twins' to rise; Pollux (Mahoe-hope), 'second' of the twins,	Mahoe (2)

marking the months: June to July (O'ahu), August to September (Hawaii), and September to October (Kaua'i).

1569 Southern Cross Kope'a  
[pole, south].

The placement is so mixed that the order suggests a relationship based on horizon positions of stars in recognizable groupings complementing those on the opposite horizon:

a) rising or setting, i.e., which are on the east (rising), or on the west (setting) when the sun rises or sets;

b) on the opposite sides of the equator, above (north) or below (south) in separate hemispheres;

c) aligned on the same meridian (longitude, right ascension) or in the same hour (or two-hour) segment (hour-circle).

Manu was *Maan* 'bird' in Micronesia marking the cardinal direction due east as the rising place of Altair the 'bird pillar' in Aquila. As in Polynesia, *Maan* (Manu) was variously applied to Canopus (*Maan*), Sirius (*Maan-ifono*), and Ursa Minor (*Maan-apan*).

The positions of *Manu* ~ *Maan* reflect shifts in polar alignments and polar orientation between the solstices and equinoxes:

a) to south when the 'bird' [Procyon, Sirius, Rigel, and Canopus] is on meridian [June solstice, midnight; December solstice, midnight];

b) to north when the 'bird' to the south [Procyon et. al.] is setting on the western horizon when *Kope'a* 'bird' or 'bat' (Southern Cross) is on meridian at the pole (south) with the Dipper (Alioth and Megrez) at the pole (north) [March equinox, midnight].

The relevance of these sets of stars on meridian at midnight when they are visible at night, or on meridian at noon when they are invisible during the day is also pertinent to the subject of the zenith (*nu'u*) and zenith stars (*pou, Pou o Manu*).

The subject of the zenith (halawai, huina, nu'u, lolo) is also, perhaps, part of this picture, and it is amply represented:

(1)	Hui	( 812)
(2)	Nu'u	(1045)
(3)	Pi'onu'u	(1106)
(3)	Nu'unu'u	(1314)
(4)	Li'ilinu'unu'u	(1315)
(5)	Halawai	(1340)
(6)	Ali'ikilokau	(1428)
(7)	Muaokahanu'u	(1492)
(8)	Muanu'unu'u	(1495)
(9)	Lo'ilo'ipololo	(1550)
(10)	Lo'ilololo	(1561)
(11)	Kulukau	(1561)
(12)	Lo'ilolokapū	(1564)
(13)	Kealanu'u	(1564)
(14)	Lo'ilālolo	(1565)

It is apparent from these generation names for the zenith that reference to time may differentiate times when the sun is on the meridian (longitude) of Hawaii and in the zenith (*nu'u*) at local noon (*lolo*).

In Hawaii a *pou* or 'pillar' (zenith star) was considered the central post, or *Pou o Manu*, the 'bird' (manu) pillar of the ordinary house (*hale*) which position was also assigned to the image (*Pou o Manu*) in the center of the semi-circle of *maka'iwa* post images (representing the god Lono) stationed in front of the oracle tower (*anu'u*) in the *luakini* temple (*heiau Kū*).

The pillar image central to the ritual sacrificial area in the *heiau Kū* went through several name changes during the ritual period of twenty-one to twenty-six days set aside for Kū in the quarter of the year between vernal equinox and summer solstice (March-June):

1. *Kū-ka-'ohi'a-laka*, Ku-in-the-ohi'a laka (lehua) tree;
2. *Pou-o-Manu*, Bird-Pillar, name of the central post of the ordinary house, or the 'house of god' (*hale o ke akua, heiau*) and name of the central image when posted over a human sacrifice in the heiau temple;
3. *Mo'i*, 'paramount sovereign or high chief', given to the *Pou-o-Manu* after its navel (*piko*) was cut (*'oki ka piko*) and girded with a loincloth (*malo*) in the *kaioloa* service [Malo, 1951: 169-175].

The change in names may reflect the shifting position and identity of pillar (*pou*) stars, or zenith stars, marking the middle (*piko*) of the horizon circle where local latitude and the meridian meet beneath local zenith (*nu'u, lolo*).

The concept of the pillar star is two-fold in that it:

a) marks the local meridian (longitude) and local zenith (*lolo, nu'u*), and:

b) connects (*pū*) the *piko* (navel), or center of the individual person at his locus to the *piko* of the two world parents (Wākea, Papa), the *piko* above at 'noon' (*kau, awakea*) when the sun, is in the zenith (*kau ka lā i ka lolo*) above the 'brain' (*lolo*) when the sun casts no shadow at noon (*kau ka lā i ka lolo*).

This will happen only twice during the year between the months of May and July throughout the Hawaiian archipelago from latitude 19 degrees north (Kalae, Ka'ū, Hawai'i) to 23.5 degrees north (Nihoa).

The position of the 'brain' (*lolo*) of an individual is his 'center' (*manawa*) of 'time' (*manawa*) where two sides of the human skull meet in the middle. This creates the *piko* aligned vertically (*kū*) 'upright' to the zenith above and horizon due east (or west). The vertical *piko* at the

*manawa*, or soft spot of the newborn infant, is on the horizontal plane when lying down (*moe*) when the body *piko* (navel) faces upward to Sky Father (*awake*) or downward to the *piko* where the center is to Earth Mother (Papa), i.e., to *Ka piko o ka Honua*. At the equator, however, the diagonal drawn through the earth is *Ka Piko o ka Honua*, the center of the earth, and the extension beyond earth is *Ke Ala i ka Piko o Wakea* (i.e., 'path to the celestial equator').

The ridge (*manawa*) of the human skull that parts it on the longitudinal axis is on line with the *kaupoku o ka hale* ridgepole meridian at the vertical *piko*, as the '*ōpū*' at the center of the body on the horizontal plane (*moe*), joined (*pū*) to the sky *piko* above. This *pū* and '*ōpū*' is the first connection of the human person to his own placenta (*honua*) within the womb

(*pū'ao, 'ōpū*) of his mother. When he dies he goes back to Earth Mother.

On the vertical axis, on either side of the ridgepole, is the center (*manawa*) of time (*manawa*) that we connect with the clock as hours, minutes, and seconds by today's clock, but which in ancient times was quartered by 'corners' (*kihi*) at evening and morning or cut into halves at the midpoint (*kau*) of night and day, the mean day beginning at midnight (*kau, 'aumoe*), and quartered again by the *pili* 'close to' midnight (*pili 'aumoe*) or morning (*pili puka*).

These 'hour circles' of time, as navigators call them correspond to longitude. There are 24 hour circles in 360 degrees of earth time, each hour circle corresponding to 15 degrees of the compass.

When we face either 'due east' (*kukulu hikina*) or 'due west' (*kukulu komohana*), finding the sun rising due east and moon setting due west opposite each other, the time of year is the equinox, one day in spring (March) and another in the fall (September).

It matters, then, if you are on the earth's equator and the sun is on your latitude due east or due west. At that time the sun is also in the zenith casting no shadow at noon, *kau ka lā i ka lolo at ka piko o ka honua*. The zenith and the path to the celestial equator is at *Ka piko o Wakea* and on *Ke Ala i ka Piko o Wakea*.

The symbol of this geographic center and geometric mean of measurement is the 'cross' (*pe'a*) of the mariner's compass in quadrature, the segments of which are halved and quartered through the earth and further divided into eight primary wind directions, the shape of the 'octopus' compass that is the god Kanaloa's *kinolau* form. These may increase to 16 to 32 wind directions.

If one travels by canoe going across the equator, then the saying is that he has 'trampled' (*ke'ehi*) 'the diaphragm of Kane' (*ka houpo o Kane*), whose 'eyeball' (*ka 'onohi o ka lā*) is the sun disk.

The star that rises due east on local latitude will eventually transit the meridian at local zenith. All other stars that course through the same track to the 'ridgepole of the house of god' (*kaupoku o ka hale o ke akua*) will be in line with the poles, north and south, on local meridian. They do this all hours of the night as soon as the sun sets.

This provides another gauge to time in that the sun transits local zenith a quarter of the meridional compass in the daytime at the *piko*, or on the meridian, and the invisible star that was in the zenith with the sun will set just after sunset in the evening.

The *pou* star that rises in the east after sunset will transit the zenith at midnight, when the sun is in the zenith on the opposite side of the earth. If there is no *pou* star at the *piko* then stars on meridian from north to south nearest the zenith become important.

The zenith stars for Hawai'i named in the genealogical list above may then indicate, by the absence of Arcturus (*Hōkūle'a*) in the recitation, that the canto may refer to a time before Arcturus became the zenith star in the Hawaiian star compass. It has been replaced [latitude 20 degrees north] by Zosma (Leo) and Sharatan (Aries).

Nevertheless, star names as ancestral generations in Canto 11 that mark the present star months of the Hawaiian calendar, as those passing through or near the zenith of Hawaii (latitude 20 - 23.5 degrees north) are:

- |             |                          |   |
|-------------|--------------------------|---|
| 1. January  | Pleiades                 | Makali'i  |
| 2. February | Aldebaran                | Kaomaaiiku;<br>[Ka-ule-o-Nanahoa]<br>[Cp. Haumea (Rarotonga)] |
| 3. March    | Gemini                   | Kaulua, Mahoe   |
| 4. May      | Regulus, Denebola (Leo), | Ikiiki  |
| 5. July     | Alphecca                 | Corona Borealis   |
| 6. October  | Delphinus                |   |
| 7. November | Scheat, Markab (Pegasus) |   |

The cano environment in which the zenith is noted presents a cluster of celestial phenomena phenomena:

- |        |                |   |
|--------|----------------|---|
| (812)  | Hui            | zenith  |
| (813)  | Malama         | moon  |
| (815)  | Ehoaka         | 2nd moon, crescent  |
| (816)  | Ehōkū          | 15th moon, full   |
| (817)  | Keoma          | Aldebaran (?)<br>[Ka-oma-aiku = Aldebaran]                                  |
| (1104) | Kapouhina      | moon-post (?), or<br>'fallen' (zenith star)                                 |
| (1105) | Kapouhinahā    | (post) "four  |
| (1106) | Pi'onu'u       | 'arch-zenith' (transit?)  |
| (1111) | Nānāwa'a       | 'observe-canoe'   |
| (1111) | Oma            | Aldebaran<br>[Ka-oma-'aikū]   |
| (1314) | Nu'unu'u       | zenith  |
| (1314) | Li'ilinu'unu'u | zenith  |
| (1325) | Li'ililimanu   | [-Manu]   |
| (1339) | Pule           | tabu period<br>[1 and 1/2 to 2 days per period,<br>of seven days per month] |

(1340) L'iili-lā	[-lā 'sun']	(1568) Lo'ilo'ikope'a	Southern Cross
(1340) Halawai	zenith	(1570) Houpo	Equator
(1375) O 'Ā	Sirius	(1576) Lo'iokanaloa	Tropic of Capricorn
(1375) O Li'i	Pleiades	(1577) Hulikahikeoma	Aldebaran (?)
(1376) Ali'i	Pleiades	[Ka-orna-'aikū]	
(1376) La'a	[Oraaka, 'Pegasus' (?)]	(1586) Pola'a	[Oraaka, 'Pegasus'
(1377) Ali'ila'a	[Pleiades, Pegasus] (?)		(Kapingamarangi); cp. Ola'a 'sacred' (Hawaiian)].
(1398) Ikuwā	October-November (Hawaii); January-		
(1398) Ikuwā	February (Moloka'i); April-May (Kaua'i); August-September (O'ahu);		
(1401) Ali'ikilo	Pleiades (observe)		
(1401) Loa	Venus (?) or long period		
(1402) Ali'ikiloloa	Observe Venus (?) Loa, or long period		
(1402) Pokopoko	Poko - short period		
(1403) Ali'ikilopoko	Observe short period		
(1425) Ali'ikilohökū	Observe stars	(775) Loa'a	prop (lō) Sirius (A'ā)
(1426) Ali'ikilomalama	Observe moon	(776) Le	'Ole quarter moon (?)
(1427) Ali'ikilomakali'i	Observe Pleiades	(780) A'a	Sirius [bright]
(1428) Ali'ikilokau	Observe midnight	(782) Nahu	7th generation from Loa'a; 10th generatioan from La'ila'i
(1428) Ali'ikilokau	Observe summer	(790) Kulu	17th night of the moon 15th generation from Loa'a 17th generation from La'ila'i
(1429) Ali'ikiloho'oilo	Observe winter	(801) Lana	horizon level
(1433) Ali'ikilomo'o	Observe Milky Way	Kilo	observe, observer
(1433) Mo'olio	Milky Way	(802) Lanalana	first level of oracle towar in the heiau
(1437) Ali'ikilohope	Observe behind	Paepae	heiau platform
(1437) A'a'ā	Sirius	(811) 'Ike	see, know
(1491) Muaokaha'iku	Milky Way	'Ao'ao	side
(1491) Mehei'a	Milky Way	(812) Hui	zenith
(1491) Lo'iipololo	zenith	Malama	moon, moonlight
(1492) Muaokahanu'u	zenith	(815) Ehoaka	2nd night of the moon
(1492) Kamanuha'aha'a	Manu (Procyon, etc.)	(816) Ehökū	15th night of the moon (full moon)
(1495) Muanu'unu'uzenith		(830) Loa'a	prop (lō) Sirius (A'ā)
(1496) Muaokamōi	central image		
(1497) Muaokaha'i	Milky Way		
(1497) Ha'eha'e	East [Eastern gate of the sun at the equinoxes; Kumukahi, Puna]		
(1498) Muaokeoma	Aldebaran (?) [Keoma'aiku = Aldebaran]		
(1499) Muaokekaha'i	Milky Way		
(1550) Lo'ilo'ipololo	zenith		
(1557) Pi'opi'o	zenith (arch)		
(1562) Lo'ilololo	zenith		
(1562) Kulukau	midnight		
(1564) Lo'iloloikapū	zenith		
(1564) Kealanu'u	zenith path		
(1567) Lo'ilo'ilā	sun		

Perhaps most of the stars recited as names of ancestral generations were observed at zenith and meridian transit, if the objective was to cycle sidereal and synodic lunations so that they would coincide with the lunar (354 days) and tropic years (365.25 days).

Are references to the moon in the genealogical list any indication of such observation?

This sequence suggests a cycle involving Sirius and the first-quarter 'Ole moon, with observations at the horizon level (lanalana) of the oracle tower (anu'u). In terms of the generation count, 55

generations elapse between *Loa'a* (775) and *Loa'a* (830), or 54 generations between *Le* (776) and *Loa'a* (830).

Upon examination the curious alignment of these stars to others in adjacent hour circles is that they are positioned in relation to one another and other constellations within or outside the gyration (*ho'owili*) of the Milky Way (*mo'o*) or its north to south swing that levels upward and across the northern hemisphere from east to west.

If the observation of that swing began with Sirius, then the time of observation about the latitude of Hawaii is mid-July, when Sirius rises in the east before the sun and vanishes into daylight about July 13th. Afterwards, for the rest of July, August, September, October, November. Sirius will be observed again setting after the evening sun at summer solstice (June 20-22).

This is true for our present time, but the recitation in Canto 11 was probably with regard to Sirius rising in June (500 B.C.-500 A.D.) [Aveni, 1980: 116].

In the evening sky of our own time, rather than that of our ancestors of two thousand years ago, Sirius is in the same hour circle with Procyon, Castor, and Pollux (Gemini), all of which lie on the edge, but not within, the Milky Way. They are on opposite sides, Sirius ('A'a, Kaulua) rising before Procyon and Gemini (Mahoe, Kaulua). In the hours circles ahead of them are stars in Orion, above and below the equator, all lying outside the Milky Way. Betelgeuse in the shoulder of Orion lies closest to the Milky Way.

All of Auriga's bright stars encompass a section of the Milky Way about equal to its width of two degrees (east-west) under the pole (between 30 and 50 degrees north latitude).

The path of the Milky Way stretches westward through Perseus, Cassiopeia into Cygnus (Deneb) and through Altair (Aquila)

on the opposite horizon.

After Sirius transits the meridian, the path of the Milky Way arches from the western horizon southward below the equator, as Canopus, farther South, sets,

The Milky Way then stretches around the southern horizon. As Sirius sets, the Milky Way is swinging (*lewa*) around the southern horizon eastward into the stars of Scorpius (Antares) rising to the southeast.

The Milky Way appears to ring the horizon all around the visible compass circle from Auriga (northwest) arching through the south pole clear around to the northeastern horizon into stars rising from the northeast: Vega (Lyra), Altair (Aquila), and Deneb (Cygnus).

The sky then appears to have reversed (*kāhuli*) itself, and on either side of the north pole is a noticeable opposition.

The first takes place when Sirius in the south and Capella in the north are about to vacate the sky. The time is the evening of the June solstice. June solstice is better than "summer" solstice because June is not summer in the south. June is winter south of the equator.

From the latitude of Hawaii (North 20-23.5 degrees) Capella (west, setting) and Vega (east, rising) are opposite each other in the shoulders of the north pole aligned on the meridian opposite each other. The same alignment takes place again, not in the evening at sunset, but in the morning before sunrise, December solstice, at which time, the Dipper is filling up its cup on the meridian. At the pole south is the Southern Cross (*Kope'a, 'O'ili*).

For the moment, however, on the western horizon, Gemini (Mahoe-mua, Mahoe-hope, Kaulua) in the northern hemisphere is about to set behind Capella in the north and Sirius in the south. Below the equator, in the southern sky (*Kumulipo*), Procyon is moving with the

Twins (Gemini) in the same hour circle toward setting in the west.

When these stars (Castor, Pollux, and Procyon) are about to set in the evening, a prominent triangle on the opposite horizon has risen: Vega (Lyra), Altair (Aquila), and Deneb (Cygnus). Altair marks the sharp point or apex of the triangle, pointing southward.

After Procyon has set, the Twins are still visible in the north where Capella had once been some hours ago. Mahoe-mua and Mahoe-hope (Kaulua, Mahoe) are on the same side of the meridian in the evening: Gemini setting, Cygnus (Deneb) rising.

The time is about a month after the June solstice. The same alignment will happen again before sunrise in the morning, about January 21-23 a month after December solstice.

Greater emphasis seems, therefore, to be on the zenith and the Milky Way, as to the point overhead and the direction, or axis, around which the sky seems to be moving.

This is suggested in one of the names of the Milky Way, *Pae-loa-hiki*, which means 'to reach (hiki) in a long (loa) row (pae)' from one side to the other. It also turns as it 'twists' (*ho'owili*), like a 'lizard' (*mo'o*), or it 'breaks up' (*ha'iha'i*, *kaha'i*) toward and around the edge of the horizon circle so that only parts of the path are visible.

It is not conclusive, however, that ancient Hawaiians may have discerned that the motion (*ho'owilimo'o*) around the "fixed star" (*Hökūpa'a*) and the reversal (*kāhuli*) of the sky was a rotation (*kāhuli*) around the axis of the earth? To signify this motion in the Kū heiau ritual, tapa was wound around the *anu'u* oracle tower in the rite called (*ho'owilimo'o*).

For the breaking phase there are many names: *Kaha'i*, 'the breaking', *Kaha'iha'i*, *Ha'iha'i*, or *Moku*, 'cut', as in *Mokukapewa* 'sever-the-tail' as a "fish"

(i'a), *Moku-ka-i'a*, the 'sever the fish'. The 'tail' (*pewa*) breaks (*moku*) by dawn, and the 'fish' (*i'a*) which lies from north to south 'turns over' (*huli*) or declines after midnight, so that midnight is called "the fish has turned (*ua huli ka i'a*)".

(1)	Pae	(789)
(2)	Mokukapewa	(870)
(3)	Mokukai'a	(871)
(4)	Ha'iha'i	(1236)
(4)	Poloha'iha'i	(1237)
(5)	Ali'ikilomo'o	(1433)
(6)	Mo'olio	(1434)
(7)	Muaokaha'iku	(1491)
(8)	Mehei'a	(1491)
(9)	Muaokaha'i	(1497)
(10)	Manō	(1498)
(10)	Muaokekaha'i	(1499)
(11)	Pae	(1511)
(12)	Moku	(1522)

The genealogical recitations continue into the Canto 12 (*Wa 'Umikumalua*) on the line of Opu'upu'u, brother of Ali'ihonupu'u [See line 1389]. The line from Ali'ihonupu'u dies out at the time of the great tsunami, Pōla'a [1586].

A puzzling element in the genealogical recitation between Loa'a and Pōla'a are the Kai o Kahinali'i tidal wave (tsunami) events or generations:

(966)	Mahinalea	Palemo	[ <i>Ke Kai o Kahinali'i</i> ] (1)
(1171)	Papio	Lo'ilo'i	[ <i>Ka lua o ke Kai o Kahinali'i</i> ] (2)
(1374)	Li'ipau	Kaneiwa	[ <i>Ke kolu o ke Kai o Kahinali'i</i> ] (3)
(1585)	Lo'ipō	Kilika	
(1586)	[ <i>Hānau o Pōla'a</i> ]		(4)

What are these four tsunami called the *Kai o Kahinali'i* and *Pola'a* "deluge" or "flood" events?

If they belong strictly within the generation counts, then the periods are roughly these:

(1) Between *Loa'a* (775) and *Mahinalea* (966), at *Palermo* [*Ke Kai o Kahinali'i*] were 191 generations, or 5,157 days.

(2) In the set *Mahina* (964), *Mahinalea* (965), and *Mahinalea-Palermo* [*Ke Kai o Kahinali'i*] (965), the behavior of the full moon is significant:

"...The next night, the fifteenth, had two names applied to it. If the moon set before daylight *ke ao ana*--it was called *Hoku palermo*, sinking star, but if when daylight came it was still above the horizon it was called *Hoku ili*, 'stranded star' [Malo, 1951: 32; italics mine].

(3) Between *Pipika* (967), after *Mahinalea* (966) and *Papio* at *Lo'ilo'i* [*Ka Lua o ke kai o Kahinali'i*] (1171), the second tsunami, are 204 generations, or 5,519 days. The tropic year is behind by 41 days.

(4) Between *Manu'akele* (1172) and *Li'ipau* at *Kaneiwa* [*Ke Kolu o Ke Kai o Kahinali'i*] (1374) are 202 generations, or 5,454 days. This number is shy of 15 tropic years by 21 days.

(5) Between *'Ā* [and *Li'i*] (1375) after *Ke Kolu o Ke Kai o Kahinali'i* to the tsunami generation at *Pōla'a* (1585-86) are 210-211 generations, or in sidereal lunations:

210 = 5,670 + 13 = 5,683 days

211 = 5,697 days.

These are greater than 16 lunar years of 5,664 days by 19 and 33 days, respectively.

The 5,664 days in 16 lunar years are 180 days short of the 5,844 days in 16 tropical years, requiring a correction in the

synodic lunations of 180 days, about six months.

They are in the short period (*poko*) of 180 days of the sun's motion from north to south, between the solstice stops at the tropics, *Cancer* [*Ke Ala Polohiwa a Kāne*] and *Capricorn* [*Ke Ala Pohohiwa a Kanaloa*].

The long (*loa*) period of 185 days and the short (*poko*) period of 180 days in the two halves of the tropic year are probably what the chant refers to in lines 1401 to 1402, *Ali'i-kilo-loa* (observe long period) and *Ali'i-kilo-poko* (observe short period).

Nevertheless, 5,844 days of 16 tropic years are equal to the 5,840 [+ 4 days] of ten synodic cycles of *Venus* [*Hoku Loa, Hoku Ao*] one cycle of which is 584 days inclusive of its disappearing period [*Manalonalo*].

The meaning of *Kai o Kahinali'i* begs attention to definition, and the only thing we have at this point to go on is the Tahitian (*Tahi'ari'i*) identification of *Kahinali'i* as the constellation *Auriga* in the north whose bright star is *Capella*. The constellation has other names: *Matariki, Mata-tau-inoa, Fa'anui, and Taranga*.

The last name, *Taranga* (*Kapingamarangi*), is found as the name of *Maui's father* [*Maui-tikitiki-a-Taranga*], meaning that *Maui* was in the 'topknot' (*tikitiki*). When was *Maui* in his father's topknot? It is the hair left after the tonsure ceremony is performed whereby the hair of males, when first cut, is still left on the head, leaving one section of original hair uncut. This is then allowed to grow for the individual's entire life. It was braided and twisted into a topknot skewered through to hold it in place. The braid was nine-ply braid in Hawaii and was threaded through a

whaletooth, forming the *lei niho palaoa* passed down through the line of noble chieftains and worn around the neck as a symbol of rank and authority.

The meaning of *Kai a Kahinali'i* is probably connected to the story of the 'fall' of *Rigi*, the 'worm' or 'eel' ancestor who propped up the sky, like *Lō, Lū*, and *Mauitikitiki-a-Taranga*, except that *Rigi (Li'i)* was the Milky Way. It later became the Pleiades (*Mataniki ~ Makali'i*) in Polynesia. *Rigi* was a Micronesian sky-propping culture hero.

Evidently, the 'fall (*hina*) of *Li'i* (Kahinali'i) is connected to the 'fall' of the Pleiades (*Makali'i*) as the 'eyes' (*maka*) of the Milky Way, except that the Pleiades lie outside the Milky Way spiral. The *kai* 'sea' into which *Li'i* fell is into the 'sea' of the Milky Way which names the constellation of Auriga. The history of this constellation bears this out.

"It is a large constellation stretching northward across the Milky Way from its star (*gamma*), which also marks one of the Bull's [Taurus] horns, to the feet of Camelopardalis...

"The early Arabs called it Al Rāhib, the Driver; for, lying far to the north, it was prominent in the evening sky before other stars became visible...and synonymous with Al Hadi of the Pleiades, as, on the parallel of Arabia, it rose with that cluster..."

"...Capella's place on the Denderah zodiac is...always an important star in the temple worship of the great Egyptian god Ptah, the Opener...and probably was observed at its setting 1700 B.C. from his temple, the noted edifice at Karnak near Thebes...Another...sanctuary...at Memphis also was oriented to it about 5200 B.C..."

"...In India it also was sacred as Brahma Ridaya, the Heart of Brahma..."

"...The Akkadian Dil-gan-Iku, the Messenger of Light, or Dil-gan-Babili, the Patron Star of Babylon, is thought to have been known in Assyria as I-ku, the Leader,

i.e. of the year, in Akkadian times the commencement of the year was determined by the position of this star in relation to the moon at vernal equinox...

"...This was previous to 1730 B.C., when during the preceding 2150 years, spring began when the sun entered the constellation Taurus...and others whose positions as to that initial point had changed by reason of precession..." [Allen, Richard H., *Star Names*, 1963: 83-89].

When Auriga 'fell' (*hina*) at sunset in 1700 B.C. [Denderah (Egypt) 1700 B.C.] zodiac, temple of Ptah; Memphis, 5200 B.C.] after a period of 3,500 years, the Austronesian-speaking ancestors of the Polynesians were living west of the culture area (Samoa, Tonga) which they inhabited about 1500 B.C.

It is significant that the year in the Fertile Crescent (Babylonia) and North African (Egypt) culture areas was determined by the position of Auriga in relation to the moon at vernal equinox. Zodiacal precession is usually related to the position of the sun with respect to the constellations in the tropics, but Auriga is not in the tropics. It is nearer the pole, outside the zodiacal (tropical) zone.

When the moon is in the east, at Hōkū [15th night], it is full moon. Between the 15th and 17th phase (*Kulu*), the moon may become a 'sinking' (*palemo*) or 'stranded' (*'ili*) star. The waning moon in this phase may be visible in daylight.

The first *Kai o Kahinali'i* was perhaps timed to the full moon at *Palemo*, when the sun rises in the east, perhaps at the equinox, when the sun is on the equator, or when it is in the latitude of Hawaii between May and July, the period of the zenith sun. To these days of the equinox and zenith sun are those periods when Capella is invisible in daylight, i.e., not visible at night, 'fallen' (*hina*) as from view.

For Hawaii (latitude 21 degrees north) Capella (Auriga) is setting in the northwest just after the sun about July 5th, at which time Antares (Scorpius) is rising above the horizon to the southeast in the evening [Bryan, E. J.: 1977].

The schedule of Auriga's rising and setting horizon positions between 500 B.C. and 1500 A.D. were made available in Anthony Aveni's studies of Mexican temple alignments in which he tabulated the significant dates to mark the appearance and disappearance of bright stars.

The following events are for the period 500 B.C. to 1500 A.D. of Capella's cycle [Aveni, 1980: 115-116, Table 10, from the latitude, 21 degrees north]:

1. The first day on which a star is visible rising in the east before sunrise:

500 B.C.	April 27
(Zero)	May 5
500 A.D.	May 13
1000 A.D.	May 22
1500 A.D.	May 30

2. The last day on which a star is visible setting in the west after sunset:

500 B.C.	May 1
(Zero)	May 9
500 A.D.	May 18
1000 A.D.	May 26
1500 A.D.	June 4

3. The first day on which a star is visible rising in the east after sunset:

500 B.C.	October 7
(Zero)	October 15
500 A.D.	October 24
1000 A.D.	November 2
1500 A.D.	November 11

4. The first day on which a star is visible setting in the west before sunrise:

500 B.C.	November 14
(Zero)	November 23
500 A.D.	December 1
1000 A.D.	December 10
1500 A.D.	December 19

From the foregoing data the following deductions may be made:

(a-b) Period 1: Capella was absent from the sky for an average of 157-158 days.

- 500 B.C. - 1 A.D. April 27 - October 7 (157 days)
- 1 A.D. - 500 A.D. May 9 - October 15 (157 days)
- 500 - 1000 A.D. May 18 - October 24 (157 days)
- 1000-1500 A.D. May 26 - November 2 (158 days).

(c-d) Period 2: Capella was absent from the sky for an average of 162-164 days.

- 500 B.C. November 15 - April 26 (163 days)
- (Zero) November 24 - May 4 (162 days)
- 500 A.D. November 30 - May 12 (164 days)
- 1000 A.D. December 9 - May 21 (164 days)
- 1500 A.D. December 19 - May 30

We may then adjust those findings to the *Kai o Kahinali'i* (Capella in Auriga) sequence in the cycle above computed by a reliable and competent scholar in the whole sphere of present-day archaeoastronomy studies:

(a) *Kai o Kahinali'i* (1) [Mahinalea-Palemo (966)]; Heliacal rising of Capella. N. Latitude 21 degrees, about the latitude of Kukaniloko Heiau, Central O'ahu, and Kualoa Pu'uhonua.

May 30, 1600 A.D. 4:29 a.m.

Capella is observed rising in the east before sunrise on May 19th, vanishing into daylight about June 1st.

(b) *Kai o Kahinali'i* (2) [Papio-Lo'ilo'i (1171)]. June 1 - July 3rd. (Invisible about 58 days).

Capella rises after the sun, is invisible through the day until it is seen setting above the western horizon at sunset, July 3rd.

(c) *Kai o Kahinali'i* (3) [Li'ipau-Kaneiwa (1374) July 3 - October 31.

Capella is in a long period of invisibility for about 119 days, returning to the evening sky about November 1st.

(d) *Kai o Kahinali'i* (4) [Lo'ipō-Pola'a (1585-1586)]. [Capella is invisible about 51 days; Auriga for about 52 days].

Capella is now in its night-long cycle from evening to morning, rising in the east at sunset behind the Pleiades. Auriga transits the meridian about midnight on the December solstice.

The constellation of Auriga is above the horizon, setting after the sun about the June solstice.

The first star in the constellation to set is invisible about June 23rd; El Nath about June 27th, while Capella and the two stars trailing behind remain as Capella exits the night sky.

Capella goes out of sight about July 9th; by July 19 the whole constellation has 'fallen' into the sea (*kai*).

The *Kai-o-Kahinali'i* cycle was probably tallied into Canto 11 as part of the sidereal notation to target days when the sun was:

a) Firstly, on meridian through all of the islands in the archipelago from south (Hawaii, latitude 19 degrees north) to north (Nihoa, latitude 23.5 degrees north);

b) Secondly, in the zenith at noon on the latitude of all of the major islands in

the archipelago, especially those inhabited, from Hawaii to Kaua'i.

The focus of the generation count at *Mahina*, *Mahinale*, *Mahinalea*, and *Palemo* for *Kai-a-Kahinali'i* (1), about full moon due east is a supportive factor for that conclusion.

The corresponding date, also, is another factor: *May 19th*.

The sun has begun to enter into Hawaii's latitude (Kalae, South Point) about May 15th from the south. About May 20th the sun is at the latitude of Kawaihae (latitude north 20 degrees).

About May 21st it is at the latitude of central O'ahu (Kualoa, Kukaniloko), and from May 31st to June 2nd at the latitude of Ni'ihau and Kaua'i until the solstice day at the latitude of Nihoa (23.5 degrees north).

At any of these times the sun is at noon, *kau ka lā i ka lolo*, in the zenith.

Perhaps, when the moon was full and visible setting opposite the solstice sun on the day that Capella was about to transit the meridian at winter solstice (December 20-22), as it does now, the moon may then have been at its highest standstill at the latitude of Nihoa.

There may be other interpretations. The ones just mentioned are only the most obvious. This brings the matter back to the theory at hand, that the cycles of stars to moon, sun, and earth are the basis of the generation count in the Kumulipo.

1. Kai o Kahinali'i 1: Loa'a [775] to Palemo [966] 189-191 generations;
2. Kai o Kahinali'i 2: Pipika [967] to Lo'ilo'i [1171] 204-205 generations;
3. Kai o Kahinali'i 3: Manu'akele [1172] to Kaneiwa [1374] 203-204 generations;
4. Pola'a 4: 'Ali'i [1376] to Pola'a [1585-86] 211-212 generations.

(Zero)	La'ila'i-Palemo	191
(Zero)	Kamahaina-Palemo	190
[775-964]	Loa'a-Mahina	187
[965]	Loa'a-Mahinale	188
[966]	Loa'a-Mahinalea	189
[966]	Loa'a-Palemo	189

Each *Kai o Kahinali'i* sequence is no more than 189 to 204 generations, followed by 212 generations to Pola'a. These average about six to seven sidereal lunations. The largest number is the *kai* of Pola'a, 212, or seven sidereal lunations, plus 22-23 days, suggesting that Capella's transits of the meridian were probably observed at third-quarter moon (21 days).

The time table of the precession would give to Beta and Gamma Aurigae rising before Capella a position in the vernal equinox in the approximate hour circle with Orion between 4,500 and 4000 B.C.

Capella would have been in the hour circle with El Nath and Aldebaran in Taurus at the vernal equinox between 3,000 and 2200 B.C.

When the Pleiades came into the vernal equinox about 1800 B.C., Kahinali'i 'fell' (*hina*) in another 'sea' (*kai*) and again between the first and fourth centuries A.D.

At the third *Ke Kolu o ke Kai o Kahinali'i*, the ancestral generation is Li'ipau and Kaneiwa. A name for the Belt of Orion is 'Iwa, which constellation is another 'Bird Pillar' on the equator.

Between the sun's *toki* at the summer and winter solstices, the sun's

course was checked against the eastern horizon [i.e., heliacal risings], and after the winter solstice (December 20th) it was plotted out northward by observing the horizon westward (heliacal settings).

Since Capella and Auriga transit the meridian at winter solstice (December 20-22) in the zenith of Nihoa, that is a possibility. Between May and July, the zenith sun was at other local latitudes,

All this comes back to the sacred space of the brain, skull, spine, and body of man in relation to cosmic and earth parents on meridian and latitude, the ones whose bodies are no longer perishable parts of human anatomy like the *piko* of descendants marking physical time through real life.

Where are the ancestors? Up there, down here, above, below, always with us, in sight, as Shakespeare once said, "to the last syllable of recorded time" in the greater reach of sky beyond earth. They left their lights behind, those star-crossed souls named above who, like giants of old, still go the distance at night and by day visit the relatives living on the other side of the world.

Not yet, however, are we prepared to comfortably leave Canto 11 without speaking about other aspects of encoding that persist into the next genealogical age, lest they continue to nag conscience.

Critical words in the Hekaunano formula have to do with water (*wai*) in which to see, perhaps, reflections (*'aka*) of sunlight, moonlight, and starlight, or water over which not only canoes sail (*holo*) but

also birds in constellations, planets, and other flying (*lele*) objects:

- (1) hina- 'to fall', or 'moon'
- (2) 'aki- 'to bite'
- (3) lolo - 'brain'
- (4) 'ea - 'to emerge, to come into sight'

- (5) wai-akea - 'wide water(s)'
- (6) holo - 'to run, sail'
- (7) lele - 'to fly', or 'altar'

Why is water (*wai*) and 'ea, meaning to 'emerge, appear, rise' used in a number sequence of 40 in two parts of tradition, one in the Hekaunano formula of Canto 11 in the Kumulipo, and another in the legend of the rope-stretching god, *Kana*?

Only the legend of the rope-stretching god, *Kana*, gives a formula in which length equals time connected with the daily movements of the sun.

*Kana* was born as a piece of rope from his mother, *Hina*, and his grandmother *Uli* saved him by putting him into a calabash of water. Then *Kana* grew a fathom (*anana*) a day for no less than 40 days and no more than 400 fathoms. When *Kana* stretched his rope body from one island to another, he left his footprint (*kapua'i*) behind.

*Kana*'s name is a number prefix *kana-* when counting by tens, as in *kanakolu* (30), *kanahā* (40), *kanalima* (50), until 90, *kanaiwa*. Ancient Hawaiians had no word for 'hundred(s)' until 400 (*lau*).

What does a calabash of water have to do with a rope the length of a newborn infant that grew to be a month and one-third old in 40 days and more than a year old in 400?

Hawaiian fishermen are known to check their zenith star by gazing (*kilo*) into the bilge (*liu*) of the canoe at night,

because water always finds a level to the plane of the horizon.

The ancients chant about watching the moon come into the pond of *Palemo* in Ka'u, farther south than Puna (Hawaii) where the moon temple *Mahina'akaka* 'Clear-Moon' was built near a pond.

The high priest (*kahuna nui*) and king went into the heiau during a service of twenty-one to twenty-six days where the two men together, with no other people in the temple with them, performed the "stretching of the cord" (*aha*) ceremony. The full name of the cord was *aha hele honua*, 'cord that goes the earth', from two roots of the verb *hele*, one meaning 'to go' and the other 'to tie, bind, lash', as of the cord (*aha*).

No details exist about how this was measuring was done, or how long the cord may have been "stretched" except that the dimensions of the house, *hale wai'ea*, where the cord was stretched, are of record [F'i: 1983: 34-35]:

"...[T]he Hale Waiea, was a small one... twice the length of the distance from fingertip to elbow in length, its height and breadth being half that measure. Two images stood before it on either side of the opening, and the king and kahuna conducted their 'aha' services at the right side of the opening, in the dark of night."

The service described was performed at midnight of *Kūlua*, fourth moon phase, when the moon had moved after new moon to 48 degrees west of south. It was probably done at the equinoxes, when the sun was at the equator, or on days when the sun was in the zenith at local latitude, between Ka'u (Hawaii) and Wailua (Kaua'i) [latitudes 19-22 degrees north]. The 'stretching the cord' ceremony was scheduled after the spring equinox and before summer solstice [March 21 - June 21].

"March was the month in which the temple was to be dedicated. It might perhaps be consecrated in the month of April, or perhaps in the month of May. *These were the three months designated from ancient time; the service could not be performed in any other month*" [Fornander, 1974: Vol 6: 8].

In all three months important sky events are happening:

a) March (vernal equinox): Kaulua (Gemini) transits the zenith in late March, about the 21st;

b) April-May: the Pleiades after the sun through April until May 1st, when they are last seen above the horizon after sunset;

c) May 31st, Capella is last seen at sunset in the evening sky. before it is invisible on June 1st.; Leo transits the zenith in late May.

The *hale wai'ea* faced the central image (*Pou o Manu*). Its longer side was either east-west or north-south, depending on the direction of the *heiau's* orientation. If to east, the long side of the house was north-south, emphasizing the times of transit over the meridian. If to north, then the longer side was east-west, emphasizing the points (*lua*) from which celestial bodies rise.

How long was the *aha* cord if it was proportioned or equal to the length and width of the *hale wai'ea*?

Kana stretched over a 40-fathom length for 40 days, which means he spent time growing along the meridian for 40 decan weeks, a period ten days longer than the synodic month (29.5-30 days). The length of the cord of 40 fathoms and 400 fathoms is longer than the ecliptic between the tropics (47 degrees).

Let us posit, only as an analog to the *toki* principle of the decan week (*anahulu*)

and the *aha* cord stretched to the dimensions of the *hale wai'ea* as a method of timing the length of the horizon to the *hale wai'ea* and time to the *toki* adz, that the fathom-a-day to the length of the month and year, to the *'iwilei* of the length of the sun's travel from the horizon to the zenith, that after Kana was born, he was at

zero length before he was put into the calabash of water (*wai'ea*). He was already, if not a foot (*kapua'i*), at least a *ha'ilima* cubit of 18 inches, about the normal length of a newborn infant.

So that we may make sense of the riddle, let us superimpose the *Kana* cord on the southern *toki* and say that Kana was born at the winter solstice, and he started growing north after December 21st. Each decan week he was ten fathoms longer.

(zero) 180 S.	Tropic of Capricorn (solstice)	
1. (10)	December 31	
2. (20)	January 10	
3. (30)	January 20	= 1 month
4. (40)	January 30	
5. (50)	February 9	
6. (60)	February 19	= 2 months
7. (70)	March 1	
8. (80)	March 11	
9. (90)	March 21	= 3 months
(zero) 090 E.	Equator (Vernal Equinox)	
10. (100) [1]	March 31	
11. (110)	April 10	
12. (120)	April 20	= 4 months
13. (130)	April 30	
14. (140)	May 10	(latitude 19 N)
15. (150)	May 20	= 5 months
16. (160)	May 30	
17. (170)	June 9	
18. (180)	June 19	= 6 months
(zero) 360 N.	Tropic of Cancer (solstice)	
	June 20-24	standstill

Kana is still growing, but he has gone half the distance of the sun's ecliptic, waiting for the sun to turn around and go home.

19. (190)	June 29	
20. (200)	July 9	
21. (210)	July 19	= 7 months
22. (220)	July 29	
23. (230)	August 8	
24. (240)	August 18	= 8 months.
25. (250)	August 28	
26. (260)	September 7	
27. (270)	September 17	= 9 months

27.1-4	September 21 (equinox)
(zero) 090 E	Equator
28. (280)	September 27
29. (290)	October 7
30. (300)	October 17 = 10 months
31. (310)	October 27
32. (320)	November 6
33. (330)	November 26 = 11 months
34. (340)	December 6
35. (350)	December 16
36. (360)	December 21 = 12 months solstice
(zero) 180 S	Tropic of Capricorn
37. (370)	December 31
38. (380)	January 10
39. (390)	January 20
40. (400)	February 9 = 13 months

It took Kana 360 days (plus five) to go the length of the ecliptic of no more than 47 degrees distance between the tropic limits of the sun, so there are two parts to the riddle. How is the length of the cord collapsed to represent 47 degrees in 360 fathoms, and why extend it to 400 fathoms? The basic cord is no more than one fathom (equals one day) of six feet.

Let us say that Kana is a tropic-year old, but we may have the wrong date and position for Kana's birth. We have to intercalate another month, the 13th month needed if he was born during leap year. After three years, the lunar year which was being used to time his birth would be behind by about 34 days.

Beyond this basic interpretation we are yet unsure. We may find other answers by considering word compounds left undefined in the Hekaunano recitation.

One such set was:

- (1) ko'i- 'adz'
- (2) 'ele- 'priests' word for north ('ele-kū), west ('ele-honua), east ('ele-lani), south ('ele-moe)
- (3) maui '29th moon'

The sequence suggest observations 'tied' (Hekaunano) to the longitudinal (meridional) factor on the axis, probably, between north-south ('ele-kū, 'ele-moe) and east-west ('ele-lani, 'ele-honua).

We may invoke the *toki* (ko'i) 'adz' shape of the decan year and the last phase before new moon as 'dark' 'ele, and ask if this would allow observation of lunar eclipses?

The *kahuna po'oko'i* was the 'adz-headed' kahuna in ancient Hawai'i. It is not certain whether he was the same as the Kahuna Nui, or high priest, but no priest would hold the highest rank in the order of Kū unless he knew every chant by heart and could teach the recitations to initiates until they graduated ('uniki, 'ailolo) from training.

The Kahuna Nui was the king's canoe-carver, *kahuna kālaiwa'a*, a rather ordinary man in the daily round of work at the canoe house (*hālau wa'a*) of the ali'i.

'Adz-headed' (*po'oko'i*) kahuna have down-sloped foreheads from the crown to a pointed-brow, which in petroglyphs tend to resemble the so-called 'bird-man' petroglyph. As wood-carved images (*ki'i akua*) their foreheads slope forward into the face. The forceful image abstractly creates awe and mystery with either respect or fear in the beholder.

From what tradition does this adz-headed bird-man kahuna come? Is he the one who used the terms *ko'i* and 'ele and knew what they meant? Was he the kahuna who guarded the sacred adz (*malu ko'i*) to cut down the sacred 'ohi'a-laka lehua tree in the forest to make the canoe and the *Pou o Manu* image in the heiau?

The Gilbertese decan system may unravel this 'adz' *toki* (Gilbertese; *ko'i* (Hawaii) with 'east-west' ('ele-kū, 'ele-honua), and the '29th' (synodic) moon (*maui*) in the Hekaunano recitation.

In this decan system (Micronesian) of tracking the sun's north and south swing to its *toki* (adze) or "limit" at the solstices, an analogy to the adze pointing in two directions, back to back, forms a diamond shape (lozenge) to the ecliptic from two triangles, one pointing north, and the other pointing south

Along this *toki*, the sun's azimuth of rising was marked at the end of each decan week of ten days, or decan week, in Hawai'i (*anahulu*) by placing a pebble (*'ili'ili*) to represent the sun's position. That would also mean that every 'ten' marks latitude and azimuth (*lua*) of the sun's position every ten days, not only the number of days in the track between pebbles. The points of the blade are the limit of the solstices, north and south, and the course of the sun in a year so that you would know the month and time certain events take place within the circumference of time and space.

Between the sun's *toki* standstills (solstices), the sun's course (ecliptic) was checked against the eastern horizon (heliacal risings) from June to December, and after the winter solstice plotted out from south to north by observing the horizon westward (heliacal settings).

This seems to be consistent with the word *ko'i-ele* in the Hekaunano series, *ko'i* meaning 'adze' and *-ele*, a term used only by kahuna to refer to cardinal directions determined from the *piko* and *manawa* center (latitude + meridian, + zenith).

The Gilbertese *toki* system, however, is not oriented only to the ecliptic, i.e., the sun's track, but also to heliacal risings and settings of stars, like *Kai o Kahinali'i* (Capella, Auriga).

What is *ko'i* doing here with *hinalea* and *mauli* which are moon words, moon at the 'fall' of *-lea*, whatever that may be, and moon in its 29th phase (*mauli*) before new moon (*muku*), the 'dark' (*'ele*) of the moon?

When do you see the moon when the sky as black (*pō'ele*) at new moon? You see the last waning moon on the 29th, *mauli*, when Hina is a 'spirit' (*mauli*) going through the Milky Way to revive at Hoaka, first phase of waxing moon. *Muku* is the dark phase. It suggests the synodic lunation (29.5 days) ending at midnight (*kau*).

It is not the sun with which the adze limit is sighted that gives the time of the year, except that the decan counter knew the time beforehand. He could only know the sun had reached its northern limit by the fact that it remained there for about four days before it moved back again. So why was the adze chosen as a concrete shape or metaphor of the sun's motion on the ground?

It was probably the closest analogy the cultures, Micronesian (Caroline and Gilbert Islands) and Polynesian (Hawaiian) could come to perceiving by short versus long tracks of stars beyond local latitudes that the shape of the earth was not square. It bulges or thickens toward the middle (equator). They came close to imagining that the middle of the earth was a larger space between meridians without being greater in length of time. This was not due to guesswork. They lived and voyaged on both sides of the equator and were aware how much longer stars are in the sky on the equator and outside that latitude, or how much less the sun stays up in the sky at latitudes above or below the equator.

However, there is an 'adze' or 'triangle' in the sky that stretches across a significant distance and length of sky between Vega (Lyra), rising first, then Altar (Aquila), rising next, and Deneb (Cygnus) rising last of the three points in the isosceles, the apex of the blade of the adze pointing southward.

This great triangle rises in January at sunrise as Gemini sets. The triangle also sets in January in the evening as Gemini rises. It is another pivot point that quarters the year between January-July (morning-evening) and April-October (noon-

midnight). The month of April is in the set of months (March, April, May) that the kahuna would dedicate the heiau Kū.

The use of water in the bilge (*liu*) of the canoe to see the sky by night and zenith sun by day was a practice of ancient Hawaiian fishermen who looked for their zenith star by gazing into the bilge, analogous to looking at your face in a calabash of water with a basalt stone at the bottom to create a clear reflection. This was the old Hawaiian 'mirror' (*aniani*), and is probably, also, the principle by which grandmother Uli put a piece of rope into a calabash of water so that he lived and grew from a fathom in a day to be no less than a 40-fathom rope in 40 days.

How far does the sun travel in 40 days, 400 days? Ten days longer than a synodic month and 34.75 days more than a tropic year, and in sidereal time?

It suggests the intercalation of a 13th month required after three tropic years, which a correction of 33.75 days was necessary to intercalate in order to synchronize the lunar with the tropic year

The riddle of Kana is a formula for the intercalation, but it doesn't tell us how the fathom measurement of the line per day was derived. What was the kahuna watching by day to give a length commensurate with watching the sky at night? We have no insight except that it is apparently based on one 180-degree rotation of the sun at the equinox when the day and night are equal, and the shadow length at noon would then equal the shadow length at the equator when the sun was in the zenith at noon at *Ke Ala i ka Piko o Wakea*.

The *ko'iele*, *waiakea*, and *'akilolo* 'bite-brain' sequence in Hekaunano may be concerned with the zenith sun (May-July) in Hawaii over latitudes 19 (Hawaii) to 23.5 degrees north (Nihoa).

The Pola'a tsunami is a different event following the third *Kai a Kahinali'i* in that it affects only the descendants of *Ali'ihonupu'u* [1389], who are erased from the genealogies after *Pola'a* [1585-1586] but not those of his brother *'Opu'upu'u* [1389], whose descendants continue after *Pola'a*.

In the fourteenth generation from 'A and Li'i after *Ke Kolu o ke Kai o Kahinali'i*, the *'Opu'upu'u* lineage branches off from the main Kupolo- stem.

The line of *Opu'upu'u* ancestry reverts (to line 1389) to reposition the survivors in the following Twelfth Age. The generation count will then revert to the Eleventh Age [Line 1389].

## KA WA UMIKUMALUA

## THE TWELFTH AGE

1389	Ali'ihonupu'u		1389	Kaeahonu	
1389	Opu'upu'u		1389	La'amiha ka wahine	
1389	Opu'upu'u ke kane		1389	La'amiha ka wahine	
1390	Opu'upe		1390	Pepe	
	Opu'umauna			Kapu'u	
	Opu'uhaha			Leleiao [fly-Jupiter, morning star]	
	Opu'ukalaua			Maukao	
	Opu'uhanahana			Kilokau [sight-midnight]	
1395	Opu'uhamahama		1395	Halalai	
	Opu'ukalauli			Makele	
	Opu'ukalakea			Opu'u'ele	
	Opu'ukalahiwa			Opu'umakaua	
	Opu'ukalalele			Lelepau	
1400	Maunanui		1400	Makelewa'a [canoe-navigate]	
	Maunane'e			Hulipu	
	Maunapapapa			Kanaua	
	Maunaha'aha'a			Ha'alepo	
	Maunahiolo			Hane'ene'e	
1405	Pu'ukahonua		1405	Lalohana	
	Ha'akuku			Wa'awa'a	
	Ha'apipili			Ha'amomoe	
	Kanioi			Ha'akauwila	
	*Puanue			Lalomai	
1410	Kepo'o		1410	Kau-a-wana	
	A-'a'a [Sirius]			Ho'oanu	
	Piowai [arch]			'A'amoia [Sirius-meridian]	
	Nananu'u [watch zenith]			Makohilani	
	Haulanuliakea			Huku	
1415	Mahikoha		1415	Hinaho'oka'ea [moon-Vega (?)]	
	'O'opukoha			Kumananaiea	
	Hawai'i			Ulunui	
	Kekihe-i			Kekila'au	
	Makuaiawaokapu			Ikawaoelilo	
1420	Makaukau		1420	Hahalua	
	Kalolomauna [mountain-zenith]			Kaloloamoana [ocean-zenith]	
	Kalolopiko [navel-center]			Kalolo'a'a [zenith-Sirius]	
	'A'a [Sirius]			Waka'au	
	Kauwila			Uhiuhi	
1425	Palipali		1425	Palimoe	
	Punalauka			Punalakai	
	Pihe'eluna			Pihe'elalo	
	Malana'opi'opi			Haika'ulunui	
	Malanaopiha-e			Pihaehae	
1430	Hānau Kihala'aupoe he Wauke				
	Hānau o 'Ulu, he 'Ulu				
	Hānau ko laua muli o				
1430	Kepo'o		1430	Halulu	
1431	Oliua		1431	Kauikau	

1432	Kikona		1432	Ka'imai	
1433	Ho'opulupulu		1433	Auna	
1434	Ho'olehu		1434	Lapa'i	
1435	Ka'ulunokalani		1435	Kahele	
	Ho'ouka			'Aluka	
	Kanalu			Hakihua	
	Po'i			Lenawale	[Sirius]
	Paepaemalama	[moon]		Kaumai	
1440	Kaulana		1440	Kaulalo	
	Pala'au			Paweo	
	Nuku'ono			Hopulani	
	Pouhana			Hanaku	
	Kaiwiloko			Kamaka	
1445	Leua		1445	Ka'oiwi	
	Ho'okahua			Ho'omalae	
	Kuiau			Ku'iaeonaka	
	Kapawaolani			Kaini'o	
	Manamanaokalea			Kaukaha	
1450	'Auku'u		1450	Koha	
	Kakahiaka			Ku'ua	
	Kapoli			Ho'opumehana	
	Kimana			Kalimalimalalau	[125 x 400 = 50,000]
	Polohilani			Kalanimakuaka'apu	
1455	Kahilinaokalani		1455	Hemua	
	Kapaia			Ho'olawakua	
	Kakai			Manawahua	[Jupiter (?) Antares (?)]
	'O'ili			Mohala	
	Kapaeniho			'Oke'a	[Southern Cross (?)]
1460	Kaupeku		1460	Kapua	
	Ka'ope'ope			Kuka'ailani	
	Nakia			Ho'omaua	
	Ko'ele			Lohelau	[cord-400]
	Huakalani			Kaunu'u'ula	
1465	Nu'uko'i'ula		1465	Meheaka	
	Kaioia			Mecheau	
	Kalalomaia o	[Jupiter, east]		Ho'oliu	
	Hakalaoa			Kulukau	[17th moon]
	Kekoha			Mahikona	[-Canopus (?)]
1470	Pipili	[Stars in Scorpius or Gemini]	1470	Ulukau'u	
	Ka'ulamaoko			Kapiko	[navel-center]
	Ka'ulakelemoana	[sea-navigate]		Ho'omau	
	Hi'ikalaulau			Hamaku	
	Hainu'awa			'Ulahuanu	
1475	Laukohakohai		1475	Ho'olilihia	
	Opa'iakalani			Kumukanikeka'a	
	Opaikumulani			Kauikaiakea	
	Liahu			Kapohele-i	
	Kanikumuhele			Ho'omauolani	
1480	Ho'opililani		1480	Nawihio'ililani	
	Ohemokukalani			Kauhoaka	[2nd moon]
	Pilihona			Mahinakea	[moon (?)]

	Ho'omahinukala		Paliho'omoe		
	La'iohopawa		Kuaiwalono	[iwa images]	
1485	Kuliaimua		1485	Ho'opi'alu	
	La'aumenea			Mahiliaka	
	Ho'opiliha'i			Holiliakea	
	Kiamanu			Pu'unauaeakea	
	Ho'opa'ilimua			Ho'opi'imoana	
1490	Nakukalani		1490	Kaukealani	
	Naholokauihiku	[Big Dipper]		Apo'apoakea	
	Pepepekaua			Puhiliakea	
	Ho'omaopulani			Ahuahuakea	
	Kukulani			Awekeau	
1495	Kukauhalela'a		1495	Waka'aumai	
	Kukaimukanaka			Hiliapale	
	Kukamokia			Hauli	
	Kukahauli			Lele'imo'imo	
	Kukamoi	[stand-mo'i-image]		Ho'oahu	
1500	Kukaluakini		1500	Pu'epu'e	
	Ho'opilimoena			Kahiolo	
	Ho'opailani			Mahikona	
	Lohalohai			Lauhohola	
	Kelekauikau			Mokumokalani	
1505	Kanikania'ula		1505	Meimeikalani	
	Keleikanu'upia			Pihana	
	Keleikapouli			Opi'opuaka	
	Kelemalamahiku			Ku'uku'u	
	Ho'ohiolokalani			Ho'opalaha	
1510	Ho'opihapiha		1510	Ho'onu'anu'a	
	Ho'opalipali			Kuka'alani	
	Mihikulani			Poupehiwa	
	Maunaku			Kalelewa'a	
	Ho'oholihae			Hinapahilani	
1515	Pi'ipi'iwa'a		1515	Naukelemoana	[sea-navigate]
	Kakelekaipu			Laulaulani	
	Nakiau'a'awa			Po'iao	[Jupiter-night]
	Nanue			Kuhimakani	[direct-wind]
	Napolohi			Lono'a'aka'ika'i	[Sirius-lead]
1520	Ho'ohewahewa		1520	Ho'opalepale	
	Milimilipo			Miliho'opo	
	Ku'eku'emakaokalani			'Ohuku	
	Po'opo'olani			Heanalani	
	Ka'iliookalani			Kiloahipe'a	[watch-Southern Cross]
1525	Ho'oiptomalama		1525	Kaikainakea	
	Kunikunihia			Mali'iluna	
	Paniokaukea			Pokaukahi	
	Polomailani			Nakao	[Belt of Orion]
	Polohiua			Helehiao	
1530	Kukukalani		1530	Pani'oni'o	
	Ho'olepau	[Olepau moon]		Holoalani	
	Nu'ualani	[zenith]		Pahiolo	
	Ho'omukulani			Newa'a	

1535	Ho'onewa Lanuku'a'a'ala Ho'opilimeha-e Maninikalani Ho'onakuku Lanipuke			1535	Kua'a'ala Pilimeha-e Niniaulani Kalaniku Nahunahupuakea Kalolo [zenith, meridian]
1540	Ahukele Pi'oalani Miahulu Minialani Kumakumalani			1540	'O'illalolo [appear-meridian] Pi'oalewa [arch-sky-space] Pahulu Ki'ihalani Ho'ouna
1545	Ho'opilipilikane Nu'akeapaka Palela'a Palimoe Paliho'olapa			1545	Pilikana Holiakea Palikomokomo Paliialiku Palimau'ua
1550	Palipalihia			1550	Paliomahilo
1551	Hānau Paliku Hānau 'Ololo [meridian] Hānau 'Ololohonua Hānau Kumuhonua O Kāne (k) he mau mahoe O Kanaloa O Ahukai (ka muli loa)			1551	[Cp. Paliha'i ka wahine] Ololonu'u [zenith, meridian] Olalohana Haloiho
1552				1552	Holehana
1553	Kapili			1553	Kealona'ina'i
1554	Kawakupua			1554	Helea'eiluna
1555	Kawakahiko Kahikolupa Kahikoleikau Kahikoleiulu Kahikoleihonua			1555	Kaha'ulaia Lukaua Kupomaka'ika'eleue Kanemakaika'eleue Ha'ako'ako'aikeukahonua
1560	Ha'ako'ako'alaulaiea Kupo Nahaeikekaua Keakenui Kahinaki'iakaea 1			1560	Kaneiako'akahonua Lanikupo Hane'eiluna Iaheamanu Luanahinaki'ipapa 2
1565	Kolunahinaki'iakea 3 Limaanahinaki'iakea 5 Hikuanahinaki'iakea 7 Iwanahinaki'iakea 9 Welaahilaninui			1565	Ha'anahinaki'ipapa 4 Onoanahinaki'ipapa 6 Waluanahinaki'ipapa 8 Lohanahanahinaki'ipapa 10 Owe
1570	Kahikoluamea			1570	Kupulanakehau
1571	Wakea i noho ia Haumea, ia Papa, ia Ho'ohokukalani,			1571	Wakea lived with Haumea, with Papa with Ho'ohokukalani,
1572	Hānau'o Hāloa 'O Hāloa nō			1572	Born Hāloa It was Hāloa...

## KA WA UMIKUMAMAKOLU

- [1551] Palikū ke kāne  
 1552 Palika'a  
 Lakanihau  
 Nalaunu'u [zenith]  
 1555 Kapapanuinuiaukea noon]  
 Kapapaku  
 Kapapaluna  
 Olekailuna [Ole moon]  
 Kapapanuialeka  
 1560 Kapapanuikahulipali  
 Kapapanuiakalaula  
 Kapapaki'ilaula  
 Kapaiaoa  
 Kapapauli  
 1565 Hānau o Kapapapahu ka mua  
 Kapohe'enalu mai kona hope noho  
 Kapohe'enalu ke kane  
 Kaho'okokohipapa  
 Papa'iao [Jupiter]  
 1570 Papahe'enalu  
 Hānau a iloko  
 1571 o Pu'ukahonualani  
 1571 o Ii'aikuhonua,  
 o kona muli mai,  
 1571 o Ohomaila  
 1571 Ohomaila ke kane [the husband]  
 1572 Kehaukea  
 Mohala  
 Kahakuiaweaukeleke [Canopus?]  
 1575 Kahokukelemoana [Hatutahi] (?)  
 [star-navigate-ocean]  
 1576 Mulinaha

[Note: In the Ololo genealogy, Wakea is born in generation 1586; marries Papa, who is Haumea. Papa belongs also in generation 1586]

## THE THIRTEENTH AGE

- [1551] Paliha'i ka wahine  
 Palihiolo  
 Keaona  
 Pu'ukahalelo  
 1555 Ka'ina'inakea  
 Kapapamoe  
 Kapapailalo  
 Kapapapa'a  
 Kapapahanauua  
 1560 Kapapai'anapa  
 Kapapaholahola  
 Kapapaiakea [celestial equator (?)]  
 1565 Kapapapoukahi  
 Kapapapoha  
 Kamaulika'ina'ina ka wahine  
 [29 moon]  
 Mehakuakoko [Antares (?)]  
 Mauluikonanui [Canopus (?)]  
 1570 Hanauna [generations]  
 Born in:  
 1571 Pu'ukahonualani  
 1571 Ii'aikuhonua  
 and behind him,  
 1571 Ohomaila  
 1571 Honuakau ka wahine [the wife]  
 1572 Kualeikahu  
 Lu'ukaualani  
 Hinawainonolo  
 1575 Hinawai'oki  
 1576 'Ipo'i

[Note: In the generations after Mulinaha, the numbering reverts to line number count, rather than generation count, from lines 1596 to the conclusion].

1577	Hānau o Laumiha he wahine, i noho ia Kekahakualani Hānau o Kahaula he wahine, i noho ia Kuhulihonua Hānau o Kahakauakoko he wahine, i noho iā Kulani'ehu	1577	Born Laumiha, woman who lived with Kekahakualani Born Kahaula, woman who lived with Kuhulihonua, Born Kahakauakoko, woman who lived with Kulani'ehu,
1580	Hānau o Haumea he wahine, i noho ia Kanaloa-akua Hānau o Kukauakahī he kane i noho ia Kuaimehani he wahine Hānau o Kauahulihonua Hānau o Hinamanouluae he wahine Hānau o Huhune he wahine	1580	Born Haumea, a woman who lived with Kanaloa, god, Born Kukauakahī a man who lived with Kuaimehani, wife, Born Kauahulihonua, Born Hinamanoulua'e, female Born Huhune, female
1585	Hānau o Haunu'u he wahine Hānau o Haulani he wahine Hānau o Hikapuaiaiea he wahine, ike ia Haumea, O Haumea no ia-- O Haumea kino paha'oha'o,	1585	Born Haunu'u, female Born Haulani female Born Hikapuaiaiea female, Haumea was seen, was known, (That) she was Haumea, Haumea of mysterious body,
1590	O Haumea kino papawalu O Haumea kino papalehu, o Haumea kino papamano	1590	Haumea of eight-fold body, Haumea of four-hundred-thousand- fold body, Haumea of four-thousand-fold body, Four-thousand-times-four- thousand,
1592	I manomano i ka lehulehu o na kino	1592	Until four-hundred-thousand-times- four-hundred-thousand-fold body,
1593	Ia Hikapuananaiea pa umauma ka lani Pa 'ili o ia wahine o Nu'umea	1593	Until Hikapuaiaiea the chiefess was struck upon the chest; Tattooed this woman of Nu'umea,
1595	O Nu'umea ka 'aina, O Nu'upapa- kini ka honua	1595	Nu'umea the land, Nu'u-papa-kini the placenta
	Laha Haumea i na mo'opuna  Io Kio pale ka ma'i, ka'a ka lolo  O ia wahine hānau manawa i na keiki Hānau keiki puka ma ka lolo		(From which) spread the grand- children of Haumea, Until with Kio the womb was delivered, the top of the brain turned; This woman whose children were born from the brain, Gave birth to children at the brain,
1600	O ia wahine no o 'Iilipo o Nu'umea I noho io Mulinaha	1600	This woman of 'Iilipo of Nu'umea, Who lived with Mulinaha

- Hānau Laumiha hanau ma ka lolo  
 O Kahakauakoko hanau ma ka lolo  
 O Haumea o ua wahine la no ia  
 Noho ia Kanaloa-akua
- 1605 O Kauakahi-akua no a ka lolo  
 Ho'ololo ka hanauna a ia wahine  
 Ha'ae wale ka hanauna lolo
- O Papa-huli-honua  
 O Papa-nui-hānau-moku
- 1610 O Papa i noho ia Wakea  
 Hānau Ha'alolo ka wahine  
 Hānau inaina ke ke'u  
 Ho'opunini ia Papa e Wakea  
 Kauoho i ka lā i ka mālama
- 1615 O ka po io Kane no muli nei  
 O ka po io Hilo no mua ia;
- Kapu kipaepae ka hanu'u
- Ka hale io Wakea i noho ai  
 Kapu ka 'ai lani makua
- 1620 Kapu ka 'ape ka mane'one'o  
 Kapu ka 'akia ka 'awa'awa  
 Kapu ka 'auhuhu ka mulemulea  
 Kapu ka 'uhaloa no ke ola loa  
 Kapu ka la'alo ka manewanewa
- 1625 Kapu ka haloa ku ma ka pe'a
- Kanu ia Haloa ulu hahaloa
- O ka lau o Haloa i ke ao la
- Pu--ka.
- Born Laumiha, born at the brain  
 Kahaula, female, born at the brain,  
 Kahakauakoko born in the caul;  
 Haumea was that woman mention-  
 ed before,  
 (Who) lived with Kanaloa-akua,  
 (It was) Kauakahi-akua at the  
 brain;  
 The generations from this woman  
 born from the brain,  
 Covered with birth fluid the  
 descendants born at the brain,  
 Papa-huli-honua  
 Papa-nui-hānau-moku  
 Papa-earth-placenta-turning,  
 Great-Papa-giving-birth-to-lands,
- 1610 Papa who lived with Wakea,  
 Born Ha'alolo female;  
 Born fault-finding vexation,  
 Papa deceptively flattered by Wakea  
 Ordering days of the month to be
- 1615 The night to Kāne behind,  
 The night to Hilo before;
- Tabu the pavement (before)  
 the oracle tower,  
 The house where Wakea lived,  
 Tabu the food sacred to the elders;
- 1620 Tabu the uncooked 'ape taro  
 Tabu the bitter 'akia plant  
 Tabu the anesthetic 'auhuhu plant  
 Tabu the 'uhaloa medicine plant  
 for long life,  
 Tabu the leaves spiralling to the  
 side of the taro stalk,
- 1625 Tabu the long stalk rising from the  
 inner branching,  
 Hāloa the long-breathing stem of  
 the lauloa taro planted,  
 The leaf of Hāloa in the sunlight  
 of day there,  
 Came forth--

[\*Note: The numbering reverts to the generation count, with a discrepancy of about 15-20 generations between the 11th and 12th-14th cantos].

## KA WA UMIKUMAMAHA

## THE FOURTEENTH AGE

1571	Li'aikuhonua Laka Kamo'oalewa Maluapo	1571	Keakahulihonua ka wahine Kapapaialaka Lepu'ukahonua Laweakeao
1575	Kinilauemano Halo Kamanookalani Kamakaokalani Keohookalani	1575	Upalu Kinilauewalu Kalanianoho Kahuaokalani Kamaookalani
1580	Kaleiokalani Kalali'i Malakupua Ha'ule Namea	1580	Kapu'ohiki Keaomele Ke'ao'aoalani Loa'a Walea
1585	Nanau'u Lalokona Honuapoiluna Pokinikini Pomanomano	1585	Lalohana Laloho'oaniani Honuailalo Polelehu Pohako'iko'i
1590	Kupukupuanu'u Kamoleokahonua Paia'alani Hemoku Makulu	1590	Kupukupualani Ke'a'aokahonua Kanikekoa Pana'ina'i Hi'ona
1595	Milipomea Ho'okumukapo Lukahakona	1595	Hanahanaiau Ho'ao Niaulani
	Hānau o Kupulanakehau he wahine Hanau o Kulani'ehu he kāne		Born Kupulanakehau female Born Kulani'ehu male
1600	Hanau o Ko'i'aakalani		Born Ko'i'aakalani
1601	O Kupulanakehau wahine I noho iā Kahiko, o Kahikoluamea		Kupulanakehau female (Who) lived with Kahiko, Kahikoluamea
1603	Hānau o Paupaniakea--	1603	Born Paupaniakea

The Li'aikuhonua lineage is that of the brother of Ohomaila [line 1571], in the same generation. That from Ohomaila, the line of 'Opu'upu'u, came down to Papa (Haumea), who married Wakea.

The Li'aikuhonua lineage comes down to Wakea from the same stem [Opu'upu'u, brother of Ali'ihonupu'u (1389)]



- |      |                |  |      |   |
|------|----------------|--|------|---|
| 1582 | Malakupua      |  | 1582 | Ke'ao'aoalani   |
| 1583 | Ha'ule         |  | 1583 | 'Fall', probably refer to setting(s)?<br>and rising(s) of stars east and west<br>horizon at evening sunset  |
| 1583 | Loa'a          | [Sirius (setting?)]  |      |   |
| 1584 | Namea          |  |      |   |
| 1584 | Walea          | [-Le'a 'Arcturus',<br>evening rise east (?)]                   |      |   |
| 1585 | Nananu'u       |  | 1585 | 'Observe-zenith' (oracle-tower,<br>anu'u)   |
| 1585 | Lalohana       | ['below']<br>[Hana 'Gemini', past<br>meridian, i.e., westward] |      |   |
| 1586 | Lalokona       |  | 1586 | Lalo - 'below', south and west<br>kona - 'Canopus' (Lehuakona)<br>kona- Tonga (West Polynesia)<br>Lalokona-Rarotonga (Cook Islands)                           |
| 1586 | Honuapoiluna   |  |      |   |
| 1588 | Pokinikini     |  | 1588 | 'night-40,000 x 40,000 (stars)  |
| 1589 | Pomanomano     |  | 1589 | 'night-4,000 x 4,000 (stars)  |
| 1590 | Kupukuanu'u    | [zenith]   | 1590 | Pleiades (zenith) [at the oracle tower]   |
| 1591 | Kamoleokahonua | [solstice point]   | 1591 | Mole- northwest, solstice limit   |
| 1592 | Paiaalani      | [sky-wall]   |      |   |
| 1593 | Hemoku         | [Milky Way breaking?]  |      |   |
| 1594 | Makulu         | [(Hawaii) : Saturn]  | 1594 | Ma-kulu, from Kulu, which may<br>mean the 17th night of the moon; or the -<br>kulu (turu) 'pillar' (zenith) stars.<br>[Makulukulu is also the planet Saturn]. |
| 1594 | Hi'ona         |  |      |   |
|      |                |  |      | The Kulu (Turu) stars are, variously:<br>[East Polynesia, south]<br>Altair (Pukapuka)<br>Altair and Antares (Maori)   |
|      |                |  |      | [West Polynesia]<br>Alpha, Beta, Kappa, Gamma in<br>Orion (Turuturu-ti-harau), i.e.,<br>'pillar(s) holding-up-house'<br>(Kapingamarangi); equatorial stars.   |
| 1595 | Milipomea      |  |      |   |
| 1595 | Hanahanaiau    |  |      |   |
| 1596 | Ho'okumukapo   |  | 1596 | Ho'ao [Jupiter, or Venus]   |
| 1597 | Lukahakona     |  | 1597 | Lū - sky-propper<br>kaha- span<br>kona - Canopus (Lehuakona)<br>kona - southwest (wind)<br>kona - Tonga   |
| 1597 | Ni'aulani      |  |      |   |

[Note: The sequence returns to  
Kupulanakehau]

1598	Hanau o Kupulanakehau he wahine	1598	Born Kupulanakehau female
1599	Hanau o Kulani'ehu ke kane	1599	Born Kulaniehu male
1600	Hanau o Koia'akalani	1600	Born Ko'ia'akalani
1601	O Kupulanakehau wahine		
1602	I noho ia Kahiko, o Kahikoluamea	1601	Kupulanakehau female
1603	Hanau o Paupaniakea	1602	Who lived with Kahiko, Kahikoluamea
1604	O Wakea no ia, o Lehu'ula, O Makulukulukalani [Antares (?), Saturn]	1603	Born Paupaniakea
1605	O ko laua hope, o kanaka 'ope'ope nui	1604	It was Wakea, Lehu(a)'ula, Makulukulu the sky, [Celestial equator, Saturn, Antares]
1606	Huihui a kau io Makali'i, pa'a [Pleiades]	1605	Their successor a man of many bundles on a carrying pole,
1607	Pa'a na hoku kau i ka lewa [fixed stars]	1606	In the Pleiades cluster (in Taurus),
	-----	1607	Fixed (the courses of) stars that hang (swing) in space,
1608	Lewa Ka'awela, lewa Kupoilaniua		-----
1609	Lewa Ha'i aku, lewa Ha'i mai	1608	planet, variously Venus, Jupiter, Mercury
1610	Lewa Kaha'i, lewa Kaha'ihai	1609	[Milky Way, breaking]
1611	Lewa Kaua, ka pu'uhoku Wahilani-nui	1610	[Milky Way]
1612	Lewa ka pua o ka lani, Kaulu-i-ha'i-mohai	1611	[unidentified stars]
1613	Lewa Puanene, ka hoku ha'i haku	1612	[Gemini, (?) setting]
1614	Lewa Nu'u, lewa Kaha'ilono	1613	[unidentified stars]
1615	Lewa Wainaku, lewa 'ikapa'a	1614	[zenith; Milky Way; -lono, Sirius]
1616	Lewa Kiki'ula, lewa Keho'oea	1615	[patron star of Hilo] [unidentified] [unidentified]
1617	Lewa Pouhānu'u, lewa Ka'ili'ula	1616	[Vega, in Lyra (rising in the evening behind Antares)]
		1617	[unidentified; tutelary star of Ka'ū]

1618	Lewa Kapakapaka, lewa Mānanalo],	1618	[unidentified; disappearing phase of Venus]
1619	Lewa Kona, lewa Wailea	1619	[Canopus; Waileia (?), variously the morning star, Venus, Jupiter]
1620	Lewa Keauhaku, lewa Ka-maka-unulau	1620	trade winds] [Note: Cp. Fatu-kura, rising November (Tuamotu), one of two stars (?)]
1621	Lewa Hinalani, lewa Keoea	1621	1[unidentified; Vega in Lyra]
1622	Lewa Ka'aka'a, lewa Polo'ula	1622	[Cp. Koro-takataka (Maori), Altair in Aquila; said to be on the border of the Milky Way; Cp. Ka'alolo, tutelary star of Ni'ihau] [Polo'ula, unidentified; Polo-stars are 3 in a triangle, one of which was called Mulehu, (probably) stars in Cygnus (Deneb) +Lyra (Vega) + Altair (Aquila)]
1623	Lewa Kanikania'ula, lewa Kauamea	1623	[unidentified; possibly Corona Borealis (?)]
1624	Lewa Kalalani, lewa Kekepue	1624	[unidentified; cp. Ka-lalani-a-Makali'i; unidentified]
1625	Lewa Ka'alolo, lewa Kaulana-a-ka-lā,	1625	[Note: a star transits the meridian; another is on the northwestern horizon, in the direction of summer solstice sunset (kaulana-ka-lā, i ka mole mai o Lehua). The star transiting the meridian is probably Denebola (Leo); those on the northwest horizon, setting after the sun may be either Betelgeuse (Orion, shoulder), or gamma Aurigae (one of the Kids) at the June solstice.
1626	Lewa Hua, lewa 'Aua	1626	[Hua, probably Antares (Scorpio) rising as Betelgeuse ('Aua) sets about the June solstice.

1627	Lewa Lena, lewa Lanikuhana	1627	[Lena, Sirius, setting, southwest, about June solstice; Lanikuhana, Lanikuhana, unidentified.]
1628	Lewa Ho'oleia, lewa Makeaupe'a	1628	[Ole moon (?); Southern Cross on meridian about 6:00 p.m., June solstice]
1629	Lewa Kaniha'alilo, lewa 'U'u	1629	[unidentified]
1630	Lewa 'A'a, lewa 'Ololu	1630	[Sirius, A'a; unidentified]
1631	Lewa Kamaio, lewa Kaulualena	1631	[unidentified; Ka-ulu-a-Lena, or Kaulua-lena; Kaulua- (Gemini), Sirius (?); Gemini, north; Sirius, south, same hour circle.]
1632	Lewa o Ihu-ku, lewa o Ihu-moa	1632	[unidentified; ihu, 'nose', also means 'bow of a canoe, heading']
1633	Lewa Pipa, lewa Ho'eu	1633	[unidentified]
1634	Lewa Malana, lewa Kaka'e	1634	[no data]
1635	Lewa Maliu, lewa Ikiiki	1635	[Spica (Virgo); Regulus (Leo); each is on the other side of the meridian by about 2 hours.]
1636	Lewa Lanakamalama, lewa Naua	1636	['moon-floating', i.e., rising or setting above the ocean horizon at night; Naua, unidentified]
1637	Lewa Welo, lewa Ikiiki	1637	Vero, or Viro, brightest star in the Belt of Orion, suggesting that this possible pairing is perhaps related to their setting, Orion about an hour after sunset, when Regulus is about an hour past meridian.]
1638	Lewa Ka'aona, lewa Hinaia-'ele-'ele	1638	[These (unidentified) stars mark the months:  [Ka'aona, in September (Moloka'i), March (Hawaii), April (O'ahu), matching (on Moloka'i) the month of September (Takaonga) in the Tokelauan calendar. Onga (Tonga) the Magellanic Clouds, visible from latitudes below the equator, not from the latitude of Hawaii].

- |      |                                      |      |   |
|------|--------------------------------------|------|---|
| 1639 | Lewa Puanakau, lewa Le'ale'a         | 1639 | [Rigel, in the knee of Orion, zenith star for Marquesas, eight degrees below the equator; setting about 6:00 p.m., about May 31st.<br><br>[Le'ale'a, Arcturus (Hoku-le'a), on the opposite side of the sky, between 6:00-8:00 pm., June solstice]                                 |
| 1640 | Lewa Hikikauelia, lewa Ka'elo        | 1640 | [Sirius, setting after Rigel; Ka'elo, probably Betelgeuse (or another bright star in the hour circle with Sirius, i.e., Murzim (in Canis Major), remains unidentified].   |
| 1641 | Lewa Kapawa, lewa<br>Hikikaulonomeha | 1641 | [Hikikaulono-meha, probably Sirius in the zenith of Tahiti (Hiki) about the 18th parallel below the equator; western orientation in the sky]  |
| 1642 | Lewa Hōkū'ula, lewa Poloahilani      | 1642 | [Probably Antares, rising on the eastern horizon as the Belt of Orion sets; Poloahilani probably refers to this combination of stars (Sirius, Belt of Orion setting, as Antares is rising (?).  |
| 1643 | Lewa Ka'āwela, lewa<br>Hanakalanai   | 1643 | [Venus or Jupiter; unidentified]  |
| 1644 | Lewa Uliuli, lewa Melemele           | 1644 | [unidentified; Melemele, stars in Orion, Belt of Orion, but variously in Polynesia and Micronesia, the mele- stars are: Southern Cross (Ponape), Antares (Pukapuka), Vega (Kapingamarangi), Orion's Belt (Tahiti, Sirius (Rarotonga), Venus (Maori), with stars in Lyra (Maori)]. |

[Hinaia'ele'ele, May (O'ahu), June-July (Hawaii), August (Kaua'i), February (Moloka'i); June-August agrees with Uvea and June-July with Tonga.]

1645	Lewa Makali'i, lewa Na-huihui	1645	[Pleiades are also setting in the northwest about the June solstice, but they set before the Belt of Orion sets and before Antares rises on the eastern horizon].
1646	Lewa Kokoiki, lewa Humu	1646	[unidentified; Humu is Altair in Aquila or Southern Cross; probably the latter because it has declined as Altair rises on the eastern horizon after Antares; on the west, Pleiades, Belt of Orion, Sirius, Betelgeuse have all set, except Gemini to the northwest]
1647	Lewa Moha'i, lewa Kauluokaoka	1647	[Milky Way; the-'tree' (ulu) of Sirius [Te Kokota (Maori)]]
1648	Lewa Kukui, lewa Konamaukuku	1648	unidentified; in the Pleiades (?)]
1649	Lewa Kamalie, lewa Kamalie-mua	1649	unidentified
1650	Lewa Kamalie-hope	1650	[no data]
1651	Lewa Hina-o-na-la'ilena	1651	[unidentified; probably the 'fall' of Sirius, or period when it is not in the sky]
1652	Lewa na Hiku, lewa Hiku-kahi	1652	[Star in the Dipper; probably the first to appear, Dubhe; about the June solstice, when Sirius is setting, the bowl is declining].
1653	Lewa Hiku-alua, lewa Hiku-kolu	1653	[Probably Merak, then Phecda]
1654	Lewa Hiku-ahā, lewa Hiku-lima	1654	[Stars in the handle closest to the bowl; Megrez, Alioth.
1655	Lewa Hiku-ono, lewa Hiku-pau	1655	[Mirak, Alkaid] [About the June solstice, the bowl is past the meridian, the handle is about to transit; i.e., the bowl is in the hour circle ahead of the handle]
1656	Lewa Mahapili, lewa ka Huihui	1656	[Probably Gemini + Pleiades; the Pleiades set before the Twins]
1657	Lewa Na Kao	1657	[Belt and sword in Orion, setting].

- |      |  |      |  |
|------|--|------|--|
| 1658 | Lu ka 'ano'ano Makali'i, 'ano'ano<br>ka lani<br>Lu ka 'ano'ano akua, he akua ka lā   | 1658 | Scattered the seeds of Makali'i,<br>the Pleiades, seeding the sky,<br>Scattered seeds of the god, the sun<br>is a god,   |
| 1660 | Lu ka 'ano'ano a Hina,<br>he walewale o Lonomuku,<br><br>Ka 'ai a Hina-ia-ka-malama,<br>o Waka;<br>I ki'i (i)a e Wakea a Kaiuli<br><br>A kai ko'ako'a, kai ehuehu<br>I ana Hina-ia-ka-malama he kā | 1660 | Scattered the seeds of Hina, after-<br>birth of Lonomuku,<br>[Dark night of the moon, Muku]<br><br>The food of Hina-in-the-moon, of<br>Ho-(w)aka;<br>Gotten by Wakea-(from)-the-deep-<br>sea,<br><br>A coral sea, foaming sea,<br>Hina-in-the-moon floated in the<br>bailing gourd calabash        |
| 1665 | Kaulia a'e i na wa'a, kapa 'ia<br>Hina-ke-kā ilaila,<br>Lawe (i)a uka, puhuluholu ia<br><br>Hanau ko'ako'a, hanau ka puhi<br>Hanau ka inaina, hanau ka wana<br><br>Hanau ka 'eleku, hanau ke 'a    | 1665 | Hung up in canoes, called Hina-<br>the-bailing-gourd there,<br>Taken upshore, left swinging,<br>[finds level]<br><br>Born the coral, born the eel<br>Born sea urchin(s) in the coral,<br>large sea urchin(s),<br>Born the 'elekū rock, the 'ā basalt<br>rock,                                      |
| 1670 | Kapa 'ia Hina-halako'a i laila<br>'Ono Hina i ka 'ai, ki'i o Wakea<br><br>Kukulu i ki'i a paepae<br><br>Kukulu kala'ihī a lalani<br>Ki'i Wakea moe ia Hina-kaweo'a                                 | 1670 | Called Hina-passing-coral there,<br>Hina craved food, Wakea got it<br>(for her);<br>Set up images on the stone<br>platform in rows,<br>Set up rules of the chiefs,<br>Wakea took Hina as wife,<br>Born the moa chief, hung (over)<br>the back of Wakea<br>[moa - center, meridian; Wakea,<br>noon] |
| 1675 | Hanau ka moa, kau i ke kua o<br>Wakea<br><br>Lili Wakea, kahilihili<br><br>Lili Wakea, inaina uluhua<br>Papale i ka moa lele i kaupaku<br>O ka moa i kaupaku                                       |      | Wakea was jealous of the kahili<br>waving over him,<br>Angry and vexed,<br>Warded off the moa that flew to<br>the ridgepole,<br>The moa was on the ridgepole<br>[Southern Cross on meridian]   |
| 1680 | O ka moa i ka haku<br>O ka 'ano'ano ia a Ka'eo'eo<br>E halakau nei i ka lewa<br>Ua lewa ka lani<br>Ua lewa ka honua  | 1680 | The moa was lord;<br>The seeds had grown strong,<br>Had perched up high in space,<br>The space in the heavens,<br>Above the earth,   |
| 1685 | I ka Nu'u no--   | 1685 | At the very zenith--   |

## KA WA UMIKUMAMALIMA

- 1686 O Haumea wahine o Nu'umea i  
Kukuiha'a  
O Mehani, nu'u manoanoa o  
Kuaihelani i Paliuli  
Liholiho, 'ele'ele, panopano  
lani 'ele
- Kamehanolani, o Kameha'ikana
- 1690 Kameha'ikana, akua o Kauakahi  
I ke 'oki nu'u i ke 'oki lani o Ha'iuli
- Ha'alele i ka houpo hūhū punalua,  
Kau i ka moku o Lua, o Ahu a Lua,  
noho i Wawau  
Wahine akua wahine o Makea
- 1695 O Haumea wahine o Kalihi o  
Ko'olau;  
Noho no i Kalihi i kapa i ka lihilihi  
o Laumiha  
Komo i ka 'ulu, he 'ulu ia
- O kino 'ulu, o pahu 'ulu, o lau 'ulu  
ia nei,  
He lau kino o ia wahine o Haumea
- 1700 O Haumea nui 'aiwaiwa;  
I 'aiwaiwa no Haumea i ka noho
- Nonoho i na mo'opuna  
I ka moemoe i na keiki
- Moe keiki ia Kau(a)kahi,  
o Kuaimehani ka wahine,
- 1705 Moe mo'opuna ia Kauahulihonua  
O Hulihonua ka wahine,  
Moe mo'opuna ia Haloa  
O Hinamanoulua'e ka wahine,  
Moe mo'opuna ia Waia,  
o Huhune ka wahine,
- 1710 Moe mo'opuna ia Hinanalo,  
o Haunu'u ka wahine,

## THE FIFTEENTH AGE

- 1686 Haumea, woman of Nu'umea in  
Kukuiha'a,  
Of Mehani, the high peaks of  
Kuaihelani in Paliuli,  
Choice sacred back (her) chiefly  
rank, deep sacred black the dark  
heaven of chiefs,  
The one alone in the sky, the single  
authority,  
Ka-meha-no-lani, one in battle,
- 1690 Ka-meha-i-kaua; god of Kauakahi;  
Where the zenith (is) cut, where  
the dark sky breaks apart,  
(Her) rage toward her husband's  
other wife she left at the equator,  
(And) settled on the island of Lua  
(O'ahu), lived in Wawau  
Goddess wife of Makea,
- 1695 Haumea, woman of Kalihi (of)  
Ko'olau  
(Who) lived in Kalihi on the border  
called Laumiha,  
(She) went into the breadfruit tree,  
became a breadfruit tree,  
Body of breadfruit, trunk and leaves,  
Of many bodies this woman,  
Haumea,
- 1700 Haumea of awesome mystery;  
(With) marvelous transforming  
powers while she lived,  
Living on in (her) descendants,  
Into marriages of children and  
grandchildren,  
Slept with son Kau-akahi as Kua-i-  
mehani, wife;
- 1705 With grandson Kau-a-hulihonua,  
Hulihonua the wife,  
Slept with grandson Haloa  
(As) Hina-mano-ulu-a'e, wife;  
With great-grandson Waia, as  
Huhune, wife;
- 1710 With great-great grandson Hinanalo,  
(as) Haunu'u, wife;

- 1711 Moe mo'opuna ia Nanakehili,  
o Haulani ka wahine,  
Moe mo'opuna ia Wailoa,  
o Hikopuaneiea ka wahine
- Hanau o Kio, Ike (I) a Haumea
- 'Ike 'ia 'o Haumea he pi'alu'alu
- 1715 He konahau, he konakona
- He 'awa'awa ina ka wahine  
'Awa'awahia a mulemulea  
I haina, eu, ai'a, he wahine pi'i-  
ke-akea-e
- Ua pi'alu ke kua, pi'alu ke alo
- 1720 Ke'ehina ka umauma, pā hiolo  
Nu'umea
- Nauau papa pā umauma 'ilio ka  
wahine
- Ia Kio laha na li'i  
Moe ia Kamoe i ka wahine  
o ka nahelehele
- 1724 Hanau 'o Ole ke kane,  
o Ha'i ka wahine
- 1725 Pupue ke kane [Pupue the husband]
- Manaku  
Kahiko  
Iukahakona  
Luanu'u
- 1730 Ki'i
- Hanau o 'Ulu, hanau o Nana'ulu  
Ulu ke kāne [Ulu the husband]
- Nana  
Nanaie
- 1735 Nanaielani  
Waikalani  
Kuheleimoana  
Konohiki  
Waolena
- 1740 Akalana
- 1711 With great-great-great-grandson  
Nanakehili, (as) Haulani, wife;  
With great-great-great-great-grand-  
son, Wailoa, as Hiko-pua-  
neiea, wife
- Until Kio was born, [Polaris, the  
pole star]
- Then was Haumea seen (as) one  
shriveled with age,
- 1715 As damp and cold as the south  
wind,  
Unsavory, a woman become  
Soured, embittered.  
Aloof and cunning, pallid,
- Sagging behind, wrinkled in front,  
Chest trampled, bosom of Nu'umea  
fallen,  
Breast that had suckled litters like a  
dog, this woman;
- Increasing the chiefs until Kio,  
(Kio) married Kamole, a woman  
of the jungle,
- 1724 Born Ole the husband, [quarter  
moon]  
Ha'i the wife [Milky Way]
- 1725 Kamahela ka wahine [Kamahela  
the wife]  
Hikoho'ale  
Kaea  
Ko'ulamaikalani  
Kawaoma'aukele
- 1730 Hinako'ula
- Born 'Ulu, born Nanaulu  
Kapunu'u ka wahine [Kapunu'u the  
wife]
- Kapulani  
Kahaumokuleia
- 1735 Hinakina'u  
Kekaulani  
Mapu'u[-puna]ia'a'ala [Chant 2: 156]  
Hakaululena  
Mahu'ie  
Hina-a-ke-ahi

- |   |   |
|---|---|
| <p>1741 Hanau Maui mua, hanau Maui<br/>waena<br/>Hanau Maui-kikī'i,<br/>Maui-a-ka-malo</p> <p>O ka malo o Akalana I humea</p> <p>Ho'okauhua Hina-a-ke-ahi, hanau<br/>he moa</p> <p>1745 He hua moa ke keiki a Hina i<br/>ho'okauhua<br/>*A'ohe ho'i he moa o ka moe *ana<br/>He moa ka ka hanau *ana<br/>*Alala ke keiki, ninau Hina:</p> <p>*A'ohe ho'i he kanaka o ka moe<br/>*ana he keiki ka,</p> <p>1750 He keiki *aiwaiwa na Hina-a-ke-ahi</p> <p>Ukiuki Kia('i)-loa ma lāua 'o<br/>Kia('i)-a-ka-poko<br/>*O na kaikunane ia o Hina;</p> <p>*O na kia('i) *elua iloko o ke ana ha<br/>Paio haka Maui, hina ua kia</p> <p>1755 Kahe ka wai *ula i ka lae o Maui<br/>O ka ua mua ia a Maui</p> <p>Kī'i i ka pu'awahia a Kāne ma<br/>lāua 'o Kanaloa<br/>O ka alua ia a Maui</p> <p>O ka ua akolu ke ku'eku'e o ka<br/>*ahu'awa</p> <p>1760 O ka ua aha o ka 'ohe a Kāne ma<br/>lāua 'o Kanaloa<br/>O ka ua alima o ka pae humu</p> <p>O ka ua aono o ka anu'u<br/>Nu(n)u Maui, ninau<br/>i ka makuakāne;<br/>Ho'ole Hina, *A'ole au makua,</p> <p>1765 O ka malo o Kalana o ka makua ia"<br/>'Ono i ka i'a na Hina-a-ke-ahi</p> | <p>1741 Born first Maui, born Maui<br/>in the middle,<br/>Born Maui-in-the-topknot,<br/>Maui-of-the-loincloth<br/>[Stars in the Belt of Orion]</p> <p>The loincloth that Akalana had put<br/>on,<br/>Hina-a-ke-ahi conceived,<br/>born a warrior bird, a moa,</p> <p>1745 The egg of a moa the son Hina<br/>conceived,<br/>Not ever had she slept with a moa,<br/>A moa indeed she had borne;<br/>When) the child crowed, Hina<br/>asked,<br/>"How is this child born from<br/>sleeping with a man?"</p> <p>1750 A child of awesome power the son<br/>of Hina-a-ke-ahi<br/>Guardians of the long and short posts<br/>of the house were peeved,<br/>They (who) were the brothers of<br/>Hina,<br/>Two pillars of the four sides<br/>measured;<br/>Maui wrestled (them) in combat,<br/>(and) those posts fell,<br/>Blood then flowed on the forehead<br/>of Maui, (In) the first of<br/>Maui's struggles;<br/>(He) got the black *awa root of Kāne<br/>and Kanaloa,<br/>(That) was the second contest of<br/>Maui's;<br/>The third was pulling up the tuft of<br/>sedge<br/>[to follow Hina to the underworld];<br/>The fourth was the bamboo of Kāne<br/>and Kanaloa;<br/>The fifth was the fenced platform of<br/>the temple ground;<br/>The sixth that of the oracle tower;<br/>Maui scolded (Hina) when he asked<br/>about his father,<br/>Hina refused, (saying),<br/>"You have no father,<br/>The loincloth of Kalana is your<br/>father,"<br/>Hina-a-ke-ahi (then) wanted to eat<br/>fish,</p> |
|---|---|

	A'o i ka lawai'a, kena Hina-a-ke- ahi "E ki'i 'oe i ko makuakane Aia ilaila ke aho, ka makau O Manaia-ka-lani o ka makau ia		Teaching him to fish, Hina-a-ke- ahi (then) commanded him: "(Go) get your father, Over there is the line and hook, Manaia-ka-lani, that fishhook [Scorpius] For hooking up islands in ancient seas,"
1770	Ki'i (a)na ka 'alae nui a Hina  Ke kaikuahine manu; O ka ua ahiku (o) na ua a Maui  O ke kupua eu nana i ho'olou  Ke 'a, ka waha, ka 'opina o Pimoe 1775 O ka i'a 'Aimoku e halulu ai ka moana Lilo Pimoe moe i kaina a Maui  Ulu aloha o Mahanaulu'ehu  O kama a Pimoe Lawena uka ai Maui i na i'a koe ka pewa 1780 I ho'ohalulu a'e Kane ma laua 'o Kanaloa, O ka ua a hikilele 'iwa a Maui  Ola Pimoe ma ka pewa Ola Mahanaulu'ehu ma ka hi'u; Lilo Hina-ke-ka ia Pe'ape'a,	1770	(Then) get the Great-mudhen-of- Hina, (My) bird sister That was the seventh competition of Maui, The trickster demigod caught by hook The jaw, mouth, and gills of Pimoe, 1775 The island fish that tethered shook the seas Pimoe caught fast on the line of Maui, (As) Mahanaulu'ehu's pity (for him) grew, Son of Pimoe, When the fish was carried ashore, except the tail; 1780 Then (were) Kane and Kanaloa shaken, (By) the ninth shocking feat of Maui; Pimoe lived again by the caudal fin, Mahanaulu'ehu by the tail, Hina-the-bailing-gourd lost to Pe'ape'a [Southern Cross]
1785	O ke akua pe'ape'a o Pe'ape'a O ka ua ho'olawa 'ia a Maui  I waluhia ka maka o Pe'ape'a- maka-walu;  Kikeke ka ua ia Moemoe Kilika ke kaua a Maui i ka la  1790 I kipuka 'ahele a Maui Lilo Makali'i ka la  Lilo ke kau ia Maui; Inu i ka wailena ma ke kuna  O Kane ma laua 'o Kanaloa	1785	The bat god was Pe'ape'a That was when Maui proved sufficient to the test, When the eyes of the Eight-Eyed Bat, Pe'ape'a-maka-walu, were gouged out; Moemoe knocked out in that bout, Then Maui battled the swift passing of the sun, 1790 With a lasso Maui (made), The winter seas of the Pleiades became the sun's, The summer became Maui's; He drank the river water muddied by the fresh-water eel Of Kane and Kanaloa;

- |      |   |      |  |
|------|---|------|--|
| 1795 | <p>O kuaa i ka ho'upa'upa<br/> Puni Hawaii, puni Maui<br/> Puni Kaua'i, puni 'O'ahu<br/> I Kahalu'u ka 'ewe,<br/>           i Waikane ka piko<br/> Ha'ule i Hakipu'u i Kualoa</p> | 1795 | <p>He fought to exhaustion<br/> Around Hawaii, around Maui,<br/> Around Kaua'i, around O'ahu;<br/> At Kahalu'u the placenta,<br/>           at Waikāne the navel cord,<br/> (He) died at Hakipu'u in Kualoa,</p> |
| 1800 | <p>O Maui-a-ka-malo<br/> O ka ho'okala kupua o ka moku<br/> He moku no.</p>   | 1800 | <p>Maui-of-the-loincloth,<br/> Amazing ancestor of the district,<br/> Of the island.</p>   |

## KA WA UMIKUMAMAONO

## THE SIXTEENTH AGE

- |      |   |      |   |
|------|---|------|---|
| 1803 | Maui ke kane<br>[stars in Hercules, Sagittarius,<br>Ophiucus]   | 1803 | Hinakealohaila ka wahine  |
| 1805 | Nanamaoa<br>Kula'i<br>Nanakua'e<br>Kapawa<br>Heleipawa<br>Hulumalailena [Sirius]  | 1805 | Hinakapa'ikua<br>Hinaho'opa'ia<br>Keaukuhonua<br>Kukuluhiokalani<br>Ko'oko'okumaikalani<br>Hinamaikalani  |
| 1810 | 'Aikanaka [Milky Way]   | 1810 | Hina'aiakamalama [moon]   |
|      | Hanau Puna i mua, o Hema,<br>o Puna i muli,<br>'Aha'i Hema i ke 'ape'ula<br>o Luamahaheau<br>Hanau Kaha'i-nui-a-Hema<br>[Milky Way breaking up] |      | Born Puna (the elder), Hema,<br>Puna the youngest,<br>Hema went after the 'ape'ula red<br>taro of Luamahaheau<br>Born Great Kaha'i, son of Hema<br>[Milky Way; south] |
| 1815 | [Kaha'i-nui-a-Hema]<br>Wahieloa ke kāne [the husband]<br>Laka [Oraaka (Kapingama-<br>rangi), Pegasus]   | 1815 | Hina-ulu-ohi'a<br>Ho'olaukahili ka wahine [the wife]<br>Hikawaolena [Sirius]  |
|      | Luanu'u [zenith]<br>Kamea<br>Pohukaina  |      | Kapokulei'ula<br>Popomalie<br>Huahuakapolei   |
| 1820 | Hua [Jupiter]<br>Paunuikaikeanaina<br>Huanuiekalāla'ila'ikai<br>[Jupiter, as morning star]<br>Paunuikūakaolokea<br>Haho                         | 1820 | Hikiiluna<br>Manokalililani<br>Kapoea   |
| 1825 | Palena [border]   | 1825 | Kapuhō'okia<br>Kauwilai'anapu<br>Hikawainui [re: Chant 2: line 12]  |
|      | Hanau Hanala'anui, hanau<br>Hanala'aiki [Castor, Pollux]  |      | Born Hanala'a the older, born<br>Hanala'a the younger (of the<br>twins, i.e., Gemini)   |
|      | Hanala'aiki ke kane<br>Mauiloa [Hercules, Sagittarius,<br>Ophiucus]   |      | Kapukapu ka wahine<br>Kauhua [Jupiter]  |
| 1830 | Alau<br>Kanunokokuheli'i<br>Lonomai [Sirius]<br>Wakalana<br>'Alo<br>Kaheka  | 1830 | Moeikeana<br>Keikauhale<br>Kolu<br>Kawai<br>Pūia<br>Ma'ilou   |
| 1835 | Mapuleo<br>Paukei   | 1835 | Kama'eokalani<br>Painale'a  |

	Luakoa ke kāne [the husband] Kuhimau Ko'e		Hina'apo'apo ka wahine [wife] Kaumana Waoha'akuna
1840	Kahokuohua [Antares (?), or Jupiter]  Kaka'e Kaulahea Kahekili	1840	Hikakauwila  Kapohānaupuni Kapohauolal Hauanuihoni'ala
1845	Hanau 'o Kawaukaohela Noho Kelea iā Kalamakua  Hānau La'ielohelohe, noho iā Pi'ilani,hanau Pi'ikea,  'O Pi'ikea noho ia 'Umi, hanau 'o Kumalae-nui-'Umi Nona ka Pali haili kauwā;	1845	Born Kawauka'ohela, Kelea lived with Kalamakua [Keleanohoana'api'api] Born Lā'ielohelohe, lived with Pi'ilani, born Pi'ikea,  Pi'ikea lived with 'Umi, born Kumalae-nui-a-'Umi, His the cliff cursing kauwā outcasts;
1850	Kumalae-nui-a-Umi ke kane, 'o Kumunui puawale ka wahine  Makua ke kane, ka wohi kukahi o ka moku, Kapohelamai ka wahine, he wohi ali'i kapu, ka ho'ano,  'O 'I, ia 'I ka moku, ka haina kanaka, Ke kaulana 'aina i Pakini	1850	Kumalae-nui-a-Umi, husband, Kumunui puawale, wife;  Makua, husband, the wohi kapu chief of the district, Kapohelamai, the wife, a wohi kapu chiefess, revered;  'i, to 'i the district, the human sacrifice(s), The famous land of Pakini ,heiau (in Ka'ū),
1855	Ka 'ohi'a ko, ku ku'ina o ka moku o Hawai'i; Ia Ahu, ia Ahu-a-'I, ia Lono Ia Lono-i-ka-makahiki ho'i.	1855	The 'ohi'a kō rite of the temple, center of the island of Hawai'i; To Ahu, to Ahu-a-'I, to Lono, To Lono-i-ka-makahiki, indeed.

## Comparative Kumulipo Genealogical Lists and Generation Count:

### The Luanu'u Version in the Twelfth-Fourteenth Eras

The Kalākaua text was first translated in part by Adolf Bastian in 1881 into German, followed by Joseph Rock's translation of Bastian's work into English, then in full by Lili'uokalani (1897), into English. Martha Warren Beckwith (1950) completed another translation into translation. Johnson (1981) and Charlot (1982) are interpretive translations with alternative emphases. These present the basis of all deductive commentary during the recent twentieth century

After Kalākaua's Hale Nauā group, called the "Ball and Twine Society", copied the Moloka'i poetic version unreelied from the knotted cord (hipu'u) by chanters there in the late 19th century, and the full text of the Kalākaua version became the standard translated text, the earlier David Malo Kumulipo text, specifically restricted to genealogy lists and without poetry was archived and forgotten.

In the Malo text and later Kuluwaimaka/Kalaniana'ole version, which seems to recover the Malo and Kalakaua versions into one text, an entire sequence of the Puanue segment known as the *Luanu'u* genealogy is intact since the 1850s when it was written down at Lahainaluna Seminary. The Luanu'u genealogy is not found in the Kalākaua version [Lili'uokalani and Beckwith translations, 1897-1950].

The date on the Malo Luanu'u [Kumulipo] text is 1827, which means it was written down a year after the orthography of the Hawaiian language had been decided (1826) and four years before the Lahainaluna Seminary college formally opened (1831).

The Kuluwaimaka/Kalaniana'ole version retained the Malo text of the genealogy sections of the Ao period, and the Kalākaua text removed the Luanu'u segment of the Puanue (Opu'upu'u genealogy) before the Pola'a tsunami (line 1586).

The recitation list (helu papa) in this study will reincorporate the Luanu'u data from the Malo text and where necessary, or radically altered, the corresponding Kuluwaimaka-Kalaniana'ole list, as well.

Another generation count will then be made reordering the generation count so that the difference determines any great shift in time correspondence between the Kumulipo with (or without) the Luanu'u segment.

[\*Note: There are 41 generations missing in the Kumulipo text between Kaiōia (k) and Kalalomaiaō (k), Canto 12, lines 1466-1477].

Also, at the point at which the Kalākaua Kumulipo text ended, with Lonoikamakahiki, son of Keawe-nui-a-'Umi, in the 16th century, Malo continued, as may be expected, to recount the generations of ali'i post-Lonoikamakahiki to the time of his own generation (post-Kalaniopu'u, 18th - 19th centuries). These may be found in the Appendix [intra] as Malo continued them.

## The Luanu'u Genealogy (Puanue)

Line	1466 Kaiويا			
	1467 Kalalomaiaio [below Jupiter]	1466	Meheau	[Kumulipo text]
1466	Kaiويا	1467	Hooliu	
1467	Kahakukeleomoana [cp. Hatutahi, Canopus]	1466	Meheau	[David Malo text]
		1467	Ka'aluna	
1468	Hookaa			
1469	Moae [tradewind]	1468	Nakaka	
1470	Kapaau	1469	Nahae	
	Kaiwikoko	1470	Lana	
	Manakamoo [Milky Way?]		Kamaka	
	Kapuu		Kaneilokahale	
	Kaiwa		Kalaumaumau	
1475	Nuupele		Hakianapala	
	Kaholomoku [sail canoe]	1475	Kauakia	
	Kaluanuuokoa [zenith]		Haili	
	Manaku		Kamakamaka	
	Wahukanaka		Hooleia	
1480	Kaanuunuiikumamao		Kamoka	
	Kopili	1480	Ka'a	
	Kaehoihaikala		Nonolo	
	Kaumihau		Kulia	
	Kaolokea		Anianikalani [mirror-the-sky]	
1485	Aukuu [heron]		Laalaa	
	Keopulani	1485	Maihope	
	Kapoukiaokalani [pillar of the sky]		Kamapele	
	Kookookalani [prop the sky]		Ko'olani	
	Keki		Mumu	
1490	Oohaiakulani		Kuhela	
	Kaahinakumauna	1490	Paai	
	Lopali		Lopali	
	Kanoa [mist]		Lohana	
	Kalulumakanui		Kanae	
1495	Kahiwailalokona [Rarotonga]		Keaka	
	Kahiwakaapu	1495	Kamoeaulani	
	Kalolenanuialohai		Kapaukulani	
	Puaeahakumoana		Kaopuulani	
	Kikimakaihao		Ilikahonua	
1500	Keaupeakukoae		Kaponihaikala	
	Kaulakiaioelani	1500	Malualani	
	Kakukuinanahua [Nanahua post]		Ulapunuakele	
	Amihakalani		Kaakakailani	
	Weloka [Vero, in belt, Orion]		Hooleianoa	
1505	Mihikipua		Kapeakau [Southern Cross]	
	Lonokahokuemihaiikalani [star]	1505	Kamakanewe [Southern Cross]	
	Kahokumakaweloweloula [comet]		Kaukeaweula	
	Kalolomaiaio [Jupiter]		Kaumeheii	
	Kalalomaiaio [Jupiter]		Kupuaiekea	
			Hooliu	[End David Malo Text]

- [1510] Kalolomaiaio [revert to 1467]  
 Hakalaoa  
 Kekohaokalani  
 Pipili  
 Kaulamaokoko  
 1515 Kaulakelemoana  
 Hiikalaulau  
 Hainuawa  
 Laukohakohai  
 1519 Paialani

[Malo text diverts to another branch  
 from Paialani (k):

[Kumulipo text]:

- 1476 Paialani Kumukumukekaa  
 1477 Paikumulani Kauikaiakea

[David Malo text, continued]:

- 1478 Kumuhonualaua  
 1479 Kamoleikama  
 1480 Onipua  
 Kaukiukikaulani  
 Maiko  
 Kelekaunuiakoha  
 Kahauli  
 1485 Koiewe  
 Kapaakelono  
 Kolokoloula  
 Kalohialii  
 Mauikoi  
 1490 Kekoenuihulumaemae  
 Kekaiakeakoahulumaemae  
 Kaikikiapaananea  
 Kauamuku  
 Kahiwahewahalekohana  
 1495 Kamakanuanu  
 Kekanulau  
 Kaneneluoiawahi  
 Kaulupeakamanu  
 Hawiniwini  
 1500 Kakaileiohoaka  
 Kekahaouluokalani  
 Kahoukapuamehelani  
 Kaulaihoae  
 Hihikiaekalaniiluna  
 1505 Kakaiokukalaniiluna  
 Kuokuhulikuwa  
 Hikileleiakau  
 Kamualionuhi

- 1510 Kupuaiekea (another wife)  
 Kukulualani  
 Kamapukea  
 Kahainakua  
 Humehananapea  
 1515 Kaninika  
 Hiipoipoiia  
 Keanaialani  
 Ihupeaala  
 1519 Kumukumukekaa

[David Malo text parallels Kuluwaimaka-  
 Kalanianaole]

- 1478 Opuukahonua  
 1479 Hapuukama  
 1480 Ninio  
 Kekahoakaulaokalani  
 Kohalanikapu  
 Kohalanikapu (?)  
 Kahapoele  
 1485 Kalanikapu  
 Kaihalakau  
 Kololei  
 Kapoleiula  
 Hoakamapu  
 1490 Kaumanalani  
 Kaihokuhoku  
 Kanakaikaekalonokamaka  
 Kauna  
 Halalaikaiamahia  
 1495 Malona  
 Mapuu  
 Kanaeleolaawaia  
 Kaulaia  
 Kaleomalahea  
 1500 Kaoiliokamalama [moon appears]  
 Kahaokamakelele  
 Kahakupapalani  
 Kaulaihoani  
 Luanu'ukahiko [old zenith]  
 1505 Kuokuma  
 Kalanialiua  
 Kealalakai  
 Maimaikoloahaha

	Pupuepapaokauowali Ailimanoano		Luanuuenakilolaniekiloanailalowaia
1510	Kalaniiluna Kaluanu'uikapohuikaekēke [zenith, oracle tower]; Luanuukahunailokoihalepahuikē- kanapule [priest-drumhouse] Luanu'ukahunailokoimanakamoo [zenith-priest-in-mana] Luanuuilokoiwaieaikahoalifaula- maana [zenith-priest-in-hale-waie'a- Kahoali'i (rite)]	1510	Kahonuailalo, hanau Kaluanu'u Kanikuhekuhele  Haliilauhau  Kahakuili Kainaaha
1515	Luanuuiwahoinapahuikapea [oracle tower, drums outside] Luanuuikekainaoiakealinapapa [oracle tower, oloa rite] Kaluanuukuulalawaiakaaoa Luanuuheikuikamaloholau Luanuukuamukuawaawaekuilo- kanananuu [zenith, oracle tower]	1515	Alaihoihoiaku  Kapukuokaio  Kuhulukai Hoalaiaku Kumakalehua
1520	Kaluanuuhookaahikiilaloiwaiea [oracle tower-below-waiea] Kaluanuukapailuenohoanaikeaanua Kaluanuuhilinaikaleleikaniopuka Kaluanuulapauilaikahoaka Kaluanuuowaikukaienohoanaika- poualo	1520	Papaikahonua  Papailaninei Komohanahale  Hooneeuwai Hiiakapoukua
1525	Kaluanuunohokuonoikahuina Kaluanuuheikuikapouomanu [oracle tower-Pou-o-Manu-post] Luanuuiukupahuluanianikaalana- kuo Kaluanuukumakawaiwaikaililiki- papaunu [makaiwa images] Luanuuiuakeahukanailokoika- lananuumamao [oracle tower]	1525	Hiiakapoualo Kapoulannahua  Waipunaca  Kaokoikealookahakualaea Holanapala
1530	Luanuukuapalahoomoepuleike- ahiahi [prayer-evening] Luanuuhoalapuleikawaanakakahi- akaikaponiponi [morning prayer] Kaluanuukieeienohoanaiakahalehau Kaluanuuikeikalalau Kaluanuuikekaulanapawaikēalaula	1530	Alaaauaku  Alaauwai  Hauhaumaliemai Hikuamakoi Akakailani [clear-sky]
1535	Luanuukanekanalolohonue Kaluanuualahanaikēalomaliuka- lani [Maliu, Spica in Virgo] Luanuumakiiloheloheenohoanai- kalohaku [maki'ilohelohe rite]	1535	Haikimailēi'i Kakealamauēleka  Kaukalohalo Kaukaomea

1539 Luanuukapalakuhialaeaenohoana-  
ikeahupuua  
1540 Kaluanuukupinaienohoanaikealopali  
Kaluanuuahaolinaikawalena  
Kaluanuumouoleleaenohoanai-  
moanaliha  
Luanuukanehulikoahulihikoalua-  
haku  
Kaluanuukanehoalani  
1545 Kaluanuukuieoloonakekeilunaka-  
laninei  
Kaluanuuponiolonoenohoikeahihiwa

1539 Kuikaipuai  
1540 Lellekohanamai  
Kapauhinu  
Kaukaalei  
Maeakekoaihaua  
Hinaolomele  
1545 Neheoweowe  
Haumakaele

Na laua i hanau mai kukulu o honua

[From them born the cardinal directions]

Kukuluohonua [cardinal directions]  
Mawaenu'u [zenith divide]  
1550 Punanana [spider's web, nest]  
Ae  
Ao

Kukuluokalani [cardinal directions]  
Mawaelani  
1550 Punanailania [spider's web, sky]  
Aeae  
Aoo

Keawe  
Laaukuku  
1555 Kalewa [space]  
Hopupalali

Keaweawe  
Laaukaoko  
1555 Kalewalewalani [space]  
Kalewahoomaku

1557 Iaiala  
1557 Iaiala

1557 Hakuhaui, na laua mai o Hui  
1557 Kahonuanei, na laua mai

[Note: The line [1557] from Iaiala (k) and  
Hakuhaui (w) [Kuluwaimaka-  
Kalaniana'ole text, to which the Malo  
text will return, but generations  
continuing in Malo's text at this  
point are from Kahonuanei (w)  
[1557].

1558 Auwaei  
Auwaeleo  
1600 Auwaeku  
Aku  
Pipilipili  
Aiai  
Hookukapakapakaua  
1605 Kumuhonua [earth foundation]

Auwaeleo  
Auwaepane  
1600 Auwaenoho  
Anoho  
Momoemomoe  
Kikoikikoi  
Kokohopuu  
1605 Kamaiele

1606	Kamoleokahonua Keaaokahonua Kaweluokahonua Kahihiokahonua	1606	Panee Kokolo Keapo Kapea [Southern Cross]
1610	Kailiokahonua Kalalaokahonua Kalauokahonua Kamuokahonua	1610	Nakaka Kalanimalu Maulukia Keoka
1615	Liaiokahonua Kekumuokahonua	1615	Waiialiimaomao Kuikaukala
1620	Kumuhonua Alealepokii Nauelepokii Pupuliliiana Uihele	1620	Laloohilukekimoku Puea Aala Kapumaola Makuawale
1625	Kaneluhonua Kahaumaioia Kahaumaalamea Kanuuneeneeaku Kanuuneeneemai	1625	Keokalele Kulolo Nohonoho Poele Pokano
1629	Papahimaioeokekumu Neeneeakuauokalau Luanuukahunaimanakamoo	1629	Kahihikaunoa Wawaehaaipo Mahai (w)
[*Note: Malo text differs from Kulu-waimaka-Kalaniana'ole text at this point by one generation; 817 generations; Malo text, 817 generations to Mahai (w)].			
1630	Kaluanuukealahoaimuakeahukana Luanuuhookalakupuailalowaia Kaluanuukuhialaeimuahonuala- ikalanakuikawaihonaokawaa Kaluanuuhookuahikiilunailalo- ilokaiwahoimanakamoo Kahianuumokoikualaaaukawaome- hawaii	1630	Kawaohoomakua Haukepue kana wahine Kaupaohookaa kana wahine  Mahikakana  Ahakakai
1635	Kaluanuuohoehaoimuahonua'ula Kaluanuukuamukuawaawaeku- ilokokalananu Kaluanuunohonionioikapoukua- okapouomanu	1635	Kuhananui, kana wahine Kualanakila kana wahine  Lamalamakaio kana wahine
1638	Kaluanuumokuhaliikaneikalau	1638	Hikimalino, kana wahine

- Na laua mai o Kukuihaa ke kahuna  
lapaau  
1640 Hanau mai Kekukuialii i kanu ia i  
ke alo o Papa  
Hanau mai ka la o Kapakukui lilo  
i kai, kiai kukui i uka  
Hanau hou mai Ka la o kanaka  
huakukui lilo i kai, kiai  
kukui i ka uka,  
Hanau hou mai Keki, hanau hou  
mai ka lama
- Hanau Haapuaiana,  
1645 Hanau Ahulikaaala, he wahine oia  
ka i moe aku ia Kane  
  
'O Hinamaileli('i) moe ia Kanaloa  
  
Hanau Wekewekewaleaku  
Hanau Wekewekewalemai  
Hanau Unahikawaleaku  
1650 Hanau Unahikawalemai  
Hanau Holoholo  
Hanau Hooliaponalo,  
Na wahine nuku o ka Po  
Hanau Kalelei ka wahine weawea  
1655 Hanau Mahikianaloa  
Mahikianaloa noho ia  
Keopumauu  
Kamauumakolukolu  
Welcapukapuka  
  
1660 Hanau Kahoouaha, he wahine ia  
'O Kumalaloa ke kane  
Hanau ka la kaolali lilo i kai  
Kiai ka mauu kuolohia i uka  
Hanau ka la o kapakii i kai  
  
1665 Kiai ka mauu maniania i uka  
  
Hanau ka la o Kalipepeiao i kai  
Kiai ka pu o keaalii iuka  
Hanau mai ko lakou hope he  
wahine, o Hai kona inoa,  
  
O ia ka i moe aku ia Ole, na laua  
mai 'o Pupue  
1670 O ia ke kanaka o kaili mai 'o Haloa,  
ke kana o kuamoo o Haloa.
- From them Kukuiha'a the priest of  
healing  
1640 Born Kekukui'ali planted on the  
front of Papa,  
Born the sun of Kapakukui into the sea,  
the kukui tree guards upland,  
Born the day of mankind the kukui seed  
into the sea, the kukui guards upland,  
  
Born the Keki, born the lama tree...  
  
Born Ha'apuaiana,  
1645 Born Ahulika'a'ala, she was a the  
wife of Kane,  
  
Hinamaileli'i the wife of Kanaloa;  
  
Born Wekewekewaleaku  
Born Wekewekewalemai  
Born Unahikawaleaku  
1650 Born Unahikawalemai  
Born Holoholo  
Born Ho'oholiaponalo,  
Women (at) portals of the night,  
Born Kalele'oi, the temptress,  
1655 Born Mahikianaloa  
Okukeopu kana wahine  
Kamakuloa  
Welchainaka  
Hooikala  
  
1660 Born Kaho'ouaha, the wife  
Kumalaloa the husband,  
Born the sun's brightness into the sea,  
The sedge grass guards upland,  
Born the day on the border of the sea,  
  
1665 The smooth-stemmed grass guards  
upland,  
Born the day of seaweed by the sea,  
The stem of the a'ali'i plant guards  
upland,  
Born their last child, her name was Hai.  
  
She slept with Ole, their child was Pupue,  
1670 The person taken as Haloa's personal  
attendant [iwi kuamo'o].

1557	Iaiala noho ia Hui Kamehaikea	1557	Hakuhai ka wahine Hoomalolo Laumekiaula
1560	Kamehaikupua Haikupua Kualoiau	1560	Hinalekai Alanamoana Loiaka
1565	Kaalaakekaa Lalowaiiāala Poelua Huluhulumania Kamakouaala Kekupaliiaala Iliāalaikawaakele	1565	Kupioia Nuukahili Naenaēala Waikuaaala Kalauawaaala Aiwohikaala Nilehihiikaaiwalau
1570	Ha'i ka moku puka hanau 'o Ulunui ka wahine  Kiipua Lohia Nakahunaokapo Nakahunaokeao		The section recounts the birth of Ulunui, the wife  Kiihaapoia Lonae Kapoeleele Keaomailani
1575	Kahakui Kahakumaanuu Lailaikanalu Mauukaakanalu Pokaakaanalu	1575	Kahakulei Uauanuu Lailaikahonua Mauukaahonua Kaakaailani
1580	Kekiihiahi Ikuaiakaukaanei Waluwaluhiaikuamohole  O Nikuakuilunakalani,  O Hemanonikukaaalaneielono	1580	Kahuaimaalea Pukaaala Kaaalakekaaaniekamakani  He kanewahineihoniakauka'a  Nalononakaukaniikahooipo
1585	O Iakaniakeuiakanimai  O Halamau O Halaaha O Lauhalapuawa	1585	Opuhekanakaoleloloalohaiakalakinaula  O Halapia O Halaoki ka wahine O Lauhalalilii
1590	Hanau Mapunaiaala he wahine 'O Kuheleimoana ke kane, Na laua mai	1590	Born Mapunai'a'ala the wife Kuheleimoana the husband, By them were
1592	O Konohiki [End Malo Text]		Konohiki
1592	[O Kailikana (k) Cp. Kuluwaimaka- Kalanianaole text].		[Kailikana (k)

Cantos 12, 13, and 14: Adjusting The Ancestry of Sky Father (Wakea) and Earth Mother (Papa).

1. Canto 12: The Opu'upu'u Lineage to Wakea.

The Pola'a tsunami destroyed the line from Ali'ihonupu'u [1389], or those who descended from Kupolo-li'ili-ali'i-mua-o-lo'i-po. However, 197 generations of Ali'ihonupu'u's descendants survived Ali'ihonupu'u until the Pola'a tsunami inundation, when it appears they also succumbed to defeat in a battle apparently raging when the wave came in.

The descendants of La'ila'i continued, however, after the end of the titled Kupolo-li'ili-ali'i-mua-o-lo'ipo chiefs on the line down from the brother of Ali'ihonupu'u, Opu'upu'u [1389]

Based on the lineal descent of generations between 'Opu'upu'u in the Eleventh Age and the recitation from 'Opu'upu'u in the Twelfth to Wakea, the recitation in Canto 12 places Wakea [1573] 184 generations after Opu'upu'u.

The descent from Opu'upu'u to Kahikoluamea [1572], father of Wakea, establishes this lineage as the paternal line from Kumuhonua [1553]

2. Canto 13: The Paliku Lineage to Haumea.

The Paliku [1553] line of descent comes down to Haumea [1580] on her maternal side (Kupulanakehau [1579], or 191 generations from 'Opu'upu'u [1389].

It establishes Haumea's descent from Ohomaila [1553], a brother of Paliku. Paliku and Ohomaila have another brother, Li'aikuhonua, whose descent is more fully developed down to Wakea in the next age.

3. Canto 14: The Li'aikuhonua Lineage to Wakea.

The Li'aikuhonua lineage to Wakea [1599] is the maternal side of Wakea's descent to Wake'a's mother Kupulanakehau [1598].

[\*Note: In the recitation of the Twelfth Age, the author has adjusted the generations to reflect the lineal descent by generation equivalents to the preceding two ages, as though continued from the Opu'upu'u line].

A discrepancy appears between the Li'aikuhonua and the Opu'upu'u in that the parentage of Wakea shifts from Kumuhonua [1553 Canto 12] to Li'aikuhonua [1571 Canto 13].

The discrepancy between the paternal [Opu'upu'u] line to Kahikoluamea, [1572], father of Wakea, and maternal [Li'aikuhonua] line to Kupulanakehau [1598] is sixteen generations. It appears to be a matter of identity in the Paliku generations which lead down, on the one hand, to Haumea (Papa), and on the other to Wakea.

a) [Canto 12 Opu'upu'u]

1552	Palipalihia	Paliomahilo
1553	Hanau Paliku	Paliha'i
1553	Hanau 'Ololo	Ololonu'u
1553	Hanau 'Ololohonua	Olalohana
1553	Hanau Kumuhonua	Haloiho
1555	Kapili	Holehana
	o	
1571	Welaahilaninui	Owe
1572	Kahikoluamea	Kupulanakehau
1573	Wakea	Haumea
1574	Ho'ohokukalani	Haloa

b) Canto 13 (Paliku)

1553	Paliku	Paliha'i
1554	Palika'a	Palihiolo
	o	
1569	Papa'iao	Mauluikonanui
1570	Papahe'enalu	Hanauna
	Hanau a i loko	
1571	o Pu'ukahonualani	
	o Li'aikuhonua	
	o kona muli mai	
1571	Ohomaila	Honuakau
1572	Kehaukea	Kualeikahu
1573	Mohala	Lu'ukaualani
	o	
1579	Kahakauakoko	Kukalani'ehu
1580	Haumea (Papa)	Kanaloa

c) Canto 14 (Li'aikuhonua)

1571	Li'aikuhonua	Keakahulihonua
1572	Laka	Kapapaialaka
1573	Kamo'oalewa	Lepu'ukahonua
	o	
1597	Lukahakona	Niaulani
1598	Kupulanakehau	Kahikoluamea
	[Kulani'ehu	Kahakauakoko]
1599	Paupaniakea (Wakea)	

Given the above the discrepancy existing strictly on the Paliku recitations for Haumea (Ohomaila) and Wakea (Li'aikuhonua) is that Kupulanakehau (mother of Wakea) and her brother, Kulani'ehu (father of Haumea) are nineteen generations apart.

The discrepancies are greater within the Paliku line between Wakea and Haumea's parents' generation, in which both were brother and sister, than that existing between the Opu'upu'u [Canto 11] and the Li'aikuhonua [Canto 14].

Are these discrepancies troublesome? They are, if we believe them to be human ancestors. They may not be if we continue to apply regard for them as calendrical constructs whereby the kahuna priesthood of former ages were trying to structure time in different sequences in an attempt to intercalate generations to achieve a kind of correction.

For example, the sequence in Canto 12 is probably a notation to deal with a fractional remainder that was difficult to account in the Opu'upu'u line down to Wakea [1566-1570], amounting to the number 10.

The numbers go down and across, unlike the Hekauno formula, where the numbers were positioned as in a ratio, or parallel series, for purposes of keeping a tabulation of one set in relation to another set. In Canto 12. The odd numbers are on the male side of the generations; the even ones are on the opposite, female, side.

Heaven may have the answer to this one, because the priests certainly would have known that Wakea could not possibly marry a person who was sixteen to nineteen generations removed from him, but how about the compression of generations into sidereal lunations or lunar years? If so, the numbers sixteen and nineteen enter into reformulations of time:

16 sidereal months = 432 days  
19 sidereal months = 531 days

16 synodic months = 472 days  
19 synodic months = 531 days  
20 synodic months = 551 days  
21 synodic months = 580 days  
21 synodic + 4 days = 584 days  
584 days = 1 Venus synodic cycle

16 lunar years = 5,644 days  
16 tropic years = 5844 days  
10 Venus cycles = 5840 days  
19 lunar years = 6726 days  
19 tropic years = 6782 days  
17 Jupiter cycles = 6782 days

Are the planets truly part of the evolving theme of cosmic time?

c). Canto 12: Opu'upu'u.

[\*Note: In the following alignment, the .5 = the female side, which is either south or west in the Hawaiian compass of sacred space, particularly in the temple (heiau). For that reason, the sequence here reverts to the inside of the temple with instructions for observation (kilo) given in the Ali'i sequence [1375-1435] of Canto 11. The rationale is that the sequence also involved generations descending from Opu'upu'u as well as Ali'ihonupu'u.

1375 'A Sirius  
 1375.5 Li'i Pleiades  
 Sirius is two hours behind the Pleiades.

1376 Ali'i Sirius, Pleiades  
 1376.5 La'a Pegasus  
 Pegasus is three hours ahead of Pleiades.

1377 Ali'ila'a Sirius, etc.  
 Sirius and Pleiades (east); Pegasus (west).

o  
 1389 Ali'ihonupu'u  
 1389 Opu'upu'u  
 o  
 1425 Ali'ikilohoku watch stars  
 1425.5 Kanulau plant leaf  
 1426 Ali'ikilomalama watch moon  
 1427 Ali'ikilomakali'i watch Pleiades  
 1428 Ali'ikilokau watch midnight  
 1428 Ali'ikiloho'oilo observe winter  
 1431 Ali'ikilonamalama watch months  
 1433 Ali'ikilomo'o watch Milky Way  
 1434 Ali'ikilokua watch back  
 1434.5 Kilohi gaze  
 1435 Ali'ikiloalo watch front  
 1436 Ali'ikilohope watch behind  
 1436.5 A-'a'a Sirius  
 1437. Ali'ikilomua watch forward  
 1438 Mua front (east)  
 1438.5 Wanaku sun (rising)

1389 Opu'upu'u  
 1392 Leleiao Jupiter  
 1394.5 Kilokau watch midnight  
 1400.5 Makelewa'a navigate canoe  
 1411 A-'a'a Sirius  
 1412 Piowai zenith  
 1412.5 'A'amo'a Sirius, Southern Cross  
 1413 Nananu'u mid-level oracle tower  
 watch zenith  
 1415.5 Hinaho'oka'ea moon  
 1421 Kalolomauna zenith (mountain)  
 1421.5 Kalolomoana zenith (ocean)  
 1422 Kalolopiko zenith (navel center)  
 1422.5 Kalolo'a'a Sirius, zenith  
 1423 'A'a Sirius  
 1438.5 Lenawale Sirius  
 1439 Paepaemalama moon  
 1440 Lanalana horizon level of the  
 heiau oracle tower  
 1453.5 Kalimalimalimalau 5 x 5 x 5 x 400  
 125 x 400 = 50,000  
 1458 'O'ili Southern Cross  
 1460 Moku Milky Way (?)

1467	Kalalomaiaio	Jupiter (below)	4 sidereal lunations	=	108 days
1468.5	Kulukau	17th moon, midnight	76	-	2052
1470	Pipili	stars in Scorpius, or Gemini	<u>51</u>	-	<u>1394</u>
1471	Piko	navel, center	131 sidereal lunations	=	3537 days
1472	Ka'ulakelemoana	navigate-canoe			
1481	Kauhoaka	2nd moon (waxing)			
1482.5	Mahinakea	moon			
1484	Kuaiwalono	maka'iwa images			
1488	Kiamanu	'bird-pillar' image			
1491	Naholokauihiku	Big Dipper	80 sidereal lunations	=	2160 days
1495	Kukauhalela'a	sacred house	<u>51</u>	=	<u>1394</u>
1499	Kukamoi	mo'i image	131 sidereal lunations = 17 +		3554 days
1500	Kukahaleluakini	Ku-heiau			
1505	Kanikania'ula	star (?)			
1506	Keleikanu'ulani	navigate zenith			
1508	Keleikapouli	eclipse (?)			
1509.5	Ku'uku'u	spider			
1516	Naukelemoana	navigate-ocean			
1518.5	Po'iao	Jupiter-night			
1519	Kuhimakani	direct-wind			
1520	Lono'a'aka'ika'i	Sirius-lead			
1525	Kiloahipe'a	watch Southern Cross			
1526	Na Kao	Belt of Orion (equator)			
1532	Ho'olepau	10th moon night			
1533	Nu'ualani	zenith (oracle tower)			
1541.5	Kalolo	zenith			
1542.5	O'ililolo	zenith, Southern Cross			
1543	Pi'oalani	zenith			

In Canto 12 the position of Jupiter is important because it is present in the sequence of surviving generations from both lines, Opu'upu'u and Ali'ihonupu'u. Another difference is that navigation at sea is more actively mentioned in the naming of generations.

Canto 12 has posted Jupiter's ('Iao) place in the Opu'upu'u lineage at 4 generations [1392] from Opu'upu'u (1389); 76 generations [1467], suggesting a phase of the planet in a cycle, and 51 generations [1518] in the next phase, totalling 131 generations assigned to Jupiter.

If these generations are sidereal lunations, a consistent analog, then the corresponding numbers in that analog are:

The 3,537 total number of days reflects the 1/3 day fractional remainder added to the actual sum:

80 sidereal lunations	=	2160 days
<u>51</u>	=	<u>1394</u>
131 sidereal lunations = 17 +		3554 days

The number of 2160 days in 80 generations (4 + 76 sidereal lunations) is half the sidereal calendar round of 4320, but with respect to Jupiter, this may not be so important as 1392, the numbered generation assigned to Jupiter in the sequence.

The number 1392 listing Jupiter in that generation from Opu'upu'u [1389] is equal to 48 synodic lunations in 4 lunar years. The synodic cycle of the moon will require two more months to equal four tropic years of 1461 days and a Sothic (Sirius) cycle of 1460 days.

The number 1392 is also eight Jupiter synodic cycles, rounding the actual number [398.9] to 399 days for convenience' sake, in 4 lunar years. The ancient Hawaiians probably rounded that figure out to 400 days in the eight-lunar year Jupiter synodic cycle.

The 3537 days in the total number (131) of sidereal lunations is equally significant, since they are short by only three days of the 3540 days in 10 lunar years.

Finally, then, in the total number of generations to survive from the the time of Ali'ihonupu'u and Opu'upu'u to that of Pola'a, there are 196 to 197 generations.

Applying the sidereal lunation formula to lunar years, then, in 196 sidereal months are 5292 days, or 14 synodic cycles of the planet Saturn; 197 sidereal months are 5319 days, or 9 days more than 5310 days, equal to 15 lunar years.

The correlation with synodic lunations as an analog of 197 to 198 generations after Pola'a [1585-86] into Po'elua yields an interesting result.

A synodic notation of 197 to 198 lunations are 5800 and 5841 days, respectively, which are nearly equal to 10 Venus synodic cycles in 5840 days and 4 Sothic cycles of 5844 days, or 16 tropic years. As Sothis was the star Sirius in the Egyptian calendar where the Sothic cycle originated, it is a factor as well in this canto that Sirius is prominent.

## Canto 14: Timing the Rotation of the Sky.

Canto 14 may be set apart, as the Kumulipo poets have apparently done, in order to take oratory out from the sacred house into the open air and under the real sky with a clear view to the horizon circle.

For convenience' sake, although the poetry does not mention them, the disk of the horizon circle is quartered by the equator to the four points of the compass, called the *kukulu* 'pillars', east (*hikina*) west (*komohana*), north (*'akau*) and south (*hema*).

These are made by the equator (*ka piko o ka honua*) at the 'navel center' (piko) of the earth (honua) at latitude (zero degrees).

The equator is the position of Papa-hanau-moku, or Haumea, Earth Mother, the wife of Wakea (Sky Father).

He is the first circle drawn into the system of coordinates until the stars are in their fixed (pa'a) tracks, *pa'a na hoku kau i ka lewa*.

1604 O Wakea no ia, o Lehu'ula, o  
Makulukulukalani,

1604 Wakea celestial equator  
noon (on meridian)

Wakea is the sky during the day. The time between its rising and setting on the equator (*ka piko o ka honua*) with the midpoing of time at noon (*awakea*) finds the middle of your own local latitude and longitude, the 'navel center' (piko) of daytime.

Noon at the latitude of the equator and your latitude is a midpoint connected to another midpoint on the same longitude (north to south). This is an extension of

points in a line connecting your meridian to the poles, an extension of the 'ridgepole' of your house (*kaupoku o ka hale*).

From that navel center on your latitude, or at the equator, the diameters drawn across the plane of your horizon circle (*kumuhonua, kukulu o ka honua*) will cut the compass circle into four parts, the hemispheres north and south of the equator, and the hemispheres east and west of your meridian.

This is basic geometry we all learn in geography class in the middle grades, but unless one has access to a sundial or has watched shadows created by a pole, like a flagpole standing without a flag, as ancient Hawaiians watched the images and posts in the heiau casting several shadows across the sacred ground with the compass of the heiau, the expected reaction to all this is, so what?

The same sky, the same stars, the same information were detailed in the genealogies. No, they were not. They were names of ancestors that you memorized in the classes taught by the men, only, in their eating house, the hale mua, and only men went to worship in the heiau during the 56 tabu nights set into eight months of the year, the other four being free (noa) of the tabu and required attendance at the heiau. (Women, bless their freedom, were left at home).

It would make a difference if we had no pocket watches, no clocks on the wall, no help from Babylonia about base 60 and hours, minutes, and seconds, no sextants, no octants, no gadgets, no planetarium, no observatories, no computers. The only memory bank that matters is the one inside your skull, and the only teacher is eyesight and hearing.

It makes a difference if you had to go out in the morning on the vernal equinox (March 20-22) to the ocean with a

clear view to the eastern horizon before the sun came out. You would have in your hand nothing else but a stick which you braced or planted in the ground waiting for sunrise.

Or, you would post it into position where you would want to observe it again at another time, at the next equinox in the fall when you could watch the sun create the longest shadow of the day on that morning.

The sun would rise, and the *azimuth* position or 'pit' (lua) from which it rose, east of your stance, would be the midpoint of the horizon from north to south. It would cut the length of the sun's track, or *ecliptic* called the 'spider's path' (*ke ala a ke ku'uku'u*) on your horizon circle in half, but the sides (radii) on either side of your local latitude would not be equal. That would only happen if you were on the equator.

Nevertheless, that moment in time would create some idea about where the sun would be seen from your latitude. On the equinoxes, the sun would appear to rise due east and set due west of your position. You would pay attention to the more ancient practice of telling time by sundials and finding north or south by the shadow cast at noon (*awakea*).

The shadow falls westward of the pole in the morning, then shortens toward noon, but the direction of the shortening will either be north or south of the pole depending on your latitude. At the latitude of Hawaii, at the vernal equinox, the sun will fall west of the pole then shorten steadily until it pointed to north at noon. Then it would shift after the sun went overhead and lengthen toward the eastern side of the pole to evening. Then the shadow would be so long it would go into infinity.

After the sun is in the zenith of any latitude in the Hawaiian islands between Kalae, Hawai'i to Nihoa, from latitude 19 degrees north to 23.5 degrees north, the

shadow will then shift to the southern side of the pole and point due south at noon. The sun is now north of your latitude, so the shadow goes south.

The sun is in the zenith over the Hawaiian chain of islands between May and July. This is a most interesting time for people who live in the tropics, because the sun will cast no shadow when it is in the zenith overhead at noon at local latitude. The Hawaiian name for this event is *kau ka lā i ka lolo*, the sun 'stands over the brain', or 'the sun is in the zenith (lolo)'. The point overhead is called *nu'u* (zenith) at the highest point where the two hemispheres meet at the meridian. The point where they meet is called *halawai*, to 'meet', or *hui* 'to join'.

This is also linked to the vertical center of your head where the sides of the skull meet (fontanel), at the *manawa*, or soft spot 'center' of your head and 'time' (*manawa*). When you take the horizontal position, then your center is *pū*, 'ōpū, at the navel (*piko*).

All of this culture was already in the heads of the young men who went to worship during the sacred tabu days of the month, called *kauila* days, *na la kapu kauila*, named for the sacred wand of the kahuna, the *kauila* stick. The designation of Wakea as the celestial equator, or noon, as Sky Father, is not alone in the opening lines of the recitation. He has two brothers, Lehu'ula and Makulukulu, followed by stars and the Milky Way.

Saturn and the Milky Way introduce two other circuits and cycles of time into the night sky, and they will be learned along with the stars in their rising, setting, and zenith positions.

The complete matrix follows:

1604	Wakea	celestial equator
	Lehu'ula (Lehua'ula)	Antares
	Makulukulu	Saturn

Antares in Scorpius below the latitude of Tahiti is still within the tropic zone. The planet Saturn, introduces yet another circuit in the sky which tips back and forth over the ecliptic (*ke ala a ke ku'uku'u*), and the ecliptic is tilted away from the celestial equator by five degrees. Then there is the added feature of retrograde ('olo'olo) motion, a sawing back and forth, which ancient Hawaiians compared to the flight of a dragonfly (*pinao*), a noble insect with an amazing set of wings with which it stops in mid-flight, hovering or backing up, levitating upward, downward, and zooming off again forward.

The presence of Wakea's brother as Antares may set the clock to another time when Antares is rising and setting or in the zenith at night, not just on the horizon.

The whole constellation of Scorpius is declining from the meridian in the hour or two after midnight of the summer solstice (June 20-22), or, it is in the hour approaching the meridian at midnight about May 20-21, about a month before summer solstice. This would probably explain why Kaua'i's calendar names the month of May (*Welehu*) for Antares.

This factor, however, creates some confusion in Hawaiian calendars on several islands which do not agree with one another. Antares names the sidereal month (*Welehu*), variously:

Kaua'i	May
O'ahu	September
Hawai'i	November
Moloka'i	December

As much as this creates confusion it also explains it away. In May Antares transits the meridian at midnight [e.g., Kaua'i, *Welehu*].

In September Antares is declining from the meridian about the evening of the austral equinox (September 20-22) [e.g., *Welehu*, O'ahu].

Scorpius sets in the evening about November 12th [e.g. *Welehu*, Hawai'i].

For eight months, beginning about August and lasting into March, Antares is not in the night sky. For four months Antares is in the night sky with three other constellations before they disappear, one from another in consecutive order throughout the four-month period. This four-month visible-at-night and eight months not-visible-at-night fluctuation is pertinent to constellations in the tropics:

About 6:00 a.m. on the morning of winter solstice (December 20-22) Scorpius rises in the east just before the sun only to then vanish into daylight. That may explain *Welehu* on Moloka'i as December.

For navigators between Tahiti and Hawaii, this particular observation of Antares at winter solstice would be important, as the azimuth check would then be made eastward on the compass, as it would also be made westward in the first quarter of the November moon.

The problem with this scenario is that it is adjusted to this century A.D. and not to centuries when Polynesians migrated north to Hawaii from Tahiti, about the fourth century A.D. Until then, their navigation compass below the equator was set eastward and to the pole south, when Antares was rising at another azimuth closer to the latitude of Tahiti than where it is seen now.

If this is the scenario laid down in the coordinates [1604] of Wakea (celestial equator), Lehu'ula (Antares in Scorpio), and Makulukulu (Saturn), the association probably would have been in place about 350 A.D. when Polynesians began to settle in Hawaii. That date appears to fit the facts presented in the chant thus far.

The coordinates are productive with respect to the latitude [21 degrees 19 minutes north] and longitude [157 degrees 40 minutes west] of Kumukahi (Hawai'i), the easternmost point of the Hawaiian

chain of islands (acc. Redshift 2, 1997). The time was set to 6:00 a.m., March 22nd, 350 A.D., showing Antares setting in the west before daylight shuts out the view. The time was set again to 6:00 p.m., to setting stars in the evening. Saturn was then above the horizon in the vicinity of Aries, setting before Perseus and the Pleiades setting to the northwest.

That is presented in the next few lines of Canto 14 below, however, the alignment dates in the following list are to the present day.

		1621	Keoea	Vega	[6:00 a.m. rising, December 12] [6:00 p.m. setting, January 14] [6:00 a.m. on meridian, March 21] [6:00 p.m. meridian, September 21]
		1622	Ka'aka'a	Altair (Aquila)	[6:00 a.m. rising, January 17] [6:00 p.m. setting, January 19]
		11624	Kalalani	Pleiades + Perseus	[3:00 a.m. setting, January 21] [6:00 a.m. rising, May 13] [6:00 p.m. setting, May 20] [6:00 p.m. rising, November 20]
1604	Wakea	celestial equator			
	Makulukulu	Saturn			
	Lehu'ula	Antares (Scorpius)			
	October 29	setting, 6:00 p.m.			
	Summer solstice	meridian transit			
	November 12	setting, 6:00 p.m.			
	December 12	rising, 6:00 a.m.			
			1626	Hua	Jupiter
			1626	'Aua	Betelgeuse (Orion)
				[4:00 a.m. setting, January 22]	
				[6:00 a.m. rising, June 21]	
				[6:00 p.m. setting, June 21]	
				[meridian, December 21]	
1605	Kanaka'ope'openui	Perseus	1627	Lena	Sirius (Canis Major)
1606	Huihuikau io Makali'i	Pleiades		[4:00 a.m. setting, January 22]	
1605	Kanaka 'ope'ope nui	Perseus	1628	Makeaue'a	Southern Cross
1606	Huihui kau io Makali'i	Pleiades		[4:00 a.m. meridian, January 22]	
		[Rising, 6:00 p.m. November 2]			
		[Zenith, midnight, November 22]	1630	'A'a	Sirius
		[Setting, 6:00 a.m., November 26]		[4:00 a.m. setting, January 25]	
1608	Ka'awela	Jupiter (or Venus)	1631	Kaulualena	Gemini + Sirius
				[4:00 a.m. setting, January 22]	
1614	Kaha'ilono	Sirius		[6:00 a.m. setting (Gemini), Jan. 22]	
	[Rising, two hours after Pleiades,			[6:00 p.m. rising (Gemini), July 22]	
	6:00 p.m. January 11]			[6:00 a.m. rising (Gemini), July 9]	
	[Near zenith, midnight, December 21]				
	[6:00 a.m. setting, June 21 solstice]		1635	Mali'u	Spica (Virgo)
1616	Keho'oca	Vega (Lyra)		[6:00 a.m., past meridian, Jan. 28]	
	[6:00 p.m. January 11, setting]			[6:00 p.m. rising, April 20]	
	[On meridian, midnight, summer			[6:00 a.m. rising, October 20]	
	solstice.			[6:00 p.m. setting, October 3]	
1618	Mananalo	Venus (disappearing)		[past meridian, midnight, April 21]	
1619	Wailea	Jupiter, morning star	1637	Ikiiki	Regulus (Leo)
1620	Auhaku	Canopus		[6:00 a.m. setting, January 28]	
	[6:00 p.m. rising, February 7]			[6:00 a.m. rising, August 20]	
	[6:00 p.m. meridian March 21]			[6:00 p.m. rising, Feb. 20.]	
	[midnight, meridian, June 21 solstice]			[6:00 p.m. setting, August 24]	

1637	Welo	Belt of Orion (equator) [6:00 a.m. rising, June 21 solstice] [6:00 a.m. setting, December 10] [6:00 p.m. setting, June 11]		a) Post-contact Period
			1834 A.D.	Kamehameha IV
			1813	Kamehameha III
			1797	Kamehameha II
1638	Ka'aona	March (Hawai'i) April (O'ahu)	1781	Death of Kalaniopu'u
			1782	Battle of Mokuohai, Kona
			1778-1779	Captain James Cook
1642	Hoku'ula	Antares [6:00 a.m. rising, December 12]		b) Reconstructed period
1643	Ka'awela	Venus or Jupiter	1758-1819	Kamehameha I
			1731-1733	Keouakupuapaikalaninui
1644	Melemele	Belt of Orion [6:00 a.m. setting, December 12]	1704-1708	Ke'eaumoku
1645	Makali'i	Pleiades [5:00 a.m. setting, December 12]	1679-1683	Keaweikekahiali'iokamoku
			1652-1658	Keakealanikane
			1625-1633	[intervening line]
			1598-1608	'Iwikauikaua
1646	Humu	Altair (Aquila) [6:00 a.m. rising, January 21]	1571-1583	Makakauali'i
			1544-1558	Kukailani
			1517-1533	Keali'iokaloa
1647	Moha'i	Milky Way [northeast around horizon to the southwest]	1490-1508	'Umi-a-Liloa
			1463-1492	Liloa
1648	Konamaukuku	polar star in the south, probably Agena [6:00 a.m. zenith, January 21]		[*Note: If Kamehameha's date of birth of 1738 rather than 1758 A.D. is acceptable, then twenty years may reduce Liloa's generation to 1451-1453 A.D.]
1652	Na Hiku	Big Dipper		
1652	Hiku-kahi	Dubhe		
1653	Hiku-alua	Merak		
1653	Hiku-kolu	Phecda	1436-1433	Kihanuululumoku
1654	Hiku-aha	Megrez	1409-1408	Kauholanuimahu
1654	Hiku-lima	Alioth	1382-1383	Kahoukapu
1655	Hiku-ono	Mirak	1355-1358	Kuaiwa
1655	Hiku-pau	Alkaid	[1350]	End of voyages between Tahiti and Hawaii
1656	Mahapili	Gemini [6:00 a.m. declining from meridian, January 21]	1326-1333	Kalaunuiohua
			1301-1308	Kahaimoelea
			1279-1283	Kalapana
			1247-1258	Kanipahu
			1220-1208	Kukohou
			1193-1183	Ole
			1166-1159	Koa
			1139-1133	Pili
			1112-1108	La'au
			1085-1083	Lanakawai
			1058-1058	Hanala'anui
			1031-1033	Palena
			1004-1008	Haho

The accepted date for the birth of Kamehameha I is about 1758 A.D., although genealogies have recorded an earlier date, about 1738 A.D.

The sequence below is the accepted 25 years per generation count and the Hekaunano formula (27 years to a generation) to coincide with sidereal-based recitation of Kumulipo generations for the sake of comparison.

967-983	Paumakua
940-958	Huanuikalalailai
913-933	Pau
886-908	Hua
859-883	Pohukaina
831-858	Kamea
805-833	Luanu'u II
778-808	Laka
751-783	Wahieloa
724-758	Kaha'i
697-733	Hema
670-708	'Aikanaka
643-683	Hulumanailani
616-658	Heleipawa
589-633	Kapawa
562-608	Nanakaoko
535-583	Nanakulei
508-558	Nanamaoa
481-533	Mauiakalana
454-508	Akalana
427-483	Wawena
400-458	Konohiki
373-433	Kuheleimoana
346-408	Waikulani
319-383	Nanailani
292-358	Ulu
265-333	Ki'i II
238-308	Luanu'u I
211-283	Lukahakona
184-258	Kahiko
157-233	Manaku
130-208	Pupue
103-183	Ole
76-158	Kio
49-133	Wailoa
22-108	Nanakehili

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5 B.C.- 83A.D	Hinanalalo
32 B.C.- 58 A.D.	Haloa
59 B.C.- 33A.D	Wakea [Ho'ohokukalani]
86 B.C.- 8 A.D	Kahikoluamea
	[etc.]

Wakea lived about mid-century before the birth of Christ, when settlement of Hawaii by Tahitian migrants had not yet truly begun, not until the third to fourth centuries A.D. Marquesans came to Hawaii earlier than Tahitians, but no carbon date has yet confirmed settlement dates, although they are believe to have settled in the northern group (Kauai, Ni'ihau).

The alignment of stars in the vernal equinox or in the tropics will tip in and out of their azimuth positions on cue in cycles greater than sidereal lunations, or centuries, or millenia, but the gears will recycle according to precession and click back to zero position again 26,000 years later

The kahuna pacing his students through this chant is aware that his lifetime is shorter than the information contained in fourteen wā. In Canto 14 he sets down the compass code so that those trying to learn must pay attention to details most of us can only listen to for a few minutes.

Only men who know the horizon cross the desert and the ocean without fear, their eyes focused on stars as ancestors whose favors of protection and encouragement gleam down from above to light the way for us to safely go.

### Summary and Theory

The analogy of one turn of the night (Pō) and the Day (Ao), of seven wā of the night and nine wā of the day into sixteen wā, is one rotation of the day to the night. The time lapse between the evening of the Pō [Makali'i on the eastern horizon in the evening] and morning [La'ila'i] of the Ao is one-half of a full day (eighth wā).

Wākea (Sky Father) appears in the twelfth wā with Papa (Earth Mother) in the line down from Opu'upu'u [line 1389]. His (Wākea's) own place in that lineage is in the fourteenth wā as the celestial equator (with Makulukulu, the planet Saturn). By then it is noon (awakea), and we assume that the sun is in the zenith on latitude (or on the equator at spring equinox).

From Wakea to midnight will be the mean day, from one *Kau* to the next *Kau* according to the old Hawaiian clock.

6:00 p.m.	Kihi
9:00 p.m.	Pili
12:00 p.m.	Kau

3:00 a.m. Pili puka  
 6:00 a.m. Kihi puka  
 12:00 a.m. Kau (ka lā i ka lolo)  
 3:00 p.m. 'Auinalā

6:00 p.m. Kihi  
 9:00 p.m. Pili  
 12:00 p.m. Kau

Noon hour is called *awakea* (midday); noon as *kau ka lā i ka lolo* when the zenith sun casts no shadow, as it moves over the latitude of any island in the Hawaiian archipelago between South Point (Ka'ū) Hawaii and Nihoa (Tropic of Cancer) [19 degrees to 23.5 degrees north] twice during the year, between May and July, as it courses through local zenith once going north and once again going south.

Greater epochs of time in the Kumulipo, however, have been compressed into this cycle of rotation of a single day in sixteen wā:

(1) The time between the first wā and the seventh as prehistory, constituting less than half of total time devoted to cosmogenesis and the appearance of life forms on earth.

(2) The time between La'ila'i (8th wā) and Wākea (14th wā) in 6 wā out of the total 16 wā of the night (Pō) and day.

The closing epic wā from the 15th (Maui) to 16th (Lonoikamakahiki) are a chronology of Hawaiian chiefs between the 7th and 17th centuries (about 600 to 1600 A.D. or about 1,000 years).

If we use this figure to gauge each wa (15th and 16th) as about 500 years, it would still hardly be sufficient to deal with 812 generations from La'ila'i and Wākea in 6 wa as total real time. On the average, 812 generations in 6 wā are about 135 and 1/3 generations per wā, or 3,383 and 1/3 years (at 25 years per generation). If we apply the sidereal formula of 27 years per generation, then there are 3,654 years per wā. The total number of years in 6 wā are

21,924, to which 2 wā of the 8 wā of the Ao period (after Po), would add another 7,308 for a total of 29,232 years, a number suggesting the precession of equinoxes.

Generations before La'ila'i and after La'ila'i cannot be considered true human ancestors, but rather, a projection of some sort, as eponymic ancestry by which ancestral generations are the means through which to assess time through chronology. The ancestors may not be real people, although names used may have been those of real people, as in many instances and often such names refer to stars or other celestial phenomena and ritual or calendrical formulae.

This begs the question: who would name a child for zenith stars, main posts in sacred houses on the heiau, or moon phases?

Wākea must have been a real chief, and Papa, his wife, a living person, certainly, at one time. Their names became the celestial equator and noon, as sky and earth personified.

Maui was also, probably, a real hero in life during Polynesian migrations from west to east Polynesia. He is deified in various parts of the constellations Ophiucus, Sagittarius, and Hercules, while tools of his trade are in Scorpius and three brothers in the canoe of the Belt of Orion on the opposite horizon, trying to fish up an island from the bottom of the sea with a fishhook in Scorpius suspended in the Milky Way over regions south of Tahiti.

After Wākea, ancestry in Kumulipo recitations (papa helu) conforms to human generations ordinarily recorded in standard ali'i lines such as that of Palikū, Ololo, Kumuhonua, Ulu and Nanaulu, belonging to a time of active Polynesian migrations out of Central Polynesia (Marquesas, Tahiti) to Hawaii.

Why stop at 812 generations? What is the poet doing with time in this chant if all he needed was an exact account of

high-ranking ali'i generations after Wākea to establish descent of title for ruling chiefs?

A practitioner of calendrics is aware that the number 812 is a synodic lunation of 28 months less a fortnight., but 28 sidereal lunations are two Saturn [Makulukulu] synodic cycles. Makulukulu is born with Wākea in the 14th wā. Was this an accident or a deliberate encoding? Fourteen sidereal months are one Saturn synodic cycle of 378 days, or in our sense of time, a tropic year of 365 days plus 13 more.

Why is recitation so muffled in silent sanctuary cloisters with priests in secluded environments of the temples only to be brought out onto the heiau at certain ritual times to be chanted for the ancient dead? Like ritual fire certain kinds of knowledge were not to be profaned on the outside, to ordinary folks, but it had to be put somewhere to be recalled if forgotten, into the recitations memorized by the kahuna. The rule was that a mistake in oration of these sacred chants during ritual recitation was death.

If you, as the kahuna, were aware that it took about 2,160 years for the equinoxes to "precess", and when that happened the ruling star(s) of March became those of April, as of calendars set to the Pleiades around 3500 B.C. (March), then to Aries (March) in 1800 B.C., would you lightly hand this information down to be processed for 812 generations after your death in the fourth millenium B.C.?

Suppose you had had no writing, how would you teach it, and harder still, how would you learn it, if only by rote memory and from another spokesperson?

If your own generation had become so morally slack, so that you had trusted no one following you to handle it properly, how would you program the information so that several hundred years later, it could be accessed again, by a more capable or curious future generation? Three to four

thousand years later?

Appropriately, then, if you knew how the arithmetic had worked thousands of years before, and you had witnessed a part of it down into your own priestly generation, would you become at some point an intellectual obliged to faithfully and accurately inform your successors, two thousand years later, to move the Pleiades month (Makali'i) from March to April (heliacal rising, Moloka'i calendar), or otherwise reorient to evening the rising position of Makali'i in the east after sunset when those stars would no longer be rising in the evening as at autumn equinox (September 20 -22) 6,000 years ago, but two months later, about November 20th, 6,000 years later, in our generation?

Polynesian settlement has been established at 1500 to 1200 B.C. in Tonga and Samoa by carbon and La Pita pottery dating methods, but the tradition of Maui as culture hero may be older than Polynesia.

Most of Maui's stars are on both sides of the equator, in Ophiucus and Sagittarius (southward), and to the north above the equator, in Aquila, Cygnus, and Hercules. Maui is named Kī'iki'i-a-Kalana (Samoa) and Maui-tikitiki-a-Taranga (Tonga), the surname (Taranga) of which is Capella in Auriga [Kapingamarangi, Polynesian outlier, East Carolines, Micronesia]. Some of Maui's (as Lumauig, culture hero) themes have been traced to the Philippines (Bontoc and Lepanto tribes of North Luzon) and the border between India and Burma in Southeast Asia, especially that of the culture hero snaring the sun, perhaps much older than Maui's fishing up of islands in the Pacific.

In the 612-line name chant *Ka Inoa o Kualii* [Fornander, 1969: 380] for the chief of O'ahu, Kualii, in the 17th century, the opening subject is Maui's fishing up of the *ulua makele* island fish with the *'alae* mud-hen as bait on the fishhook (Manaiakalanai, Ka-makau-nui-o-Maui, Scorpius):

He elele kii na Maui  
 Kii aku ia Kane ma  
 Laua o Kanaloa, ia Kauakahi,  
 Loaa o Maliu.  
 Hano mai a hai a hai i ka puu  
 Hai a holona ka puu o Kalani  
**Ka Makau nui o Maui,**  
**O Manaiakalani,**  
 Kona aho, hilo honua ke kaa  
 Hau hia amoamo Kauiki;  
 Hania Kamalama,  
**Ka maunu ka Alae a Hina,**  
 Wahia ka papa ia Laka,  
 Ahaino ilalo ia Kea,  
 Ai mai ka ia, o ka ulua makele,  
 O Luaehu kama a Pimoe,  
 e Kalani e...

A messenger sent by Maui to bring,  
 To bring Kane and his company,  
 (Him) and Kanaloa, and (to bring)  
 Kauakahi,  
 (Him) and *Maliu* [Spica in `Virgo].

To praise and to offer, to offer up prayer,  
 To offer and decree the fortune of the  
 chief.

*The great fishhook of Maui,*  
*Manaiakalani,*  
 (And) its line, naturally twisted is the  
 string that ties the hook.

Engulfed is lofty Kauwiki,  
 (Where) Hanaiakamalama (dwelt),  
*The bait was the Alae of Hina,*  
 Let down upon Hawaii,  
 The sacred tangle, the painful death,  
 Seizing upon the foundation of the earth,  
 Floating up to the surface of the sea.  
 (But) Hina hid the wing of the alae,  
 Broken up was the table of Laka,  
 Carried away below (was the bait) to Kea;  
 The fishes ate it, the Ulua of the deep  
 muddy places...

*Maui:* stars in Hercules, Ophiucus,  
 Sagittarius, Aquila, Lyra

*Kāne:* Tropic of Cancer  
*Kanaloa:* Tropic of Capricorn

*Kauakahi:* unidentified [Cp. Hatutahi  
 (Maori), Canopus; Au-tahi,  
 A-tu-tahi, Tu-tahi]

*Maliu:* [Cp. Mariua (Tahiti), Spica in  
 Virgo].

*Manaiakalani:* Scorpius and its "line"  
 [Scorpius lies in the Milky Way]

*Ka Alae nui a Maui:* unidentified;  
 [Cp., 'Bird with a broken wing';  
 probably Sirius, Procyon, and  
 Canopus (Kapingamarangi); *Manu*  
 (Sirius) + Ti Pekau i ngake 'The  
 wing in the south' (Procyon) + Ti  
 Pakau i Ngeiho (Canopus), i.e., one  
 wing is broken [Johnson, 1975: 125].

*Hina:* moon

*Laka:* [Probably connected to the  
 centralpost image, Kū-ka-ohi'a-  
 laka, that becomes the *Pou o*  
*Manu* and *Mo'i* on the Ku heiau;  
 Cp. Oraaka (Kapingamarangi)  
 Pegasus].

*Kea:* Wakea, celestial equator

*Ulua:* [Cp. Ka'ulua, Sirius, or  
 Kaulua, Mahanakaulua, Gemini].

Is the *ulua* crevally fish in  
 Gemini on the opposite side of the hour  
 circle in which Hercules and Scorpius  
 [Maui] are situated? How could Maui catch  
 so elusive a fish except through Manai-  
 ka-lani, the fishline that goes up through  
 Sagittarius into the Milky Way until it  
 reaches Gemini 180 degrees away on the  
 other side of the celestial compass?

In the very distant past, the  
 shoulders of Hercules held up the north  
 pole for about 4,000 years, between 10,000  
 and 6,000 B.C. For that he was called Atlas  
 whose mighty shoulders held up the axis of  
 the world in the mythologies of ancient  
 Greece and Rome.

Maui's character is essentially  
 Promethean, as of the culture hero who  
 brings a better life for mankind by risking  
 his life to get from the gods what privileges

they have reserved for themselves and denied to man:

“A child of awesome power the son of  
Hina,  
Guardians of the long and short posts  
of the house were peeved,  
They (who) were the brothers of Hina,  
Two pillars of the four sides measured;  
Maui wrestled (them) in combat (and)  
those posts fell...” [Fifteenth Wā].

The poet is talking about the celestial house built into the heiau temple grounds as the *hale manā*, often mistranslated as ‘house of power’, but patterned after the Tahitian *fare manaha*.

It was a house borrowed by Polynesians from the Gilbertese *maneaba*, or its ancestor, the Indonesian god-house (*balay*).

In the *maneaba* a line of string (sennit) was folded to several lengths to measure the sides and height of the council house. The ridgepole (*taubuki*) represented the meridian 90 degrees above the horizon, akin to the *kaupoku o ka hale* ‘ridgepole of the house’ (Hawaii).

Spaces between rafters were levels by which the altitude of stars moving from one level in space to another from the horizon upward could be tracked and timed. It was appropriately called the “roof of voyaging” in Micronesia.

The Fijian sacred house, *mbure*, was another model for the tabu *pule* periods of the eight-month (240-day) ritual cycle, leaving the 120-day *makahiki* period without *pule*.

In the council [*fono* (Samoa, Tonga), *hono* (Hawaii)] houses of Polynesia and Micronesia, high-ranking titled chiefs took their seats of honor at certain pillar posts (*pou*) of the meeting place.

Maui is credited with causing guardians of the ‘short-post’ (*kia’i-poko*) and ‘long-post’ (*kia’i-loa*) to “fall”. These are ‘pillar star’ (*pou*) posts that held up the voyaging roof.

The “pillar” (*pou*) stars, such as Procyon and Altair, are zenith stars. In the Cook islands they were called *tauirā*; in Tahiti, ‘*Ana [Ngana]*’ stars.

That may explain why the central pillar image of the Hawaiian Kū heiau was called *Pou o Manu* ‘bird pillar’ and the other image in front of the hale manā the *Nānahua [Ngana + Hua]* post.

The ‘bird pillar’ star in most Micronesian star compasses was *Altair* in Aquila; in Polynesia, *Procyon*. These positions would normally be altered, due to precession, about every 500 years. The stars in Hercules have drifted away from the pole toward the equator.

“Blood then flowed on the forehead of  
Maui,  
(In) the first of Maui’s struggles;  
(He) got the black ‘awa root of Kāne  
and Kanaloa,  
(That) was the second contest of Maui’s.

“Hina-the-bailing-gourd (was) lost to  
*Pe’ape’a* [Southern Cross, *Kape’a*],  
That was when Maui proved sufficient  
to the test,  
When the eyes of the *Eight-eyed Bat*,  
*Pe’ape’a-maka-walu*,  
were gouged out..”

In this part of the epic the Kumulipo leaves out certain details, such as Maui assuming the body of a bird so as not to be detected by the demon and obeying counsel of a kahuna not to sever its head until all eight eyes were asleep.

Wākea had found *Hina-ke-kā*, the bailing gourd, when she floated to shore over the reef:

"Scattered the seeds of Makali'i,  
the Pleiades, seeding the sky,  
Scattered seeds of the god, the sun  
is a god,  
Scattered the seeds of Hina, after-  
birth of Lonomuku  
[Dark night of the moon, Muku]

The food of Hina-in-the-moon, of  
[Ho-]-Waka [Hoaka]  
Gotten by Wakea-(from)-the-deep-  
sea,  
A coral sea, foaming sea,  
Hina-in-the-moon floated in the  
bailing-gourd calabash [Hina-ke-kā]  
Hung up in canoes [kaulia a'e i na wa'a  
Taken upshore, left swinging,  
[finds level]...

"...Hina craved food, Wākea got it for her  
Set up images on the stone platform in  
rows,

Set up rules for chiefs,  
Wakea took Hina as wife,  
Born the moa chief, hung (over)  
the back of Wakea  
[moa, center, meridian, Southern Cross]

Wakea was jealous of the kahili  
waving over him,  
Angry and vexed,  
Warded off the moa [i.e, Maui]  
that flew to the ridgepole,  
The moa was on the ridgepole  
[Southern Cross on meridian]..."

Left out in this Kumulipo sequence  
of Maui's deeds is the lifting of the sky, or  
*Ha'amonga-a-Maui*, "Burden-of-Maui"  
that the trillithon of that name  
commemorates on Tongatapu. The  
*Ha'amonga* are three stars in the *Belt of  
Orion*, straddling the equator, one in the  
middle and two on either side [Velt, Kik,  
Stars Over Tonga, 1990:86].

In some versions of sky-lifting Maui  
used a pole, the stars in *Te Tao-o-Maui*  
[Pukapuka, Cook Is.], a black nebula near  
Scorpius, and those in *Taki-piki-tolu*  
(Piscis Australis) [Beaglehole, 1938: 348].

"He drank the river water muddied by  
the freshwater eel  
Of Kāne and Kanaloa..."

[\*Note: There are other dimensions  
to the eel aumakua family connections in  
the altercation between Maui and Kuna that  
recalls the symbolization of Kū as the  
ancestral eel in the coconut tree].

For celestial themes which concern  
us at this point, the only freshwater eel in  
the sky is *Na, Nga, Gapi-lah*  
[Kapingamarangi, Micronesia] the square  
of Pegasus.

[A more ancient water-serpent  
creature, however, in the general area of  
Herculean struggles (and Maui-connected  
stars) was the Hydra, or water-snake,  
connected with the Euphratean Tiamat  
(dragon)].

The eel (*Kuna*) was Hina's pet, who  
told her to cut off its head but not to lay it  
down on the way home. [In some versions  
it is Maui who takes the head of the eel  
and forbids Hina from putting it down]. She  
forgot what the eel had told her and went to  
sleep by the side of the road. When she  
awoke she found the eel's head grown into  
a tall coconut tree. From the nut of this  
tree comes water for drinking as the eel's  
gift to Hina, and on the nut is the eel's  
face. There are two eyes and a mouth,  
and from one of these the water pours out.

The celestial coconut tree lying  
across the sky is *Niu-joa-hiki* in the Milky  
Way. Along its trunk and branches  
heroes reach the sky world to find lost  
relatives.

How old is Maui? Tongans have  
been speaking of him and several of his  
Maui ancestors as long ago as 1200 B.C.,  
before Wākea was ever ancestor of  
Hawaiian kings in the century straddling  
the turn of the millenium from B.C. to A.D.  
How do we arrive at these dates, such as 17  
B.C. for Wākea, and 533 A.D. for the Maui  
who, by our own legenday history, lived  
and died in Ko'olaupoko district, O'ahu?

Maui lived and died in Hawaii on O'ahu about the 6th century A.D. Before he died in Kahalu'u he lassoed the sun at Haleakalā on Maui, one of his last great endeavors. It is how he does this that intrigues us.

He tied down the sun by its legs, all sixteen of them, to a wiliwili tree below the top of the mountain, on the Makawao side of the crater. The Kumulipo verses say nothing about the number of the sun's legs:

"Then Maui battled the swift  
passing of the sun,  
With a lasso Maui (made)  
The winter seas of the Pleiades  
became the sun's,  
The summer became Maui's"...

The constellation Hercules [Maui] is in the night sky with Scorpius during the months of April, May, June, and July. Between August and March, a period of about eight months, Hercules and Scorpius are in the daylight: August, September, October, November, December, January, February, March.

If these eight months when the sun shuts out Hercules during the daylight are counted as sidereal lunations, Hercules is in the sun for 216 days, or half of sixteen such months (432 days). Between the equinox months, March and September, the sun moves quickly over a long stretch of the horizon, from March to June (summer solstice) and June to September (austral equinox).

In November the sun is in the direction of Hercules and Scorpius. The sun begins to slow down on the horizon from November to January.

The story of Maui lassoing the sun with a rope braided from Hina's hair at Haleakalā is probably an analogy for the slowed down motion of the sun on the ecliptic during the months before and after winter solstice.

This is another kind of "year", called an *anomalous year*, of one *perihelion* of the sun to the next, or *between January (perihelion)*, when the earth is nearest the sun, and July (aphelion), when the earth is farthest from the sun, back to January (perihelion).

This is the probable metaphor of Maui lassoing sixteen legs of the sun, which, like sixteen wā of the Kumulipo, remain baffling to analysis for the length of time each "leg" or the sun may really be.

It is easier, perhaps, to relate those "legs" to the sun's 180-degree course between the eastern and western horizon when each "leg" is then equal to 11.25 degrees in the compass circle of daylight.

If the apparent sun courses through a 360-degree circuit in 16 segments of time, then each leg is 22.5 degrees in length, the time longer than one hour by 7.5 degrees [i.e., in our present clock one hour equals 15 degrees of the compass, thus 24 hours are 360 degrees (24 x 15)].

Whatever this unit was when the story was told remains unknown. It is interesting, however, that the clock in Haleiwa church on the north shore of O'ahu has seven dials, and one of them makes a complete circuit in sixteen years.

Maui used a rope made from Hina's hair, and Hina was also the mother of Kana, the stretching rope kupua, grandson of Uli, the sorceress. [See Kana, *intra*, pages 123-126]. To recapitulate: Kana is a foetus born as a rope to Hina, and grandmother Uli saves it in a calabash of water. In it the Kana grows a fathom a day for 40 days and for no more than 400 days.

The riddle of Kana takes us back to the decan system, where each ten days the kahuna noted the stars on opposite horizons east and west where the sun rises and sets. Forty days in the decan system are a month and ten (30 + 10 days). The next forty are two months and twenty, and so on.

How would one determine that the unit of length for forty days was a basic fathom (anana) of six feet? Using the standard ruler of feet and inches:

1 fathom (anana) = 6 feet = 72 inches  
 1 yard ('iwilei) = 3 feet = 36 inches  
 1 cubit (ha'ilima) = 1 1/2 feet = 18 inches  
 1 foot (kapua'i) = 12 inches

If the sun travels about 1/4 degree per day and a degree in 4 days, a fathom a day for the length of the sun's step (kapua'i) per day is 72 inches (anana) and a cubit (ha'ilima) would be equal to 1/4 anana or 18 inches, or 1 and 1/2 feet, the Hawaiian cubit (ha'ilima).

On the principle of rotation of the earth on its axis, these measurements by the day may be represented as:

1 fathom = 72 inches = 12 hours  
 1 fathom = 72 inches = 180 degrees  
 1 fathom = 6 feet = 180 degrees  
 1 foot = 12 inches = 30 degrees  
 1 foot = 12 inches = 2 hours  
 1/2 foot = 6 inches = 1 hour  
 1/2 foot = 15 degrees = 1 hour  
 1/4 foot = 3 inches = 1/2 hour  
 1/4 foot = 3 inches = 30 minutes  
 1/12 foot = 1 inch = 10 minutes

The rope of Kana, however, is also adjusted to the length of the ecliptic, or the sun's motion north/south, i.e. to *revolution* (of the earth around the sun). Ancient Hawaiians thought of the sun as going up and down the horizon east and west between the solstices.

If Kana grew 40 fathoms in 40 days and no more than 400 fathoms, why 400 days to round off the sun's stride past the tropic year limit of 365.25 days?

The sun's motion is not even in two halves of the year. For one half of his stride over six months, the days are 180,

and over the other half, 185.25 days. If we leave off the fractional .25 day, it will accumulate in four tropic years to one whole day in leap year, 366 days. In leap year, however, the moon is behind the sun by 45 days, one day of which was a 1/4 day remainder. This became 1,461 days in four tropic years.

Correction, however, was probably made at the end of three lunar years, carrying the extra sidereal month into the 41st sidereal lunation:

3 tropic years = 1095.75 days

[sidereal correction in 3 tropic years]:  
 40 x 27 1/3 = 1080 days  
 41 x 27 1/3 = 1107 days

[synodic correction in 3 tropic years]:  
 36 x 29.5 = 1062 days + 33.75 = 1095.75

This is probably why the Kahoali'i rite in the Kū heiau required 40 ka'ai akua hulu manu and 40 kahu ka'ai carriers in the Kahoali'i circular procession, Kahoali'i making the 41st person at the head of the line.

The 400-fathom cord is 365.25 plus the extra length of the requisite intercalary 33.75 days after three years, and the extra 11.25 day accumulation of the lunar year (354 days + 11.25 = 365.25) in the fourth year plus the cumulative .75 day the whole 45-day shortfall in leap year.

In ritual time, 120 days (4 months) were assigned to the makahiki season in honor of Lono; the other 240 days (8 months) in honor of Kū, Kāne, and Kanaloa when men in the society had to go to temple to observe the tabu pule periods, of which there were four in each month and nine (actually seven) kapu kauila days to be observed for Kū, Kāne, and Hua (Jupiter, or Antares in Scorpius).

The men went to temple 56 days actual ritual time in the eight-month period, although in the calendar the pule period was spread over 72 named days.

Makahiki tax and recreation season in honor of the agricultural god (Lonoikamakahiki) began in Mahoehope [Castor, in Gemini], September-October] and continued through four months, ending in the month Makali'i (Pleiades), December-January.

It stretched out through Ikuwā (October-November) into Welehu [Antares in Scorpius] (December-January). This is the season when the sun slows down on the horizon, as when Maui has it tied down.

Between the June (summer) and December (winter) solstices, the kahuna went out to watch the sun to note in which stars it rose or set on the eastern and western horizons every ten days (decan *anahulu*). For the latitude of Hawaii and Nihoa at 23.5 degrees north he probably made these observations (facing sunrise, eastward).

About November 26th at 6:00 a.m. Hercules (eastern horizon) rose with the morning sun as the Pleiades set (western horizon). The Pleiades year had already begun about November 22nd.

About December 6th at 6:00 a.m. Hercules (eastern horizon) rose with the morning sun as Aldebaran [Hyades in Taurus] and Orion (equator) set..

In sixteen decan weeks, 160 days after winter solstice, Hercules was observed rising in the northeast at 6:00 p.m. as Capella [Auriga] set in the northwest about May 30th.

The sun is passing swiftly at this time on its northerly course 16 decan weeks after slow sun November to January, when Hercules is in the daylight.

Are these the sixteen legs of the sun, the decan weeks of 160 to 180 days in the half-year after winter solstice.

allowing for two more decans in November-December when Hercules was rising with the morning sun [November 26 to December 6]? It would make some sense.

If there are 36 decan weeks in a year, and the sun was observed against stars, then cumulative numbers built on decans increase as in tropic years, allowing for a five-day remainder, thusly:

	[Decans]	[Tropic Years]
(1)	36	360 days 365
(2)	72	720 730
(3)	108	1080 1095
(4)	144	1440 1460
(5)	180	1800 1825
(6)	216	2160 2190
(7)	252	2520 2555
(8)	288	2880 2920
(9)	324	3240 3285
(10)	360	3600 3650
(11)	396	3960 4015
(12)	432	4320 4380
(13)	468	4680 4745
(14)	504	5040 5110
(15)	540	5400 5475
(16)	576	5760 5840
(17)	612	6120 6205
(18)	648	6480 6570
(19)	684	6840 6935
(20)	720	7200 7300
(21)	756	7560 7665
(22)	792	7920 8030
(23)	828	8280 8395
(24)	864	8640 8760
(25)	900	9000 9125
(26)	936	9360 9490
(27)	972	9720 9855
(28)	1008	10,080 10,220
(29)	1044	10,440 10,585
(30)	1080	10,800 10,950
(31)	1116	11,160 11,315
(32)	1152	11,520 11,680

The decan system is well-known for Egypt, where it was employed in the Sothic cycle, as in the "small" (360 days) and "great" years (365 days) to 5840 days in 4 Sothic cycles of 16 tropic years thousands

of years ago. This makes the tropic year and decan system the ideal calendrical coordinate for the sun, Venus synodic, and Sothic (Sirius) cycles, as 5,840 days are 10 synodic cycles of Venus.

No matter how prominent or obvious these correlations may be for the summing up, there are no clues that Venus synodic cycles were figured into the Hawaiian decan (anahulu) system. (Yet).

Another "sixteen" that becomes a 432-day calendar round is the sidereal lunation count, by which 16 sidereal lunations (months) are 432 days, thusly:

[Sidereal lunations]:

(1)	27	+ 1/3	
(2)	27	+ 1/3	= 54 days
(3)	27	+ 1/3	= 81 + 1 = 82
(4)	27	+ 1/3	= 108
(5)	27	+ 1/3	= 135
(6)	27	+ 1/3	= 162 + 2 = 164
(7)	27	+ 1/3	= 189
(8)	27	+ 1/3	= 216
(9)	27	+ 1/3	= 243 + 3 = 246
(10)	27	+ 1/3	= 270
(11)	27	+ 1/3	= 297
(12)	27	+ 1/3	= 324 + 4 = 328
(13)	27	+ 1/3	= 351
(14)	27	+ 1/3	= 378
(15)	27	+ 1/3	= 405 + 5 = 410
(16)	27	+ 1/3	= 432
(17)	27	+ 1/3	= 459
(18)	27	+ 1/3	= 486 + 6 = 492
(19)	27	+ 1/3	= 513
(20)	27	+ 1/3	= 540
(21)	27	+ 1/3	= 567 + 7 = 574
(22)	27	+ 1/3	= 594
(23)	27	+ 1/3	= 621
(24)	27	+ 1/3	= 648 + 8 = 656
(25)	27	+ 1/3	= 675
(26)	27	+ 1/3	= 702 + 6 = 708
(27)	27	+ 1/3	= 729 + 9 = 738
(28)	27	+ 1/3	= 756
(29)	27	+ 1/3	= 783
(30)	27	+ 1/3	= 810 + 10 = 820
(31)	27	+ 1/3	= 837
(32)	27	+ 1/3	= 864

It reminds us of the calendar round in India with multiples of 432, which Joseph Campbell noted in The Mythic Image [174: 143]:

1,200 x 360 =	432,000	human years
2,400 x 360 =	864,000	" "
3,600 x 360 =	1,296,000	" "
4,800 x 360 =	1,728,000	" "
12,000 divine =	4,320,000	" "
	=	1 Great Mahayuga

Hertha von Dechend and Giorgio Santillana noted the same calendar round [1969: 161] in several world systems, Greek, Scandinavian, Indic:

"...It is known that in the final battle of the gods, the massed legions on the side of 'order' are the dead warriors, the 'Einherier' who once fell in combat on earth and who have been transferred by the Valkyries to reside with Odin in Valhalla--a theme much rehearsed in heroic poetry. Says the Grimnismal (23):

"...Five hundred gates and forty more--are in the mighty building of Valhalla--eight hundred 'Einherier' come out of each one gate--on the time they go out on defence against the Wolf"...That makes 432,000 in all, a number of significance from of old...

"...This number must have had a very ancient meaning, for it is also the number of syllables in the Rig-veda. But it goes back to the basic figure 10,800, the number of stanzas in the Rigved (40 syllables to a stanza) which... together with 108, occurs insistently in Indian tradition. 10,800 is also the number given by Heraclitus for the duration of the Aion, according to Censorinus (De die natali 18), whereas Berossos made the Babylonian Great year to last 432,000 years. Again, 10,800 is the number of bricks of the Indian fire-altar (Agnicayana)...

"...To quibble away such a coincidence,' says Schroder, 'or to ascribe it to chance, is in my opinion to drive skepticism beyond its limits. Shall one add Angkor to the list? It has five gates, and to each of them leads a road, bridging over that water ditch which surrounds the whole place. Each of these roads is bordered by a row of huge stone figures, 108 per avenue, 54 on each side, altogether 540 statues of Deva and Asura, and each row carries a huge Naga serpent with nine heads..."

Consider: every sixteen sidereal months equals 432 days, thus:

16 months	=	432 days
32	=	864
48	=	1296 + 16
	=	1312

Something has happened, so intent were we on the cycle of 432 that we missed the 40th sidereal lunation of 1,080 days [less the accumulating fraction of 1/3 day] in three tropic years [1095.75 days].

If we are thinking like the kahuna of ancient times, we would coordinate this with the synodic lunar month, the one to which we were accustomed to watching, as one new moon to next [Muku].

To recapitulate: if we continued to watch this moon for twelve months, we would be short of the tropic year by 11.25 days. We may let the remainder accumulate for three years until we had 33.75 days by which to intercalate a full lunar month and have a few days more [3.75] to spare. That is close enough to the 40 days in the decan system for an additional intercalary month.

Did the ancient kahuna resolve the accumulation of sidereal lunations by counting in fours until ten fours of them were 40 sidereal lunations in 1,080 days?

If he did, then this is how he may have simplified coordination between 40 sidereal lunations and three tropic years of 1080 days:

4 sidereal lunations	=	108
8 " "	=	216
10 " "	=	270
16 " "	=	432
20 " "	=	540
40 sidereal lunations	=	1080
80 " "	=	2160
100 " "	=	2700
160 " "	=	4320
200 " "	=	5400

The numbers 40, 80, 200, 400, 800 are reminiscent of the 40 to 80 ka'ai gods carried in the Kahoali'i rite on the Kū heiau luakini with equivalent pig and dog sacrifices offered, 40, 80, 400, 800, 120, 160, 240, etc. during a 21 to 26-day ritual.

The danger in using this short cut is that, eventually, the basis for the correction, as of the synodic to the sidereal to the tropic years may ritualize into formulae, rather than knowing the basic reason for the cumulative numbers and where to stop. Eventually all that would remain is the ritual form and requirements minus the abstract reasoning behind the formulae, the understanding retreats until it is forgotten.

The heiau could be built or consecrated only in the period between the vernal equinox and summer solstice, March to June, when the sun was on its northerly course.

The 40th sidereal lunation formula in the decan system may have helped the kahuna to intercalate the 13th intercalary month approximately every three years, but this would have been merely ideal.

Astronomer E. H. Bryan Jr., former curator of collections at the Bishop Museum [1955: 46] thought they may have done more than that [1955: 46]:

“...The Hawaiian Kilo-hoku doubtless discovered this ‘Metonic cycle’ in the same way Meton had, by trying to make the month fit the year.”

Greek philosopher Meton in the 5th century B.C. is remembered for the Metonic cycle, in which a thirteenth intercalary month is added so that in a period of 19 years, seven have 13 months, and 12 years have 12 months. The thirteenth month in the Metonic cycle was added after the 3rd, 5th, 8th, 11th, 13th, 16th, and 19th years. [\* Note: This subject is discussed in the Appendix, “Sidereal and Synodic Lunar Year Correlations with Tropic Years”].

### Recapitulation of the Millenium: Post-Pola’a Period.

Finally, then, by counting twenty-five generations backward from Kamehameha IV, Alexander Liholiho, whose exact date of birth was recorded in 1834, we encounter Wakea at the turn of the present zodiacal age (in western time).

#### [Kumulipo]

[End Age of Aries]:  
17 B.C.      Wākea      [Papa (w)]

#### [Pola’a, Po’elua].

[Begin Age of Pisces]:  
1 A.D.      First year of new millenium.

8 A.D.      Ho’ohokukalani (w)  
[8 A.D.]      [2,000 years ago, Regulus  
and Mu Geminorum, zenith  
stars, latitude of Kaho’olawe]

8 A.D.      Hāloa (k)  
33 A.D.      Hinanalo

58 A.D.      Nanakehili  
108      Wailoa  
133      Kio  
158      Ole

183      Pupue  
208      Manaku  
233      Kahiko  
258      Lukahakona  
283      Luanu’u I  
[308 A.D.]      [Carbon date, settlement of  
O’ahu]

333      Ki’i II  
358      Ulu [and Nanaulu]  
383      Nanailani

408      Waikulani  
433      Kuheleimoana  
[450 A.D.]      [Carbon date, settlement of  
Ka’u, Hawai’i]  
458      Konohiki [non-titled kaukau  
ali’i chiefs]  
483      Wawena

[492 A.D.]	[1500 years ago, Scheat in Pegasus and Alpheratz in Andromeda, zenith stars, latitude of Kaho'olawe]	1208 1233 1258 1283 1308	Kukohou Kaniuhi Kanipahu Kalapana Kaha'imooelea-(etc.).
508 533	Akalana <b>Mauiakalana</b> [21 generations from Wakea]	1333 A.D.	Kalaunuiohua [First conqueror of all of the islands, except Kaua'i]
558 583 608	Nanamaoa Nanakulei Nanakaoko	1358 1383 1408	Kuaiwa Kahoukapu Kauholanuimahu
633 [650 A.D.]	Kapawa [Settlement dates, Hālawā, Moloka'i]	1433 1458	Kihanuilulumoku Liloa
658 683	Heleipawa [Kukaniloko] Hulumanailani	1483	Hakau
708 733 758 783 808	Aikanaka Hema Kaha'i Wahieloa Laka	[1492 A.D.]  1492  1508 1533	[500 years ago, Arcturus and Hamal, zenith stars, latitude of Kaho'olawe]  Columbus discovers America.  Umi-a-Liloa Keali'iokaloa
833 858	Luanu'u II Kamea	1558 1583	Kuka'ilani Makakauali'i
[858 A.D.]	[Eclipse of the sun mentioned in the time of Lonohuanewa, cousin of Kamea (Nanaulu genealogy)]	1633 1608 1658 1683	[intervening line] 'Iwikauikaua 'Keakealani (w) Keaweikekahiali'iokamoku
883 908 933 958 983	Pohukaina Hua Pau Huanuikalalailai Paumakua	1708 1733 1758	Ke'eaumokunui Keouakupuapaikalaninui Kamehameha I
[992 A.D.]	[1000 years ago, Denebola in Leo and the Pleiades in Taurus, zenith stars, latitude of Kaho'olawe]	1778	[Captain James Cook arrival.
1008 A.D. 1033 1058 1083 1108 1133 1158 1183	Haho Palena Hanala'anui Lanakawai La'au Pili Koa Ole [1000 years from Ole, 183 A.D.]	1782 1790 1792 1795 1797 1810  1813 1820 1826 1834  1839 1840	[Battle of Mokuohai, Hawaii] [Battle of Kepaniwaioiao, Maui] [Battle of Kauwa'upali, Maui] [Battle of Nu'uānu, O'ahu] Liholiho (Kamehameha II) born. [Ceding of Kaua'i by Kaumuali'i]  Kauikeaouli (Kamehameha III) <i>Thaddeus</i> arrives; missionaries. [Hawaiian language orthography] Alexander Liholiho (Kam. IV) (first ali'i birthdate recorded in writing) [Hawaiian Magna Charta] [Constitution of 1840]

- 1848 Great Mahele land division.
- 1852 [Constitution of 1852]  
 1854 [Death of Kamehameha III]
- 1862 [Death of Kaleiopapa]  
 1863 [Death of Kamehameha IV]
- 1864-1872 Reign of Lot Kamehameha V  
 1873-1874 Reign of Lunalilo  
 1874-1891 Reign of David Kalakaua  
 1891-1893 Reign of Lili'uokalani  
 1893 Overthrow of the Hawaiian Kingdom  
 1893-1894 Provisional Government  
 1894-1898 Republic of Hawaii  
 1898 Annexation of Hawaii to U.S.  
 1900 Organic Act, Territory of Hawaii  
 1959 Statehood Admission Act
- [1992 A.D.] [Present. Zosma in Leo and  
 Sharatan in Aries, zenith  
 stars, latitude of Kaho'olawe]
- 2001 A.D. Third millenium after Christ.

The Ulu genealogy summary above lists 72 generations between Wākea and Kamehameha IV, while 76 generations are usually allowed between Wākea and our own generation, about 1900 years.

## Geometric Shapes in the Kumulipo

It is apparent that the Hawaiian kahuna were not alone in the world with thoughts about life in the cosmos. Halfway across the world were other thinkers, too, and if their thoughts were almost the same, where did they get their inspiration?

How would we go about finding that out, if we are limited to proving every point we raise here by evidence from within the chant of the Kumulipo itself?

It was noticeable sometime ago that radial (*pe'a*) shapes in the chant appeared very early at the birth of the coral polyp ('*ukuko'ako'a*) in the first canto.

The coral polyp makes a fascinating home of its own skeleton. The '*uku- ukuko'ako'a*' is an eight-segmented radial creature. Some coral animals make hexagonal homes. Octocorallians make octagons and are called 'spider' (*puna*) corals. The sea cucumber (*weli*) also has a radial opening through which it takes food.

We are aware that most of these are kinolau bodies of the god of the compass, Kanaloa, whose form is the octopus (*pe'a*) but *Pe'ape'amakawalu* 'Eight-eyed Bat' with whom Maui struggles to recover Hina takes on a demoniacal persona.

Not until Maui has recovered Hina from the lair of *Pe'ape'amakawalu* does he attempt to snare the sun, and not until he has successfully tied it down toward the end of the year does he "drink the yellow-water (*wailena*) of the freshwater eel" (*kuna*).

The constellations in the sky that come to mind are the Southern Cross [Tapeka (Tuamotu), *Kape'a* (Hawaii), and the "gills" (*gapi*) of the "eel" (-na, lah), or "square" of Pegasus [Kapingamarangi]. A name for the Southern Cross is *Ripeka* [Tuamotu], meaning to 'tie across', as on a transverse, criss-cross.

This name [pe'a ] inspired inquiry into words for tying and weaving cross-shapes and knotting. It seemed a proper direction to take because Moloka'i kahuna had unreeled the verses of the Kumulipo from the knotted cord (*hipu'u*).

The cord took us on a long journey beyond Indonesia into continental Southeast Asia, India, around Africa, through the Fertile Crescent, Egypt, into Greece and Europe westward, then northward through China into Tibet and the Americas.

Eventually the search focused on bast fibers used to make knotted cords, such as coconut sennit, grass, bamboo, hemp, jute, and cotton. Cotton led to fluff, as of fungus (*pungk*) of a kind used for tinder. [See Johnson, Rubellite K. and Bryce G. Decker, 1989, in Appendix]

We are talking about a time level 3,000 years or more before Christ and nearly 5,000 years ago. It is sufficiently distant in the past to allow people to wander around the world with a great deal of freedom. The only barriers are deserts, deep oceans, and high mountains, and these they crossed, somehow.

Nothing stops wanderlust just as nothing stops love. The dust unearthed for bones and artifacts utters no words nor sentiment as convincing as those in the Kumulipo that somewhere along the coastline stretching between the Indian and Pacific oceans the ancestors the story it relates must have begun at least a thousand years before Polynesia happened.

## Track of The Cosmic Spider

The coordination of the octopus compass, a form of Kanaloa, and the celestial spider is implied in the numerical divisions of the chant's four-fold structure.

The use of the astronomical shape of the spider's web has been documented for Hawaii:

"The Celestial Equator is the earth's equator projected on the celestial sphere. In Hawaii it was called *Ke ala i ka piko o Wakea*, 'the road to the navel of Wakea (the Sky Parent),' i.e., to the centre of the world" [Fornander, 1878: 127]. According to Best *piko o Wakea* instead applies to the ecliptic (1922 a:12). Among the Maori the corresponding name *Te Pito a Rangi* (the Sky Parent)' is interpreted by Smith as the ecliptic (1913: 167-168)...

"...Fornander supplies yet another name for the celestial equator, *Ke Alaula a ke Ku'uku'u*, 'the bright road of the spider' (1878: 127). However, Makemson holds the view that the expression refers to the ecliptic, since "the path of the spider refers to the spiralling motion of the sun northward and southward during the year." [Akerblom, 1968: 15, 375].

Evidence for an association of shape equating the eight legs of the octopus and spider, or combining both as one in a correlation of shape, is found in Easter Island tradition. Heyerdahl mentions the migration of chief Hotu Matu'a to Rapa Nui which he named *Te Pito o te Henua*, 'the Navel of the Earth, with a description of the road plan of the village according to the web of the spider:

"Another ancient local legend collected by Thomson, and known as the *Apai*, had a corresponding hint. This text was recited independently from a written tablet by two old Easter Islanders, and translated into English by Salmon. Between two unintelligible sections of text, 'supposed to have been written in some ancient

language: 'When the island was first created and became known to our forefathers, the *land was crossed with roads beautifully paved with flat stones*. The stones were laid close together so artistically that no rough edges were exposed. Coffee trees (?) were growing close together along the borders of the road, that met overhead, and the branches were laced together like muscles...

'...*Heke* was the builder of these roads, and it was he, who sat in the place of honor in the middle where the roads branched away in every direction. These roads were cunningly contrived to represent the plan of the *web of the grey and black-pointed spider*, and no man could discover the beginning or the end thereof...

"...After a further section of text in an unintelligible former language, the names of some persons living in the former fatherland are cited, and this former habitat is allegorically referred to as the land where the black and white-pointed spider would have mounted to heaven but was prevented by the bitterness and the cold " [Heyerdahl, 1961:I: 35].

*Heke* (Easter Island) *He'e* (Hawaii) is the octopus, *Fe'e*, or form of the creator god Tangaroa of Samoa. A description of the house of the octopus god *Fe'e* in Samoa is described by Stair:

"*O le Fale o le Fe'e* (the Temple of the *Fe'e*), the war-god of A'ana, Upolu, was formerly a place of great renown and importance, but of late years its glory has departed. Its history was described to me in such a way, that I determined to visit it and see for myself the marvels described. Not only were there the remains of the temple of the god, but quantities of coral that he had carried up from the reef into the mountains lay scattered on every side. I found that comparatively few had actually visited the spot, but the name of the place was familiar as also the wonderful stories of the famous *fale ma'a*, or stone house of

the god. The large blocks of coral, requiring several men to lift them, were scattered about the temple, and which the god had carried up from the reef single-handed..."

"... [Our] guide suddenly sprang from the bank, and glancing around the spot near which he stood, hastily exclaimed, '*O lenei le fale, o le Fe'e*' (Here is the house of *Fe'e*)...Our guide commenced in good earnest to clear away the brushwood and undergrowth that covered the place, and as we all joined in the work the ground was soon cleared, and the remains of the far-famed *Fale o le Fe'e*, or house of the *Fe'e* were laid bare before us..."

"...We soon discovered that the house had been built of the usual round or elliptical shape, but that the builders, whoever they were, had substituted slabs of basalt for the wooden posts usually placed to support the eaves..."

"...We found *twelve or thirteen* of the smaller stone posts still standing, but the large centre slabs lay broken in the middle of the circle. The outer posts, which were still standing, were about four feet out of the ground, whilst the centre slabs appear to have been originally about twelve or thirteen feet in length, fifteen or eighteen inches in width, and seven or eight inches thick..."

"...At about six or eight feet on the left-hand side of the ruin was a small stone platform, or seat, still remaining, and which was perfect. Whether it had been used as a seat for the priest, or altar, was hard to say; but from the sloping stone support at the back, I fancy it had been used as a seat by the priest..."

"...The house had been forty-eight feet in length by forty-five in breadth. One portion of the floor of the house had been covered with a pavement of neatly placed slabs of stone..."

"...The little that we could gather about this old ruin is this:--the god, or Aitu,

in the form of a cuttle-fish (o le Fe'e) was stated to have been brought from Savai'i, by a woman, to Apia; but, on reaching that place he made his escape from the basket in which he was carried, and following the course of the mountain torrent bed, he had reached this spot, far inland, where he took up his abode, and in process of time made the place famous..." [Stair, 1894: 241-243].

The Samoan octopus god, Fe'e, floating on a piece of coral, was brought to Manu'a by Tangaloa. On Manu'a Fe'e became the father of two girls, Sina-sa'u-mani and Sasa'umani. Sina-sa'u-mani married the Tui-Manu'a Tagaloa-a-Ui, and Sasa'umani moved to Savai'i where she married a chief of Gaga'e-malae on the west coast. The impression given by Manu'a tradition is that Fe'e came from the same homeland (Pulotu) as Savea Si'uleo. Legend reports that after the departure of Fe'e, Savea Si'uleo ruled over the underworld with his hosts of aitu [Kramer, 1902: 1:8:957].

Savai'i traditions locate the entrance to the underworld toward Pulotu and to Sā-le-fe'e, an old name for Samoa, at Fāfā on the west coast of Savai'i near Flaealupo. Sā-le-fe'e was so named "because the family of Fe'e, the octopus, ruled there" [Ibid: 79].

'Upolu traditions trace the origins of Fe'e to Savai'i and Manu'a:

"In the land where Tagaloa sleeps  
From the house of the cuttlefish and  
the sleeping place of the crayfish  
(Fe'efa'apuga)  
Came the aitu from Manu'a" [Kramer,  
1902: 1: 6: 284].

"Fe'e...the cuttlefish of Savai'i...often came to visit his bride at Vaimauga...(he) broke a hole in the reef so as to be able to land more easily...settled in upper Vaisigano, where a temple was built to him as the war god of Vaimauga village...the aitu Fe'e is said formerly to have lived in a cave on the way from Letogo to

Lauli'i...(and) was killed by *Tiiti'i* (Maui) [Kramer, 1902: 1: 4: 432-433].

The war god Fe'e of Vaimauga, of the Fale pou ma'a 'stone house' or Fale o le Fe'e 'house of the squid' was represented by a large wooden bowl (lipi), white bark cloth, and the white Cypraea shell [Buck, 1930: 70].

The Samoan idea of the octopus god holding up the sky has a parallel in the Tahitian tradition of the 'spotted octopus' deity, Tumu-ra'i-fenua: "When land became land and it was firm, the great octopus, Tumu-ra'i-fenua...held on; one arm was south; one arm was north; one arm was east; and another arm was west: they held the sky down against the earth" [Henry, 1971: 338].

The Samoan identification of *Tiiti'i* (= Maui-tikitiki-a-Taranga) as the slayer of the octopus god Fe'e is confirmed in Ra'iatean legend:

"There was a tradition here that the sky originally lay flat upon the face of the earth and ocean, being held down by the legs of a huge cuttlefish. But, at a certain time, a man named Maui dived to the bottom of the sea, and grappling with the monster, utterly dismembered him; whereupon the sky flew up, and expanded into its beautiful convexity, resting on the horizon, and having the vertical sun as its keystone" [Tyermann and Bennet, 1831: 138].

The death of the Tahitian octopus Tumu-ra'i-fenua resulted in the formation of Tubua'i, one of the Austral Islands:

"Tu conjured death upon the great Octopus holding the sky to the earth, but it did not die by his agency...Then Rua-tupua-nui...conjured death upon the great octopus...caused the great octopus Tumu-ra'i-fenua...to die...The arms of the great octopus, Tumu-ra'i-fenua...became detached from the sky, and they fell away south...the great octopus became land, which is Tubua'i" [Henry, 1971: 404-405].

The Tongan octopus god Feke was important to the Ha'apai group as god of the Tui Ha'a Ngana, called Haelefeke, represented as a white or brown species. Feke as a place name stipulates tracts of land in Ha'apai on Niniva, Lofanga, and Lifuka islands [Gifford, 1923: 64]

The feke was octopus deity Atua i Faea of the Kafika and Tafua (clans), joining symbolically the 'yam' (Kafika) and 'coconut' (Tafua) clans of Tikopia: The symbolism of the octopus concentrated upon its tentacles, analogies to which were found in the rays of the sun, and in a set of springs of water originating from the hill crest of Korofau and emerging on various sides of the slope. Both sun with its rays and hill with its springs were treated as further embodiments or transformations of Feke; the rays indeed were invoked as a set of separate entities in ritual...But though dangerous, the octopus god was not regarded with the same fear as was the eel god; he seemed to be thought to lack the malignancy of the latter." [Firth, 1967: 556].

The probable significance of the shape of the octopus (fe'e) house in Samoa, to which there were twelve or thirteen stone pillars, and the association in Easter Island with Heke (octopus) sitting in the center of a road plan based on the pattern of the spider's web, may be that such a shape is reminiscent of home and courtyard design in Southeast Asia in which the principal dwelling is situated in the center of a square or circle out of which the major gates open to the four cardinal directions as do the doors of the temple.

The concept of a spider's web associated with the sky also recalls the role of the spider as a major creator god in Southeast Asian and Indian origin myths. In Burma among the Shan is a belief that the creation is built on the webs of spiders at the four cardinal points of the compass:

"The Shans believe that this present world is incalculably old. Hundreds of thousands of years before our world was created there was another world, but of its creation there is no legend. It was

inhabited by people like ourselves; there were also beasts and birds, and its rivers and seas were full of fish. At the beginning of the world only one sun existed, and life then was the same as it is now. After many hundreds of thousands of years a second sun appeared, and the trees, grass, and green herbs became the colour of gold. Then a third sun came into the heavens, and the three suns together made so much heat that all beasts died, also all men. Women were still alive on the earth, as they had more blessings than men, attaining a certain merit by becoming mothers of saints and Bodhisats. When they were dead no creature was left alive on the earth, or in the rivers and sea, but one enormous fish. Then, as the world grew hotter, and still more hot, the great fish also died, in its dying struggles in the boiling sea it burst, and its fat took fire, burning with such an enormous flame that the whole world was alight, blazing fiercely until it was quite consumed. Some say that seven suns, and some that nine, were created, and the world became like whirlwinds; there was no solid part remaining..."

"...When our present world first came into existence it was covered with water. At first the water was shallow, but in time it grew deeper, becoming a great deep sea, which rose higher and higher until it almost reached the heavens. There was an endless space to the North and to the South, to the East and to the West, and still the waves of the sea rose towards heaven. When the gods of the high heavens saw that the rising waters threatened to invade the skies, nine of them came down to build again the earth. They looked at the rolling seas, and saying, 'It is too difficult for us,' they returned again to heaven..."

"...Then, as the waters still rose, four greater gods descended from the highest heaven, and brought with them four huge spiders. One spider was sent on the sea to the South, and it spun an enormous web all around itself, the web and the spider forming the Southern Island. That is the

island in which we live, which we call our world. The other three spiders were sent to the North, to the East, and to the West. Each spun its web, so that the spiders (with their webs) became the Islands of the East, the North, and the West--islands which no living man has seen, though the spirits of the dead may be reborn in them. When the islands appeared above the seas the waters remained in their place, rising no longer towards heaven. In the middle of the islands is Loi-sao-mong--the central pillar of the world--known in the Buddhist cosmogony elsewhere as Mount Meru." [Milne, 1910: 196-198].

A similar tradition is found among the Palaung of the Shan states:

From the rising of the seven suns,  
From their rising close together,  
The leaves of the trees withered,  
The suns shone on the leaves, they  
withered,  
The suns shone on the leaves, they  
withered,  
They became all dry together.

The earth and the sand were yellow,  
Were yellow from the flame of the heat.  
Even that fish that lived in the waters,  
That lived in the waters of the ocean,  
Broke itself with the scorching heat.  
As it broke it became fire,  
A fire great and terrible, consuming the  
world.

The earth is consumed, nothing remains,  
Nothing as large as a pearl,  
Not even ashes the size of a fly.

All the sweet smells of the world mingled  
together,  
Are wafted up to the land of spirits,  
The scent rose up to the heaven of  
heavens,  
To the sea of Sa-gya, ruler of heaven.  
Even the seven circles of mountains  
Are filled with the scent  
Rising to the seven thrones of Sa-gya,  
Until the greatest throne became fire...

"...There are various legends to  
account for the origin of our present

world, the following fragment appears  
to refer to it:

Call and bring great spiders,  
Ten great spiders.  
Let them descend,  
Carrying earth the size of a pea,  
Earth the size of a pearl.  
The spiders met together,  
In one night they builded,  
In one night they made the  
world..."

"...The centre of the Universe is a  
great mountain named ting Loi Sao  
Mong, the Shan name for Mount Meru;  
four islands, connected with it under the  
tumultuous waters of the sea, lie to the  
north, south, east and west. Our world  
is the island to the south. It is formed  
out of four elements, earth, water, fire,  
and air; and it took thousands and thou-  
sands of years to make..." [Milne, 1924:  
361-363].

The role of the spider as a creator  
god in Southeast Asian myth, of which the  
Shan and Palaung versions of creation are  
examples, is also found in island Indonesia.  
Among the Kayans of central Borneo is the  
belief in a primeval sea and sky. A great  
rock fell into the sea from the sky, and  
slime collected upon it. Worms eventually  
bred upon the slime, having issued from it  
themselves, and these bore into the rock,  
causing sand to be produced and  
eventually, soil. From the sky a wooden  
handle of a sword fell and took root,  
becoming a tree. From the moon fell a  
vine. The tree and the vine bore two  
beings: a boy and a girl.

In a related version a spider first  
spun a web in the sky from which it then  
descended. The web caught a stone which  
fell from the sky and the stone grew to fill  
in the space. A lichen fell from the  
heavens to the rock and became a worm.  
From the excrement of the worm the first  
soil was formed. This earth spread over the  
rock, and onto it fell a tree which then  
grew. A crab dropped from the sky and by  
its clawing about, the mountains and

valleys were formed. The vine and the tree, which formed from a sword or spindle that fell from the sky, produced a being without arms or legs, which eventually gave birth to human offspring [Dixon, 1964: 159].

Farther eastward into Micronesia, the cosmogonic myth of creation is fairly absent except in the Gilbert Islands and the Marshalls. On Nauru, creation is shared by two beings called Ancient Spider, Nareau the Elder, and Young Spider, Nareau the Younger. They dwell in a darkness or void, or they float in endless space or upon an infinite primeval sea. Nareau the Elder took a tridacna shell and from this made heaven and earth, or, he crawled into the crack of the rock. Inside the rock the shell he enters is what is known to be the world. A snail then raises the roof of the shell and becomes the moon.

Another sky-raiser in Gilbertese myth is the butterfly or worm, called Rigi or Mata-Rigi. Rigi first raises the sky, then Nareau the Elder, or Ancient Spider, orders sand and water to mate. They produce the octopus, eel, and Nareau the Younger, or Young Spider. Nareau then cuts off two of the legs of the octopus, who then has Riki help him lift the sky. From the great effort of raising the sky, Riki falls dead from exhaustion. A sympathetic god comes along and picks up the pieces, flinging them into the sky where they are now the Milky Way, Mata-Rigi, or Mata-Riki, 'Eyes-of-Rigi,' ('Eyes-of-Riki') the worm. His severed legs fall and become eels. Nareau the Younger makes the sun and moon with the eyes of his father, stars from his brain, rocks and stones from his flesh, and trees from his spine [Ibid.: 249-250].

A similar version from Nauru records that the god of thunder and lightning is Tabuerik, or 'Ancient Spider' (Jupiter) who takes the form of an omnipotent bird and soars over chaos.

During this chaos sky lies prone upon the earth. The butterfly Rigi separates

heaven and earth. Ancient Spider then turns stones into men who become supports for the sky. Young Spider, *Areop-it-Eonin*, is born from a boil on the back of *Dabaga*, the tortoise [Hambruch, 1914: 388]. In a Marshallese variant from the Ralik chain, the spider spins a web as the gull stretches out the sky [Erdland, 1914: 308].

The relationship between the birds and spider creator appearing in the Ralik variant is found in Indonesian tales. The spider functions in a more subordinate role as a guardian deity to the Sea Dyaks of Borneo. In this guardian spirit role the spider belongs to the Spirit Birds who are the flock of Singalang Burong, Ruler of the Spirit World.

In the story of Siu, the culture hero who introduces rice cultivation to the Dyaks from the Spirit Birds, the eight daughters of Singalang Burong function as tutelary deities who interact with mankind. Seragunting, son of Siu by the youngest daughter of Singalang Burong, is a child hero who, by seeking his lost mother, forces her to send the great Emplawa Jawa, Spider of Java, to guide him across the sea in his search for her country.

The story begins when Siu the Dyak goes off to hunt birds in the jungle and having caught a few, proceeds to find shelter for the night. He spies a house in which there are no people and enters whereupon he is told by a young girl that he is in the house of the Ruler of the Spirit World, Singalang burong, chief of the birds, and that she is the youngest of the daughters. After some time Siu marries her, having promised never to kill a bird again nor ever to hold one in his hands. They return to his village, and Siu's son Seragunting is born.

One day Siu is tempted to hold a bird and, for break his promise, suffers the departure of his wife to her father's home. Seragunting prevails upon his father Siu to search for his mother. Siu and Seragunting travel through the forest looking for her. Each time that they pause to rest,

Seragunting finds a bundle of food already prepared for him. finally, they reach the seashore. One day as Seragunting is watching he hears the sound of paddles as several long boats approach in the distance:

"He hailed the first, and asked the men in it to take him and his father with them. The boat made for the shore, but the man in the bow recognized the two wanderers, and shouted out: 'It is Siu and his son Seragunting; do not let them come into the boat...' Now these were the boats of the sons-in-law of Singalang Burong...The next day Seragunting saw what seemed to be a dark cloud come towards him over the sea. As it came nearer, it took the form of a gigantic spider, carrying some food and clothes..."

"Do not be afraid," said the Spider, "I have come to help you and your father. I have brought you food and clothing. changed your clothes, I will take you across the water to the land on the other side. My name is *Emplawa Java* (the Spider of Java). I know your history, and I will lead you to your mother whom you seek..."

After they had eaten and put on the new clothes brought them, *the spider told them to go with him across the sea. They were not to be afraid, but to follow his track, not turning to the right hand nor to the left.*"

Seragunting and his father approached the opposite shore towards evening. Not far from the landing where there were many boats they found several houses, and one which was longer and more imposing than any of the others. *To this house the Spider directed Seragunting, telling him that he would find his mother there. The Spider then left them.*"

When they encountered Seragunting's mother, she said to him: 'My dear son...though I left you I did not forget you. It was I who placed the food by you every night. I left your father because he broke his promise...But you are my own son, and I have been wishing to see you...It

was I who sent the Spider to help you and show you your way here..."

From the Spirit Birds and Singalang Burong, Siu and Seragunting learn rice agriculture and when transported back to their home they teach the Sea Dyaks of Borneo how to grow rice [Gomes, 1903: 22-24].

The role of the spider as creator god and culture hero is highly developed in folk myths of India, as one follows the motif of the spider's web farther westward. While Java's tutelary guardian spider, *Emplawa Jawa*, is connected with sea travel (by Sea Dyaks of Borneo) and distribution of rice cultivation, the spider's role in India is connected with the ordering of the heavens. The mythological concept of the sky containing a spider's web in which constellations are hung as well as the origin of the spider in balls of yarn is found in the myths of Orissa [20-22 degrees north, east of Calcutta, area Bay of Bengal]. The Didayi of Patroputtu, Koraput District tell this tale:

"Long ago, when the earth was covered with water, Rumrok hung a boar in a spider's web up in the sky. When Rumrok wanted to make a new world he was unable to find any earth. He searched everywhere without success and it was only when he went to the boar that he found a little earth sticking to its tail. He removed it and sprinkled it on the face of the water. After a while the earth grew and grew and soon there was mud everywhere and the water began to dry up. But the mud remained damp and dirty and to harden it Rumrok killed the boar and ground its bones into powder and spread it over the world. When the mud dried it was strong and steady. Then Rumrok created animals and said to the boar, 'You may always lie in mud and you will be as strong as the earth itself'" [Elwin, 1954: 4].

Among the Jhoria of Kerba, Koraput District [southeast of Orissa]: "Somru Johoria had a very beautiful daughter. Her name was Sonwari. She was unmarried. In those days there was no sun in the sky;

the world lived in darkness. Sonwari used to wear golden rings in her ears. When she was married she went to her husband's house...One day while she was drawing water a great kite swooped down and snatched one of the golden ornaments from her ear. It flew up, up into the sky but was caught in the great spider's web that stretches across the heavens...In this way the sun came into being" [Ibid.: 40-41].

Among the Kond of Charcharganna, Ganjam district: "Jaonra Pinnu once got a very bad cough and brought up phlegm from his chest. He picked up the mess and said to it, 'Become a spider and go to Nirantali and help her.' As he spoke it turned into a strange creature with nine legs. At that time Nirantali and Bindrabari the blacksmith were engaged in making the clouds and the spider went to help them string them in the sky. Nirantali said, 'Go and see the four quarters of the world and tell us what is good and what is bad.'

The spider climbed up, spun a thread from its belly and swung round the world: it saw east, west and north. But when it wanted to go to the south, it ran out of thread. Nirantali said, 'Very well, stay where you are and make your thread!' [Ibid.: 262-263].

In tales which involve the spider's association with weaving, the birth of the spider from balls of yarn, its ability to spin thread from its belly, its role as teacher of fishermen and weavers in techniques of netting and cloth-making, and its function as author of patterns make the spider in India a tutelary culture hero. The Bhattra of Parsel, Koraput District tell this tale:

"In Salheputti village there lived a Ganda called Arjun. He had five sons and three daughters. He got them married, all but the youngest: when this boy too grew up he went to find a bride for him. He found a good girl in the house of the watchman of Baiyaguda. When the arrangements for the wedding were completed Arjun called his relatives and many Gandas came to the village. Arjun

took some yarn in his right hand and would it into a ball on his left. But the yarn slipped from his hand and fell on the bridegroom's foot. Directly it touched the foot, life came into it and it turned into a spider. the spider climbed up into the boy's wedding-crown. The wind carried it and its thread into a tree. The spider lived there and began to spin thread from its belly" [Ibid.: 259].

Among the Bondo, Pinnajanga, Koraput District: "Maprabhu made a spider and its wife and placed thread in their bellies and told them, 'Even if you go seven times around the world, this thread will not be exhausted. Go to that fisherman and show him how to make a net.' The spiders went to the fisherman's house and wove their webs across the door and over the rafters. The fisherman watched them and learnt how to make his nets." [Ibid: 259-261].

Among the Gadaba, Rajput, Koraput District: "When Ispur Mahaprabhu reached Tingapan Hill, the girl was cleaning her hair with a comb...'Who are you?' she said. 'And what do you want?' 'I am Mahaprabhu and I want to know how to make clothes for men'...She pulled some of her hairs out of her comb, rolled them into a ball and threw it down in front of Ispur. It turned into a spider. She said, 'Take this little creature home and watch how it makes its web. From it you will learn how to make cloth'" [Ibid: 261].

The spider as a symbolic shape of the creator of the universe in classical mythological statement is found in the *Upanishads*, first *Mundaka*, first *Khanda*, in which the creation of the world emanates as though from the belly of the spider, a form of Brahman:

- (1) "Brahmā arose as the first of the gods--  
The maker of all, the protector of the  
world.  
He told the knowledge of Brahmā  
(*brahma-vidyā*), the foundation  
of all knowledge,  
To Atharvan, his eldest son.

- (2) What Brahmā taught to Atharvan,  
Even that knowledge of Brahma,  
Atharvan told in ancient time to Angir,  
He told it to Bhāradvāja Satyavāha;  
Bhāradvāja to Angiras--both the higher  
and the lower (knowledge).
- (3) Saunaka, verily, indeed a great house-  
holder, approached Angiras according  
to rule, and asked: 'Through under-  
standing of what, pray, does all this  
world become understood, sir?'
- (4) To him then he said: 'There are two  
knowledges to be known--as indeed  
the knowers of Brahma are wont to  
say: a higher (*para*) and also a lower  
(*apara*).
- (5) Of these, the lower is the Rig-Veda,  
the Yajur-Veda, the Sāma-Veda, the  
Atharva-Veda,

Pronunciation (*siksā*), Ritual (*kalpa*),  
Grammar (*vyākaraṇa*),  
Definition (*nirukta*), Metrics  
(*chandas*), and Astrology  
(*jyotisa*)

Now, the higher is that whereby that  
Imperishable (*aksara*) is apprehended.

- (6) That which is invisible, ungraspable,  
Without family, without cast (*a-varṇa*)-  
Without sight or hearing is It,  
Without hand or foot,  
Eternal, all-pervading, omnipresent,  
exceedingly subtle:  
This is the Imperishable, which the wise  
perceive as the source of beings.
- (7) As a spider emits and draws in  
its thread,  
As herbs arise on the earth,  
As the hairs of the head and body form  
a living person,  
So from the Imperishable arises every-  
thing here." [Hume, 1931: 366-367]

The simile of the cunning spider  
emitting thread from its belly, *yathornā-  
bhih srjate grhnate ca* 'as the spider takes  
from his body and creates the net', is deve-

loped into the form of Brahmān in the Up-  
anishads, second Adhyāya of the Brhad-  
Āranyaka:

"Now when one falls sound asleep  
(*susupta*), when one knows nothing what-  
soever, having crept out through the seven-  
ty-two thousand channels call *hitā*, which  
lead from the heart to the pericardium, one  
rests in the pericardium. Verily, as a youth  
or a great king or a great Brahman might  
rest when he has reached the summit of  
bliss, so this one now rests...As a spider  
might come out with his thread, as small  
sparks come forth from the fire, even so  
from this Soul come forth all vital energies  
(*prāna*), all worlds, all gods, all beings."  
[*Ibid.*:95].

Again, in the sixth Adhyāya of the  
Svetāsvatara Upanishad:

"The one God who covers  
himself,  
Like a spider, with thread  
Produced from Primary Matter  
(*pradhāna*),  
According to his own nature...

and in the sixth Prapāthaka of the Maitri  
Upanishad:

Now, as a spider mounting up  
by means of his thread (*tantu*) obtains free  
space, thus does the meditator, mounting  
up by means of Om, obtain independence  
(*svātantrya*)." [Ibid: 409, 437].

The negative image of this spider is  
not Brahma but *Maya*, the eternal weave  
of the web of illusion. The spider is also  
considered a lunar animal in many myths  
depicting the moon as a gigantic spider,  
just as a certain species of spider on the  
island of Tongareva is called *Sina* 'moon'  
(goddess).

The Gonds of India call the Great  
Spider seen "straddling across the high  
road under a dark sky", Makramal Chatri,  
the name by which he is also known on  
Ceylon [Cirlot, 1962: 290; Elwin, 1935:39].  
In this form the celestial spider is associated

with the ecliptic [Sengupta, 1938: 422-423].

In computing solstice days in Vedic literature, Sengupta demonstrated that motion of the sun toward its northerly course and then towards the southerly was compared to a spider in the *Rgveda Brāhmanas*:

"On the new moon of Māgha he rests, being about to turn northwards; these also rest, being about to sacrifice with the introductory *atirātra*; thus for the first time they obtain him; on him they laid hold with the *caturvimsa*; that is why the laying hold has its name. He goes north for six months; him they follow with six day periods in forward arrangement. Having gone north for six months he stands still being about to turn southwards; these also rest, being about to sacrifice with the *Visuvant* day; thus for the second time they obtain him. He goes south for six months; they follow him with six day period in reverse order. Having gone south for six months he stands still, and they about to sacrifice with the *Mahāvratā* day obtain him for the third time. In that they obtain him thrice, the year is in three ways arranged. Verily it serves to obtain the year. With regard to this this sacrificial verse is sung:

" *Ordaining the days and nights,  
Like a cunning spider,  
For six months south constantly,  
For six north the sun goeth..*"

(*Kausitaki Brāhmana*, xix, 3; *Rgveda Brāhmanas*) [ibid.: 433].

From sensitive computations based on the Rg Vedic humns, Sengupta was able to deduce that the sun turned north on the new moon of Māgha, the star Regulus, in 3517 B.C. and thus determined the age of the *Brāhmanas*:

"We have thus shown from the direct statements as found in the *Brāhmanas* and the *Baudhāyana Śrauta Sūtra*, that the development of this class of literature and of the religious ceremonies prescribed in them began from about 3550

B.C. and terminated at about 2100 B.C." [ibid: 433].

From this data the ability of the Hindus to determine the ecliptic, the solstices and equinoxes, described as the cunning of a spider, has been documented for 3550 B.C., establishing the concept of the spider as a shape of the celestial creator and the spider's path as the ecliptic very early in India and in Indic literature. The Polynesians were not yet settled in West Polynesia in 3550 B.C., however, their calendrical computations, as previously discussed in preceding chapters, may well have begun between 3000 and 1800 B.C.

The appearance of the metaphor of the spider and the spider's web in the sky in the common, everyday folklore of India and the association with cloth and net-weaving techniques may argue well in favor of India as the home of the spider creator concept found in Southeast Asia and Oceania where the spider's net was a conceptual configuration for the ecliptic.

### The Celestial Spider in Polynesia

The spider's net as a sky formation is present in the heroic cycle of Tahaki, the adventurer-chieftain who makes a journey to recover his father from the Matuauru demons in the land of Puna. There he discovers that the eyes of his father, Hema, have served as "light" for the star-maidens. Tahaki took the eyes and returned them to Hema's eye sockets so that both eyes regained their sight:

"Then indeed for the first time Hema realized that this was Tahaki. He caught his son in his arms and set him upon his knees, and rubbed noses with him in affection. And Hema wept for very joy over his boy, and as he wept he chanted:

(1) The child remained behind at Havaiki,  
 alas!  
 The father had vanished in Kororupo,  
 alas!  
 The father was brought to the point of  
 death by the goblin myriads of  
 Matuauru, alas!  
 Ho! Wonderful is the son!

(2) Long has the father been gone.  
 It is the son who now avenges the  
 father  
 Lost far below in Kororupo, alas!  
 Ho! Valiant is the son!

"...Soon they ceased weeping, and  
 afterwards Tahaki left his father in the land  
 of Puna and the star-maidens, and went  
 back to Hiva-nui, the land of the goblins, to  
 exact vengeance for his father's shame..."

"Then Tahaki made a net--Tahaki  
 and Tukutuku-raho-nui, Great Spider,  
 fashioned it together, and Tahaki sang a  
 song about this net:

(1) First Voice:

Spread--the net is spread!

Second Voice:

It is spread in the World-of-Night!

Chorus:

A mighty net belonging to Tahaki,  
 Filled till it bellies out above,  
 Till it sags down below!

Refrain:

His fish is caught in the meshes--  
 It is indeed the goblin-band of  
 Matuauru.  
 Ho! A might net--

(2) First Voice:

A mighty net is the net of Tahaki!

Second Voice:

Filled till it bellies out above, till it  
 sags down below--

Chorus:

Completely filled as it lies spread out  
 here upon the shore!

(3) First Voice:

Here upon the shore lies the mighty  
 net of Tahaki

Second Voice:

Filled till it bellies out above, till it  
 sags down below--

Chorus:

Crowded with myriads!  
 Completely filled as it spreads out  
 before Puna-ariki-tahi.

Refrain:

His fish is hemmed in by the net--  
 It is indeed the goblin-band of  
 Matuauru.  
 So it is! Oho!

"Now when Tahaki overtook them  
 the goblin myriads of Matuauru were fast  
 asleep. Immediately Tahaki and his  
 companion, Great Spider, completely  
 surrounded the sleeping-place of the  
 goblins, one and all, with the net; and  
 Tahaki said to Great Spider, "Keep guard  
 over our net--I am going to start a blaze"  
 [Stimson, 1937: 88].

The concept of the 'way of the  
 spider', a path of travel, is a traditional  
 phrase. When Te-Aru-Tanga-Nuku builds  
 his canoe Taraipo, Oro-taere, on his way to  
 help Te-Aru-Tanga, comes upon a struggle  
 between the white heron, Ruru, and a  
 seasnake, Aa. The Ruru asks Oro-taere  
 where he is going, and Oro-taere replies, "I  
 am going to fell a tree to make a ship for  
 the ariki (chief), for Te-Aru-Tanga-  
 Nuku," whereupon the white heron  
 encourages him: "Go to my tree, by way of  
 the spiders, it is a Maota-mea," (I reira i  
 akakite mai ai i te rakau, 'E oro ra ki taku  
 rakau i te ara pungaverere, e Maota-  
 mea) [Gill, 1912: 52].

## The Cord of the Celestial Spider in Hawaii

The 'way of the spider' is known in Hawaii as the ecliptic, *Ke-ala-a-ke-ku'uku'u*, 'pathway of the spider' (*ku'uku'u*, 'to let down, as a net') who is called *Tukutuku-raho-nui* (spider-of-large-scrotum) 'Great Spider', Tahitian (and Tuamotuan) tutelary deity of net-weaving in the Tahaki cycle.

The pathway of this spider was shown on the navigation gourd (*ipu makani*) diagrammed by Kaneakaho'owaha, counselor to Kamehameha I, in old Hawaii. It had several markings: the celestial equator, *Ka Piko o Wakea* 'The Navel of Wakea (Sky Father)'; the ecliptic, *Ke ala a ke Ku'uku'u* 'The Path of the Spider', which was divided into four parts:

(1) The limit of the sun's path in the north on the 15th or 16th day of the month Kaulua [June, for Gemini], the summer solstice, *Ke Ala Polohiwa a Kane* 'The Black Shining road of Kāne';

(2) The limit of the sun's path in the south on the 15th or 16th day of the month Hilinamā [December, unidentified], *Ke Ala Polohiwa a Kanaloa* "The Black Shining Road of Kanaloa";

(3) The eastern quarter, *Ke Ala'ula a Kane* 'The Dawning of or the 'Bright (Red) Road of Kāne';

(4) The western quarter, *Ke Ala Ma'awe'ula a Kanaloa* 'The Red-Track (as of a spider's thread, from awe, strand, thread; 'awe, tentacle) of Kanaloa'.

A line was drawn in by burning in, (pyrogravure) between the North Star (Polaris) and the Southern Cross [indicating the meridian].

From another tradition [according to Theodore Kelsey] was graphed, in the form of a net (*koko*) woven over the calabash of mesh squares, a grid numbering twenty-

four to thirty-six spaces (*maka*), as of a net ('*upena*), called *na maka o 'Alihi* 'the eyes of 'Alihi.

Below the rim of the gourd, securing the mesh to the rim, was a red cord of 'olonā twine called the 'Alihi, corresponding to the name of Tahaki's loyal cousin and helper, Karihi, who assisted Tahaki in reaching the sky world [Kelsey, in Johnson 1975: 150-152].

The Hawaiian navigation gourd net which bears the name of Karihi as the supporting red cord, 'alihi, and the 'eyes of Karihi', *na maka o 'Alihi*, is a parallel to the net of Tahaki fashioned by *Tukutuku-raho-nui* 'Great Spider' (Tahiti) whose path was outlined between the solstices and equinoxes on the ecliptic. So sang the Hawaiian bards of the exploits of Tahaki (Kaha'i) and Karihi ('Alihi):

Holo Hema i Kahiki, ki'i i ke 'ape 'ula  
Lo'a'a Hema, lilo i ka 'A'aia  
Hā'ule i Kahiki, i Kapakapakaua  
Waiho ai i Ulu-paupau.

'O ke anuenuē ke ala o Kaha'i  
Pi'i Kaha'i, koi Kaha'i  
He Kaha'i ke Ko'i'ula a Kāne  
Hihia i na maka o 'Alihi  
A'e Kaha'i i ke anaha  
He anaha ke kanaka, ka wa'a  
I luna o Hānaiakamalama  
'O ke ala ia i 'imi ai i ka makua o Kaha'i  
O hele a i ka moana wehiwehi  
A halulu i Hale-kumu-kalani  
Ui mai kini o ke akua  
Nināu 'o Kāne 'o Kanaloa  
He aha kau huaka'i nui  
E Kaha'i, i hiki mai ai?  
I 'imi mai au i ka Hema  
Aia iā Kahiki, aia i Ulu-paupau  
Aia i ka 'A'aia, hāhā mau 'ia a Kāne  
Loa'a aku i kūkulu o Kahiki.

Hema went to Tahiti to fetch the red 'ape taro,

Hema was caught by the 'A'aia bird  
He fell dead in Tahiti, in Kapakapakaua,  
He rests in Ulu-paupau.

The rainbow is the pathway of Kaha'i  
 Kaha'i arose, Kaha'i bestirred himself,  
 Kaha'i pass onto the floating cloud of  
 Kāne,  
 Perplexed were the eyes of 'Alihi  
 Kaha'i passed onto the glancing light,  
 The glancing light (on) men and canoes,  
 Above was Hānaiakamalama (moon),  
 That is the road to see the father of Kaha'i  
 Go on over the deep blue ocean  
 And shake the foundations of heaven,  
 Inquiring are the retainers of gods,  
 Kāne and Kanaloa are asking,  
 For what purpose is your large traveling  
 party,  
 O Kaha'i, that has come hither?  
 I am seeking for Hema,  
 There in Kahiki, there in Ulupaupau  
 There (with) the 'A'aia constantly  
 breathed upon by Kāne,  
 Reaching to the farthest ends of Kahiki.

Tahaki's birth, like that of Maui, was in a West Polynesian home, and the place where Hema (Sema) was 'caught by the 'A'aia' was in Kahiki-west, or Viti, meaning in the direction of Fiji. In the Ulu genealogy, Kaha'i appears in the tenth generation after Maui.

When Hina is abducted by the chief of Moloka'i, Keoloewa (or Kaupe'epe'e-kauila), who employs three messenger birds to scout for her (the p

In Hawaiian myth the spider's web or the shape of the spider in the sky is a form of the supernatural hero, Kana, son of Haka-lani-leo and Hina, chief and chiefess of Hilo, island of Hawaii. Kana was the grandson of Uli, the goddess, and Kū. Uli was the sister of the sky god Wakea and Manu'a (god of the underworld). The name Manu'a belongs to Samoa.

Kana is born supernaturally as a rope which was thrown into a pig pen and forgotten. He is the twelfth son. The spirit of the cast-away baby visits the grandmother Uli, and she recovers the neglected rope, putting it into a calabash of water where it grows forty fathoms in forty days, or one fathom a day.

In the meantime Kana's older brother, Niheu, who is only half as tall (five feet) as his ten brothers, is the only person able to lift the ten-fathom one-yard long great ulua fish-rod, Kolea; the sandpiper (or wandering tattler), 'Ullili; the snipe, 'Akekeke) Niheu tells his father he is unable to rescue his mother.

Kana is sought to help Hina because of his superb stretching powers, so Kana is sent by Uli to help Niheu rescue Hina from Keoloewa of Moloka'i. Meanwhile Keoloewa orders the turtles to raise the fortress, Ha'upu, on Moloka'i higher. Niheu tries to climb it but is distracted by the plover who plucks five hairs from his head, whereupon Niheu falls, breaking his leg. [All of Niheu's strength is in his hair, which is never cut]. So Kana employs his bodies to reach Haupu fortress:

"...Kana was very angry, for he knew that now they would have a great deal of trouble in rescuing their mother again. Kana turned over in the mats and having thus broken the ropes, stood up. The king saw that this man was taller than his fortress. As Haupu was slowly raised higher and higher, *Kana stretched his body, first his human body, then his rope body, next his convolvulus (morning glory) vine body, his banana (cordage) body, and last his spider web body.*" [Fornander, 1969:II:16-18; Rice, 1971: 101]

In a Kaua'i variant the motif of Kana's changing the hill by stamping (on) it with his foot (ke kapua'i a Kana; kapua'i, measuring foot; (vs.) wāwae, 'foot', as of the body) is repeated. The name of the hills raised by the turtles, both on Moloka'i and Kaua'i, is Haupu:

"Kana was afraid that it would reach too high, so he stretched himself up until his body was no larger than a spider's web. When he was tall enough, he put his foot on top of the mountain and crushed it down" (Another trait of his demigod is that he possessed two large, staring eyes).

The activities of the turtles in raising Haupu are alluded to in this Moloka'i chant:

Huki e lele iluna ke kū a Oloka'u  
Ke kaulu pali lālā hale o Kaunuohua  
E ho'olikelike ana elike me Ahumauna,  
Me ke kihi lālā peahi o Haupu,  
I paia e ka honu nui kua e'a'e'a.  
Mae'a ke kanaka i ke kaunu a ka moe  
I ke kaomi lima a ka ipo i Keiu-a  
'O ka'u ipo no ia o ke aloha,  
'O ko'u me'eme'e no ia o ka meahou.

E ala e, e ala e Kōlea  
E ala e Ulili, e ala e Ahike'ehiale  
Na kaikaina manu o Keolo'ewa,  
E hele 'oukou a ha'i aku i ka Haku  
Kaikuana o 'oukou  
He me'eme'e nei la no ka moe  
E mana ana i ka 'āina  
Ko ke 'ano he 'auhe'e,  
I ke koa o kū 'Aiwa'awa'a  
He koa na Hina i hānau,  
*Hānau a'e Kana he kino kaula,  
He kae'e kowali 'awe pūmai'a,  
Punāwelewele na kino o Kana,*  
Hānai a Uli a ka ihupi,  
A ka ihu nanā, a ka ho'onanā,  
'O ka 'ilio hae 'o ka manō hae,  
Auwē! Alia e! Ha'a nei mauna  
O ka moe a Moi, a ke Kahuna mana.

The rising back of 'Oloka'u lifts the eyes  
The cliff ledges branch into the house of  
Kaunuohua  
So much like Ahumauna, heaped  
mountain,  
*And corner flippers of Haupu  
Walled by the great turtle of patterned  
back,*  
Made erect like a man at lovemaking  
Gripped by the sweetheart at Keiu-a  
My sweetheart beloved is he,  
My favorite new interest.  
Awake, arise, rise up, O Golden Plover,  
Awake, O Wandering Tattler, awake,  
Ahike'ehiale,  
Bird brothers of Keolo'ewa,  
Please go and tell the Chief,  
Your older brother,  
Who likes to sleep--  
Spreading toward the island  
In the manner of a fleet,

Is a warrior of Ku-aiwa'awa'a,  
A warrior born of Hina,  
*Born was Kana of rope body,  
Of kowali cordage, of the fiber of  
the banana stalk,  
Of the spider's web are the bodies  
of Kana..*

Raised by Uli to be the snarling nose  
Of the dog and snapping shark.

Oh, wait! Low is the mountain  
In the repose of the king and the  
powerful priest [Beringer, 1921].

In the tale of Kana the spider's web  
is the equivalent of the cord kept in a  
calabash of water. The cord measures out  
from the calabash, forming a forty to  
four-hundred fathom rope a day.

This may be interpreted again as the  
bailing gourd (Hina-ke-kā) filled with  
water and kept on the canoe.

The god of the golden plover, kolea,  
was Lono-kolea-moku, symbolized as a  
red stone in the heiau foundations at Cape  
Kumukahi, Puna, Hawaii. The rock was  
the first in a row of five stones, four of  
which were called "The Wives of  
Kumukahi", spaced around the cape and  
used to mark positions of the sun at its  
northern (Hanakaulua [Gemini]) and  
southern (Kanono, unidentified) limits.

The name Kumukāhi [First  
Foundation] given to the easternmost point  
of land in the Hawaiian group is  
associated with the migration of Mo'ikeha  
from Tahiti. His younger brother,  
Kumukahi got off the canoe near the place  
bearing his name while Mo'ikeha  
continued northward. Several others  
jumped ship between Hawaii and Kaua'i,  
and Mo'ikeha pressed onward with his  
companion, La'amaomao, who had the  
wind calabash [Ipu makani a La'amaomao.

La'amaomao would call the winds  
into the ipu when they were too strong for  
the canoe or summoned them forth out of  
the ipu when the sea was dead calm.

Yet, when Mo'ikeha sent Kila, his youngest son, to Tahiti to get another son (or nephew), La'amaikahiki, La'amaomao was not in the returning crew doing all of the navigation for Kila.

About four to five centuries later, in the sixteenth to twentieth generation after Mo'ikeha, the wind calabash of La'amaomao was bequeathed to Kū-a-Paka'a by his mother, La'amaomao-wahine:

"When La'amaomao finished talking, she opened the cover of a large gourd (ipu nui) and drew out a certain small gourd (ipu hokeo 'u'uku) which had been woven tightly with 'ie (Freycinetia) cord with a cover (po'i) on top."

"...Then she turned to her son: 'I give this gourd to you, as its name was your grandmother's name and mine also, and within it are her bones. When she was alive, all of the winds of this archipelago were her servants, beneath a marvelous power which she received, and she gathered all of the winds into this gourd, and they are still in this gourd until now, and there names were committed to her memory, those from Hawaii to Ka'ula, and when there was no wind, she would remove the cover and call the wind, and the wind would then blow, and when the cover was replaced the wind would cease, and this gourd was famous as the 'Wind Calabash of La'amaomao.'" [Nakuina, Kū-a-Paka'a (no date), 20-21 in Johnson, 1989 (unpublished mss.), 1989: 44, 47].

The account of the wind calabash of La'amaomao finds a parallel in the Rarotongan tradition of the wind god, Raka-maomao, whereas in Samoa La'amaomao was a war god. In the tradition of Rata, the wizard Nganahoa combats the demons of the sea in a floating calabash called a "red gourd" ('ue kura) from which he divines their approach and continues to warn the doubting Rata.

Nganahoa, a wizard who flies kites, applies to Rata to go with him on his voyaging canoe to find Vahieroa. Rata considers him useless and leaves without him, but Nganahoa follows him on a large gourd floating on the sea:

"..At the time that the canoe sailed away there were only eleven men on board. The canoe sailed on until the land was out of sight, when the crew descried a large gourd floating on the surface of the sea. The crew threw Ngana'oa and his gourd overboard, and left him to his fate (as they thought)."

"...The canoe proceeded on its voyage, and had sailed on for some distance when the crew noticed another gourd floating on the ocean; they at once cried out, 'The is our 'ue-kura floating on the sea.' Rata heard them and called out, 'Pick it up.' They did so, and when they opened it they were again confronted by the glistening eyes of Nganahoa" [(no author), "The Rarotongan Version of the Story of Rata," Journal of the Polynesian Society Vol. 9 (1910): 142-168].

Nganahoa in this form is the bailing calabash, like Hina-ke-kā, In the Tuamotus Nganahoa is a star represented in Rarotonga as a character prominent in the Rata story. Like Tahaki (Kaha'i), Rata (Iaka), grandson of Tahaki, goes on a voyage to find his father, Vahieroa (Wahieloa).

In Hawaii Nganahoa is the name of the phallic rock on Moloka'i, Ka Ule o Nanahoa (Penis of Nanahoa). This ule was Ul or Uun 'Aldebaran' [Hyades, in Taurus] in Micronesian star names. Aldebaran was one of the "four royal stars" or 'Guardians of the Sky' in Persian astronomy, 5000 years ago, when it marked the vernal equinox [Allen, 1963: 383-385; Gleadow, 1969: 218; Johnson, 1975: 122].

A peculiar attribute of Nganahoa in the Rarotongan version is that when the bailing calabash was brought aboard the canoe, all that was seen inside were the

staring eyes of the wizard.

In the Ipu-makani-a-La'amaomao carried by Mo'ikeha on his journey, La'amaomao was, apparently, not a body on the canoe, but rather, the bones of an ancestor in the calabash by which Mo'ikeha called the winds to come out when the ocean was dead calm, calling them back when the winds were too strong.

Aldebaran [Nganahoa, Ka Ule o Nanahoa, Ul, Uun] in Taurus has been an ancient ancestor of star-worshipping wind-watchers on deserts as well as oceans.

That the gourd was encased in basketry in Hawaii is clear in the case of the wind calabash of La'amaomao, but the Unu o Lono shrine, as the Ipu o Lono god image in the hale mua men's eating house, was suspended from a net (koko), reminiscent of the net ('upena) that went across the sky in the Kaha'i story. The chant to this gourd sang:

"The gourd is placed in position;  
a shapely gourd it is;  
Plucked is the gourd; it is cut open,  
The core within is cut up and emptied  
out,  
The gourd is this great world;  
Its cover the heavens of Kuakini,  
Thrust it into the netting;  
Attach it to the rainbow for a handle!  
Within this gourd from the cavern of  
Muaiku, calabash of explosive  
wind-squalls--  
Till the serene star shines down,  
Take hold of it and it crouches.  
Take hold of it and it displays itself  
at Vava'u;  
Confirm this and make it sacred,  
wholly sacred, O Lono!  
Bind it securely there." [Malo, 1951: 89].

Often ignored but present in the tradition of the Ipu o Lono is a small note:

"...This image had suspended from its neck a gourd, ipu which was perforated to receive a wooden bail" [Ibid.:88]. This

means that the larger gourd of Lono, the unu (temple), also carried the ka bailing cup, gourd symbol of the goddess Hina-ke-kā, canoe-bailer form of the moon (goddess) [Johnson, 1989: 50].

The Ipu-makani-a-La'amaomao wind calabash is, in part, derived from the Malay word for 'compass', mata angin, 'eye of the wind' (angin). The standard Polynesian wind compass had eight 'eyes' (maka) or as many as thirty-two wind directions ('Aitutaki, Cook Islands).

Hina-ke-kā, the bailing gourd, is not the wind compass (Ipu-makani-a-La'amaomao). It was a reflecting mirror or an instrument used as a plumb bob or water level. The Nganahoa calabash carried by Rata (Laka) was thrown out into the sea ahead of the canoe. Both were, apparently, the same type of gourd of which Tuamotuans sing:

Oh, my calabash!  
Blown toward me by the wind,  
My calabash rolls over and over  
on the toppling waves.  
It is my diviner,  
*Giver of the ancient wisdom of  
the stars,*  
Oh, my calabash!  
Bringing me a brother's life-saving  
love,  
My calabash turns over and over on  
the crested waves.  
*It is the first of my sacred  
possessions* to be borne  
hither by my side,  
Drifting into my welcoming hands.  
Oh, my sacred calabash!  
*Revealing the wisdom of the  
stars!* [Stimson, 1957: 75].

The riddle of Kana may, perhaps, only be unraveled by testing the history of the knotted cord to its origins.

Like Ngana'oa in the 'ue kura gourd of Rarotonga, Kana was a visage of staring eyes of a cord in a calabash of water, as a rope of banana fiber ('awe'awe) that became a spider and its web, or sky grid in

extending from a fathom when born to forty and four hundred fathoms in several weeks.

These features are reminiscent of heiau numbers, as of 40 to 80 kahu ka'ai caretakers and 40 to 80 akua ka'ai pole images carried on the end of a spear in the Kahoali'i rite and circular procession of aumakua gods to whom 400 to 800 pigs were ritually sacrificed.

Who or what was Kahoali'i, leader of a procession of forty-one men, and the only one unclothed, whose duty was to swallow an eye during the papa ulua human sacrifice in ceremony, on the morning of Olekulua, first quarter moon of the month Nana, April-May?

It probably had nothing to do with predicting eclipses, because 'Olekulua is not a full moon. That it is a quarter moon may mean that stars transiting the meridian that night would have been observed.

Outside the heiau every six months Kahoali'i was also required to swallow a human eye to remove the fish tabu on 'opelu (mackerel) and to commence another on aku (bonito) fishing. This must have complicated his life for as long as he lived and all those generations after him who inherited this "revolting edict" (as Kamakau called it), until Hewahewa (mercifully) ended this obligation by renouncing his kahuna nui office to help Liholiho (Kamehameha II), Ka'ahumanu, Keopuolani, and Kauikeaouli to abolish the 'ai kapu in November, 1819.

If Rigi was the Milky Way, whose worm body became the "Eyes of the Pleiades" (Mata-riki, Makali'i), was the "companion" (hoa) of Rigi, Aldebaran? After the Pleiades set, Aldebaran is right behind it all of the time. When the Pleiades rise, Aldebaran is right behind it again. It was called "The Follower" [Al Dabarān], i.e., of the Pleiades, originally given to the entire group of the Hyades [Allen, 1963: 383-384].

## The Cord in the World

The artifact to be considered here is the knotted cord, in Inca Peru called *quipu*, in Hawaii *hipu'u* (or *lipu'u*, *nipu'u*), in Indonesia *terbuku tali* (Borneo), and in India the *grantha lipi*. (The latter knotted cord was regarded by nineteenth century scholars as an embryonic system of writing practiced by adherents of the Kamphati sect, members of which also lengthened perforated ear lobes, an item of cultural practice widely dispersed between India and the Pacific and still done by navigators on Puluwat atoll (Micronesia), while to the west and east the lengthened ear lobes may be seen in megalithic stone sculptures of India and Southeast Asia/Japan well into Buddhist times and most prominently in the silent heads and split ear lobes of Rapa Nui (Easter Island) stone statues.

Scholars of writing systems (Diringer, Wuttke, Lacouperie) in the nineteenth century regarded the Peruvian *quipu* as a late introduction into South American Indian culture, despite claims to its origination there: "It was said that the *later* art of reckoning by *quipus*, knotted and colored cords, was invented at Tampu-Tocco" [*Mythology of All Races*, 217].

Given the widespread distribution and antiquity of the knotted cord in Asia and established chronicling of its uses in the earliest Chinese written records, Lacouperie grouped existing traditions of the knotted cord, including the Peruvian *quipu* and Hawaiian/Marquesan samples, into one cultural continuum from northern Asia to the Americas. To quote him:

"...Polynesia was the way through which apparently the custom of knotted cord records reached the new world. The remarkable instance of dissemination we have to quote further on about the Easter Island inscriptions is highly suggestive of such a fact. It is by the Peruvians that the cord system of mnemonics was carried to the greatest perfection and the name of

quipus they gave to them might be taken as a generic appellative for the system" [Lacouperie, Beginnings of Writing, 1894: 14-15].

Lacouperie, whose work is largely forgotten in present-day linguistics, cited the Hawaiian hipu'u knotted cord as evidence for this inference, notwithstanding antecedent examples in Indonesia and Asia, quoting description of the same by Tyerman and Bennet:

"...The tax-gatherers, though they can neither read nor write, keep very exact accounts of all the articles, of all kinds, collected from the inhabitants through the island. This is done principally by one man, and *the register is nothing more than a line of cordage from four to five hundred fathoms in length*. Distinct portions of this are allotted to the various districts, which are known one from another by knots, loops, and tufts, of different shapes, sizes, and colors...

"...Each taxpayer in the district has his part in this string, and the number of dollars, hogs, pieces of sandalwood, quantity of taro, etc. at which he is rated, is well-defined by means of marks, of the above kinds, most ingeniously diversified. It is probable that the famous quippus, a system of knots, whereby the records of the ancient Peruvian empire are said to have been kept, were a similar, and perhaps not much more comprehensive mode of reckoning dates and associating names with historical events" [Tyerman, Daniel and George Bennet, 1821 and 1829: 119].

We note, by the addition of "dollars" and "sandalwood", that the Hawaiian hipu'u knotted cord was still being used in post-contact, post-missionary times, also with respect to recording of Kumulipo verses from the knotted cord on Moloka'i by Kalākaua's Hale Nauā well toward the end of the nineteenth century.

[\*Note: Persons desiring more information about the decoding of the Inca

quipu should consult Marcia and Robert Ascher's work, Code of the Quipu. A Study in Media, Mathematics and Culture, University of Michigan Press, 1981].

Lacouperie's inference that the knotted cord system in Inca culture came from Asia through Polynesia was based on a common observance that earlier native American string devices from North to South America, as embryonic writing/message systems, were tally cords strung or netted together with pebbles and maize beans for counters, per Wuttke:

"...Before the time of their acquaintance with the Quippus, the Peruvians used in the same pebbles or maize-beans of various colours" (Wuttke, H. in Lacouperie, 1894: 11].

Contemporary scholars (archaeo-astronomers, mathematicians) indicate that decoding of the Inca quipu is confined to samples post 1400 A.D. Pre-Columbian samples have not yet been decoded.

"...Quipus remain undeciphered as to content, but their structure, their grammar, and their mathematical syntax can be clearly appreciated...Quipu, which is the Quechua word for knot, is the term that the Incas used for their knotted string mnemonic devices...

"... Several early references...suggest their broad use as data retrieval systems: for recording history, for census information, for treasury data, and for law court records. Also, 16th century drawings of quipus exist that by visual association, at least, link *astronomy and quipus*" [Conklin, William J., 1982: 261-262].

[\*Note: The above passage was illustrated by a drawing and text by Waman Puma, dating from about 1600 A.D., with translation by Conklin, showing an astrologer-poet carrying a quipu in his left hand and a *forked stick* (emphasis mine) in his right hand];

"And our Astrologer/Poet!  
 Who knows of the rotation of the sun.  
 And the eclipse of the moon,  
 Of the stars and the comets,  
 Of the hours, the Sundays, the months,  
 and years  
 And of the four winds of the world  
 And of the planting time for seeds for  
 the food,  
 Since time immemorial..."

At last, we have arrived at a place where the *content*, in this instance from Peru, of the knotted cord (including a forked staff) concerns the reckoning of time.

Lacouperie's history of the cord in Asia and Indonesia mentions measuring of time by passage of observed celestial bodies as typical of Formosans (Western Pacific, Austronesian) and the Sonthals of India (Indian Ocean):

"...A recent account of Formosa states that the aborigines ignore writing. They have not even any means of keeping time, and when they have made an appointment for any date, their only means of keeping a check on the days as they pass is by means of a tally of stones or grass, one stone or one knot in the grass representing a day"...

"...Such is also the case with the Sonthals of Bengal. Their accounts are either notches on a stick, like those formerly used by the rustics for keeping score at cricket matches in country villages in England, or knots on a piece of grass string, or a number of bits of straw tied together...I will remember my astonishment while trying my first case between a grasping Mahajun and a Sonthal, when I ordered them to produce their accounts...the Sonthal produced from his back hair where it had been kept. I suppose, for ornament, a dirty bit of knotted grass string, and threw it on the table, requesting the court to count that, as it had got too long for him. Each knot represented a rupee, a longer space between two knots represented the lapse of

a year" [Lacouperie, 1894:10, 14; from E. J. Man, 1867, Calcutta].

The knotted cord as a time piece, or tally of time, is documented from the Pacific:

"...Dr'Urville spoke of natives in the vicinity of New Ireland as being voyagers to some extent. They made voyages 10 to 12 days to some land inhabited by people of a much lighter colour than themselves, and there obtained garments covered with designs...On one of these occasions they brought back one of these light-skinned folk, a woman, who tallied her days of absence from home by tying knots in some fabric that she wore round her neck."

"...We know that the natives of the Carolines, Pelew, and *Hawaiian* groups formerly employed the quipu, or knotted cords as mnemonic aids to memory, and that the same aid was in use among Polynesians generally" [Best, Elsdon, 1954: 60]

The observation, then, among prominent scholars of language and culture of the nineteenth century (Lacouperie, etc.) claimed an antiquity of wide-spread knotted cord notation, as of reckoning and timing quantification through a system of early measuring by knots and stringed objects impressive for its broad range of distribution [from]:

Northern Asia across the Americas (Tibet, north of Tibet, among the Yang Tung, south of Khoten; Siberia, among the Bratyí and Buriat) into Peru (Inca), where Lacouperie insists on Polynesian cultural influence; Southern Asia (India); China and Japan; the offshore islands Hainan (Li people) and Formosa;

[E]astward into the Ryukyu Islands, a northern Pacific route, then southward into Timor (according to Chinese records of this area, circa 1618 A.D.), penetrating, perhaps earlier, through Polynesia, of which the Hawaiian knotted cord affords the most comparable artifact to match the colored Peruvian quipu by description, if not by

surviving example.

It is in the heart of Indonesia, however, where tally strings and notched stick devices reach an interesting level of time-keeping, indicating a more scientific approach than mere tallying of days (arithmetical notation, cumulative reckoning):

"...The Kenyahs (Borneo) sun dial (tukar do) measures the noon-day shadow by means of a measuring stick (asu do)...*the stick lies along the extended arm*, the notches corresponding to certain regions of the arm and hand...some of these spaces correspond(ing) to positions along the arm *where strings have been tied*, indicating when, *according to shadow lengths* it is time for planting [\*Addendum to Mr. Hose's Paper on Methods of Reckoning Time," in Royal Asiatic Society No. 42 (1904): 201-210]. (This was a combination of the notched stick and string as a further development of a rule of measure into gnomonic strategies for shadow-length measuring, employing observation of and knowledge of the sun's apparent course during the year).

"...The Kenyahs and Kayans judge the seasons by the sun, and the method they adopt displays a wonderful knowledge of the precautions to accuracy. The Kenyahs *measure the shadow cast at midday* with an instrument the Greeks would have called a gnomon. It is a pole set up near the village, guarded by a fence to keep away mischievous children and animals. *In height it is more than a fathom by the span of the thumb and first finger. A piece of string weighted at each end and thrown over the top shows when it is perfectly upright.* The length of the shadow is measured by a stick called the 'asu do' which is marked with notches gradually approaching one another more closely as they get further from the pole."

"...The interval between successive notches represents the change in the length of the shadow in three days. Midday is

known to be the time when the shadow cast by the sun is at its shortest, and the Kenyahs are also aware of the fact that the direction of the shadow at noon, though sometimes to the north and sometimes to the south, is always in the same straight line...

"...The Kayan method, which differs more in practice than in theory from the Kenyah, is *to let in a beam of light through a hole in the roof* and measure the distance from the point immediately beneath the hole to the place where the light reaches the floor. Their measure is a plank, made level so that round discs do not roll on it, and fixed in position by chocks placed at the side. *This shows that they know the sun to be always due north or due south at noon.*"

"...The best time for planting has not arrived until the noonday shadow is the length of the forearm from the tip of the fingers to the inside of the elbow....

[\*Note: This is the cubit length, from middle finger of the extended arm to the elbow, roughly half a yard, a ha'ilima (Hawaii), about 18 inches, or one-fourth of a fathom of 72 inches = 6 feet, the measure of Kana].

"...When the shadow is less than the length of the hand, sowing is not likely to prove very productive...otherwise the Kenyahs care nothing about the heavenly bodies" [Hose, C. (1904): 4-5]

This represents a point of departure for use of cordage in a stretching cord to find level, i.e., the plumb line, rather than the knotted cord, probably replaced by another measuring device, the notched stick.

The string is obviously a related device for telling time, not by arithmetical notation but by calculation of the *rotation* of the sun (i.e., daily, or diurnal, cycle) versus *revolution* of the sun's annual passage (ecliptic), by shadow marks. The

Kenyahs and Kayans always knew where the meridian at noon was, north or south, without ever checking the stars in the pole south. [They are too far south to see Thuban, Kochab, or Polaris].

The measuring cord documented for Hawaii is the *'ahakū* or *'aha hele honua* connected with measuring height or length (*'ahakū*), squaring corners to sacred houses, or finding the middle of a circumscribed area. The latter was used in ritual ceremonies for squaring corners of sacred houses on the temple grounds for finding level and the center (*pīko*, 'navel', *ka piko o ka honua*, 'navel of the earth', the individual's own place of connection to earth mother (Papa) and sky father (Wakea).

The *'aha hele honua* is a lashing used on voyaging canoes for tying the canoe float (*'ama*) to the *'iako* connectives which are in turn lashed to the hull (*wa'a*). The fore and aft parts of the *ama* were termed *kapua'i* meaning 'foot', as of the measuring foot, so that crossing the equator (*ka piko o ka honua*, terrestrial equator) was "trampling" (*ke'ehi*) over the "diaphragm" (*houpo*) of *Kāne* (equator).

Use of a stretching cord to square corners in the building of houses and to make straight lines while constructing stone walls and platforms as in leveling the foundation on uneven ground and to find the middle of a circumscribed area was the function of the Greek *arpedonapt*:

"...I have listened to many men," said the Greek philosopher Demokritos, "but no one has yet surpassed me in the construction of figures out of lines accompanied by demonstration, not even the Egyptian *arpedonapts*, as they call them. Now the word *arpedonapt* is not Egyptian but Greek. It means 'cord-fastener'; and it is a striking coincidence that the oldest Indian geometrical treatise is called the *Sulvasutras* or 'rules of the cord'. These things point to the use of the triangle of which the sides are 3, 4, 5, and which has always a right angle. We knew that this

was used from an early date"...the so-called Pythagorean triangle is the application...the very name 'hypotenuse' affords strong confirmation of the intimate connection...it means literally 'the cord stretching over against,' and this is surely just the rope of the 'arpedonapt' [Burnet, John, 1958:20, 104.

"...In the narrow passage back of the drumhouse (*hale pahu*) and at the end (*kala*) of the house called *manā* was a small house called *wai'ea*. where the *aha* cord was stretched...

"...The fourth house, called the *Hale Wai'ea*, was a small one between the *Hale Umu* [earth-oven cookhouse], and the *Hale Pahu* [drumhouse]. *It was twice the length of the distance from fingertip to elbow in length, its height and breadth being half that measure.*

"..Two images stood before it on either side of the opening, and the king and kahuna conducted their *'aha* services at the right side of the opening, in the dark night before the birds began to twitter" [Malo, 1951: 161-162; Ii, 1983: 34-35].

The Hawaiian cubit, *ha'ilima*, (elbow extended to middle finger), forearm measure, equal to half a yard (*'iwilei*, middle of the collar-bone to the end of one arm) was, then, a unit built into the height and width of the *hale wai'ea* where they stretched the *'aha* cord.

However, if the *'aha* were not found, then the temple tabu could not be relaxed (*ho'omahanahana*) and would remain for a long time, so we are told, until that measurement was found. If that is the case, what were the *ali'i nui* and kahuna *nui* measuring against, and why were they the only ones to do it with no else present?

Some of the prayers uttered for the building ceremonies have survived but so few. Those uttered for human sacrifice rituals on the *heiau Kū* (*luakini po'okanaka*) contain repeated references to the cord and sky. The cord (*'aha*) gives

its name to the service ('aha).

Pule Ho'owilimo'o  
(Prayer to "twist" the lizard)

Hauli lani ka aha ka apipi o Kāne  
O Kāne ulu lani, hāko'iko'i ka lani,  
Lani kū, ka 'alana o aha 'ula ho'o-  
wilimo'o,  
Mo'olani, mo'olani 'aukūkū ka honua  
Ua wela ka hōkū Ka'elo iā  
Makali'i,

Ka 'auhuhu paina  
O ho'owilimo'o ka aha nani,  
Nani Kūkulu o Kahiki  
Ua nani ka aha,  
Ua moe kao'o ka leo kanaka  
E ka'i ka aha no ke ali'i,  
He aha noa, he aha lele  
He aha kapu, he aha kū  
Kūlia ka aha no ke ali'i,  
A make ka hoa paio.  
Kūlia ka aha no ke ali'i  
A lū, a ola, ola ka 'āina  
Iā 'oe Kāne, ke akua ola!  
E ola lau, iā (Mahoe) ke ali'il  
Ua noa! Ua ka'i ka aha!

"From heaven fell the aha to the  
spot favored by Kāne,

Kane who arched the heavens, mottled  
with clouds the whole heavens,

Gift of the sacred red aha of  
ho'owilimo'o of the upper  
heavens,

Heavenly portent! Heavenly portent!  
that fills the earth with blessings,

The star Ka'elo [Betelgeuse in Orion]  
blazes in the time of Makali'i  
[Pleiades]

The bitter 'auhuhu scorched to brittleness  
Ho'owilimo'o is the beautiful service,

Beautiful is Tahiti,

Favorable are the omens for the service,  
The voice of the multitude is at rest.:

Now we must perform the service for

the king,

An acceptable service that reaches its  
end,

A sacred service that shall not fail.

The assembly stands before the king.

His enemies shall melt away before him.

Pour abundance, life, life to the land

Through you, Kāne, the god of life!

Life of me, to (Mahoe) the king!

It is accepted! The service is  
accomplished!

The "lizard" (mo'o) is the Milky  
Way, which makes a twisting (wili) motion  
across the celestial sphere. Since the ritual  
was confined to the time between vernal  
equinox (March 20-22) and summer  
solstice (June 20-11), the kahuna would  
have known how the Milky Way moved in  
the night sky through that season. Ka'elo  
[Betelgeuse in Orion] as a 'star' (hōkū)  
marked the month of that name.

The season of Makali'i (ke au o  
Makali'i) is when Pleiades are in the night  
sky, November to January. On the islands  
of O'ahu and Hawai'i, respectively, the  
month Ka'elo was November and January.  
On the islands of Moloka'i and Kaua'i,  
respectively, Ka'elo was May and June.

In May, Ka'elo (Kaua'i) Makali'i  
(Pleiades) set at sunrise on the eastern  
horizon before the sun shut it out in the  
daylight. It also set on the western  
horizon after sunset [May-June]. Given  
the time in which the ho'owilimo'o  
ceremony was performed and the 'aha cord  
measured against the hale wai'ea at night,  
the prayer would have suited the sky a  
month before summer solstice. Hercules  
and Scorpius are declining

What would one learn by twisting a  
white tapa completely around the oracle  
tower (anu'u) in the ho'owilimo'o  
ceremony during the day, between May  
20th and June 20th, and stretching the aha  
cord before the hale wai'ea at night?

If you were concerned, perhaps,  
with what the southern skies were doing  
between May and June, the observations

would be more productive looking south in the direction of Tahiti, "beautiful", as the chant said, from May to June.

**Pule o Kai-a-Po('o)kea**  
(Prayer of the Bleached Skull)

"O Kū of the ocean at Tahiti  
The sacred ocean,  
Sea of the bleached skull;  
[\*a skull filled with sea water taken  
into the heiau by the kahuna]

Take of the sea foam  
That is the brine wherewithal to  
consecrate,  
Consecrate the ohī'a, ohī'a of Kuamū,  
of the woodland deities,  
Kūawao, Kūawa, and Kualana(wao),  
*That the ka'ai god may make his  
circuit*

*About the pavement guarded by  
the 'aha'ula [red cord]*

Obedient only to royal chiefs  
[\*Translator's (Nathaniel B. Emerson)

note: "The kind of aha here meant is the cord braided of much art, of many colored strands--one of them red, 'ula--which was stretched as a mystic protection about the residence of an ali'i with a kapu..."]

**Pule Kuwā**

(Prayer for the *linalina*, decorative net-like arrangement of cords hung over the ridgepole).

O Kū in the heavens,  
*Behold the cord done into the all-  
including knot (aha o Maku'u-  
halala)*

O Kū of the mystic, wonderful  
ridgepole (kaupaku) of Hanalei,  
Bind, tie with the *knotted olo-a*  
Power is wrapped up in the olo-a cord,  
Let power go forth to the god image.  
Cut now the navel cord of the house  
*manā*,

Virtue, virtue resides in the *knotted  
olo-a cord*

That decorates the house of god Kāne.  
Cut now the navel string!  
Done! It is done!

[Malo, 1951: 181]

**Kau Na Au'au**

(Prayer for thatching the sacred house of the god Lono)

Above the level of the ground floats  
the thatch pole,  
Lash with a tight loop the 'ukī leaf to  
this thatch pole,  
*Bind and lash the cord firmly  
To the back of the rafters of Lono's  
house!*

O Lono, here is a house for you, the  
house Mauiola!  
A sacred temple...[Malo, 1951: 184]

**Pule Hulahula**

(Prayer for the hulahula dancing ritual in the anu'u oracle tower, midlevel).

Resplendent the heavens, crystallizing the  
earth, mirror-like earth's plane,  
*The Milky Way inclines to the  
west,*

Refulgent are the heavens,  
The heavens are guarded by the Milky  
Way... [Malo, 1951: 183].

## Theory of the Distribution of the Knotted Cord, A Study of the Process of Tying and Knotting

We may never know what the 'aha ever was, except that it provided a standard of measurement, a unit of length. All that we know is that a check was made of that unit from time to time, during the night when the Milky Way was inclined across the sky between May and June, leading up to summer solstice.

At the top of the hale manā another cord, the *Maku'u* was knotted over the "ridgepole", or meridian, drawn from north to south the length of the house. Around the oracle tower (anu'u) the ho'owilimo'o tapa 'to twist the lizard' (Milky Way) was curled around the entire height of the anu'u so as to shut out the sunlight during the day, blocking shadows or creating a square (or rectangle) of light over the luakini circle at the base. If the sun was in the zenith at that parallel of latitude there would be no shadow at noon. In the evening over the equator [south of our latitude] but eastward, we would see Orion's arm come over the horizon, as its brightest star, Betelgeuse rose.

We may never know what the two men, the ali'i nui and kahuna nui, did to check the 'aha, but we may look along the length of the history of the knotted cord. The answer may lie there.

Are knotted cords on either side of the Pacific rim isolated, unrelated artifacts, or is 19th century scholar Terrien Lacouperie vindicated in inferring that these artifacts are from a related process, or from a number of related processes, given the multiple uses of cords with or without knots in various kinds of measuring?

We pause here to consider Lacouperie's credentials. He was Laureate of the Institut de France (Academie des Inscriptions, 1889-1893); Professor of Indo-Chinese Philology (late of University College, London); Honorable Member, (the) Royal Asiatic Society: Author of "the

Languages of China before the Chinese" (1887), "The Oldest Book of the Chinese" (1892), "British Museum Catalogue of the Ancient Chinese Coins" (1892), "Western Origin of the Early Chinese Civilization" (1894), etc., Director of the Babylonian and Oriental Records, etc.

His work on the distribution of knotted cords is found in a book entitled, *Beginnings of Writing in Central and Eastern Asia, or Notes on 450 Embryo-Writings and Scripts* (1894).

Under "Embryo Writings", subtitled "Objects", Used Singly, Strung Together, Fastened on Sticks or Strings, and "Fixed, Carved or Drawn", the subject of knotted cords is largely about the Tibetan systems, followed by another group of topics under "Signs," symbolical or conventional, with many subtopics under which are netted beans (wampum in N. American), and "knotted cords" (like the Quippus of Peru), then "notched sticks", and "marks on stones, like cup-marks, lines, of all sorts".

Lacouperie was a French orientalist, and his emphasis, perhaps, when he began his work, was on Asia. His first comment was:

"Knotted cords were originally used in Tibet, but we have no information about their system of using them. The bare statement comes from the Chinese annals."

"...It is commonly reported that the ancient Chinese used, before the invention of writing, and *previous to that of the Kwas by Fuh-hi, a system of knotted cords invented by a ruler of the mythical period named Sui-jin.*"

By *kwas* are meant the system of *Pakwa* or *Pakua* diagrams of the I-Ching, called *Batquoi* in Vietnamese. The image of the batquoi is an eight-sided figure with a yin-yang symbol, white and black, in the center of eight segments with three lines (trigrams) each of different lengths and combinations (hexagrams), each trigram representing 15 degrees per 24

lines in the 360 degree octagon. The total number does not exceed 256, or the sixteen squared.

The figure derives from a more ancient metaphor or analogy of the "bat" as *kwa*. This *kwa*, however, becomes the *\*mpekwa* proto-form in Austronesian for 'bat', from which is derived Polynesian *peka* and Hawaiian *pe'a* 'bat' as well as *Pe'apea-maka-walu* 'Eight-Eyed Bat' that Maui eliminated because it had abducted the moon.

We may grope through this mass and maze of history and language by assuming that the bat that eludes us in the cave of a long night of human ignorance of our language history will be found by following the elusive thread the spider left behind when he spun a web over the entrance to our past, concealing it for thousands of years.

As a particular artifact by itself, the knotted cord in Hawaii and the other in Peru seem related in function and form, but it is difficult to relate the two in their number operations. Assuming that Quechuan numbers are in no way related to Hawaiian numbers, as words (not concepts), we would have to say that Lacouperie could seize upon the like function and appearance, but on closer examination the theory snags on the problem of unrelated languages. Linguists are interested in cognate languages and the syntax and structure that connect them, not etymological or philological probabilities even though their science did not begin until after the late 19th century school of comparative philology that included Max Muller, Theodore Benfey, and scholars like Lacouperie who considered the literature and folklore as well as the languages. Without the brothers Wilhelm and Jakob Grimm of the 19th century school there would be no rule for the "regular correspondence" of consonants that identified the large Indo-European family from Sanskrit to Icelandic. Linguistics as a science is post-Grimm and the law of consonant correspondences that settled the

classification of the Indo-European family of languages.

Only in one instance is there comparability between the quipu and hipu'u, and that is in the existence of a decimal system in the calculations of Quechuan and Hawaiian numbers in the use of a base ten:

"...The single most important breakthrough in understanding quipus remains that of Leland Locke, who, in 1912, demonstrated that the quipus he studied were evidently *not language*, but rather purely numerical in nature. He also discovered that *they used a decimal counting system of a positional nature, and that the concept of zero was present*" [Conklin, 1982: 263].

[\*Note: The old Hawaiian counting system was decimal using place value and assumption of the zero position].

For other support we must then go to the verbs associated with the "tying" of "knots". Assuming that tying knots applies to other kinds of artifacts and tools, we should examine these in the related context of fiber technology, words for hand-tied or hand-woven textiles, basketry, and netted fabrics (i.e., fishnets, mesh-making), and even pyrotechnology, because cordage was used in making fire.

It is in the process of tying, not in number words, that the same distribution pattern emerges that was graphed for the extent of 'cotton' (*Gossypium* spp.) in the Indo-Pacific as used in cordage, cloth, and tinder [See Johnson and Decker, 1980, in the Appendix].

Let us consider the most widely-distributed form as it appears over the Indo-Pacific area, between Central/South America and Southeast Asia.

[\*Note: Use of the question mark (?) is for the hamza/glottal stop; small /c/ is for /ch/ affricate as in 'ch/air'; /ʌ/ is a schwa;

## Central/South America

Proto-Amerindian: [Matteson, et al. 1972:77]

- \*pʔali 'rope'
- pri? 'to roll, as rope'
- \*pʔal [(?) = hamza, glottal]

Mayan/Chipaya (Bolivia):

[Olson, 1965:35]

Mayan	pari	'string, not well-twisted'
Proto-Mayan	*bal	'string'
Chipaya	bal (a)	'to make rope, to twist cord'

Maya/Yunga/Chipayan

[Stark 1972: 134, 124]

Yunga	pal	'twisted string'
Uru-Chipaya	pari (to spin thread)	
Chipaya	bal	'to roll up something'

Proto-Aztecán \*puuli 'to tie'

[Lyle, 1978: 262-279]

## Southeast Asia (Austroasiatic and Austronesian)

Austroasiatic

[Headley, 1976:463]

Proto Central North Bahnaric

	*bray	'thread'
Proto Jeh-Halan	bray	'thread'
Mnong	brai	
Brou	prai	'bandage'
Pacoh	parai	
Serting	bri	
Proto-Chamic	mrai	'thread, silk'
Chamic	phray	'thread, silk'

Austro-Thai

[Benedict, 1975:257]

- \*(m)p(r,l)ali(s) 'cord, string, (reconstructed form)

The distribution of the foregoing forms, with bilabial voiced /b-/ and voiceless /p-/ initial stops (+ /-ri/, /- ali/, /-

ala/ (Central/South America) 'rope, string, to make/twist cord, to spin thread, to rollup (as cord)' in Proto-Amerindian, Proto-Mayan, Yunga and bilabial voiced /b-/ and voiceless /p-/ or nasal /m-/ (+ -ri/, /-rai/ or /-ali/ (Southeast Asia) in Austroasiatic and Austronesian (Proto-Chamic/Austro-Thai) is interesting since they straddle the extremes of the Pacific rim, but they do not exist alone for the technology of weaving/cordage.

Another related set of forms prefixed by initial voiced /j-/ and voiceless /c-/ affricates before the stems /- ali/, /-al/, /-alah/ , /-alin/ (India, Southeast Asia, Indonesia) further reflected as /t- / plus /- āri/, /-ali/ , /-ani/ reappear in the Americas north as cʔ ali (Zuni, Penutlan) 'to stretch' (as cord, weaving) and ts alan (Mayan, of southeast Chiapas, Mexico) 'tied' (in which the affricate has been glottalized). Consider the sets:

## Amerindian

Tojo Labal [Supple: 68-174] (Southeastern Chiapas, Mexico)

isʔalan	'tied'
ʔalan	

Zuni, Penutian [Newman, 1964:10] (California)

ʔali 'to stretch'

Aymara (Bolivia) [La Barre: 87, 117]

tari	'small cloth, shawl'
tahli	'measurement, four fingers wide; width of hand'

Muskogean [Swanton: 66] (Natchez in Mississippi, Louisiana)

tāl	'to weave'
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Shuswap (Salish) [Thompson, 1974: 23] (Oregon, northwest)

tal	'stretch, extend'
-----	-------------------

Coeur d'Alene [Reichard, 10:95; 11:55]  
(Oregon, northwest)

tar 'to stretch out, extend, as  
hand'  
tan 'be taut'  
'arrayed in a line'  
tanu 'be tight'  
tanut 'clothes fit tight'

Paco-Tacanan [Suarez, 1973:153]  
(Macro-Quechua)

tani 'to tie'  
tan

Coeur d'Alene [Thompson, 1974: 22-28]

?  
tar 'untie, loosen'

Kalispi

taal 'untie, loosen'

Chipewyan [Li: 131] (Alberta, Canada)

tar 'to untie a knot'  
?ar

Indo-Aryan/Indo-European

Nepali [Turner]

tāri (f) 'to tie (derived from Persian  
tār)  
tāre 'having a string, wire, band'  
tare 'to tie'  
tan 'warp, loom'  
tāni 'stretching'  
tānnu 'to pull, tighten'  
tanā 'stretching'

Sanskrit [Monier-Williams]

tan 'to spin out, to weave'  
tan 'cord, string'

Sanskrit [Turner]

tani 'a string with which garments  
are tied'  
tāli 'a string (ear ornament)  
[from li 'to join, unite',  
loanword from Pali, lpi, lvi:  
lpinati, lvinati 'to join']

Sanskrit [Monier-Williams]

tan 'to stretch'  
tanaka 'cord' [from tan 'to stretch']  
tanika  
tanti 'cord, string'  
[from tan 'cord, string']  
tantu

Pali [Turner]

tanti (f) 'cord, string'  
tantu (m) 'cord, thread'

Nepali [Turner]

sutari 'string, rope'  
sut 'fibre, twine, string'  
sutli 'string, cord, strand, twine'  
sutlo 'piece of string, twine, gauze'

Proto-Indo-European

\*syu- 'to bind, sew, [\*su- in  
Germanic \*saumaz,  
English seam

English surure 'process of joining,  
by sewing; material used, the  
line so formed' [from Latin  
*sutura*

Austronesian

[Oceanic]

Marshallese [Abo et. al., 1976:84]

jālinlin 'string'  
jaljal 'loosen, unwind'  
jāli 'kind of basket'

Indonesian [Dempwolff]

zalah /djala/ 'fishnet'  
zarin 'hunting net'

Borneo

Lawangan jala 'fishnet'  
Dusun, Tamuan

Chamic [Headley: 465] (Southeast Asia)

jāl 'net'  
ciel (from jāla)

Malay

jala 'net'

### Austroasiatic

Sedang [Headley: 465]

ceā 'net'

Bahnar

jal "

Jeh

jar "

Halang

jal "

Stieng, Koho

j:al "

Vietnamese

chai "

Bonda (Assam)

jali "

### Dravidian (India)

Tamil [Burrow/Emeneau]

centiravar (caliyan) 'weavers'

### Kannada

jāda, jēda 'a weaver belonging to the Lingavanta sect'

### Telugu

jēndra, dēndra 'a caste of weavers'

jade, jadye 'weaver, spider'

cali 'sieve'

### Indo-Aryan

Nepali [Turner]

jal 'snare'

Marathi

jale 'net'

Orissa

jāla 'net'

Nepali

jāli 'network'

tari 'to tie [derived from

Persian tā]

Persian [+ Arabic]

tare angkabut 'spider's web'

angkabut 'spider'

### Austronesian (Western)

[Indonesian]

Proto-Austronesian [Blust, 1976:47]

\*zari 'cord'

\*talig(i) 'cord'

Malay

tali 'rope, string'

Sea Dayak

tali "

tasi, nasi 'to make twine'

nali 'to make rope'

(Philippines) [Reid, 1971]

Bilaan tali 'string'

Tagalog tali 'string'

irali 'to tie, to join'

Bisayan itala 'to tie, to join'

(Formosan) [Stanley, mss.]

tali 'rope'

### Tibeto-Burman

Chinese [Wieger: 284, 525-26; 538, 549, 560; (numbers = tone)

li (2) 'rope, cable'

liao (2) 'to bind, wrap'

lei (3) 'to bind, tie'

lien (2) 'to connect, join'

li (4) 'astronomy, calendar'

li (4) 'annual cycle'

p'u (3) 'chronicle, register, catalogue'

ta (2) 'a knot'

### Austronesian (Oceanic)

[Micronesian]

Woleaian [Sohn, 1976]

feotagiy 'string'

Chamorro [Topping]

faatali 'tie with string'

tali 'rope, string'

Yap

tal 'rope, string'

Ponape

saal 'rope, cord'

[Melanesian]

Espiritu Santo [Codrington, 1974]

vetali 'banana string'

Leper's Island

votali " "

Maralana

vetal " "

verel

ve'el

Fiji

ndali 'rope, string'

[Polynesian]

Tongan [Churchward]

putalinga 'plantain'

'cordage plant'

Maori [Williams, 1971]

tari 'to plait, to weave'

tari 'sieve; noose for catching birds'

tari-kākāriki '4-strand cord'

tari-karakia '8-strand cord'

ri 'to tie'  
ripeka 'to tie across'

Tuamotu [Stimson]

Ripeka 'Southern Cross'  
rō 'cord'

Hawaiian [Puku'i-Elbert]

nipe'a 'to tie across'  
lipe'a 'to tie across'  
nipu'u 'to tie (knots)  
lipu'u 'to tie (knots)  
niki'i 'to tie'  
hiki'i 'to tie'  
hikiki'i 'to tie'  
muki'i 'to tie'

li 'to lace (as shoes)'  
kali 'string, long vine, spindle,  
spine, roll'  
kalina 'long vine, as of sweet  
potato'  
mali 'to tie, as bait to hook'  
mamali 'to tie'  
mali 'string'  
malina 'to splice, as rope'  
lino 'to weave, twist, braid, tie'  
lino 'taut'  
liō 'tight, taut'  
malo 'tight, taut'

Maori

roi 'knot, bond'  
roiroi 'bind, tie up'

Hawaiian

mālō 'taut, firm, straight, as a cord'  
mālō'elo'e 'taut, firm, as a rope'

Austronesian (Western)

[Borneo]

Ulkit taraki 'rope, string'  
Kajaman talei 'rope, string'

[Indo-China]

Atjinese taloe 'rope, string'  
Roglai talo?i 'rope, string'

Austroasiatic

Sakai s'roi, s' rōy 'string'

Bahnar [Benedict, 1976:13, 26-27]  
talei 'cord'

Khasi [Rabel-Heyman, 1973:1024]

tilay-suwali 'rope for plough'

Dravidian

Tamil  
talai 'fastening cord, rope'  
talayam 'bonds, fetters'  
irai 'thread'  
inai 'to tie'  
Bonda gurai, guray 'to tie, roll up'  
Desia

Marathi tali 'fetters, foot-rope for  
Tulu climbing palm trees'

Marathi tala 'fetters, foot-rope for  
climbing palm trees'

Telugu netari 'weaver'  
neta-purugu 'spider'  
neta 'weaving'

Gondi dohtānā 'to bind, tie;  
weave a fishtrap'

Kuwi dōh'nai 'to bind, tie'  
dōssali - -  
neh'nai - -

Tamil ney 'to weave'  
neyū 'a web'  
neyuni 'to weave, as a spider'  
pinai 'to be joined'  
punai

Kolarian ney 'to weave'

Austroasiatic

Vietnamese nhen 'spider'

Thai nen' pyng 'to be firmly tied,  
securely tied, tightly'

Nicobarese henden nang 'web'

Semang nangan 'rope' (for climbing a tree with tied ankles)

Thai nang-nang 'snare, net'

Bonda (Assam)  
 puglang 'to be folded'  
 puglanga "  
 apuglanga "

Austronesian

Proto-Malay  
 banang 'yarn, thread'

Tonga  
 lalanga 'to weave'  
 lālanga-a-Matuku 'mat'  
 alanga 'rope, of boat, masts, sails, oars; tackle, tacking, rigging, gear'

Samoa  
 lalanga 'weave, plait'

Maori  
 raranga 'weave, plait'

Rarotonga  
 ranga 'to weave, plait; to braid, as in mat-making'  
 raranga, rangaranga,  
 rangaranga'i 'plaited'

Easter Island  
 nanai 'spider'  
 kupenga nanai 'cobweb'

Hawaiian  
 lanalana 'spider, Great Spider'  
 ulana 'plait, as mat'  
 nananana 'spider'  
 nonanona 'spider; ant'

Barito Dyak (Borneo)  
 ũngkilaga 'spider'  
 tangkalaga?ang 'spider'

Indo-Aryan

Sanskrit kilanga 'mat'  
 kilinga 'mat'  
 (kulay-a) 'web, tissue, mat'

Prakrit vunang 'weaving'

We note that forms with mb-, mp-, b-, p- and m- + -rai, -ray -ri for 'rope' and 'string' [i.e. pa li, pal-, bal-, and brai, prai, pri, etc.] tend to favor the *Atlantic side of Central and South America and the Pacific side of Southeast Asia (Austronesian)* at the beginning of the listing [see page 141, *intra*]. The forms on the Pacific side of Central and South America favor the affricates [tʃa lan, cali] and those that begin with ta- + -l, -n, -li-, etc., as in tāli, tal-, tan- generally found in Oceania, India, Southeast Asia [Austronesian, Austroasiatic, Indo-European, Dravidian].

Hawaiian has both: ka- + -li and ma- + li 'to tie' 'thread, cord', including the range of bases -li, -lino, -lina, -lo'e, -lō prefixed by ma-, probably from causatives ka- and ma- + base.

Difficult to ignore is the form in Mexico, ts alan, alan 'tied' which seems similar to [Austronesian] forms for weaving (langa, lana), as of the mat sail (lā, from lāyar [Indonesian]), and west Austronesian forms zalah 'net',

Forms tsa-, dj-, and ca- + -li are represented in:

(1) Indo-Aryan (Nepali): jale 'snare', tare 'to tie [from Persian tar 'to tie'] (acc. Turner)

(2) Dravidian (Telugu, Tamil):

cali 'sieve, caliyān 'weavers'

(3) Austroasiatic

(Sedang) cea 'net'  
 (Bahnar) jal  
 (Vietnamese) cai (chai) 'net'

(4) Austronesian (west)

(Indonesia) djala, djali 'net'  
 (Malay, Borneo) jala

(5) Austronesian (Oceanic)

[Micronesian]: Marshallese jaljal 'untie,  
'loosen'  
Ponape saal 'rope, cord'

[Cp. Amerindian: Columbian/Colville  
and Coeur d'Alene  
tar 'untie, loosen'

(6) Amerindian:

[Mexico] Tojo Labal tsʔalan 'tied'  
[California] Zuni cali 'to stretch'

Compare the Hawaiian word for  
'snare' *hei* with:

Vietnamese cai (chai) 'net'  
Dravidian cali 'sieve',  
Nepali jale 'snare'  
Hawaii hei 'net, snare, stratagem'  
'cat's cradle, string figure'  
Tuamotu fai 'cat's cradle, string  
figure'

The contact or source area for  
Amerindian b- and p- forms appears to be  
Southeast Asia [Austroasiatic], favoring a  
route between the Indo-Pacific and the  
Atlantic, around Africa; the j-, t-, c-, ts-  
forms argue trans-Pacific influence. The  
b-, p- br-, pr- forms may be of an earlier  
period.

Subtle features are prefixes, such  
as /su-/ + ri [Indo-European]; /ve-/ or  
/vo-/ + (ta) + -ri or -li [Melanesian]; /ne-  
/ + (ta) + -ri or -li [Indo-European,  
Dravidian], and /ne(y)/ or /nai-/ + (ta) or  
(-nang) [Dravidian, Austroasiatic], and  
/na-/ + -di or -si [West Austronesian and  
Melanesian (Fijian)].

The forms *sutari* [Indo-Aryan  
(Nepali)] and *suture* (English) are from the  
same source as Hawaiian *kali* 'to tie, as  
string'. The history of the form is pre-  
European in Hawaii and derives from the  
source in Austronesian which belongs to a  
very ancient source in world language.

In New Zealand native Maori speak  
less about spider tracks along the celestial

grid net and more about "baskets" (kete),  
using the analogy from weaving:

"...Hence it was he (Tane) brought  
forth the stars. There were four baskets (or  
receptacles) into which the stars were  
gathered, and their names are as follows:  
Haruru, Tairaoa, Maemae, and Whiriwhiri.  
When he placed the stars in these baskets  
the following karakia (or incantation) was  
recited...of each basket:

Haruru te rangi i runga  
Ka toto taku kete tapu  
He whetu tukua ki te rangi  
Io e, ko tana tama i wehea e...

Resounds the heavens above  
My sacred basket reaches out  
To spread the stars in heaven  
O Io! his son, where is he?  
Maemae and Tairaoa from the stars,  
Behold my basket with its pendulous end  
'Tis a basket to enclose the miraculous,  
Behold my basket with the pendulous  
end,  
Even from Hawaiki,  
Behold my basket with the pendulous  
end.  
Containing the seed of the stars  
Behold my basket with the pendulous  
end... "[Best, Elsdon, "The Origin of  
the Stars", Journal of the Polynesian  
Society Vol. 30 (1921): 259-261].

It is this "basket" (kete) or woven  
container of "seeds of the stars" that is a  
'compass' denoted by the term *kaveinga*,  
implying woven basketry.

Polynesian

Tuamotuan kavēi 'to lash with fine cords  
[Stimson] kave 'the thread of a fringe'  
kavekave 'ends, strands, threads, fibres  
of a cord, belt, or mat'  
mākave 'a fibre, strand; composed  
of several fibres'

Hawaiian  
ma'awe 'ula 'red cord, as of the road in  
the sky to the west, as of Kanaloa

(octopus god, as of wind compass  
and banana fiber)  
'awe 'strand, thread'  
'awe'awe 'tentacles (as of  
banana plant, octopus'  
'awe'awe 'runners, as on vine'

Atakapa-Chitimacha  
wari 'to weave'  
wayi 'to weave'

### Central and South America

Tuamotuan kave 'tendrill' (= 'ave)  
ave 'long hairs, as on dog's  
tail'

Tahitian mave 'to weave'  
tavai 'twined weaving'  
to ha'avai 'cane, banana' [i.e.,  
plantain fiber]

Samoaan 'āvei 'strap, cord'  
[Milner]

Tuamotuan vavāi, kawai 'a variety of  
running vine'

Marquesan ha'avai 'cotton'  
[Dordillon] haha'avai 'cotton'  
Tongan vavae 'cotton, kapok'  
vavae kona 'milkweed'

Proto-Austronesian  
[Dempwolff] \*labay (-bar) 'yarn, thread'

### Austroasiatic

Old Khmer ✓  
[Cambodia] canhvay 'skein'

Modern Khmer ✓  
cangva:y 'skein'

Laotian say fay 'cord, wire'  
fay

Vietnamese vai 'cloth, material, fabric,  
cotton cloth'

Muong Vietnamese  
vai, (b)vay 'cloth'  
\*h^ pay, pay, ?ay 'cloth'

Thai phaafay 'cotton, cotton fabric'  
pujfaaj 'cotton fiber, cotton  
wool'  
fai 'cotton' (*Gossypium* spp.)

### Amerindian

Inca (Peru) away 'cloth'  
vay 'spider web'

In an ethnoastronomical study by  
Cecelia Klein "Woven Heaven, Tangled  
Earth; A Weaver's Paradigm of the  
Mesoamerican Cosmos," the concept of the  
woven and knotted cosmos is highly  
developed in Maya cosmology:

"...The Yucatec Maya...reference to  
'the stretching out of the earth'...evokes an  
image of the weaver who readies the warp  
cords on her loom...

"...The Aztec month Tititl, which it  
translates as 'Stretching,' for which it  
depicts a 'man as one who stretches  
something with a cord, in order to indicate  
that the gods thus stretch and sustain the  
machine of the world...

"...Both art and literature testify to a  
general Mesoamerican belief that the  
universe is bounded, defined, and  
contained by long, thin, essentially supple  
objects of a basically cord-like form. The  
primary identity of these strands varies, but  
the various types are typically *cross-  
connected* (italics mine)...the Chamula,  
for example, claim that their cosmos is  
'bounded and held together by the circular  
paths of the sun and moon...', and the  
Lacandon tell of the sun's daytime travels  
along a road in the sky...[Klein, 1982:1-2].

"...The Mesoamerican universe,  
then, was perceived, at least by some, as  
formed during the creation with pliant cords  
stretched out as on a giant  
loom...however...the celestial portion of the  
Maya universe, not as a loom, but as a  
house..." (emphasis mine)...

"...[The] Zinacanteco house serving  
as a microcosm of the upper universe, its  
peaked roof thought of as layered and  
traversed by the sun, moon, and  
stars...(emphasis mine)..."

"...[The] Aztec house facades...show that they were bound together with cords that form a diagonal cross...(emphasis mine).. Maya names that mean 'to be woven or braided,' 'to be interwoven as a braid or mat,'..."

"...Maya houses are measured and their parts matched by means of a stretched cord, a process that curiously parallels...the Popol Vuh reference to the Maya creation as time when 'the measuring cord was brought...and stretched in the sky and over the earth, on the four angles, on the four corners..."

"...Among the Aztec, these cords may have been made of *mallinalli*, a wild twining grass whose name derives from *malina*, 'to twist something'..."

"...The celestial house, then was conceived of as woven...The basic structural members were organized according to the geometric principle of the grid, in which vertical elements interweave with horizontal ones...During the day, only the sun passes through this vast expanse, traveling along a single road that is fundamentally straight. Only at night is that space crowded with numerous twisting paths of the moon, stars, and planets, which must have been perceived as forming a giant tangled web or net...[Klein: 4-6]

"...Aztec myth tells of the god Tezcatlipoca descending to earth during the creation by means of a spider's thread, but the more common vehicle is a twisted or braided cord...an Aztec poem reads: 'I tie a rope to the sacred tree, I plait it with eight strands so that I--a magician--may descend to the magical house' [Klein, 1982: 4, 6, 10, 16-17].

That was a magical statement Maui may have made when he tied the rope from his mother's hair woven in the moonlight. It is true it couldn't have been of one single strand. It had to be woven or braided of more than a single ply as the eight- or nine-ply square braid of the lei

nihopalaoa whaletooth ivory necklace kept around the chief's neck through which a cord of several hundred feet of ancestral human hair can be threaded for several generations.

How many moons in the lifetime of Hina is the length and ply of her braid if the chief [Maui] kept his ancestors' hair around his neck tied to a tooth of Tangaroa, the octopus god, the compass overhead and below?

In the Aztec concept the magician *descends* to the magical "house" where he has tied the cord to the 'sacred tree'. Maui climbs up the mountain of the sun, which he can do only after he has fashioned the lasso, so he must rescue the moon from the house of Pe'ape'amakawalu first. Only Kana can go up and down like Tezcatlipoca by a single thread of the spider, but even he has to climb up.

Lacouperie started up this hill a hundred years ago while curating Babylonian and Oriental curiosities among which were 450 embryo writings within which he classified knotted cords and notched sticks. We may trust what he says that the Chinese *kwas* in the I-Ching were from a more ancient people in China than those with writing. The divination schemata was not within the purview of Confucius:

"...Now it results from my researches that this tradition, which *crept lately* (emphasis mine) into Chinese compilations, is no historical truth, so far as Sui Jin and the ancient Chinese are concerned. By ancient Chinese I mean the Bak tribes who brought the knowledge of written characters with them...and *not the aboriginal tribes non-Chinese, which had apparently the said custom of knotted cords...*

"...The oldest statement about the subject [*kwas*] is that which we find in the great appendix to the Yh-King [also found in the Tao teh King] commonly attributed to Confucius, but which is certainly not the

work of the Sage...there we read...[in the I Ching...

"...In the highest antiquity knotted cords were used for the administration of government. In subsequent ages the sages substituted for these, writing by notches...[and] we find it in a section of the above appendix [of the I Ching]..

"...[where] the writer has fancied inventions and progresses of all sorts as being suggested by an examination of the *Kwas of the Yh-King*. Now the *Kwas* are these very writing notches which were substituted for the knotted cords of former times (emphasis mine)...so that they could not suggest their own invention...[this] shows the childishness of the speculations...based upon his knowledge or hear-say of such customs among the *aboriginal tribes of China*...[which] would entail an inquiry of such length that we had better leave it as it stands until a further opportunity..." [1965:12-13].

"...The oldest remains of notched sticks in literature are most probably the *Kwas of the Yh-King*," he continued, to which he added a note:

"...I have found that the early text of the *Yh-King*, which has never been understood, will never be so [note 7: p. 18]..

"...These symbolical marks, made of lines, broken or entire, are now arranged, on a basis of eight sets of three, in sixty-four rows of six, or double-three, each of which is placed at the head of a chapter of the above book. They are in my opinion, nothing else than a survival of the notches formerly made on the *eight arrows of divination* (emphasis mine)..

"...The eight wands, or arrows of fate, are marked on many Babylonian cylinders as held in the hand of Marduk or of Istar" [Note 1 p. 19].

In this last statement Lacouperie gave a clue to the composition of the *kwas* that connected them to the planets Jupiter [Marduk] and Venus [Istar] in the eight-wand divination scheme farther west of China.

The riddle is you may ascend the house of the sun [hale-a-ka-lā] with a rope braided from the hair of Hina, and Hilo is the first "twist" (hilo) around the 'sacred tree' (Niu-loa-i-hiki), a coconut tree that reaches the length of the celestial sphere from northeast to southwest (or vice versa) [Pae-loa-hiki].

How many ply of single strands of Hina's hair would you braid into the rope? The one called the lei niho palaoa with a whaletooth of Kanaloa holding the ancestral hair of generations of chiefs palaoa was made of nine ply. It becomes a square braid tucked away into the tooth. Unrolled, it may stretch several fathoms, perhaps several forties, four-hundreds, etc.

The riddle is how many *wā* are in the *kwa(s)* of *Pekapeka-mata-varu*, if at one time his name would have been pronounced, \**Mbeka* ~ \**Mpekwa* 'bat' or the number eight [(Tuamotu) *peka*].

If there were eight wands in the Babylonian *kwas*, there are sixteen in the Kumulipo *wā*. To have the time equal, the halves must be even, as eight, but in the whole of time, odd numbers add up to even.

In the I Ching system, the hexagrams are built on the trigrams of the odd number three, the square of which is nine, so that on either side of the day or night, seven *wā* and nine *wā* add up to the two halves of sixteen, i.e., doubling the female number eight. What compass was Maui using? He was using the octopus compass but the earlier one of Hina was a boar compass, used not by navigators, "birds", but by farmers.

Hānau ka Pe'a, hānau ka Lupe  
Born the stingray, born the spotted  
eagle ray'

[Born the sail, born the kite]

[Born the octopus]

[Born the bat]

[Born the eight]

[Born the forked branch(es)]

[Born the bird, born the wing]

Pe'ape'a manamana

Kela i ka lani o kani mā

Perplexed, many branched

Are births of the high chiefs...

[Kumulipo]

I ka mauna o Pe'ape'amakawalu  
'Ewalu ka maka o ke keiki pua'a o  
Hina

On the mountain of Pe'ape'amakawalu

Eight are the eyes of the boar child of

Hina ' [Fornander, 1974: VI: 3: 517]

Kamaunu-a-niho, grandmother of

Kamapua'a, sang to him:

"Be on the watch [Hina],

(Be alert)

The eyes of the hog.

They glance to heaven,

And glance to the mountain

*The son of Hina is a hog with  
eight eyes.*

By Hina are you,

By Kahiki'ula

By Kahikilei.

You are Lono-iki

You are Lono-nui

My eyes, my face,

My beloved (grandchild),

O Lono e.

You are Hiwahiwa (sacred black)

The anointed with oil [hamohamo]

The face of the god

That appears [o'ili] in the sky,

Season of fruits, heavenly season.

When skies are covered with

black clouds;

You are the man

Born in the uplands of Kaliuwa'a.

*Having eight feet,*

*Having forty toes.*

[Fornander: V:II:314-317]

The agricultural calendar patterned on synodic lunations may have an older history than that of the navigator's star and wind compass [sidereal].

The action by Maui to sever the head of the system that worked for farmers represented by the boar demigod Kamapua'a form of Lono-nui-noho-i-ka-wai, the great rain and storm god, may have seemed too cumbersome for swiftlet bird navigators needing to move over greater distances.

The *kwas* which now bear the circle of animals [zodiac] such as the boar in Pisces, came from the west:

"...It [I-Ching] was probably not until the era of Mongol ascendancy in China that the usage became popular; but, according to Chao I (A.D. 1727) traces of a knowledge of this method of computation may be detected in literature at different intervals as far back as the period of the Han dynasty [100 B.C. -200 A.D.]...the group known as the Twelve Animals was borrowed from the Turks, and was used in China as early as the first century of the Christian era [acc.Chavannes; Young Pao, Vol. VII, 1906 in Williams, C.A.S., 1974: 411-412].

The Malay compass, the navigator's tool, harnessing winds and stars, is subdivided into *eight primary segments and those in turn into three parts, allowing each subdivision to equal 15 degrees*. There were eight additional points at the intermediate spaces totalling sixteen points to the compass..."occasionally formed for technical purposes, by placing the word samata, literally an 'eye' (mata), but here expressing a point of the compass between primary terms, as Barat samata Utara, west northwest [Crawford, 1820:I:311].

When Polynesians use the word matangi 'wind', they are using the Malay compound for 'compass', as of winds [angin 'wind' + mata 'eye']. The wind compass of Polynesia visualized eight basic

wind directions forming *na kai 'ewalu* 'eight seas (Hawaii), a reference to the spaces (*kai, maka*) in the quartered compass of cardinal points [*kūkulu*], as of the "house" (*hale*) of god, sacred space.

The antiquity of associating the numbers 4, 8, 16, 32, and 64 with geometric dividing of the circle into a square (or polygon) of several sides, i.e. of situating a diagram of a cube, square, or polygon into the compass circle, can be appreciated by observing the symbolic diagrams of the universe in Southeast Asian and Indian configurations.

The Thai word *gkoon chaun* (from Sanskrit and Pali) is assigned to eight cardinal points and eight elephants: *tot 'ten'* (from Sanskrit) is assigned to a compass of four cardinal and four intermediate points, adding a zenith and nadir.

The use of elephants to mark the compass has an origin in Hindu mythology and symbolism of the creation of the universe:

"...When Garuda...the golden-winged sun-bird, came into existence at the beginning of time, the elephants also were born. The moment the celestial bird broke from its egg, the divine elephant that was to become the mount of Indra...Airāvata is used to designate both the rainbow and a certain type of lightning: the two most conspicuous luminous manifestations of thunderstorm and rain... Airāvata was the first divine elephant to proceed from the eggshell in the right hand of Brahmā; he was followed by seven more males. From the shell in Brahmā's left then appeared eight female elephants.

"...The sixteen constituted eight couples, and became the ancestors of all elephants, both in heaven and in earth. They became also the Dig-Gajas, or 'elephants' (*gaja*) of the directions of space (*dik*). 'They support the universe at the four quarters and four points between...' [Zimmer, 1947:13].

The elephant is a symbol of the strength and force of the monsoon storms that blow across the Indian Ocean and China Sea. From May to September is the summer monsoon blowing from the southwest, with heavy squalls and thunderstorms heavier than the winter monsoon when the winds are blowing toward the southeast, from October to April. Skies are generally clear during this season, and there is relatively little rain [Bowditch, Nathaniel [1958: 799-800].

In Hawaii, this uprooting force of the rainy season is symbolized by the boar incarnation, Kamapua'a, of the storm god, Lono; in this shape the storm and rain god (Lono-nui-noho-i-ka-wai) had eight eyes.

"...In Tibet...Buddhist tradition developed under the influence of doctrines strongly imbued with Hindu...idea(s)...for example, in the beautiful temple-ceiling from the holy city of Lhasa...a perfect yantra-diagram appears...The personification in the center is the primal, eternal...

"...Radiating from him to the four quarters and four points between are eight doubles...represented as contained within the heart of the cosmic flower. This, in turn, is set within the square sanctuary, and to each of the four quarters stands a meticulously pictured door...the outermost rim of the lotus of the created universe is represented as a gigantic corolla of sixty-four vari-colored petals..."

"...In the design on the temple ceiling of Lhasa, eight vajras encircle the central buddha, sixteen the eight emanations and thirty-two the outer rim of the cosmic Lotus..."

"...Returning now to the Shri Yantra, we may perceive under the abstract linear design this...primal pair (Shiva-Shakti). There are nine triangles in the figure, interpenetrating, five pointing downward, four upward...The five female triangles expanding from above and four male emerging from below, signify the continuous process of creation..."

"...But the basic and most common object of worship in Shiva...is the phallus or lingam. This form of the god can be traced back to the worship of primitive stone symbols as early as the neolithic period....

"...Already at Mohenjodaro the lingam occurs...denotes the male creative energy of Shiva...The great subterranean rock-cut-cave-temple of Elephanta near Bombay...is adorned with many anthropomorphic representations of Shiva...The central sanctuary of this extensive temple is a simple, monumental, *square shrine, with four entrances on the four sides, each guarded by a pair of divine door keepers.* Within is the austere symbol of the lingam, emanating to *four quarters* its all-productive energy" [Zimmer, 1947: 52].