

**The astronomical knowledge of the Maori, genuine and empirical
: including data concerning their systems of astrology, astrolatry,
and natural astrology, with notes on certain other natural phenomena
/ by Elsdon Best.**

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BY
ELSDON BEST.



Published by the Dominion Museum, Wellington, New Zealand, under
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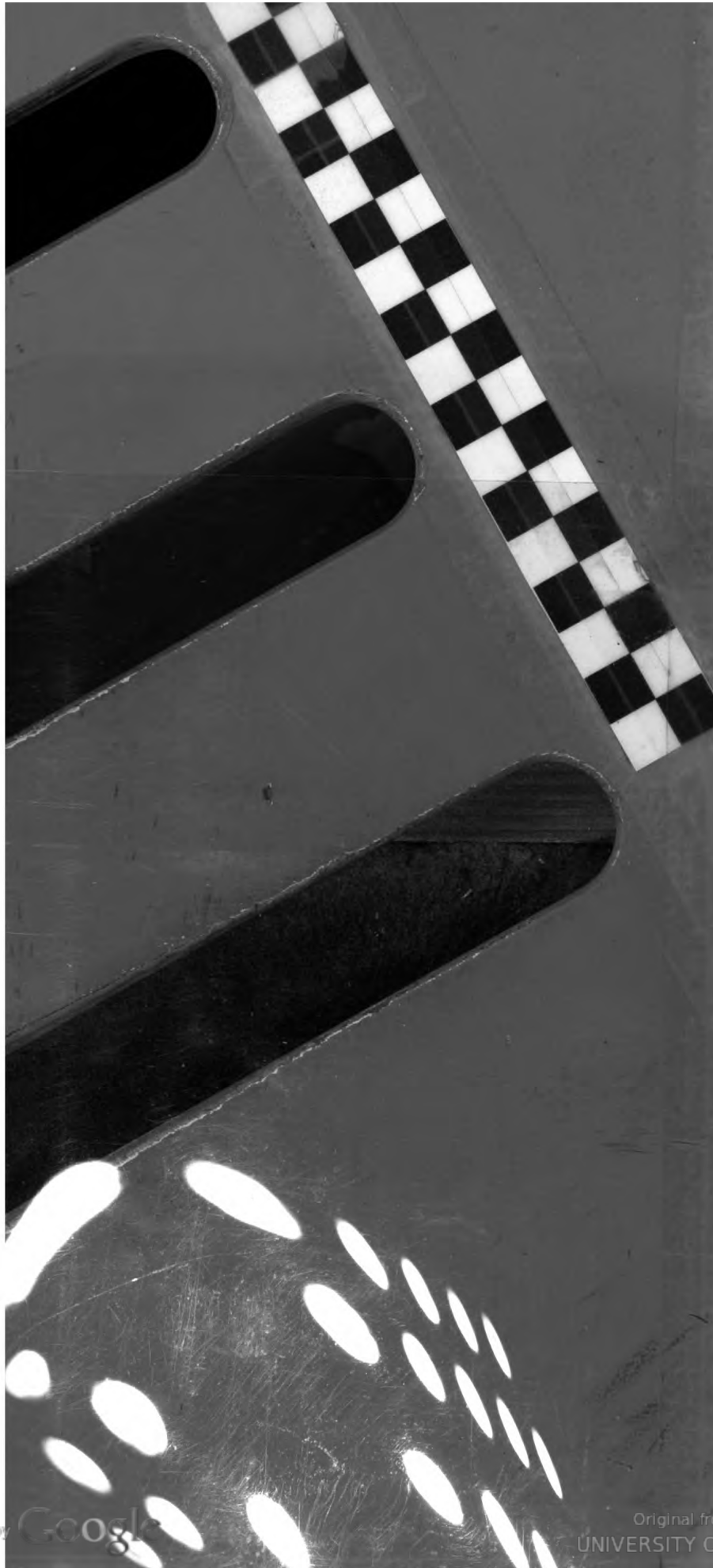
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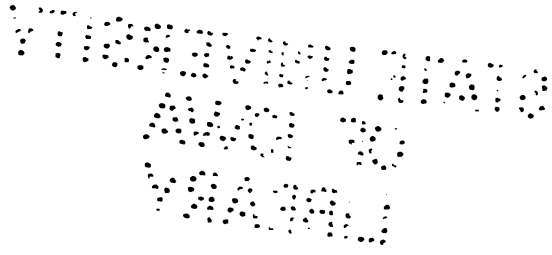


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THE LORE OF THE WHANAU MARAMA.

Being Notes on Maori Beliefs, Practices, Myths,
and Superstitions connected with the Heavenly
Bodies and certain other Natural Phenomena. . .

“ *Ko Tatai arorangi he kai-arataki i te Ra.* ”

11
5
4
3
2

CONTENTS.

The Whanau Marama. Maori study of the stars. Star-lore and its uses. Sentimental attitude of native mind towards stars. References to heavenly bodies in song. Cosmogonic myths. Origin of the heavenly bodies. Uru-te-ngangana. Astronomical myths. Distribution and regulation of heavenly bodies. The Milky Way. The *ara maua*. The sun. Tane and Tama-nui-te-ra. The winter solstice. Personifications. The *kura hau awatea*. Folk-lore. The cult of Tane. Sun-worship. The moon. Hina. Hine-te-iwaiwa. Moon-worship. Rona. Rongo. The Waiora a Tane. Moon connected with women and child-birth. The stars. Star-myths. Heavenly bodies are worlds. Star-worship. The Pleiades. Heliacal rising of stars. Time-measuring. Navigation by stars. Compass-points. Star-names. Notes on stars. Planets. Orion. Magellan Clouds. Venus. Omens. Matariki an important constellation. The Pleiades year. Scorpio. Poutu-te-rangi. Takurua. Whanui. Comets. Origin of fire. Te Manu-i-te-ra. Rongomai. Tunui-a-te-ika. Meteors. Maru. The rainbow. Uenuku. Lightning. Thunder. Clouds. The Cloud Children. Conclusions. Maori love of home-land. The Tatai arorangi. Stars as benefactors. Stars the salvation of deep-sea voyagers.

31

THE expression “Whanau Marama” was employed by the Maori to denote all the heavenly bodies. It may be rendered as “the Light-giving Family” (or “Offspring”), or “the Children of Light.” When we have scanned the origin of those luminaries we shall know why they were so termed.

Maori beliefs concerning the heavenly bodies were very different from our own, and must be compared with those of other uncultured races. Those beliefs include some very singular conceptions as to the influence of certain stars upon the products of the earth, and the manner in which they foretold the aspects of coming seasons and weather conditions. Doubtless much of the star-lore of the Maori was empirical—astronomy and astrology were intermingled in his beliefs and teachings; but, as he firmly believed in all such lore, it behoves us to place it on record, however puerile some of his superstitions and myths may be.

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Hart & Juncos' Star Lore

The use to which the Maori put his knowledge of the heavenly bodies and their movements was in several instances a scientific one, as, for instance, when he navigated his vessels by them during deep-ocean voyages, and when he watched for the heliacal rising of stars to mark the commencement of the Maori year and of certain seasons and activities.

In pre-European times the stars were closely studied by the natives—not by all persons, be it explained, but by a limited number of men of the *tohunga* (or adept) class, who devoted much time to a study of the *ra ririki*, or little suns, as they were termed. Such men would often pass long hours of the night in contemplating the stars, and would be looked upon as reliable weather-prophets. Travellers and fishermen would consult them ere venturing forth, and their powers are said to have also enabled them to foretell the general aspect of coming seasons, their fruitfulness or otherwise. Such were the studies of the *tohunga kokorangi*, the Maori astronomer. These men knew well the movements of the stars; they knew when to look for their appearance, and always awaited it, in order to scan closely their aspect. One famed old wise man of the Wairarapa district, of last century, devoted much of his time to studying the stars and planets. His contemporaries have told me that they have often known him to pass the greater part of the night on the summit of a hillock near his hut, gazing continuously at the heavens. Of what was he thinking during the silent watches of the night, as he looked on Matariki and Te Kokota, on the blazing line of Te Kakau, or the curved line of the Canoe of Mairerangi? Surely his thoughts would return to his old seafaring ancestors who followed the stars across half a world, who sailed eastward and northward and southward until they lost the familiar stars of long centuries, and saw strange new ones appear above the far-off horizon. And then, further back, his memory would recall the teachings of his elders concerning the hidden father-land, the mist-enshrouded land of Irihia, wherein his ancestors had dwelt ere the gleaming stars lured them forth on the great trackless ocean that was to be their home for so many centuries.

For, mark you, there was much of sentiment in the Maori mind in connection with the stars, and the thoughts of such a man would inevitably turn back to far-off days and to remote ancestors those stars had looked down upon in the days when the world was wide. Those old sea-voyagers and explorers, back to the days of the gods, had looked up at the same stars that now gleamed above him, the stars that live for ever, and serve as a link between the watchers of far-sundered centuries. No Maori of his type could avoid or suppress this train of thought, which would probably lead him to chant some old dirge as old as the days of Maui and of Kiwa. For such is the mentality of the Maori.

This peculiar sentimental aspect was also in evidence on the reappearance of certain stars—the more important stars, such as the Pleiades and Canopus—when the women would greet them with song, and lamentation, and possibly with posture dancing. But ever in the native mind at such times was the idea of

associating the star or planet with the past, with remote ancestors, or with friends who had passed away to the spirit-world while, or before, the star was invisible. Thus we often note a reference to the stars in song, particularly in such as partake of the character of laments. The following are the opening lines of a lullaby sung by parents to an infant :—

I haere mai koe i te ao o Puanga
I te Huihui o Matariki
I a Parcarau, i a Poutu-te-rangi.
Ka mutu, e tama, nga whetu homai kai ki Aotea.

(You came hither from the realm of Puanga (Rigel), from the Assembly of the Pleiades, from Jupiter, and from Poutu-te-rangi. These alone, O child, are the stars which provide food at Aotea.)

And again—

Tera Meremere ka mahuta i te pae.
(Yonder the evening star appears above the horizon.)

Here is another form—

Kia marama koe ki te kete a Tane
I mauria atu nei hei tohu mo tona matua
Tataitia ra, tiwhaia i runga ra
Ki Autahi e, Ki a Puanga raia
Ki a Takurua ra
Ringia i te kete ko Te Ika-o-te-rangi
Ka nako i runga nei.

(Be ye clear as to the receptacle of Tane, conveyed by him as a token for his parent; arranged and dotted on high were Canopus, Rigel, and Sirius. The Milky Way was poured out from the receptacle, and now adorns the firmament.)

Also—

Tera Kopu na te ata i hoake.
(Yonder is Venus, brought by the morn.)
Tera Matariki huihui ana mai.
(Yonder are the Pleiades, grouped together.)

The sun is referred to in the same manner as—

E to, e te ra, rehurehu ki te rua.
(Decline, O sun! and set in the abyss.)

Also in the curious form—

E whiti, e te ra, e maene ki te kiri.
(Shine, O sun! in pleasing manner on the skin [of man].)

Again, the moon is introduced in these opening lines of songs :—

Tera te marama e ata haere ana.
(Yonder the moon drifts slowly along.)

And also in—

Tera te marama ka mahuta ake i te pae.
(Yonder the moon rises o'er the horizon.)

And so we might continue to quote references to the heavenly bodies in the songs of the Maori.

The learned men of the Takitumu tribes always spoke of the heavenly bodies and the twelve heavens as so many distinct realms or worlds. One old fellow of Wairarapa used to be much

annoyed by godless scoffers at this theory among young folks. When a meteor was seen, one would cry, "Ha! There is one of Moih's worlds falling. Where will it strike? Maybe some of us will be killed."

It is assuredly a fact that in former times the average Maori knew much more about the stars than does the average man among us. When one comes to peer into native beliefs and practices in their systems of astro-geny, sabaeism, astrolatry, and natural astrology, it is then that one sees how closely the Maori of yore must have studied the heavenly bodies, but more especially the stars. There is not only the empirical aspect of their knowledge to survey, but also the genuine form illustrated by the use of the heavenly bodies in navigation and in their system of regulating time. Tylor, the famed anthropologist, has said: "From savagery up to civilization there may be traced in the mythology of the stars a course of thought, changed indeed in application, yet never broken in its evident connection from first to last." Assuredly the savage peoples of the earth have so studied the Shining Ones; barbaric man carried the study further, and added to the quaint star-lore of the mist-laden past; the old-time races of Accadia and Babylonia made further advances, and so, down through the changing centuries, man's knowledge of the heavens increased. The advance of knowledge has been slow in this department of science; it has been fouled by superstition and savage cruelty, but has slowly cleansed itself through the fleeting centuries.

Prior to discussing the heavenly bodies, it will be well to provide the heavens for them to abide in, and see them distributed. Now, in Maori myth there are twelve separate and distinct heavens, termed *nga rangi tuhaha* (the bespaced heavens). This is the Takitumu version of the East Coast tribes. Among some other tribes a system of ten heavens was upheld, and White and Davis mention still another of twenty heavens. The Takitumu teachings comprise the most complete account of Maori lore yet collected, and most of the data given in this paper have been culled from them.

It is the lowest and nearest of the twelve heavens that is looked upon as the Sky Parent, and is termed Ranginui, or Great Rangi. It is upon the body of this Sky Parent that the heavenly bodies move in their courses, as arranged by the gods of old. In barbaric cosmology the firmament stands as an arch above the earth; so says Tylor. This is true of the Maori; it is the hanging sky of Maori myth through the sides of which the bold sea-voyagers of old forced their way, and by which Whiro attempted to reach the uppermost heaven in his search for the three baskets of knowledge; where, also, Tawhaki of the flashing lightning perished, to redder with his blood the blossoms of the *rata* and *pohutukawa*. This quaint notion of the bounds of the hanging sky is an old concept of the peoples of India.

The South Island natives, writes Mr. Beattie, say that when their forefathers left the original home-land they thought the sky came right down to the sea, but found there was room to get through.

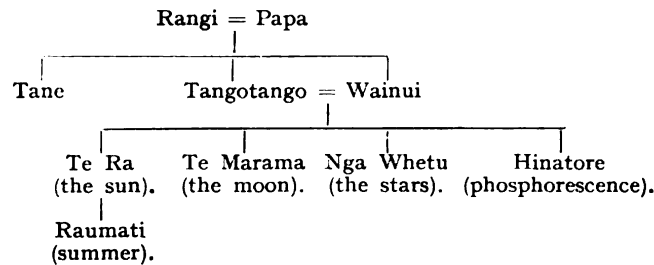
Watea is the personified form of space. Originally sky and earth were close together, but when Watea appeared they were separated. It was Watea who divided the waters that land might appear.

In the Maori tongue the word *ra* denotes the sun, as it does, with some dialectic changes, throughout Polynesia, and as it did in Babylonia and Egypt. *Komaru* and *mamaru* also denote the sun, but are seldom heard. These three names are also applied to a canoe-sail, though one fails to see any connection between the two.

The moon is called *marama*, and stars are *whetu*; a planet is *whetu ao*. The word *wheturangi* means "appearing above the horizon," and, curiously enough, its use is not confined to the stars. The expressions *whanau riki* (little offspring) and *whanau punga* are sometimes applied to the stars by experts, but they are not common expressions.

ORIGIN OF THE HEAVENLY BODIES.

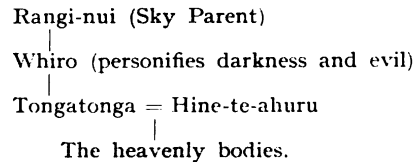
The mythopoetical Maori, when explaining the origin of the heavenly bodies, put his ideas on the subject into the form of an allegory. He derived them from certain mythical beings, many of whom appear to be personifications of some form of light. Thus the Awa folk of the Bay of Plenty explain that Tangotango and Wainui, two of the offspring of the Sky Parent and the Earth Mother, produced the sun, moon, and stars. Wainui is the personified form of the ocean. This myth is given in the form of a genealogical table :—



This Tangotango is said to have been the origin of day and night, the alternation of light and darkness. Among some tribes he is termed Tongatonga, and another of his names was Turangi. Some East Coast authorities say that Turangi mated with Moe-ahuru, and that they produced Tama-nui-te-ra and the Marama-i-whanake. The former is the personified form of the sun, and the latter a honorific name for the moon. After these they produced the stars, who are spoken of as the younger members of the family. Another version makes Rona (the woman in the moon) a member of this family. Turangi and his wife Moe-ahuru are said to have dwelt on Maunga-nui, their abode being known as Mairehau, while that of the sun on the same mountain was called Mairekura, an exceedingly *tapu* place. Rona dwelt with her parents in Mairehau, as also did the moon. They were ever on the move and kept roaming about, their plaza being known as Te One i Oroku (The Strand at Oroku). Here the Children of Light (sun,

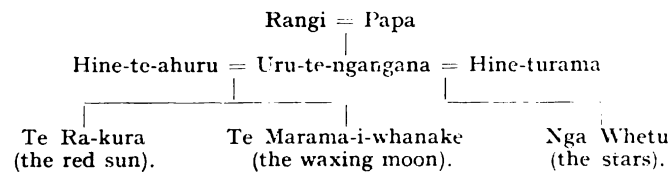
moon, stars) and Rona were found by Tongatonga and Te Here-maro, who placed them under shelter. The saying of *te pukai mata kirikiri a Turangi* (the small-eyed assembly of Turangi) is applied to the Shining Ones.

The female being, Moe-te-ahuru, mother of the Whanau Marama, also appears as Hine-te-ahuru. Thus we have in one version—



In this version the male parent of the heavenly bodies appears as the offspring of Darkness, and Te Ikaroa (The Milky Way) is not included among the Star Children, but is said to have been a younger brother of Whiro, and that is why the Galaxy was placed in charge of the stars. One version seems to show that Te Ikaroa and Te Ikanui were the parents of the stars, but does not explain who or what Te Ikanui was.

Another version endows Uru-te-ngangana with two wives, Hine-te-ahuru and Hine-turama, the former being the mother of the sun and moon, and the latter the origin of stars. This Uru-te-ngangana (Uru the Red, or Gleaming One) was one of the offspring of the primal parents Heaven and Earth, and seems to personify some form of light. Hine-turama may be rendered as the "Light-giving Maid."



These are honorific names for the sun and moon.

Nepia Pohuhu, a Wairarapa adept, who gave the above version, stated that Matariki (the Pleiades) was a young brother of Tongatonga, and that Matariki was conveyed to the Paeroa o Whanui (another name for the Milky Way) to take care of the *whanau punga* (stars), lest they be jostled by their elders and so caused to fall. This peculiar name for the Milky Way is not clear. Whanui is the star Vega, and *paeroa* means "a range"; but why should the Galaxy be termed "the Range of Vega"?

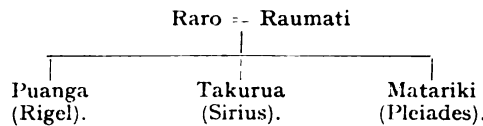
Here we may refer to an explanation made by the learned man Te Matorohanga, who said that Turangi was an ordinary or unimportant name of Uru-te-ngangana, and that Moe-ahuru and Te Ahuru are names applied to the one being. This name Turangi might be rendered as meaning "sky standing," or "placed in the sky," or "set in the sky." There are two statements in John White's works to the effect that Turangi was the owner or caretaker of the moon, or that it originated with him. They are as follows: "*Na Turangi te marama,*" and "*I a Turangi te marama, i a Tunuku te ra.*" We now see that Uru-te-ngangana,

Turangi, Tangotango, and Tongatonga are all names for one being, evidently a personification, and that he mated with Moe-ahuru, or Hine-te-Ahuru, to produce the heavenly bodies. The peculiar names of the "mother of stars," or mother of the Whanau Marama, denote "sheltered sleep" or "comfort, as of a haven," and the "Shelter Maid" or "Haven Maid." The calm haven in which reposes the unborn child is termed the *ahuru mowai*, and it bears that meaning. Thus Uru the Gleaming One, the Sky Stander, looks very much like the personified form of one of the heavenly bodies. As Tangotango he changes day into night and night into day. He was the first-born of the godlike offspring of the Sky Father and Earth Mother. He first abode with Whiro (Darkness), then joined Tane (Light); his offspring are the Whanau Marama, the Children of Light. As his name may be rendered as "the gleaming west," it might be thought that he represents the setting sun, were not other evidence against it. In a list of star-names given by Hamiora Pio, of Te Teko, Tangotango is mentioned. Elsewhere he remarks, "Tangotango is the object seen stretched across the heavens at night, surrounded by his star children." This looks like the Milky Way, the position of which was the sign of approaching dawn to the Maori; and Tangotango is said to turn night into day. In Babylonia Uruk was the moon, and was deemed of greater importance than the sun, and existed before the latter.

An uncorroborated version from a Takitumu source makes one Ahu-matonga the progenitor of the heavenly bodies. He is said to have been the child of Roiho, who was one of the offspring of the primal parents. It was Roiho who gave warning of the coming of Light, in these words: "Light is coming in the form of Tama-nui-te-ra (sun) and the Marama-taiahoaho." This last name denotes the full moon.

In his *Maori Religion and Mythology* Shortland gives an old myth that makes Kohu (mist) take Te Ikaroa (Milky Way) and produce the stars.

Another singular concept is the following :—



Here Raro, who seems to personify the underworld, or the earth, takes Summer to wife, and begets Rigel, Sirius, and the Pleiades. This does not bear the aspect of what we may term the higher Maori teaching, but looks like one of the many popular unorthodox myths so common among the natives.

A collective name for the heavenly bodies is Te Apa Whatu a Te Ahuru, apparently denoting the "eye-like company of Te Ahuru," for they appear like a number of eyes in the heavens, and stars are said, in popular myth, to consist of eyes only—they have no bodies. Te Ahuru is the Hine-te-Ahuru already referred to, the Star Mother. The term *whanau atua*, or "supernatural family or offspring," is also applied to the heavenly bodies.

Te Ikaroa (Milky Way) and Tama-rereti were both placed in charge of the *ra ririki* (little suns = stars), or *whanau riki*, as they were also called. Even so, some wilful younger members of the family sometimes stray away among their elders, and are struck by them and so fall. These stricken ones are termed *mata-kokiri*, "the Darting Ones" (meteors).

Dr. Shortland, in his *Maori Religion and Mythology*, has yet another version of the origin of the heavenly luminaries. Rangi took one Hine-ahupapa to wife, her offspring being Tunuku, Turangi, Tama-i-Koropau, and Haronga. Haronga took Tangotango, their offspring being the sun and moon. Kohu (mist) and the Milky Way produced the stars.

A version recorded by Taylor puts it that Rangi (the sky) took to wife the Glowing Dawn, and begat the moon. Again he took to wife Rays, or Radiance, and begat the sun, and so light came into the world.

In yet another Takitumu version Uru-te-ngangana takes one Iriiri-pua to wife, and their offspring are Te Au-matangi, Tongatonga, and Tama-rereti. The last-named we shall hear more of anon, but Te Au-matangi is not explained. The name probably represents a personification. Tongatonga was also known as Rama-whiti-tua, which name conveys the sense of light radiating to a distance. One version makes her the daughter of Whiro, who represents darkness. We are told that Uru sojourned a while with Whiro, and then joined Tane, who represents light. A change of sex is noted in different versions of this myth, as in the case of Tangotango or Tongatonga.

In Tahitian myth Atea (space) was taken to wife by one Rua-tupua-nui, and produced the sun, moon, stars, and comets.

THE DISTRIBUTION AND FIXING OF THE HEAVENLY BODIES.

It was Tane who was responsible for the distribution of the Whanau Marama, the Shining Ones. He it was who caused them to be adjusted on the body of the Sky Father, there to illuminate heaven and earth. Tane brought light into the world. In the Bay of Plenty version of the myth Tane is said to have visited Tangotango to remark, "How brightly gleam the Children of Light!" And Tangotango asked, "For what purpose do you require them?" Tane replied, "To relieve our darkness, that light may shine across the breast of our Mother." Even so Hinatore (phosphorescent light) was given to him and placed on the breast of Rangi (the sky). Feeble indeed was the light emitted by Hinatore, and darkness held fast. Tane procured the stars, and now dim light was seen. He next brought the moon, and light became stronger. Then Tane placed the sun on high, and bright light entered the world. Thus the *Ao marama*, the realm of light, this light-possessing world, came into being.

In the Takitumu version of the myth Tane is said to have sent Kewa, one of the offspring of Rangi and Papa, the Sky Father and Earth Mother, to far Maunga-nui to obtain the children of Te Ahuru, that they might be taken to dwell with their grandparent Rangi. Kewa applied to Tangotango and the other guardians of the *whanau atua*, or supernatural offspring—so called

because their mother was a supernormal being. So were the Shining Ones taken to adorn the breast of Rangi; hence we see sun and moon, with their young relatives, moving across the front of Rangi, the Sky Parent.

The Whanau Marama were placed in baskets to be so transferred. The basket in which the sun was placed was named Rauru-rangi, that of the moon was Te Kauhanga, while that of the stars was Te Ikaroa (the Milky Way). Atutahi (Canopus) was not put in the basket, but hung or attached outside it; hence it still remains outside the Milky Way.

Another version shows that the heavenly bodies were put on Uruao, the Canoe of Tama-rereti, for conveyance and distribution—possibly the baskets containing them were so carried. That canoe is now seen gleaming in the heavens; it is Te Waka o Tama-rereti (the Canoe of Tama-rereti), called by the white man the "Tail of the Scorpion." One Tupai, another member of the heavenly offspring, recited a long *karakia* (invocation, charm, &c.) over the canoe "Uruao." This archaic formula is of great length and considerable interest, inasmuch as it makes appeals to Io, the Supreme Being of the Maori pantheon. As, however, it refers largely to canoes it is not considered worth while to insert it here.

The Ika-o-te-rangi (another name for the Milky Way) was placed in the middle of the little suns (stars) in order that he might protect and cherish them. Tama-rereti and his assembly were placed as guardians of the canoe "Uruao." The sun was placed on the breast of Rangi (sky), the moon on his stomach, while the little suns (stars) were arranged all over his body, head, and limbs. Then Tane and his brethren looked, and behold! their parent was now of a fine appearance; his face was illuminated, his body bathed in light, while his grandchildren ever roamed across his body.

Then Rangi said to the Milky Way, "Let our 'little sun' offspring cling to you for shelter, that you may ever act as a sign of approaching day, and so that our grandchildren may steadily pursue their courses." And now was light widely diffused and illuminating the body of the Earth Mother.

An important task was the laying-down of the courses for all the heavenly bodies, and Te Ikaroa (Milky Way), Rongomai-tahanui, and Rongomai-taharangi were appointed to perform this task. These were the three *poutiriao*, or guardians of the seasons, who kept the seasons in their places, and so prevented winter intruding on the domain of summer. These were the beings who laid down the *ara matua* (the main road) and its branches, so that the Children of Light (the heavenly bodies) might move on their courses without interfering with each other. Presumably this *ara matua* is the zodiac, which has divisions by which some of the luminaries move on their courses. It is Te Ikaroa who guards the *ara matua* and the stars, and when so appointed he received his fuller name of Te Ika-roa-o-te-rangi. There are many names for the Galaxy. Rongomai-taharangi was placed to the right of the Milky Way that he might take care of the Ra-kura, or red sun, while Rongomai-tahanui was located on the left side to guard Autahi (Canopus) and the younger ones. One authority

has stated that these two Rongo personify space ; if so, the spaces are probably those on either side of the Milky Way.

It was now found that the heat of the sun was unbearable. The body of the Earth Mother dried up and became dust ; the eye of man could see naught. For at that period the body of Papa, the Earth Mother, was without covering. So now Tane said to Te Ikaroa (Milky Way), "Space out the courses of the little suns and the moon that we may obtain sleep. Move the sun forward, there to traverse his course, while you and the younger ones follow behind ; he will conduct you on your various ways." This was done, and so night and day alternated ; the day was apportioned to the ruddy sun, while the night was awarded to the Milky Way, the moon, and his younger relatives.

But the heat of the red sun was still intolerable, and all the offspring of the Earth Mother wailed aloud. Rangi was afflicted sorely by the great heat, and moaned in anguish ; his head was scorched by the fierce rays of the sun. Roiho called aloud to Tane, "We and our parent are sore oppressed ; our grandchild (the sun) is burning us by means of Matiti-taka (?) and Matiti-tiramarama." These latter are personified forms of summer.

So the sun was removed to the back of Rangi, and all things were content. Thus the sun moves over the body of Rangi ; when it moves to the lower part of his body it is winter ; when it moves up to the head of Rangi summer is with us.

In this version of the myth Te Ikaroa, the Milky Way, is not included among the stars, as to its origin, but is said to be one of the offspring of Sky and Earth. In the original the word *pito* is used in a curious sense, as though it denoted the ecliptic. It is the navel (*pito*) of the Sky Parent. Mr. Percy Smith has drawn attention to the Hawaiian expression, "the Pito of Watea." In Hawaiian myth Watea takes the place of Rangi of the Maori. Hawaiian scholars translate the above expression as "the equator," but clearly it applies to the ecliptic, the sun's course across the body of the sky. In our Maori version it is "the Pito of Rangi."

The three *poutiriao*, or guardian beings, appointed by Io, the Supreme Being, to watch over and control the sky realm—that is, the lowermost of the heavens, where the heavenly bodies are—were Uru-te-ngangana, Roiho, and Roake.

THE SUN.

We have already mentioned several names for the sun, and there are here a few more to record. It was sometimes alluded to as the *ra tuoi*, the meaning of which is obscure, the ordinary meaning of *tuoi* being "thin" or "lean." *Ra kura* (the red sun) is a descriptive name. It has also been shown, in another paper, that Tane is a personified form of the sun, the evidence of which has been gathered from Polynesia, as well as from local sources. The sky was called "the house of Tane." The personal name of the sun, Tama-nui-te-ra, was a common usage in former days, and is still in use, but the Maori has forgotten the signification of Tane. Kau was a name for the sun in Egypt ; among the Maori the word was used in a curious way connected with the movements of the heavenly bodies. Ra, the old Egyptian name for the sun, was also

its ordinary appellation in Maoriland. In that old land the sun was the principal deity, and had many manifestations. Thus the setting sun was known as Ra-tum, and by a singular coincidence the expression *ra tumu* means "the setting sun" in eastern Polynesia.

Tama-nui-te-ra is, as shown, the personified form of the sun. When the vessel "Takitumu" made her voyage from Tahiti to New Zealand the sailing-instructions were as follows: "Keep the bow of the vessel carefully on Venus during the night, and during daylight follow behind Tamā-nui-te-ra" ("*Kia pai te takoto o te ihu o te waka i runga i a Kopu i te po; i te awatea ka whai i muri i a Tama-nui-te-ra*").

The following is another old usage, as employed to denote the time of day: "*Kaore ano i poulu a Tama-nui-te-ra*" ("The sun had not yet reached the meridian"). *Poutumaro* is another term applied to the sun when on the meridian. Another form is, "*Kia moiri a Tama-nui-te-ra ka whakatika ai*" ("When the sun is well up we will start").

This name of Tama-nui-te-ra was also known at the Chatham Isles. See *Journal of the Polynesian Society*, vol. 6, page 166, where he is mentioned in a charm employed to restore animation to persons afflicted by faintness, &c.

Another name for the sun is Tama-uawhiti. In one old myth the name of Hiringa is applied to the sun in connection with the singular belief that the sun represents knowledge—the higher kinds of knowledge. This name is evidently an abbreviated form of that of Tane-i-te-hiringa, who is the personified form of such knowledge. This is a very curious connection, but we must bear in mind that it was Tane, the personified form of the sun, who ascended to the uppermost of the twelve heavens in order to obtain from the Supreme Being the three *tapu* baskets of occult knowledge. With these may be compared the three sacred books of the Hindus, which are called the "three baskets of knowledge."

We now come to another singular name connected with the sun—that of Te-Manu-i-te-ra. This may be rendered as "The Bird from [or at] the sun." Stowell identifies this as a name for a comet. White gives the following as an old saying: "*Hoatu; tenei ano to taua tipuna, a Te Manu-i-te-ra, e tu iho nei*" ("Proceed; here indeed is our ancestor, the Manu-i-te-ra, standing above"). The application is not explained. The Rev. R. Taylor states that this Manu-i-te-ra lived on the mountain of Hikurangi, which death could not reach. This was probably a Mount Hikurangi of the original home-land of the race, or possibly a mythical place. A curious myth concerning this being and Tawhaki, who is connected with lightning, is recorded at page 22 of Mr. Percy Smith's *Peopling of the North*.*

A curious form of utterance is "*Korikori taua; ka taka tauira*"—a remark that would be uttered by the leading man of a travelling party as a signal to the party to be moving on, as after a rest by the way. It may be rendered as "Let us be moving; the sun is declining." This use of the word *tauira* is interesting.

* See further notes under "Comets."

Another old saying is, "*Ka to he ra, ka rere he ra*" ("As one sun sets another sun rises"). This refers to the sun and moon, both light-givers; when one sets the other rises.

The winter solstice, termed the *takanga o te ra*, or changing of the sun, occurs in the *maruaroa* season of winter, the midsummer season being known as the *maruaroa* of the *orongonui*, the latter being a general term for summer. The term *hikumutu* seems to be a specific term for the winter solstice; the foregoing term is a general one, applicable also to the summer solstice.

Some quaint remarks are made by natives concerning the sun. Hamiora Pio once spoke as follows to the writer: "Friend! let me tell of the offspring of Tangaroa-akiukiu, whose two daughters were Hine-raumati (the Summer Maid—personified form of summer) and Hine-takurua (the Winter Maid—personification of winter), both of whom were taken to wife by the sun:—

Tangaroa-akiukiu

Hine-raumati = Te Ra - Hine-takurua.

"Now, these women had different homes. Hine-takurua lived with her elder Tangaroa (a sea being—origin and personified form of fish). Her labours were connected with Tangaroa—that is, with fish. Hine-raumati dwelt on land, where she cultivated food products, and attended to the taking of game and forest product., all such things connected with Tane. The Sun spends part of the year with the Winter Maid in the south, afar out on the ocean. In the month of June occurs the 'changing of the Sun,' and he slowly returns to his other wife, to the Summer Maid—she who dwells on land, and whose other name is Aroaro-a-manu. This period we call summer. And so acts the Sun in all years. The child of the Summer Maid was Hikohiko" (*cf. hiko* = to shine).

These old folk have told me that at the time of the winter solstice the wise men of yore would say, "The Sun is returning to land to dwell with the Summer Maid."

Among the Moriori folk of the Chatham Isles the daughters of the Sun are said to be Hine-ata (Dawn Maid), Hine-aotea (Day Maid), and Hine-ahiahi (Evening Maid).

These Chatham Islands natives also state that one Rohe, sister of the Sun, married Maui, and he changed faces with her, as she was the more beautiful. Rohe descended to the underworld and became its queen, as did the Dawn Maid of Maori myth. The name is a curious one, and is known at the Cook Group.

The following fable was a well-known one among the natives in former days: The offspring of Tongatonga were the Sun and Moon, the Sun being the elder. The twain were constantly bickering. Said the Sun to the Moon, "Let us pursue our courses in daylight," but the Moon persisted that they should move by night. So they could not agree on this subject; one declined to move by night, the other would not move by day. So they became angry over this contention, and the Moon said to the Sun, "Go on your way by day, that you may be assigned the servile task of drying garments." And the Sun retorted by saying, "Go you by night, that you may be terrified by food-ovens."

And so it came about that each went his own way, and so darkness was conquered. The Sun is the chief of these persons, though darkness is still known in all parts of the world.

The curious myth attached to the solar phenomenon termed *kura hau awatea* is one of some interest. This name is applied to a form of solar halo, or perhaps a sun-dog of several colours, and that was believed to betoken approaching bad weather. If the different colours were bright and distinct, then the storm was near at hand; if these appeared dim, then the storm was still distant. When a bright *kura hau awatea* was seen by seafarers, then was heard the cry of the expert *kaumoana*. "*Runaia te waka.*" This was a command to make all snug, to prepare for a storm. If the planet Pareaau was seen to have a misty appearance, then the storm would pass by or be dissipated.

But we now come to the curious myth connected with this halo. The Maori believed that certain men, those versed in sacerdotal matters and possessed of sufficient *mana*, could cause this phenomenon to appear at will, and that it was so employed for the purpose of signalling to distant places. Thus in the tradition of Whatonga's voyage we are told that on his return to Tahiti Island he caused both this halo and the *kura hau po*, or lunar halo, to appear round sun and moon. This was to serve as a signal to his friends at the island of Rangiatea, to show them that he had safely reached his home island.

But a much more marvellous exhibition of such power was given by Tama-ahua when he sailed from Oakura, in Taranaki, and returned to eastern Polynesia. On arriving at Tahiti he caused the solar halo to appear in the heavens that his sisters in Taranaki might know that he had safely reached his destination. With this marvellous feat on record let wireless hold its peace.

The peculiar quivering appearance of heated air seen during hot weather is known as the *haka a Raumati* (dancing of Summer), and also as the *haka a Tane-rore* (dancing of Tane-rore). This Tane was the child of Ra (the sun) and the Summer Maid. The following words are connected with the *haka* of Raumati:—

Te atua kohikohiko ana mai
Te tupua i te taha o te rangi i au e
E rere mai, e te ra i te rangi rekoreko
Kau ana mai i te taupae
Ki te rangi e tu iho nei
Aue!

(The dread being flashing yonder, the demon at the side of the heavens. Move hither, O sun in the gleaming heavens; fare on from horizon to the heavens above. *Aue!*)

Some say that this appearance betokens the dancing of supernatural beings called Mangamangai-atua, who dwell in space. And ever as they dance they sing—

Tirohia atu te rangi ka kapo mai
Ka kohikohiko, e ka kapokapo
Ka kapo, ka kapo
Ka hiko mai i te pae ki te rangi
Aue!

(Observe the flashing in the heavens—the flashing, the gleaming—flashing, ever flashing, gleaming from horizon to the heavens. *Aue!*)

Another personified form of heat-shimmer is one Parearohi. The word *arohirohi* signifies "shimmering heat," and Pare is a common name for women, used as a form of prefix, as in Parekawa, Paretipua, &c. A native account says: In the fourth month (of the Maori year) this woman, Parearohi, who is a supernatural being, appears dancing about the margins of forests. Such is the first sign of summer, and when you see that strange sight you know that it is Parearohi dancing as summer approaches. Her husband is Rehua (the star Antares), he whose enervating influence is felt by man and plants. This personification is sometimes called Arohirohi.

An eclipse of the sun was caused by its being attacked and devoured by demons, from which attacks, however, it invariably recovers. A solar eclipse is termed *ra kutia*.

The following charm was repeated in order to cause the sun to shine:—

Upoko, upoko, whiti te ra
Tenei to wahine te aitia nei
E te ngarara nui, e te ngarara roa,
Upoko, upoko, whiti te ra.

And here is another, to cause the sun to move slowly across the heavens—a charm much used by travellers:—

Hai kona ra koe, e te ra, tu mai ai
Tukua atu au kia rere haere
Tu ki Tupua, tu ki Tawhito.

(Stand there, O sun, and allow me to swiftly travel. Stand at Tupua, stand at Tawhito.)

These names probably represent Tupua-o-te-rangi and Tawhito-o-te-rangi, two mountains of the original home-land.

A considerable amount of respect was paid to the sun in Maori ritual performances, during which officiating priests always faced the east. Again, on the opening of the exceedingly *tapu* school of learning, the ceremonial opening of the house was commenced as the first rays of the rising sun reached the house. All higher classes of knowledge are connected with the sun; they emanated from Tane. The cultus of Tane represents the Maori form of sun-worship. It is marked by deference to Tane as representing the fertilizing-qualities of the sun, and by placatory gifts made to him. Thus all ritual formulæ and offerings are made to the personified form of the sun. The remarks of early writers, such as Savage and Cruise, as to direct public worship of sun and moon by the Maori at ordinary times may be dismissed as fables.

Any falsification of important traditional lore was looked upon as an insult to Tane, the origin of all knowledge and its tutelary being.

In his reminiscences George Clarke tells us that in one of his school-books occurred the statement—"It is wicked to look at the sun, and to point at it with the finger." So that we ourselves are not far removed from the age of puerile superstitions.

In vol. 6 of the *Polynesian Journal* Shand gives a form of Moriori ritual recited over a dying person, and called *hiri*. The person reciting it pointed to the sun as he did so, and

directed the spirit of the dying person to go to it. At page 165 of the work mentioned are some interesting remarks concerning an apparently decadent belief in a celestial spirit-world.

In his *Myths and Songs* the Rev. W. W. Gill tells us that Ra was the tutelary god of Porapora Island, but there is little on record to show that any reverence was paid directly to the sun in Polynesia. The same writer gives us the Cook Islands version of the *ara whanui a Tane* myth. This is the golden path of the setting sun, by which the spirits of the dead pass over the ocean to the far-off home-land of the race, thence to the spirit-world. He describes the assembling of the spirit band on the shore of their island home, and then—"The sun now sinks in the ocean, leaving a golden track; the entire band of ghosts takes a last farewell, and, following their earthly leader, flit over the ocean in the train of the sun-god Ra, but not, like him, destined to reappear on the morrow."

Lubbock tells us that sun-worship is almost unknown in Polynesia. Like other anthropological writers, and even collectors, he did not recognize the personified forms of that orb.

THE MOON.

As in the case of the sun, so in that of the moon, we find that the Maori has indulged his genius for personification. That of the moon, however, does not occupy the important position that Tane does. The personified form of the moon is Hina, and this name does not appear in Maori ritual as does that of Tane, nor does there appear to be any cult of Hina. But there is another name to consider, that of Hine-te-iwaiwa—one that appears frequently in Maori myth. She is said to have flourished in the days of the gods, and to have been a kind of patroness of the female sex and of all labours peculiar to women, such as weaving. Female children were dedicated to her, and, most significant of all, she presided over childbirth. As to whether the latter part of her name has any bearing on this latter fact I cannot say, but it is extremely suggestive, the word *iwa* meaning "nine." Another peculiar and suggestive item is that in Maori myth the first *tiki* (*heitiki*) ever made was made for Hine-te-iwaiwa by her father. When we remember that that grotesque image was worn because of its supposed fructifying influence, and the curious connection between the moon and women in native belief, then we begin to suspect that Hine-te-iwaiwa is but another name for Hina—that she personifies the moon. Mr. Tregear seems to identify Hine-te-iwaiwa with Hine-nui-te-po in his *Maori Dictionary* (page 72); but at page 71 he gives Hine-i-te-iwaiwa, obviously the same name, as another name for Hina, the personified form of the moon. He also gives *hina-iwaiwa* as meaning "a glimmering moon"; and, under "Hina," he says that Hina was also known as Hina-te-iwaiwa, Hine-te-iwaiwa, and Hina-te-otaota. The evidence of White and Wohlers also goes to show that Hina, Hina-uri, and Hine-te-iwaiwa are one and the same being, and that she undoubtedly personifies the moon. The Maori called her Hina-keha (Pale Hina) and Hina-uri (Dark Hina), the latter name apparently applying to her

1, Inset—Astro.

during the *hina-pouri*, or dark nights of the moon. Hina is said to have been the sister of Maui, who also personifies light—apparently day or possibly the sun. Tregear refers to a South Island version that makes Hina the mother of Maui, which he says is evidently a mistake; but many different versions occur throughout Polynesia. Hina is known far and wide over Polynesia as the moon, the woman in the moon, &c.

Fornander remarks that "I have found no trace in Polynesian folk-lore that the moon was ever regarded as an object of adoration, nor, though the planetary stars were well known and named, that these latter ever received religious consideration." These remarks cannot be applied to our Maori folk of New Zealand, for here the cult of Hine-te-iwaiwa, who was closely connected with women and invoked on their behalf, was essentially a lunar one. It will also be shown that similar beliefs and ritual pertained to the stars and planets, though Fornander's use of the word "adoration" is scarcely correct in regard to the attitude of barbaric peoples towards their *atua*, or any invoked being. Many writers do not recognize natural phenomena in the guise of their personified forms, as in the case of Tane, and hence such erroneous remarks as the above are recorded.

The ordinary name of the moon in vernacular speech is *marama*, but it is also called *ahoroa*, *mahina*, and *atarau*, though the last three are little used. *Marama hua* denotes the full moon, while *marama-i-whanake* is a kind of honorific name for the moon, evidently for the waxing moon. The terms *marama rou*, *marama titaha*, and *marama whiro* are also applied to the moon, the last two evidently applying to certain phases. The term *atarau* denotes that though the moon is invisible, yet a faint light, its *ata*, is visible. The word *tohi* is applied to the waning of the moon—*Kua tohi te marama*; and *riwha* and *toriwaha* to its crescent form—*Kua toriwaha te marama*. *Roku* and *roroku* also mean "to wane," and *rotu* seems to be used sometimes in the same sense. *Marama taiahoaho* denotes the full moon.

Those who look for comparisons can trace the name of Hina and Sina, as a moon-name, far across the Pacific; and even in far-off Babylonia Sin was the moon. Fenton states that the moon was called Rono in Assyria, and that Tu represented the setting sun and death in the same region; both these names being well known in Maori myth.

There is much to be said concerning Hina. She is mentioned as the sister of Maui [? day, or daylight]. At Hawaii she is the mother of Maui; at Ngapuka, Paumotu Group, she is the wife of Maui.

The South Island (N.Z.) traditions collected by Wohlers show Hina as the daughter of Mahuika, who is the personified form of fire, and as mother of Maui:—

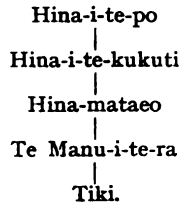
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Mahuika
  |
  Hina = Te Raka (Taranga)
  |
  Maui.

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These personified forms of light have a habit of sticking together.

A line of descent to Tawhaki, given in Mr. Smith's *Peopling of the North*, commences as follows :—



The first three of these names seem to denote phases of the moon, and all names given are those of mythical beings or personifications.

The singular myth concerning Hina and her adventure with Tuna (the eel) is, in its inner meaning, a version of the Eve and serpent myth; hence the peculiar terms employed to denote an eel's tail—*hiku rekareka* and *tara puremu*.

At Mangaia Ina (Hina) is the wife of Marama (the moon). Here there were four sisters named Ina, and Tane (the personified form of the sun) married the one named "Ina who rivals the Dawn," a being of surpassing beauty. Another of these Ina was taken to wife by Tangaroa. Possibly these four sisters personify different phases of the moon. Ina crosses the ocean to the setting sun.

At Samoa Sina is the mother of Rongo, who, in Hawaiian myth, dwells upon the waters. There are several things that connect Rongo with the moon in Polynesian myths.

At Tahiti Hina is the wife of Tiki. She it was who saved the life of the moon. She entered the moon, and watches over the earth. She is Great Hina the Watcher.

A Hawaiian myth makes Hina the wife of Matariki (the Pleiades). She afterwards dwelt in the moon, where her name was Lono-moku (Maori, Rongo-motu: *cf.* Rongo = *ante*; also Rono of Babylonia).

In the Paumotu Group Hina is the daughter of Rona, who is a noted cannibal.

Hina is said to go on a long sea voyage, because she disappears into the sea and is lost to view for several nights, and it is during this darkened stage that her name is Hina-uri.

We now see that Hina was called Rono (Lono) at Hawaii. At the same place Rongo is a dweller on the waters. At Samoa Rongo is the son of Hina and Tangaroa. Thus Rono, or Rongo, is coming very close to the moon.

In Maori mythology our "man in the moon" is resolved into the woman in the moon, her name being Rona. The common view of an eclipse of the moon is that Rona, a malignant being, is attacking and destroying it. When the moon does not appear the twain are battling with each other, and so cannot be seen. After the combat the moon bathes in the *waiora a Tane*, and so returns to us again young and beautiful. Another version credits Maui with the part of moon-darkener.

Rona is said to attack the moon because she destroys the food products of the earth. But this popular tale was not admitted

r* Inset.

as genuine by men well versed in ancient lore ; it was but a popular fireside story, or *korero purakau*. One version makes Rona a sister of the sun and moon, the youngest of the trio. She dwelt with them in Mairehau, on Maunga-nui.

Rona, in the popular tale, was originally a woman of this world, but for having insulted the moon she was punished by being snatched up by it. She was going to a spring for water one night with her gourd water-vessels when the moon became obscured, which caused her to apply a most offensive epithet to it. She was at once taken away by the moon, and she is still seen in it with her *rururu taha*, or bundle of gourd-vessels.

One version makes Rona a daughter of Tangaroa, the mythical origin or parent of all fish. The superior, or sacerdotal, version, as it may be termed, is that Rona is the guide and controller of the moon. Her full name is Rona-whakamau-tai, or Rona the Tide-controller : thus we see that the Maori recognized the connection between the moon and tides. Tangaroa is one of the guardians and directors of the ocean, and his full name is Tangaroa the Tide-controller. The popular story of the cause of tides is the puerile fable concerning the sea-monster called Te Parata, whose breathing through his open mouth causes ebb and flood tides. It was Tane-matua (Tane the Parent, the Begetter) who said, "Let the waxing moon control the ebb and flow of the Ocean Maid." Then stars were arranged so as to serve as companions for the waxing moon and to control the expanse of Hine-moana.

In vol. 27 of the *Journal of the Polynesian Society* Mr. Beattie gives a South Island version of the popular account of Rona, in which she is transformed into a man. Being pursued by his wrathful wife, he deserted the earth and sought refuge in the moon, and has been afraid to come down again. Truly he claims our sympathy !

"The moon," quoth Hamiora Pio, of Te Teko, "never dies as man dies. The men of yore said that it passes below the earth, hence it was said that the moon died. It was Hau-ki-waho who declared that at certain times the moon approaches its elder brother, the sun, and the two move together for a period. The moon belittles itself in the presence of its more important elder ; its importance (brightness) is lost in the superior magnificence of the sun. After a time the moon leaves the sun behind ; then it is said by men, 'The moon is again seen.' There is much of affection between the twain as they traverse the course together. The sun embraces its younger relative, and so they *tangi* together as they move. This is ever seen ; in all years their actions never vary. After a space the sun says to the moon, 'Now return to your own place and that of our younger relatives. Let us ever cherish them. Pursue your course, as arranged by our elders. Go forth in the time of Whitiwhiti-ora, as I will in that of Kutao. In days that lie before you will return to me.' Now, such was the origin of family love as seen in this world. The sun, moon, and stars—all the Whanau Marama, even to Hinatore (phosphorescent light), these folk ever agree. They never quarrel ; there is no evil among them ; their great aim is mutual affection.

Evil exists among the people of this world, but never with the Children of Light. Death and decay assail man; even trees perish in time. The Whanau Marama alone are the deathless ones; they live for ever."

The recovery of the moon from its periodical weakness is a subject for myth-making among all native races. The popular Maori myth concerning this phenomenon is that the stricken moon hies to the *waiora a Tane*, or life-giving waters of Tane, as the expression is usually rendered. She bathes in that fountain of youth, and returns to earth again young and beautiful. This quaint fancy is known as far away as the Hawaiian Isles, where the clearest proof exists that Tane is the personified form of the sun. Examination shows that this allegorical concept is based on scientific fact in this wise: Tane, under his name of Tane-te-waiora, is the personified form of sunlight, and the *waiora a Tane* is merely an esoteric and emblematical term for sunlight. The moon bathes in that sunlight and so renews her life, or is again seen by man. The Ngati-Hau folk, of Whanganui, say that Tane is called Tane-te-waiora because he is the cause of the life of the moon being preserved. The word *waiora* carries the sense of health, welfare, soundness. In eastern Polynesia the words *vai* and *vaiora* mean "to be, to exist." Warmth, sayeth the Maori, is necessary to all forms of life, and the warmth emitted by Tane the Fertilizer is the *waiora* or welfare of all things.

Said an old Tuhoe native to the writer, "The moon is the real (or permanent) husband of all women. According to the wisdom of our ancestors, the mating of man with woman is a matter of secondary importance; the moon is the true husband." This confusion of sex in regard to the moon is peculiar. Hina and Hine-te-iwaiwa are female personifications of the moon, yet the moon under its common name and that of Rongo is spoken of as a male. Can there be a mixture of myths to account for this confusion? Again, Polack mentions the case of a childless woman who desired to become fruitful, hence a priestly adept invoked the assistance of the moon on her behalf. He told her that the moon would assuredly relieve her desire if she would only give him (the aforesaid priest) a basket of food each day—such food, of course, being used as an offering to the moon! In days of old, when the moon appeared, women would cry, "The husband of all women in the world has appeared." Again, it was believed that the moon had considerable influence on the birth of a child. The influence and effect differed according to the stage of the moon's development.

It was an old custom for women to greet the new moon when first seen with singing and weeping, lamenting those who had died since the previous new moon. Agriculturists planted their products at the full of the moon, which was supposed to have an excellent effect on the crop.

Taylor tells us in *Te Ika a Maui* that when the new moon appeared women assembled and bewailed those who had died since the last one, uttering the following lament: "Alas! O moon! Thou has returned to life, but our departed beloved ones have not. Thou hast bathed in the *waiora a Tane*, and had thy

life renewed, but there is no such fount to restore life to our departed ones. Alas ! ”

A curious Fijian mode of greeting the new moon is explained at page 284 of St. Johnston's *Camping Among Cannibals*. At Samoa people assembled and cried to the new moon, “ O child of the moon, keep away disease and death ! ” Also they made offerings of food to it, and held a feast. At the Kingsmill Group festivities take place at the full moon.

Taylor tells us of the Maori reciting charms or invocations to the moon, and also at the commencement of the year. The new moon is sometimes called *kohiti*; but *kohiti* and *kowhiti* primarily mean the appearing of the new moon. A passage in Fenton reads, “ Fifteen days after the appearance of the moon it reaches the *туру* stage. Fifteen days after the *туру* stage it becomes *mutuwhenua*—that is, the moon is overcome by the sun, which carries it off into darkness. When abandoned by the sun it appears again.”

If the hollow side of the crescent moon is uppermost bad weather is at hand. If the crescent shows a more upright position it is a sign of good weather. If a star be seen near the moon on the *riwha* (concave) side it is a sign of fighting in the near future.

One Hine-korako is the personified form of some lunar phenomenon, apparently a bow or halo. She was one of the guides by which the vessel “ Takitumu ” was steered during her voyage from Tahiti to New Zealand. She is said to have been a kind of tutelary being in connection with childbirth.

And so, having seen the origin of the moon, its functions and personified forms, we will leave her at peace in the hanging sky. When, as Hina-keha (Pale Hina), she calls the husbandman and banishes the fisherman, watches over the mother and warns the warrior, she is closely concerned with human affairs. And then, as Hina-uri, she passes out upon the great ocean and swims to a far land, where Darkened Hina bathes in the life-giving waters that some say are represented by the Milky Way, and so returns to us as Pale Hina, the Moon Maiden. We leave her to the guidance of Rona, and the care of Te Ahurangi and Te Rangitaupiri, guardians appointed to care for her in the days when the world was young.

THE STARS.

We now come to the younger members of the Whanau Marama, the “ little suns ” of Maori lore, and here we shall encounter many quaint concepts, many peculiar myths, singular superstitions, and a certain amount of genuine knowledge. Like unto the old-time folk of Babylonia, the Maori was much given to studying the heavens in former times. As Bevan says of the former people, in his *Land of the Two Rivers*, they gazed at the expanse of the night skies in the belief that the fortunes of men somehow depended upon signs in the heavens; and that is precisely what the Maori did believe.

All peoples cherish myths and fanciful ideas concerning the stars, for such curious conceptions are evolved by all races of the lower culture-stages, and are retained when such races attain a higher civilization. The peculiar fables and beliefs to be given in

this paper may be paralleled in western lands, and similar things are found embedded in our own folk-lore.

It is certain that the list of star-names given herein is by no means complete, but few endeavours have ever been made to collect Maori star-lore, and it is now too late to rescue it. The men who knew have passed away. We had no Ellis among New Zealand missionaries, few of whom took any intelligent interest in the history, beliefs, and usages of this most interesting people. The late learned man Te Matorohanga stated that there was much to be said concerning many of the stars; and he was a man much given to the study of the heavens. The fixing of Maori star-names is by no means always easy, for the average person among us needs a planisphere to refer to when making inquiries, and such is not always to hand. Nor is it often convenient to have one's native authority at one's side at night-time. Star-names differ, in some cases, among different tribes.

Artemus Ward observed: "I can partly perceive how astronomers weigh the sun, and ascertain the component elements of the heavenly bodies by the aid of spectrum analysis; but what beats me about the stars is how we came to know their names." It is not recorded as to how the Maori came to know their names either, but in a number of cases such star-names are known far and wide across Polynesia.

We have already seen that there is often a definite meaning in Maori myths, but our minds are slow to grasp the allegorical concepts in which such meanings were rendered and conserved. In his work on *Primitive Traditional History* Hewitt tenders some enlightening remarks on the myths of the lower races, their personification of phenomena, and mythopoeical allegories we deride as puerile. He tells us that such myths were framed for the instruction of the people, and that we misinterpret them by treating the actors described as living human beings. Concerning these myths he proceeds: "They told of the recurrence of the seasons, the annual phases of the growth of the crops, the ways of birds and beasts, &c.; and in these the winds, the rain, the stars, sun and moon, and all animate and inanimate objects were depicted as human beings, the meaning being explained to the children whose natural guardians the narrators were." He adds that, in order to understand these things, "it is necessary to enter into their modes of thought, understand their symbolisms, to see things as they saw them." He might have added that such myths are the natural, and apparently inevitable, result of universal personification.

There exists no monograph on the subject of Maori star-lore—no paper of any importance. Such matter as has been placed on record is in the form of brief or incomplete notes in a number of publications. Taylor's star-notes in *Te Ika a Maui* are sadly jumbled. Few men have been field-workers in Maori lore; thus many of the works dealing with such material simply contain rewritten data from previous publications. White gives an account of what he calls an astronomical school, and says that special houses were built in native villages in former times for the specific purpose of teaching therein the star-lore of the Maori.

He even gives the dimensions of such houses. His English version of this story is not a translation of the Maori part. In the latter we find the following: "*He tini nga whare penei o te pa kotahi*" ("There were very many of such houses in a single fortified village"). This is absurd; and, what is more, no house was ever built by the Maori merely to teach star-lore in. White's remarks about the special schoolhouse for agricultural lore are equally erroneous. A special house was sometimes erected in which to teach *tapu* knowledge, but there was no restriction to one subject; all such matter was taught therein—historical and genealogical records, myth and religion, ritual formulæ, and star-lore, with many other matters. He remarks that it was a very *tapu* house, but that food was eaten in it—a thing that could not be done in even a dwellinghouse.

In the Maori tongue a star is termed *whetu*, the final vowel being long. This word, and such variant forms as *setu*, *hetu*, and *etu*, is known far across Polynesia, also in Melanesia. In far off Nuguria, in the Solomon Isles, we find *hetu* = a star, and it is also applied to a comet there, as it is by the Maori. *Whetu ao* is a planet, and *tatai whetu* a constellation. *Kahui whetu* is also employed to denote a constellation, as also the word *huihui* (assembly), as in *Te Huihui o Matariki* (The Assembly of the Pleiades). In mythopoetical lore, as we have seen, the stars are the younger members of the Whanau Marama, and are termed the *ra ririki* (little suns). The heavenly bodies are also collectively known as the *whanau puhi* and *whanau ariki* (high-born family). These names seem to be in some cases conjoined, as *whanau puhi ariki*. The meaning of the word *puhi* in this connection is not clear. The winds are also known by that name, as in "*the whanau puhi a Tawhirimatea*" ("the wind family of Tawhirimatea"). Again, *whanau punga* and *whetu punga* are terms applied to the small stars of the Milky Way.

Williams gives *tatai arorangi* as an expression meaning "to study the heavens for guidance in navigation, &c." A *langata tatai arorangi* is the person who so studies them—an astronomer, if the term be permissible. An interesting note, a brief remark made by an old native of much knowledge, seems to show that this expression was employed to denote the personified form of astronomical knowledge: "*Ko Tatai-arorangi he kai arataki i te ra*" ("Tatai-arorangi is a conductor or guide of the sun"). Stowell gives *tohunga kokorangi* as signifying an astronomer, an adept in star-lore.

We have some quaint remarks on the subject of the stars, as gathered from native sources. An old man of the Awa folk, of Te Teko, spoke as follows: "There is no limit to the world according to Maori belief, and I was taught that there are persons in the heavens. When sky and earth were separated some of the offspring of Rangi were left on high, as Whaitiri, and Poutini, Tautoru, Matariki, Tama-rereti, Whanui, Kopu, Autahi, Te Mangoroa, Te Whakaruru-hau, Takero, and Tangotango, the multitudinous stars of the heavens, who dwell there as super-normal beings. Other supernatural offspring remain on earth." The above names represent star-names, as we shall see anon.

The same man was responsible for the following discourse : " The Maori folk of Aotearoa possessed much knowledge in regard to regulating the year. Gaze upon the stars that are situated in the heavens; they regulate the days, nights, months, and seasons. People say that the moon dies. Not so; the moon never dies; it clings to its elder (the sun) for a space. Each has its own realm, the elder and the younger, but the elder one is much the more powerful of the two. They do not cling together as two persons do [in marriage]. A brace of days and nights and the moon is again seen by the Maori folk. So it goes on until the moon again becomes aged."

Te Matorohanga, of Wairarapa, remarked : " Now, be clear as to the sun, moon, and their younger relatives the stars. All these are worlds, and possess soil, plains, water, stones, trees, mountains, and open country. It was the ocean, the waters, that formed the plains and open lands you see. Mataaho and Whakaruamoko (personified forms of volcanic upheavals and earthquakes) were the dread beings who altered the aspect of the plains and waters of all land."

In his introduction to *The Lore of the Whare Wananga* Mr. S. Percy Smith remarks on the frequency with which one meets with the number twelve in Maori lore. He proceeds : " When we consider also the thread of astronomical and meteorological ideas that permeate much of the teaching we can scarce avoid a suspicion that the whole philosophy was based largely and originally upon astronomy. It is certain that the Polynesians were accurate observers of celestial phenomena. . . . They gave a name to the celestial equator and every prominent star, and were fully aware of the rotundity of the earth, as proved by the fact of finding new stars as they went farther north or south. It may be that the number (twelve) of the heavens is connected with the twelve months and the twelve signs of the zodiac, and that this is the origin of their cosmogony."

Samuel Laing tells us in *Human Origins* how barbaric man " watched the phases of the moon, counted the planets, followed the sun in its annual course, marking it first by seasons, and, as science advanced, by its progress through groups of fixed stars fancifully defined as constellations." Also how, as observations accumulated, it was found that the sun, and not the moon, regulates the seasons.

Evidences of Star-worship.

The evidence in favour of the former existence of a form of astrolatry among the Maori folk is but meagre, but there is sufficient to show that certain planets and stars were invoked in connection with food-supplies and firstfruits ceremonial.

The Pleiades were venerated by the Maori, and the heliacal rising of that constellation was greeted by women with song and dance. The occasion was marked by a festival. In the north, where the cosmic rising of Rigel marked the beginning of the new year, a similar festival marked the event. Canopus is another star the appearance of which was greeted as was that of the Pleiades, though apparently no festival was held. The Pleiades were also venerated at Manihiki and the Cook Group.

Offerings of young shoots of the sweet potato were made to the Pleiades by the Maori.

The following evidence, given by Tutakangahau, of the Tuhoe Tribe, is good proof of a former star cult. Priestly adepts gathered young, new growth of plants, termed the *mata o te tau*, and, taking them to the *tuahu* (place where rites were performed), there offered them to the stars that were believed to "bring food," as it was termed—that is, influenced the growth of food products, as also fish and game. As the offering was made certain ritual was intoned, in which such stars were mentioned and beseeched to cause a bountiful supply of foodstuffs—to send much food. Young growth of both cultivated and forest foods were so offered up. The ceremonial also prevented anything afflicting crops; it caused them to flourish. The invocation is as follows:—

Tuputuputu atua
 Ka eke mai i te rangi e roa e
 Whangainga iho ki te mata o te tau e roa e.
 Atutahi atua
 Ka eke mai i te rangi e roa e
 Whangainga iho ki te mata o te tau e roa e.

Here Tuputuputu (one of the Magellan Clouds) and Atutahi (Canopus), mounting the heavens, are asked to cause all the new year's products to flourish. The ritual chant is much longer, but consists of a repetition of these three lines, a new star-name being introduced in each repetition. Thus are the names of Sirius, Vega, and other important stars introduced.

Some anthropologists believe that the folk of lower culture-stages inferred life from motion in the case of the heavenly bodies, and so came to recognize them as supernormal beings and gods.

In *Te Ika a Maui* Taylor states that a chief of Waitotara, who was versed in star-lore, introduced among his clan a system of star-worship, each star having its *karakia*, or form of ritual, when it was in the ascendant.

Heliacal Rising of Stars.

It is a noteworthy fact that the Maori relied on the cosmic rising of stars in his utilization of them as marking seasons, phases of industry, periods of time, &c. In the Cook Group the year commenced when the Pleiades were first seen in the evening sky, but in New Zealand it was the heliacal rising of that group that marked the new year.

The passage of time during the night and the approach of dawn were notified to the Maori by the positions of the stars, the Milky Way being a much used harbinger of dawn. References to this old practice often occur in old narratives, as "When Venus appeared above the horizon," or "As the stars of morning rose," and so on.

Some very curious auguries and omens were derived from the stars, and this is one reason why certain persons closely and persistently scanned them. A star in a position close to the moon excited much interest, the omen depending upon its position. If it is "biting"—that is, near—the *mata o hoturoa*, or cusp of the

crescent moon, it betokens the approach of an enemy force. Such omens often caused natives to take careful precautions against being surprised.

An East Coast native made the following remarks: "Venus as morning star is called Tawera. Sirius, the Pleiades, and Orion's Belt are important seasonal stars. Canopus marks the coming of frost, and from the Milky Way are derived weather-signs, while the Magellan Clouds warn us of coming winds. The star Whaitiri-papa belongs to February and March, and gives important signs regarding sea-fish. Vega marks the autumn season, and the Pleiades a plenitude of food-supplies; hence the aphorismic utterance regarding it scooping up food products of land and sea." Undoubtedly the Maori looked upon stars as fecundators, while *terra mater* was the passive agent.

The natives held peculiar views regarding stars. An old man of the Awa folk, of Whakatane district, informed me that he was a *matatuhi*, or seer, and that one of his ancestors, Te Rewha, warned him of any approaching danger. This helpful ancestor of his seems to have been represented by a star, or to have utilized stars as a means of signalling to his kinsman of this world.

The following remarks on stars were collected by the late Mr. G. H. Davies: "The Pleiades hold the highest rank among the stars, inasmuch as they usher in the new year and are also visible at its close. These are the phases: in the twelfth month [of the Maori year] they set, to return again with the new year. The task of Canopus is that of making itself important. Rigel is hostile to the Pleiades because it wishes to rule the year itself. Venus announces coming daylight and the afflictions of mankind; most of her warnings are of evil things."

The rude beginning of the study of the stars consisted of observing them with the naked eye, and this condition must have continued far on the long road that leads to civilization. This fact, however, does not show that other helps, however rude, may not have been devised and employed by uncultured folk. One of the very rudest is mentioned in a paper contributed by Mr. H. Beattie, of Gore, to the *Journal of the Polynesian Society* (vol. 27, page 145). An old South Island native gave him certain information about the stars, and the writer continues: "When he (the native) was a lad at Temuka he had seen his father put sticks in the ground, and observe the stars. If the observed star moved south the season would be bad; if it moved north the season would be dry and good. One of the stars by which he made his nightly observations was Wero-i-te-ninihi, and the narrator said he could point this and other stars out; but, alas! the collector is no astronomer, and did not accept the offer." Now, surely the above contrivance must have been the very rudest forerunner of our modern observatories.

There is one advantage that the Maori held in his naked-eye studies of the stars, and that was in the possession of extremely keen eyesight. This power of the natives has astonished the present writer when sojourning among them. Colenso tells us that they could see Jupiter's satellites, and not only seven stars of the Pleiades, but also several others.

The Use of Stars in Navigation.

The following remarks by Mr. S. Percy Smith on this subject are of interest: "The great knowledge of the stars they possessed enabled them to guide their vessels from end to end of the Pacific. . . . They combined with their astrology a considerable amount of astronomy, giving names to all the principal stars, besides many constellations. There are indications, too, that they were acquainted with the fact that the earth is round, or that it is not flat. This would, of course, become known to them through their voyages, by the appearance of fresh stars as they progressed either north or south." He also gives the Hawaiian sailing-directions for the voyage to Tahiti, as handed down by oral tradition: "If you sail for Kahiki (Tahiti) you will discover new constellations and strange stars over the deep ocean. When you arrive at the Piko o Wakea you will lose sight of Hokupaa (North Star), and then Newe (Southern Cross) will be the southern guiding-star, and the constellation of Humu will stand as a guide above you." The Piko o Wakea (or Pito o Watea, as it would be in the New Zealand dialect) may be rendered as the centre of space, the navel of Watea, the personified form of space. Mr. S. P. Smith identifies this "navel of space" as the ecliptic, or *ara matua* (main road or path)—the part of the heavens across which the principal heavenly bodies pursue their courses. These two expressions of our Polynesian star-gazers are of much interest.

In making long ocean voyages the ancestors of the Maori carried on their vessels one or two expert star-gazers, men versed in the lore of *tatai arorangi*. Hence we are told, in the story of the voyage of the vessel "Takitumu" from eastern Polynesia to New Zealand, that Puh-whanake and Whatuira were the two experts. During the course of the voyage these men passed each night in scanning the stars, in order to direct the steersmen and also to be able to foretell weather conditions. Other experts attended to the steering during the daytime, when sun, wind, and sea conditions were noted, even that the true *ara moana*, or sea-road, might be kept, and the prow of the rude vessel held on the far-distant and unseen objective. Tradition states that the stars relied on during the voyage hither of the "Takitumu" were Atutahi (Canopus), Tautoru (Orion's Belt), Puanga (Rigel), Karewa, Takurua (Sirius), Tawera (Venus as Morning Star), Meremere (Venus as Evening Star), Matariki (Pleiades), Tama-rereti (Tail of Scorpion?), Te Ikaroa (the Galaxy).

A remark that occurs in this story is as follows: "Carefully keep the prow of the vessel laid on Venus during the night; during the daytime follow behind Tama-nui-te-ra (the sun)." But what puzzles the ignorant person (such as the writer) is at what juncture in the movement of a star or other body on its course did the steersman commence to steer by it. The course would be about south-west on the voyage to New Zealand, and the heavenly bodies have a pernicious habit of rising in the east. At what point were they utilized? Another account says that the prow of the vessel was kept to the left of the sun or Venus; but unless these bodies were in a certain position the hapless

voyagers might still be wandering about the ocean, or haply might have colonized South America. The explanations of Maori deep-sea navigation call for further information.

The sailing-directions laid down by Kupe, who is said to have been the first Polynesian voyager to reach New Zealand, seem to be fairly explicit. They are as follows: "Keep the sun, moon, or Venus just to the right of the bow of the vessel, and steer nearly south-west." This voyage to New Zealand was made in November or December, and Mr. S. P. Smith tells us that the true course from Rarotonga to Auckland is about S. 56 W., or S.W. by W.

But ever the Maori believes that the credit of all these deep-sea voyages of yore lies with the gods. For Ruamano led the way across the trackless ocean; Arai-te-uru guarded the wake of "Takitumu"; on either side Tutara-kauika and the Wehenga-kauki, monsters of the deep, convoyed her, and bore her to the far-distant land-head at Aotearoa. With Hine-kotea, and Hine-makehu, and Hine-korito, and Hine-huruhuru to guard and guide, wherefore should fear assail our Argonauts? Far ahead Kahukura (personified form of rainbow) was sent to stand on high as a guide-mark, and the prow of "Takitimu" was laid on him. As night fell Kahukura returned to the stern of "Takitumu," and his sister, Hine-korako (personified form of lunar halo), was sent forward to take his place. And ever Tunui-a-te-ika acted as a messenger, for he moved far ahead, and returned to tell of the nearness of land. Such are the quaint beliefs of the Maori; and any voyager of wide seas who believes that hordes of beings are guiding and guarding him should surely be of tranquil mind. Apart from this, a vessel was solemnly placed under the protection of the gods ere a voyage was commenced.

Aotahi (Canopus) is often mentioned in these old chronicles as a star of much importance to navigators, not only as a guiding-mark, apparently, but also because they believed that it foretold weather conditions.

In the South Island notes published by Mr. Beattie in the *Journal of the Polynesian Society* occurs the following: "The stars Autahi (Canopus) and its pointer Takurua (Sirius), and Puanga (Rigel), and those under Matariki, are in the east while the Wero stars are in the west. The latter stars gave the sailing-directions, while the former denoted weather and seasons. Wero-i-te-ninihi and Wero-i-te-kokota are fixed stars, but Wero-i-te-aumaria (? ao-marie) only appears between the two former occasionally. When my informant's father saw the Wero stars he recited a *karakia* (charm) beginning *Te ahuru nei, te mahana nei* (The shelter, the warmth, &c.)." This writer also gives a queer old myth concerning the ancestors of the Maori, when, in the old home-land, they first came into contact with the sea. "Here they looked at the ocean, and thought that the sky ran down into it on the horizon. They built a canoe . . . and liberated it with incantations. It went out of sight, but was driven back through the gap between sea and sky."

In *Banks's Journal* we find a note on Tahitian navigation: "In their longer voyages they steer in the day by the sun, and

in the night by the stars. Of these they know a very large number by name, and the cleverest among them will tell in what part of the heavens they are to be seen in any month when they are above the horizon. They know also the time of their annual appearance and disappearance to a great nicety, far greater than would be easily believed by a European astronomer."

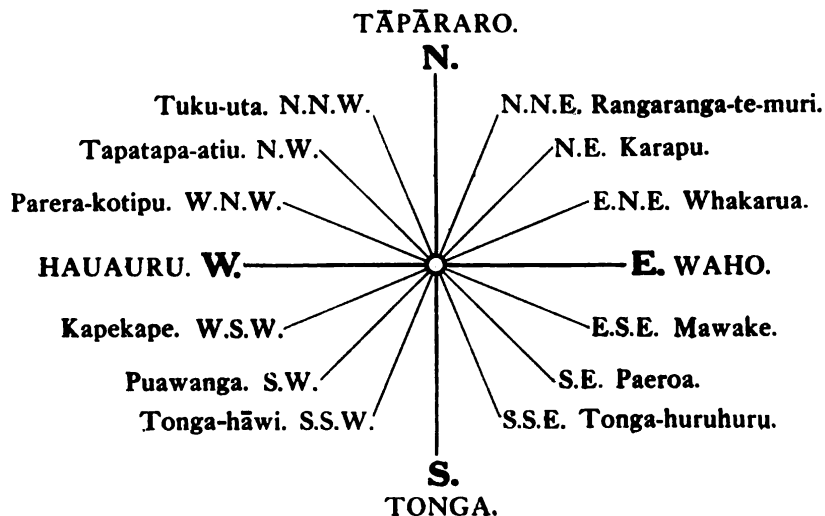
The late chief Hone Mohi Tawhai informed Mr. J. B. Lee that he knew about three hundred star-names, but no one took the trouble to collect them. What interesting notes might have been collected in past days!

Writing of stars in his *Polynesian Researches* Ellis says: "These were their only guides in steering their fragile barks across the deep. When setting out on a voyage some particular star or constellation was selected as their guide during the night. . . . The Pleiades were a favourite guiding-star with these sailors, and by them, in the present voyage, we steered during the night." This was a short voyage from Tahiti to Huahine.

In speaking of the old civilizations of Egypt and Rome Fenton says: "In those old days the knowledge of navigation was very considerable. The stars supplied the absence of the compass, and one very remarkable group received its name from the Greek word 'to steer.'"

The old Maori voyagers were also compelled to closely study the winds. Few compass-points have specific names; in most cases the wind-names were employed as such. Mohi Turei gave names for sixteen points, but Gill published a list of thirty-two points as known at the Cook Isles, each with its proper name. He remarks: "In olden times great stress was laid on this knowledge for the purpose of fishing, and especially for their long sea voyages from group to group."

NAMES OF COMPASS-POINTS AS GIVEN BY MOHI TUREI, OF NGATI-POROU.



Raki = North.
Tonga = South.
Rawhiti = East.
Uru = West.

Tonga ma uru = South-west.
Marangai-mauru = North-west.
Marangai = North (in some districts = East).
Muri = North.

Star-names.

A list of star-names, as many as are known to the writer, is given below. A few of these are doubtful, as will be explained.

The "W" opposite a star-name denotes that it is to be found in *Williams's Maori Dictionary*, 5th edition. "Tuhoe" stands for the Tuhoe Tribe of the Urewera district; "J. W." for Mr. John White; "Taylor" for the Rev. R. Taylor—well-known writers on matters Maori.

Aotahi .. ..	..	Canopus.
Atutahi .. ..	..	"
Atutahi-ma-Rehua .. ..	..	"
Autahi .. ..	..	"
Kauanga .. ..	..	"
Makahea ? .. ..	..	"
Paepae-poto .. ..	..	" (W.)
Ariki-rangi .. ..	..	A star which marks the sixth month (Nov.-Dec.) (W.)
Hao-o-rua .. ..	..	A constellation near Tautoru (Orion's Belt).
Hine-i-tiweka .. ..	..	Same as Parearau.
Parearau .. ..	..	? Jupiter. [Parearau = Saturn (Stowell).]
Kopu-nui .. ..	..	Jupiter. (Stowell.)
Hiratai.		
Hirautu.		
Hirautu.		
Hotu-te-ihirangi ?.. ..	..	A constellation. (Bay of Plenty.)
Huki, Te.		
Tuahiwi-nui-o-rangi, Te .. ..	..	The Milky Way.
Ika a Maui, Te .. ..	..	"
Ika-matua a Tangaroa, Te .. ..	..	"
Ika-o-te-rangi, Te.. ..	..	"
Ikaroa, Te .. ..	..	"
Ikaroa-o-te-rangi, Te .. ..	..	"
Ika-whenua-o-te-rangi, Te .. ..	..	"
Mangoroa, Te .. ..	..	"
Mangoroiata (? Roiata) .. ..	..	"
Mokoroa-i-ata .. ..	..	"
Paeroa o Whanui, Te .. ..	..	"
Tuahiwi o Rangi-nui .. ..	..	"
Whiti-kaupeka .. ..	..	" (South Island.)
Whiti-kaupeka ? .. ..	..	Spica. (Stowell.)
Te Kupenga a Taramainuku .. ..	..	The Milky Way. (Tuhoe.)
Tariao .. ..	..	A star in the Milky Way. (W.)
Kahui o Mahutonga .. ..	..	Southern Cross. (Stowell.)
Kahui-ruamahu .. ..	..	" "
Te Putea iti a Reti .. ..	..	" "
Taki o Autahi .. ..	..	"
Te Whai a Titipa ? .. ..	..	"
Kahui Takurua, Te .. ..	..	See under "Takurua." (Stowell.)
Kaiwaka.. ..	..	A star of late winter. (W.)
Kakau, Te .. ..	..	Part of Orion (includes Belt).
Kakau, Te .. ..	..	Constellation of Leo. (Stowell.)
Kakau a Maui, Te .. ..	..	Part of Orion (includes Belt).
Pewa a Tautoru .. ..	..	Part of Orion. (Stowell.)
Poaka = Puaka .. ..	..	Rigel in Orion. (South Island.)
Puanga .. ..	..	"
Puanga .. ..	..	" (Stowell.)
Tautoru .. ..	..	Orion's Belt (three bright stars).
Pua-tawhiwhi o Tautoru .. ..	..	Rigel. (Stowell.)
Tata o Tautoru .. ..	..	Three bright stars in Orion's Belt. (Stowell.)
Tira o Puanga, Te .. ..	..	The stars in Orion's Belt. (W.)
Tuke o Tautoru, Te .. ..	..	Orion's Belt. (W.)
Tuke o Tautoru, Te .. ..	..	A star below Rigel. (Stowell.)
Nga Whata .. ..	..	A star or stars in Tuke o Tautoru. (Taylor.)
Tuke o Maui, Te .. ..	..	Orion's Belt. (Taylor.)

Nga Tokorua a Taingarue..	Puangularua and Whakaahu (Rigel and Castor). (Stowell.)
Teka a Tautoru	? Peter's Yard-wand. (J. W.)
Karewa.	
Karorua ?	
Kautu.	
Kerekere ?	
Koero ?	Probably Wero.
Kohi, Te	A constellation.
Kokotea	" (W.)
Kokirikiri	Larger Magellan Cloud. (J. W.)
Manako-tea	One of the Magellan Clouds. (W.; J. W.)
Manako-uri	" (J. W.)
Manako-uri	The Coal-sack. (W.)
Nga Patari	The Magellan Clouds.
Nga Pataritari-hau	"
Nga Patari-kai-hau	"
Nonoko-uri	One of the Magellan Clouds. (Taranaki.)
Nonoko-tea	" "
Patari-rangi	Larger Magellan Cloud. (W.)
Patari-kai-hau	Smaller Magellan Cloud. (W.)
Nga Patari-hau	The Magellan Clouds.
Pioriori	Upper Magellan Cloud. (J. W.)
Purangi, Te	The Magellan Clouds. (W.)
Rangi-matanuku	Larger Magellan Cloud. (J. W.)
Tikatakata	Smaller Magellan Cloud.
Tioreore	Larger Magellan Cloud.
Tiripua	One of the Magellan Clouds. (W.)
Tiritiripua	"
Tuputuputu	"
Whakaruru-hau	The Magellan Clouds.
Kokouri	One of the Magellan Clouds.
Kokotea	"
Ao-uri and Ao-tea	" (Stowell.)
Kokouri	A constellation (<i>syn.</i> Te Kokota). (W.)
Kopiri.	
Kopu	Venus.
Kopu-parapara.	
Meremere	Venus as Evening Star.
Meremere	Venus as Morning Star. (Stowell.)
Meremere-tu-ahiahi	Venus as Evening Star.
Rangi-tu-ahiahi	Evening Star.
Rere-ahiahi	"
Tawera	Venus as Morning Star.
Tu-ahiahi	Evening Star.
Korotakataka.	
Kukume.	
Mahurahura ?	
Mahutonga	Star of the South (invisible). (Stowell.)
Mahutonga	? Southern Cross. See under " Kahui."
Makehua	(Colenso.)
Manu-o-te-whatu.	
Maratea.	
Marere-o-tonga.	
Marewa or Marewa i te rangi.	
Mariao.	
Mariao	(<i>cf.</i> Mariua = Spica; at Tahiti.)
Mata	Constellation of Hyades.
Mata-kaheru	"
Taumata-kuku	Aldebaran. "
Kokota, Te	The Hyades.
Matariki	The Pleiades.
Matariki	Apparently Capella. (Stowell.)
Huihui o Matariki, Te	The Pleiades.
Ao-kai	"
Tupua-nuku	One of the Pleiades.

Tupua-rangi	.. ..	One of the Pleiades.
Waiti	.. ..	"
Waita	.. ..	"
Waipuna-a-rangi	.. ..	"
Ururangi	.. ..	"
Hoko-kumara	.. ..	A name for the Pleiades.
Matawhero	.. ..	Mars. (Stowell.)
Matiti	.. ..	A summer star.
Mawera	.. ..	<i>cf.</i> Marewa.
Meto	.. ..	Probably a comet.
Otamarakau.		
Nga Tokorua a Tai-ngarue	.. ..	Rigel and Castor. (Stowell)
Pou o Whaitiri.		
Paepae o Whaitiri	.. ..	A constellation.
Panako-te-ao	.. ..	(Wohlers.)
Patiki, Te	.. ..	The Coal-sack.
Rua-patiki, Te	.. ..	"
Rua o Mahu, Te	.. ..	" (Stowell.)
Whai-a-titipa, Te	.. ..	" (W.)
Naha	.. ..	" (W.)
Pekehawani	.. ..	A star in Scorpio, near Antares.
Poutu-te-rangi	.. ..	Altair; sometimes Antares. (W.)
Poutu-te-rangi	.. ..	Altair. (Stowell.)
Rehua	.. ..	Antares.
Rehua	.. ..	Sirius. (Stowell.)
Rerehu	.. ..	? Antares. (W.)
Rerehu	.. ..	Antares. (Stowell.)
Huinga o Rehua, Te	.. ..	(Stowell.)
Putahi nui o Rehua	.. ..	Certain stars in Canis Major. (Stowell.)
Wai whakaata o Rehua	.. ..	" "
Taumata o Rehua	.. ..	" "
Pukawanui	.. ..	A triangle of stars in Canis Major. (Stowell.)
Ruhi, Ruhi-te-rangi	.. ..	A star near Antares, in Te Waka o Mairerangi.
Waka o Mairerangi	.. ..	Curved line of stars in Scorpio, of which Antares is one.
Waka o Tamarereti	.. ..	Tail of Scorpion. (Bay of Plenty.)
Waka o Tamarereti	.. ..	The constellation of Argo. (Stowell.)
Whakaonge-kai	.. ..	A star near Antares.
Whare-o-te-whiu	.. ..	Scorpio. (Taylor.)
Pekerehua ?	.. ..	(W.)
Piawai	.. ..	A cluster of four stars.
Pipiri.		
Porera-nuku ?		
Poutini.		
Puangahori	.. ..	Procyon.
Punuku ?	.. ..	(J. W.)
Pu-whakahara.		
Rangawhenua	.. ..	One of the planets.
Ra o Tainui, Te.		
Ruaki-motumotu.		
Ruawahia	.. ..	A star marking ninth month. (W.)
Ruawahia	.. ..	Arcturus. (Stowell.)
Tahu-werawera (? werowero)		(Wohlers.)
Takero.		
Takiara	.. ..	(J. W.)
Takurua	.. ..	Sirius.
Takurua-a-ngana	.. ..	Form the Kahui Takurua. (Stowell.)
Takurua-aio	.. ..	" "
Takurua-a-uru	.. ..	" "
Wero-i-te-nihi	.. ..	" "
Wero-i-te-kokoto	.. ..	" "
Wero-i-te-whakataka - punga-rehu	.. ..	" "
Takurua-parewai	.. ..	(Tuhoe.)
Takurua-ruru.		
Takurua-whareana	.. ..	(Tuhoe.)

2, Inset—Astro.

Kahui Takurua, Te	..	Canis major. (Stowell.)
Wero-i-te-ao-marie.		
Wero-i-te-kokota.		
Tama-i-waho	..	(Bay of Plenty.)
Tapuapua	..	(Taylor.)
Tariaho	..	cf. Tariao. (J. W.)
Tautahi.		
Tautahi-o-rongo.		
Tipi, Te.		
Uruao.		
Wacrchu ?		
Waka-o-rangi, Te	..	(H. Beattie.)
Wekea	..	(J. W.)
Whaitiripapa.		
Whakaahu	..	Castor. (Stowell.)
Whakaahu-te-ra.		
Whakakorongata	..	Possibly Vega.
Whanui	..	Vega.
Whare-pungarehu.		
Whetukaupo	..	(W.)
Whetu-kura.		
Whiro	..	Mercury. (Stowell.)

We will now give such notes as have come to hand concerning the *kahui-o-te-rangi*, the flock or assembly of the heavens, as the stars are sometimes termed.

AOTAHU is an exceedingly *tapu* star, and always dwells alone, as *tapu* persons are wont to do. When this star appears in the east it is greeted by the people with affection, with weeping and ceremonial chants. Said Tutaka, of Tuhoe, "Atutahi moves towards the south; he is a *tapu* person. He was the one left outside the basket by Tane. When Tane went to the abode of Tane-te-waiora to seek Hine-titama (the Dawn Maid) he failed to obtain her, so he plaited a basket and placed in it the adornments of the house of Tane-te-waiora (the stars), and took them away to adorn the breast of Rangi (the Sky Parent). And Atutahi was suspended on the outside of the basket. The Milky Way itself is that basket." Atutahi, say others, appears toward the south in the month when the *kumara* is planted, and its appearance is a sign for the task of planting the crop to be commenced. Says another authority: "Aotahi is a most important star, and a *tapu*; it is seen in the *Maruaroa* season, at its beginning. If its rays extend toward the south it foretells rain and snow, an inclement season; if toward the north a mild season follows." The season mentioned is apparently the *Maruaroa* of winter; another *Maruaroa* season includes spring and summer. It will be observed that some authorities quoted refer to the evening rising of the star, others to its heliacal rising. In Mr. White's MSS. is a note stating that when this star appears offerings of *tapu* food products are made to it, and certain ceremonial chants or invocations are sung. Puanga (Rigel) is said to be the parent of Aotahi.

Quoth Tamarau, of Tuhoe: "All the larger stars sprang from Tawhirimatea; they are the grandchildren of Rangi. As each one attains maturity, Rangi takes it and nurses it. The first-born was Autahi; this was the person who turned the Milky Way aside, lest he enter it, for the Milky Way is *noa* (common, not *tapu*), and is called the Fish, the Fish of Maui (Te Ika a Maui).

Autahi rises in the evening so as to avoid entering it ; so Autahi never entered the basket, but remains outside."

Again, we are told that Autahi is a male, and that in a spirit of vanity he left the basket, ran away from the Mangoroa, so that he might be termed the first-born of the stars, and hence the most important.

When Autahi is seen standing far out from the Milky Way about October a dry summer will follow ; if close to it an inclement season follows. Another, however, reverses this dictum. The star Marere-o-tonga is called the conductor or guide of Autahi by the Tuhoe folk. The expression *Kohi o Autahi* denotes the heavy rains of early winter. This is the sign for the *inanga* to go to sea, say the Maori, there to give birth to their young. This is called the migration of the *Kohi o Autahi*, or *Autahi-ma-Rehua* ; while the second migration is called that of Takero, and occurs when the star Takero appears. When the fourth month arrives the young fish, "the children of Rehua," as they are termed, ascend the rivers. Wohlers says Autahi is the star of the year. At Wanganui *atutahi* is the name of a small fish found in the river.

Colenso gives the following saying concerning Atutahi : "*Haere i mua i te aroaro o Atutahi*," which he renders "Go before the presence (or rising) of Atutahi" ; but it is probably used here as meaning a chief, a person of rank. A similar saying is connected with Rehua, and is certainly used with such a meaning.

Mr. S. Percy Smith gives Taki o Autahi as a name for the Southern Cross. Miss Henry tells us that Atutahi is the Tahitian name for *Piscis australis*. Kauanga is one of the stars that betoken the approach of day to the Maori folk. The curious name Atutahi-ma-Rehua, or Atutahi-and-Rehua, is somewhat of a puzzle, for it seems to be used as though denoting Canopus only.

The constellation called the HAO-O-RUA, or Net of Rua, has not been identified. It is either a part of Orion, or is some adjacent cluster. As a native put it, "It is the net you see in the heavens."

PAREARAU represents one of the planets. Four old natives in different localities of the Bay of Plenty applied the name to Jupiter. Stowell says that it is Saturn ; that Parearau is a descriptive name for that planet, and describes its appearance, surrounded by a ring. The word *pare* denotes a fillet or head-band ; *arau* means "entangled"—perhaps "surrounded" in this case, if natives really can see the *pare* of Saturn with the naked eye. If so, then the name seems a suitable one.

Parearau, say the Tuhoe people, is a *wahine tiweka* (wayward female), hence she is often termed Hine-i-tiweka. One version makes her the wife of Kopu (Venus), who said to her, "Remain here until daylight ; we will then depart." But Parearau heeded not the word of her husband, and set forth in the evening. When midnight arrived she was clinging to another cheek, hence she was named Hine-i-tiweka. Parearau is often spoken of as a companion of Kopu. Of the origin of this name one says, "Her band quite surrounds her, hence she is called Parearau"

—which looks as if our Maori friends can see either the rings of Saturn or the bands of Jupiter with the naked eye. Parearau is said to be the leader or “puller” of the Milky Way; one describes her as a widow. Seafarers consulted Parearau when a storm was threatening, for if she appeared to be of a light misty aspect the storm would pass by. Stowell gives a descriptive remark rendered as “That green-eyed star is Parearau; that is the reason why she wears her circlet.” This is a reference to the mourning-cap or head-band formerly worn by widows of Maoriland.

Regarding the HIRA trio there is but little to say. In White's MS. we have a note to the effect that Hirauta and Hiratai are the abodes of Wehi-nui-a-mamao. †Another reads: “The stars were obtained from outside the threshold of the heavens of Rongo, from the coverings of Wehi-nui-a-mamao, and the names of those coverings were Hirauta and Hiratai.” Assuredly these allegorical concepts call for explanation such as we cannot always give. Wehi is connected with stars in several traditions, and the word *mamao*, meaning “distant,” has probably a bearing on the subject. Another note states that the above two, with Parinuku and Parirangi, are the ties of the coverings of Wehi-nui-a-mamao. And yet another is that Wehi-nui-a-mamao, Hirauta, Hiratai, and the two Pari are the *tupuni* (coverings) of the stars obtained by Tane. Again, Tane took from Wehi-nui-a-mamao the *tupuni* of his garments, Hirauta, Porera-nuku, Takurua, Whare-pungarehu, Ruaki-motumotu, Wero, and Tahu-werawera. Apparently these are all star-names, and Wehi personifies distance, or perhaps the sides of the hanging sky. Williams gives Hirautu as a constellation. This is from Wohlers' paper in vol. 7 of the *Transactions of the New Zealand Institute*, which contains a number of misspelt native names.

THE MILKY WAY.—We now come to one of the most important “persons” of the Whanau Marama, and one who stands on a different footing to the other stars. This is shown by the fact that the Galaxy is in many versions assigned a different origin to that of the other stars. In Takitumu lore it is placed among the offspring of the Sky Father and Earth Mother.

A stray note asserts that the stars are the offspring of Ikanui and Ikaroa. The latter is the Milky Way, but we know not the former name. Possibly it is meant that the stars are the wards of that twain. “Concerning Ikanui and Ikaroa, the family of these persons are the stars of the heavens, Atutahi, Puanga, Mata-riki, Takurua-ruru, Wero-i-te-ninihi, Wero-i-te-kokota, Tauroru, and Poutu-te-rangi. These bring food-supplies to land, while Rehua ripens all fruits. Such are the tasks of these persons.”

My worthy friend Hamiora Pio, of Ngati-Awa, discoursed as follows: “The most numerous tribe in the heavens is the Mangoroa, the most numerous folk of the sky. Their duty is to move together and refrain from scattering. Observe how they move together—elder and younger, father and mother, grandchildren, husband, wife, child, old man, cousin, all move together. Their chief task is to foretell the coming of day. That people of the heavens represents our principal token of

daylight. When one end of the Mangoroa swings eastward, the other westward, then day is at hand." This old man made a curious remark which calls for explanation: "Tangotango is the object stretched across the heavens at night, surrounded by his star children; that truly is Tangotango." This looks as though Tangotango were a name for the Milky Way, or the personified form of it. We have already referred to several aliases of Tangotango, he who changes night into day.

We have given the choice selection of names by which the Galaxy is known. That most commonly known is Mangoroa (*Mango* = shark; *roa* = long). There is an old myth concerning an encounter between Maui, the hero, and a monster whom he subdued and fixed in the heavens, a story also known in the Cook Group. This is the Mangoroiata, who, as one version puts it, fled with trailing garments to the heavens, where he is still seen. He is also known as Mokoroa-i-ata, as at Rarotonga (*Polynesian Journal*, vol. 21, page 58; also vol. 7, pages 220, 221, and vol. 8, pages 64, 65, 72, 73).

At Tahiti it is in the Milky Way that the *waiora a Tane* is situated. In other lands it is the path of spirits, the road of souls as they pass to the spirit-world, and so equals the Broad Path of Tane of the Maori. To some races the Milky Way is the abode of souls of the dead, the spirit-world. It is the Watling Street and Galaxy of our forbears. The Maori sometimes termed it the Tuahiwi nui o Rangi and the Tuahiwi o Rangi-nui (the Great Ridge of the Heavens, or the Ridge of Rangi-nui, the Sky Parent). Its name of Ika a Maui (the Fish of Maui) has been explained. That of Whiti-kaupeka comes from the South Island, and has not, so far, been corroborated.

Te Ikaroa and Tama-rereti, we are told, have control of the "little sun" family, the stars. They also take care of their canoe, the Canoe of Tama-rereti. Occasionally some of them stray away among their elders, and are struck by them; these are the *mata-kokiri* (meteors).

If the Milky Way has a curved aspect it is viewed as a bad-weather sign; if straight, then fine weather lies before. Atutahi has a certain amount of influence over it.

The name Mokoroa, as employed in the Cook Group, may embody a western Melanesian word, *moko* = a crocodile. In our local dialect *moko* means a lizard.

Tariao is given in *Williams's Dictionary* as a star in the Milky Way. Autahi is said to have proposed to Tariao that they should move away, so as not to enter the Milky Way. Tariao objected, saying that he desired the Milky Way to enter the net (the star net, which seems to be that called the Hao-o-Rua). Even so did Tariao remain within the Milky Way. It was he who fixed the Magellan Clouds as stakes for that net. Those stars move round, but they never set. Tama-rereti wished them to enter his canoe, but Tariao objected.

The word *mahu* appears somewhat often in star-names. One gives Mahutonga as a name for the Southern Cross, which does not seem to have been confirmed. Stowell seems to give Mahu and Mahutonga as names of a star of the south that remains

invisible, and the Kahui o Mahutonga, or Flock of Mahutonga, as a name for the Southern Cross; while the Coal-sack is the Rua or Pit of Mahu—presumably the place originally occupied by that erratic orb. Tuhoe gave Mahutonga as a star-name, but with no explanation. At Horne Island (Futuna) Maafulele is a nubulæ west of the Magellan Clouds, while Maafu-toka is one east of them. At Tahiti Mahu-ni'a is the upper Magellan Cloud, and Mahu-raro the lower one. This causes one to wonder if an error has been made in identifying the two Futuna names. In the *Kauwae runga* published by the Polynesian Society Rua-mahutonga is described as "the home of the winds."

"Kaiwaka" is given in *Williams's Maori Dictionary* as denoting a star which appears in late winter, also as a name for the third month (August–September) of the Maori year, and as a name for a certain aspect of clouds. This name appears not infrequently in songs, as—

Tera te Kaiwaka ka tu ki te uru.
Tera Kaiwaka ka marewa i te pae.

The first of these allusions seems to be to Kaiwaka as a cloud, the second to the star of that name.

ORION.—The Belt of Orion seems to be known by two names. That of Tautoru includes the three bright stars in the Belt, while that of Te Kakau (The Handle) includes the same three and another row extending out from them at an angle that suggested the name Te Kakau to the Maori. These rows of stars are thought to resemble in form the handle of an adze—the form of handle used for the old stone adze. This group is sometimes called the Huihui o Te Kakau (the Assembly of Te Kakau). Stowell claims that Te Kakau is Regulus; but this is certainly not so among the Matatua tribes. Tutaka described Te Kakau as composed of two rows of three stars each. It is one of the star-groups that warns man of the approach of day.

The Tautoru stars are said to be the companions of Puanga (Rigel). John White gives the Teka a Tautoru as a star-name—presumably a row or two rows of stars. He seems to apply the name of "Peter's Yard-wand" to it in a tentative manner. Stowell's names pertaining to Tautoru refer to a bird-snaring apparatus termed a *pewa*. The bird-perch that supports a snare, and is usually termed a *mutu*, is styled a *tuke* by the Ngati-Porou folk. The name Tautoru is applied to the same stars in the Cook Group.

The star Puanga is Rigel in Orion. A native authority has said: "The task of Puanga is to strive with Matariki (the Pleiades) that he may gain possession of the year." This remark is illustrated by the fact that on the eastern coast of the North Island the commencement of the Maori year was marked by the heliacal rising of the Pleiades, but in other parts, notably the Ngapuhi district and the Chatham Islands, the year commenced with the cosmic rising of Rigel. The first new moon after such appearance of Rigel was the precise commencement of the year, according to another authority. Shand states that the three bright stars in Orion's Belt are called the *whata*, or food-store, of Puanga, by the Moriori. A Ngapuhi informant states

that when Rigel appeared in the morning the village plaza was swept, referring to the function of welcoming its appearance. Rigel is said to be the parent of Aotahi (Canopus). When Rigel appears, we are told in Mr. White's notes (probably from a Ngapuhi source), offerings of *tapu* food are made to it, and certain charms or invocations are chanted to it.

Rigel is looked upon as one of the "food-bringers," and also gives notice of approaching dawn: "The sun itself is pushing it from behind," as an old native expressed it.

Another note reads: "The stars that are guides for the seasons are eternal, and are ever flashing in the heavens. Our forebears consulted those sign-giving stars in connection with the planting of the *kumara* crop. The principal stars so relied on were Rigel, the Pleiades, Orion's Belt (Tautoru), and Whakaahu. According to the manner of their rising, the crops would be planted early or late. I have spoken of these stars as a token of regard for the beings who directed our ancestors and elders, now lost to this world."

A Ngai-Tahu (South Island) note says that women awaited the appearance of Rigel and regarded intently its aspect. If when it appeared above the horizon its rays were directed towards the south, then an inclement season followed; products of field, forest, and sea would suffer. If directed to the northward, then a fair season followed; all products were plentiful, floods were not, and merely desirable rains fell. "Our old men said that the stars were the cause of good and bad seasons, which are influenced by the *mana* of their rays. Hence certain divisions of the year were named after certain stars."

Rigel is reckoned one of the most beautiful of the stars. It is the blossom of the *pewa* (bird-snare) seen in Orion, wherein the shaft and perch are also seen. Such tree-blossoms are placed on a *pewa* in order to attract the birds.

In song we find Rigel coupled with Whakaahu—"Ka rewa ko Puanga, ka rewa ko Whakaahu."

Tuhoe say that Rigel, Takurua, and the Pleiades ascended from their mother, Raro, to the heavens. Here Raro, a word signifying "below, beneath," may represent the earth; in other cases Raro seems to personify the underworld.

One Puanga appears in native myth as one of the offspring of Whaitiri (personified form of thunder):—

Whaitiri = Kai-tangata.

|
Puanga.

Puanga is said to have had issue in the form of various species of shark; while Karihi, also a child of Whaitiri, begat the eel, barracouta, frost-fish, and conger-eel.

Sir G. Grey gives *Puanga kai rau* as a native aphorism denoting early winter, as a season of plenty. Puaka is the South Island form of the name of Rigel (Puanga). Poaka may or may not be a genuine variant. The three bright stars of the Belt are the shaft of the *pewa* or snaring-apparatus, and Taylor's name of Nga Whata (the storehouses or elevated platforms) may be compared with that given by Shand. At Horne Island

(Futuna) the name of Tolu (Toru), meaning "three," is applied to the three bright stars in Orion's Belt.

Canon Stack has told us in his *South Island Maoris* that the *whare purakau* or *tapu* school of learning of that region was "opened annually with great ceremony at the beginning of winter, the date being fixed by the rising of Puaka (Rigel), which took place between May and June."

At Samoa the row of bright stars in Orion's Belt was called the Amonga (the carrying-pole or balance-pole).

Karewa was given by a good Takitumu authority as the name of a star upon which the old Polynesian deep-sea navigators relied while making the voyage to these isles. Karorua and Kerekere appear as star-names in Mr. John White's notes. He also gives Kore-te-ruhiruhi, Tuhoroki, Tuhoroka, Whitirau-o-kura, Mahurahura, Uakirua, Tahitahi-pungarehu, and Haeretahu apparently as star-names. Kautu was given as a star-name by Te Waaka Tahu-ahi, of Takitumu. Taylor gives Kerekere, and also Haere-iti, Roke, Ruamahu, Patutahi, Tapuapua, Mangere, Papa, Whakaahunuku, Te Wakumu (?), and Nga Tapuae apparently as star-names, but his mode of giving his notes makes the meaning very ambiguous. He also states that Mars is called Maru; which does not agree with East Coast statements.

Williams gives Te Kohi and Kokotea as the names of a constellation, but in the *Journal of the Polynesian Society* (vol. 5, page 112) Te Kokota and Te Kohi appear to be mentioned as two different stars or star-groups, and Kokotea seems to be a synonym for one of these. Te Kokota is the Hyades. Kokouri and Kokotea are names for the Magellan Clouds.

THE MAGELLAN CLOUDS.—Here we encounter a truly generous list of names before which our own sinks into insignificance. It is not clear why they should rejoice in so many names. The natives look to them for wind-signs. As one put it, "Those persons, Tioreore and Tikatakata, ward off winds. When wind rises, one of them goes to obstruct it; thus their permanent task is to protect their people." The Maori describes them as *purei ao* and *pukohukohu* on account of their appearance. Should Tioreore assume the foremost position it is a sign of fine weather. The signs in regard to winds are derived from the relative positions of the two bodies.

The Magellan Clouds are called the Mahu at Tahiti, and Ma'u at the Cook Group, where the word is also employed as a month-name. A saying recorded by Mr. White states that they are the children of Matiti—of whom more anon.

Nicholas, who sojourned in the far North with Marsden in 1814-15, wrote as follows of information obtained from Ruatara: "We learned from him that much time is frequently employed by his countrymen in observing certain stars and constellations, which they are very fond of contemplating. They have given names to each of them, and have likewise connected with them some curious traditions, which they hold in superstitious veneration. . . . It is usual with them in the summer season to remain awake during the greater part of the night watching

the motions of the heavens, and making inquiries concerning the time when such-and-such a star will appear." The efforts made by Nicholas to obtain Maori star-names did not meet with happy success. He gives the names of the Magellan Clouds as "Firebou" and "Arete," and that of the Belt of Orion as the "Whacka" (Waka) or Canoe. The first two of these are not recognizable by the present writer.

Nicholas proceeds: "In two months, he said, a cluster of stars would rise, some of which would represent the head, and others the stern, of a canoe, while close to them would appear another star which they call the anchor, and which, setting at night and rising with the dawn of the morning, serves to regulate their hours of repose and labour."

Williams gives Kokouri as a constellation, and says that it is the same as Te Kokota. We have already seen that it is the name of one of the Magellan Clouds.

VENUS.—We have here an important orb in Maori estimation, and one whose beauty he appreciated; hence the well-known saying, *Me te mea ko Kopu e rere i te pae* (Like Venus as she appears above the horizon). Grey gives it as *Mehemea ko Kopu*. Now, what nicer remark could one make to a handsome woman than to say that she is as beautiful as Venus flashing above the horizon?

Tamarau, of Tuhoe, tells us that Venus has three names—Kopu, Tawera, and Meremere. As an evening star in summer it is called Meremere-tu-ahiahi; in the winter, as a morning star, it is Kopu. In other districts Venus as a morning star is called Tawera; as an evening star, Meremere and Meremere-tu-ahiahi. Tamarau stated that Kopu is applied to Venus as a morning star; and another East Coast authority agrees with him, but adds that, as an evening star, she is termed Rere-ahiahi. Another of his statements was to the effect that a third name for Venus is Puaroa—which may be doubted. Kopu is said to be a companion of the sun; she gives warning of the coming of dawn, and takes care of all sky and earth folk. One says that she is the *tohu ata* (sign of morning) of the Maori people, while the *tohu ata* of Europeans is the *heihei*, or domestic fowl—the "wise folk" as a native friend terms them.

Some quaint myths and fables are attached to the celestial bodies, and curious remarks are made concerning them. Quoth an old friend of the writer, "Now look at Kopu, the husband of Parearau; he comes along ere light appears in search of the offspring of his wife, until Tama-nui-te-ra (the sun) appears and brings blessings to mankind."

Another says: "Concerning Kopu, who is a star in the heavens, here is the message he sends to us: 'O friends—all folk of this side of the island—quit your sleeping, awake and rise! Here am I, the daylight-warner; behind me cometh the shining sun. Grasp your whip and whip your top; take also your kite and fly it, repeating the proper charms.' For the coming of daylight is keenly desired by man, that he may fulfil his desires of all kinds, engage in amusements and games, which betoken a land at peace, a time of peace, when no evil afflicteth the people."

Mr. White startles us by saying that Kopu was a female, whose husband was one Wekea, who is seen below her. Their offspring were Punuku, Purangi, and Puauau. This latter one took Pipiri to wife, and had issue Pipiri-nuku, Pipiri-rangi, and Pipiri-tau. One of these (it is not clear which) married Whakaahu (a star-name); their offspring are Whakaahu-nuku, Whakaahu-rangi, and Whakaahu-tau.

At the Cook Group Sirius is known as Mere.

A fable related by John White makes Tawera and Meremere to be the eyes of the children of Maui and Hina, both of whom are personified forms of light. This treats of these star-names as being applied to two different orbs. Maunsell remarks that Tawera rises about the month of June—which is not very definite. Venus is known as Fetu-ao at Horne Island.

KOROTAKATAKA is given as a constellation by Williams. It is said to mark the bounds of the Milky Way, presumably situated about its border. The *unahi o Takero* (? scales of Takero) are said to have fallen, and so formed Korotakataka.

MAKAHEA is queried as Canopus; but Colenso's "Makehua" we have not any further note of.

MARATEA is said to be a star the heliacal rising of which occurs some time after that of Vega: this does not tell us much. Marere-o-tonga is a star-name well known to the Matatua tribes. It is said to precede Canopus, and to be preceded by Takurua parewai.

Of MAREWA we know naught. When Rata, of Polynesian fame, was about to set forth on his famous voyage his mother said to him, "Wait awhile and set forth in December, when Marewa and Autahi are suspended over the *pachhuakai*"—which latter word presumably denotes the horizon. It is possible that Marewa and Karewa are names for the same star.

MATA is probably an abbreviated form of Mata-kaheru, and the triangular group of stars in Hyades was probably so called because one form of the old wooden spade (*kaheru*) of the Maori had a triangular blade. Such spades were used in the Waikato and East Coast districts.

Hakaraia Pahewa, of Te Kaha, gives Taumata-kuku as the name of Aldebaran.

We are told that Te Kokota is a female. Her task is to give signs as to seasons and of the coming dawn; she is the conductor or preceder of the daylight.

THE PLEIADES.—This far-famed star group has been exalted and venerated by many races from time immemorial. Innumerable myths are connected with it, and the Pleiades year has been an institution over a great area of the world for many, many centuries. There is much of sameness in the myths clustering around this group, and those of the Greeks are such as were evolved by barbaric folk. Most star-myths are puerile, though some have a meaning that is concealed beneath a childish fable.

The old myth we are acquainted with tells us that the Pleiades are the seven daughters of Pleione and Atlas, who, on being harassed, were turned into doves and flew up to the heavens. One of them is invisible because she married a mortal. The

Maori tells us that Matariki, their name for the group, is a female. Our native friends have a habit of so speaking of a constellation as though it were a single star. An old star-gazing friend of the writer said that six stars are plainly seen in Matariki, but that a seventh is faintly visible. Colenso writes: "I found that the Maori could see more stars in the Pleiades with the unaided eye than I could, for, while I could only see clearly six stars, they could see seven, and sometimes eight." Pio, of Ngati-Awa, gave the names of the six prominent stars of the group as Tupua-nuku, Tupua-rangi, Waiti, Waita, Waipuna-arangi, and Ururangi. He makes a curious remark that may possibly mean that Matariki is the name of a single star of the group, in which case we have the name of seven. He says: "I will now tell you about another ancestor in the heavens, one Matariki, and her six children." He then gives the six names as recorded above. Elsewhere in his voluminous manuscript he remarks that the assembly of Matariki came down to earth, leaving Poutini, another star, on high.

We have already noted a fable that shows Matariki to be the offspring of Raro and Raumati, the personified forms of earth (or the underworld) and of summer. The expressions *paki o Matariki*, *paki o Ruhi*, *paki o Hewa*, and *paki o Rangi* denote fine weather.

The task of Matariki, say the Maori, is to keep moving in a cluster, to foretell lean and fat seasons, and bring food-supplies to man; hence the name of Ao-kai is applied to it. An old saying is, "When Matariki is seen, then game is preserved"; for it marked the season when such food-supplies have been procured and preserved in fat in certain vessels. (*Ka kitea a Matariki, kua maoka te hinu.*)

The Tuhoe folk say that if the stars of Matariki appear to stand wide apart, then a warm and bountiful season follows; but should they seem to be close together it betokens a cold season marked by scarcity. Another version is that if the stars of this group are indistinctly seen at the time of its heliacal rising, and they seem to quiver or move, then a cold season follows. If they are plainly seen at that time—stand out distinctly—a warm, plentiful season ensues. Hence we hear the saying, *Nga kai a Matariki, nana i ao ake ki runga* (The food-supplies of Matariki, by her scooped up).

"The assembly of Matariki and Tangotango," remarked an old native, "are seen on the breast of their forbear Rangi, seen paddling their canoe." Another states that the group disappears on the 16th May, and reappears on the 16th June in the tail of the Milky Way. Again, the Maori says: "When Matariki is seen by the eye of man, then the *korokoro* (lamprey) is caught." Also, *Tena nga kanohi kua tikona e Matariki* is a saying denoting wakefulness at night, equivalent to our own saying regarding the dustman. Sir George Grey gives four other sayings: *Matariki ahunga nui*; *Matariki tapuapua*; *Matariki hunga nui*; *Matariki kanohi iti*. The first refers to the group as provider of plentiful food-supplies; the second to the abundance of pools of water in the winter season of Matariki; the third denotes that Matariki

has a numerous following, as of persons engaged in collecting food-supplies (Grey says, because all tribes made offerings of their first sweet potatoes to Matariki); the fourth may be rendered as "small-eyed Matariki," which is also the meaning of the words *mata riki*.

Nicholas, who visited New Zealand with Marsden in 1814-15, in discussing Maori star-lore, says: "The Pleiades they believe to be seven of their countrymen, fixed after their death in that part of the heavens, and that one eye of each of them, which appears in the shape of a star, is the only part that is visible." It is doubtful if Nicholas was a reliable collector of such lore; the language difficulty would be a serious handicap.

The appearance of the Pleiades was a notable event in Maori-land. It was greeted in two ways—by laments for those who had died recently, and by women with singing and posture dances. The event was marked by a festival, by feasting and universal joy. Parties of women faced the famous star group and greeted it with song and dance.

Turner tells us that at Samoa the Pleiades are known as Li'i and Mata-ali'i (Riki and Mata-ariki); and also that "when the constellation Pleiades was seen there was unusual joy all over the month, and expressed by singing, dancing, and blowing shell trumpets." Again, Jarves states that the Hawaiians held a festival at the commencement of the new year. It was called the Makahiki. It was a long-continued festival, marked by feasting, games, dances, and sham fights.

We have seen that the Maori year commenced with the heliacal rising of the Pleiades, but in the Cook Islands the new year began when that group rose in the evening in December. The Rev. W. W. Gill writes as follows in his *Myths and Songs from the South Pacific*: "The arrival of the new year was indicated by the appearance of Matariki, or Pleiades, on the eastern horizon just after sunset—*i.e.*, about the middle of December. Hence the idolatrous worship paid to this beautiful cluster of stars in many of the South Sea Islands. The Pleiades were worshipped at Danger Island, and at the Penrhyns down to the introduction of Christianity in 1857. In many islands extravagant joy is still manifested at the rising of this constellation out of the ocean." The same writer tells us that there is a curious connection between the Pleiades and the flying kites of the natives of Mangaia. They have three forms of kites; one is club or diamond shaped, and has attached to its balancing-tail six bunches of feathers to correspond with the six stars of the Pleiades. Another is a winged form with three bunches of feathers to represent the three bright stars in Orion's Belt. The third form is oval, having four bunches of feathers for the Twins and their parents. Extracts from the Rev. W. W. Gill's papers published in vol. 24 of the *Polynesian Journal* show us the esteem in which the Pleiades were held at the isles of Manihiki and Rakahanga: "Another god they had was Matariki (the Pleiades), which they worshipped."

At Tahiti the Pleiades are called Matari'i, the "k" being dropped in that dialect; at Horne Island it is Mataliki.

An old Hawaiian myth tells us of one Hina (apparently our old friend the moon) who had as husband one Makalii (Matariki in Maori), who became the Pleiades. This Makalii is spoken of as a storer of food products. Again, in far Peru we find that the Pleiades were highly venerated.

A Mangaia myth has it that the Pleiades originally formed one star, which became broken into six pieces. These folk call Aldebaran "Aumea."

The Pleiades Year.—We have seen that the Pleiades year was a Polynesian institution, and that the Maori of New Zealand seems to have changed the commencement of his year from December to June—that is, from the evening rising to the heliacal rising of the group—since he left the sunny isles of eastern Polynesia behind him. The statement concerning "sunset" at page 97 of *Te Kawwae-runga* is an error.

In his work on the Polynesian race Fornander states that the Polynesian year was regulated by the rising of the Pleiades, as the month of Makalii began when that constellation rose at sunset—*i.e.*, about the 20th November.

The year beginning in autumn or winter was an ancient institution in south-eastern Asia, and apparently farther westward. In his *Primitive Traditional History* J. F. Hewitt shows that the Pleiades year was an ancient system of time-measurement in India. The beginning of this Indian year was marked by a festival, and its weeks were reckoned by nights. It seems to have commenced in October–November. Emigrant Indian races took with them their measurement of time. The Pleiades year obtained in Sumeria, Arabia, Siam, Celtic Britain; the modern Mandaites of Mesopotamia retained it. The Indian year appears to have been marked by the setting of the Pleiades after the sun—on the 1st November, according to Hewitt. Stellar reckoning of time, and the ancient institution of the Pleiades year, form an interesting subject, but we cannot, as Maori, pursue it further.

The only note we have concerning MATAWHERO is to the effect that it is a red star.

Williams's Dictionary gives MATITI as a star indicating the summer, and also as a word denoting summer. Five subdivisions of this Matiti season are Matiti-tau, Matiti-hana, Matiti-kaiwai, Matiti-kaipaenga, and Matiti-ruwai. Matiti-tau begins some time in November, and the final one ends in April. The names given by Stowell differ in their endings, and he gives seven of them. Thomson says that the star Matiti appears in February. It is quite possible that the story of Matiti alluded to in the *Journal of the Polynesian Society* (vol. 27, pages 138–42) is a star-myth. Matiti came from beyond the skies to Tautari nui o Matariki, and obtained the stars Wero-i-te-ninihi and Wero-i-te-kokota.

MATOHU is given as a star-name at page 169 in *Te Kawwae-runga*, but the original at page 61 does not support the statement. Mawera may be a transposed form of Marewa. As to Meto, the evidence seems to point to its being a name for a comet, which are often called *whetu* by natives.

The PAEPAE O WHAITIRI appears to be the name of a constellation, but it awaits identification. The same may be said of the POU O WHAITIRI, which may possibly be the planet Meremere. The Rev. R. Taylor seems to show that Whakamaro-te-rangi and Meremere are parts of the Paepae o Whaitiri, which does not look convincing.

CONSTELLATION OF SCORPIO.—Naturally the most important "person" of this group is Antares, known as Rehua on the east coast of the North Island. Stowell identifies Rehua with Sirius, but this does not agree with the plain evidence of East Coast natives. The Matatua tribes also term Antares Rehua. The name may be applied to Sirius in the far North.

Rehua is spoken of as the summer star, and, indeed, almost as a personification of summer or summer heat; hence the saying, *Kua tahu a Rehua* and *Ko Rehua whakaruihi tangata* (Rehua the enervator of man). Another such is given by Grey—*Ko Rehua pona nui* (big-jointed Rehua)—for in summer people get thinner and their joints protrude. Colenso seemed to believe that Rehua was the name of a planet—Mars or Jupiter—and in proof thereof gives this saying: *Tūiro to mata ki a Rehua, ki te mata kihai i kamo* (Turn your eye to Rehua, to the eye that winked not).

Students of Maori myth are very liable to become confused over this name of Rehua, for it is not only the name of a star but also of one of the supernatural beings, termed *Whatukura*, who abide in the uppermost of the twelve heavens and act as messengers for Io, the Supreme Being. The name is also used as a sort of synonym for chieftainship; hence, when a chief dies, we hear the saying, *Ko Rehua ka mate* (Rehua is dead).

An old native said to the writer, "Rehua is a star, a bird with two wings; one wing is broken, the other whole. Under the unbroken wing is the Waka o Tama-rereti (Tail of the Scorpion). When Rehua mates with Pekehawani he begets Ruhi and Whakapae-waka. At such time the ocean is motionless and windless, hence the saying, *te paki o Ruhi* (the fine weather of Ruhi.)" Here we see the name of Rehua includes the curved line of stars, of which Antares forms one, also several stars below it that form part of the broken wing. Tuhoe call the curved line of stars the Waka o Mairerangi (Canoe of Mairerangi). The generally accepted version of the above myth is that Rehua has two wives, one being Ruhi, or Ruhi-te-rangi, also known as Pekehawani; the other is named Whakaonge-kai. The former name, Ruhi, is a word meaning "weak, languid," while Whakaonge-kai may be rendered as "she who makes food scarce." The ninth month of the Maori year is sometimes called Ruhi-te-rangi. Rehua has these two wives ranged one on either side of him. When Rehua abides with Ruhi her feet alight upon the earth, the left foot first, and all fruits are formed, while all things, food products and the earth itself, become enervated. When Rehua mates with Whakaonge-kai summer has come. This latter person is a most voracious female, hence food-supplies run short. When man becomes languid during hot weather it is said that Rehua is afflicting him—that is to say,

his wife, Whakaonge-kai, and the heat of the sun. The task of Rehua, saith the Maori, is to cook—that is, ripen—all fruits of the earth. Rehua's own home is at the Putahi o Rangiaho; his place of abode is the Uruuru-rangi, at Tiritiri-o-matangi, the second of the twelve heavens, counting downwards. This latter statement may apply, however, to the other Rehua.

Another anecdote pertaining to Rehua is as follows: *Na te aha i whawhati te paihau o Rehua?* (What broke the wing of Rehua?) Answer: *Na te taurekareka; na nga Papaka o Wharaurangi* (The slave, the *papaka* (? crabs = ? vassals) of Wharaurangi). We have no explanation of this peculiar discourse.

The offspring of Rehua, says an old fable, are the *koko* (= tui, a bird) and the *inanga* (a small fish often called whitebait). On the Turu and Rakaunui nights of the moon (sixteenth and seventeenth nights) in the ninth month of the Maori year (February–March) these fish are said to descend rivers to the sea, there to spawn. There are three such migrations of these fish; the second one is called that of the Kohi o Autahi-ma-Rehua; the third is called that of Takero (a star-name). The following fable is highly explanatory: About the *inanga*—these young folk enquired of Rehua, “What are we to do?” And Rehua replied, “When you see the sky redden (the *imu-rangi*, or *papa-kura*), that is a call to you to hasten to your mother Wainui (personified form of the ocean) and there give birth to your offspring. You will then return whence you came; your offspring will follow in the fourth month. When your ancestor Takero is seen your last company will proceed to Wainui.”

Another of the offspring of Rehua is the *hakuwai*, a mythical bird of the heavens, occasionally heard but never seen.

There is some evidence that serves to identify Rehua, the supernatural being of the upper heavens, with Rehua the star. With both the *tui* or *koko* bird is connected (see page 33 of Sir G. Grey's *Polynesian Mythology*, 1854 ed.). Rehua and the *koko* enter into the story of Hinauri (the moon) and Rupe, or Maui. These birds frequented the head of Rupe, whereon they found their food; and *lehua* (= *rehua*) is a Hawaiian word, now obsolete, denoting the forest. The home of Rehua was at the Putahi nui o Rehua; and this story into which enter the Paepae o Whaitiri and the Pou o Whaitiri is evidently an astronomical myth. The Tuhi o Kaitangata referred to in the story is some gleaming celestial phenomenon. This peculiar word *tuhi* means to glow, redden, gleam, shine, as the redness in the sky preceding dawn. *Haeata* denotes dawn, also a certain gleaming aspect of the sky.

Stowell identifies Rehua as Sirius—probably a Ngapuhi version, though this is not explained. He makes Te Putahi nui o Rehua the line of stars leading southward (presumably from Sirius) and culminating in the great star triangle. “That triangle enfames the mirror or reflector of Sirius, known as Pukawanui (*Pukawanui, te wai whakaata o Rehua*).” Again, he writes: “Te Taumata o Rehua and Te Huinga o Rehua are also familiar references.”

Another old star-fable is to the effect that Rehua mated with Puanga (Rigel in Orion), their offspring being Poananga

(the clematis) and Tahumate, or Puahou (= *houhou* = *parapara* = *Nothopanax arboreum*). These children were born in the Mahuru season (spring); their task is to forewarn us of the approaching warmth of summer. Ruaumoko (origin and personified form of earthquakes) caused the birth of those young folk by shaking the earth; after them many others were born. Puahou was born in August; he is the most important of the offspring. Those children are still suckling their mother during that month. In this curious mythopoetical story we see a reference to the blossoming of certain plants, the children of Rehua, the forest.

The *kekerewai*, or green beetle-like creature seen in numbers on the *manuka* shrubs, is called the Manu a Rehua among the Matatua tribes. It was formerly eaten by the natives. *Manu* denotes a bird, but in parts of Polynesia it is applied to insects; probably our local natives formerly used it in that sense.

At Tahiti the stars Castor and Pollux are known as Pipiri and Rehua, according to Ellis.

The precise name of the Canoe of Tama-rereti (Tail of the Scorpion), say the Matatua folk, is Puna-ariki (given elsewhere as Uruao). The Rev. R. Taylor makes an amazing canoe of it, for he says that the Pleiades forms the bow of the vessel, and the three bright stars in Orion's Belt the stern, while for the anchor he roams far afield to the Southern Cross—an arrangement not borne out in his diagram with any respect for position or relative distance.

One version of these old star-myths makes Tama-rereti as one of the offspring of Uru-te-ngangana, with Tangotango of many aliases as his sister. Mr. Beattie's South Island notes seem to show that the Canoe of Tama-rereti is the same as the Waka o Rangi (*Journal of the Polynesian Society*, vol. 27, pages 141-145).

POUTU-TE-RANGI.—*Williams's Maori Dictionary* gives this as the name of Altair, but says that it is also applied to Antares. Stowell identifies it as Aquila. The name is also applied to the tenth month of the Maori year (March-April). Of the two last months of the year Moihi, of Wairarapa, remarked: "These two form the Ngahuru-tuhoe season, the more prominent name of which was Poutu-te-rangi. The autumn ends with these." Apparently this period is marked by the appearance of the above star. A Tuhoe native says that Poutu-te-rangi is another name for Rehua. "When his feet alight upon earth he is called Poutu-te-rangi; this is the autumn. When but one foot has so alighted he is still called Rehua." Ngati-Awa call Poutu-te-rangi the leader or conductor of the year; it is seen in the heavens in summer and autumn. The *kumara* crop was lifted in the month of Poutu-te-rangi, which, according to Tamarau, of Tuhoe, is the eleventh month. Poutu-te-rangi is termed one of the food-bringing stars. The statement at page 56 of vol. 16 of the *Journal of the Polynesian Society*, to the effect that this star marks the planting season, is apparently an error.

PIAWAI.—This is the name of a group of four stars, not identified, as given by Tuhoe. The group is called a *hue* (gourd); presumably it has some resemblance in form to that esculent.

PIPIRI.—This, quoth an old native to the writer, is a star of low rank. It really consists of two stars adhering to each other; hence its name. It appears a little while before the Pleiades, and the first month is called the Tahī o Pipiri, sometimes the Toruheri o Pipiri (Ngati-Awa), and also Opipiri. "*Te po tutanga nui o Pipiri*" appears in Grey's Maori proverbs as a saying denoting the long nights of winter. At Mangaia the third month of the winter season is called Pipiri.

POUTINI.—This star, according to Ngati-Awa, is identical with Poutini, the origin of the *pounamu* (greenstone, nephrite), which is termed the *whatu* or stone of Poutini. Hence this name was applied to the district of Westland in which that highly prized stone was found.

PUWHAKAHARA.—This star, in conjunction with one Hinepipi, is credited with being the origin of the *maire* tree (*Olea* spp.).

RANGAWHENUA.—In the Bay of Plenty district this name is apparently applied to one of the planets, Jupiter or Mars. It is called the conductor or preceptor of Vega. When Rangawhenua appears, the high tides called *nga tai o Rangawhenua* also appear in the Bay of Plenty. Mr. S. Percy Smith remarks that the expression applies to certain yearly-recurring series of heavy rollers that roll southward. Taylor gives Rangawhenua and Uruao as the stars or constellations marking the month of January.

TE RA O TAINUI (The Sail of Tainui).—Mr. White gives this as the name of a star or constellation. In his unpublished MS. he gives a diagram of the "Tainui" canoe as represented by stars. The Pleiades form the bow of this starry vessel, and the three bright stars in Orion's Belt represent the stern. The sail, the Ra o Tainui, is perhaps the Hyades. The cable is seen in the Pointers, and the anchor is the Punga a Tama-rereti, the Southern Cross. This canoe reminds us of Taylor's Waka o Tama-rereti—evidently the same vessel. The position of the cable in relation to the far-flung anchor is somewhat unusual. Taylor connects the Ra o Tainui with the month of June.

RUAKI-MOTUMOTU.—Wohlers gives Ruaki-motumotu, Tahu-weruwere (or werawera), and Whare-pungarehu as South Island star-names.

TAKERO.—A far-spread star-name, for it appears as Ta'ero at Tahiti (where Miss Henry queries it as Bacchus or Mercury), as Taelo at Samoa, and as Kaelo at the Hawaiian Isles. Apparently Takero rises here in autumn; at Hawaii it gives its name to the month of May. The Maori says: "In autumn, in the time of Takero, or when Takero appears, then the *inanga* migrate to the ocean."

TAKURUA.—This star-name is identified as Sirius by Williams and some other authorities. It is also the commonly used name for winter. Stowell gives Takurua as the name of Sirius during the winter months only. The saying *te anu o Taku*, denoting the cold of winter, shows an abbreviation of the star-name. This is the star that is said to bring frost, snow, and cold. The Tuhoe folk say that there are several stars of this name.

Takurua-whareana, if appearing bright and distinct, warns us of heavy frost. Farther south is Takurua-parewai, which is the preceder of Marere-o-tonga. At the Hawaiian Isles there are two stars named Kaulua (=Ta'ulua—the Hawaiian letter-change of *k* for *t* is quite modern), and the month of June is called Kaulua. At Samoa there are two stars called Taulua. At Tahiti, according to Miss Henry (*Journal of the Polynesian Society*, vol. 16), the name seems to be applied to most stars, as Ta'urua-nui (Great Fomalhaut, and also apparently Jupiter), Ta'urua-nui o te hiti apato'a (Canopus), and Ta'urua nui amo aha (Sirius). Ellis gives Ta'urua hiti i te ahiahi (Takurua shining in the evening) as the Tahitian name for the evening star.

WERO.—The three (or more) Wero stars have not been identified, but they are spoken of as winter stars. One contributor, however, states that Wero-i-te-ninihi and Wero-i-te-kokota pertain to winter, and give forth signs to man concerning that period, while Wero-i-te-ao-marie provides the same for summer. Welo is a star-name at Hawaii. These Wero names, as Wero-i-te-ninihi, Wero-i-te-kokota, and Wero-i-te-wawana, are sometimes employed by the Maori to denote cold, as though they were personifications of cold.

The following extract from an old song, an *oriori*, as sung over a little child, is of interest as mentioning the Wero stars and some others:—

E hokai ana koe ki whea, e Tane-tikitiki. .e
 Ka pa mai te waha—Ki te whai atu i ta taua nei puhi, e hika. .e
 E hoki: Tangohia e koe i nga tupuni o Wehi-nui-o-mamao
 Ko Hihira ki uta, ko Hihira ki tai
 Ko Parinuku, ko Parirangi
 Tikina e koe ki te kahui whatu punga nei. .e
 Ko Takurua nei, e, Meremere nei, e, Atutahi-ma-Rehua nei. .e
 He ariki no te tau ka wehe nei. .e
 Ka tau mai ko Whakaneke-pungarehu nei. .e
 Ko Uaki-motumotu nei. .e
 Hei tupa i a Wero-i-te-ninihi, e, ko Wero-i-te-kokota nei. .e
 Ka puta i konei o raua tuahine
 A Wero-i-te-marie, a Wero-i-te-ahuru. .e
 Koia te wero i te mahana. .e
 I tataia ki te poho o Ranginui
 Koia Tama-nui-te-ra, e hine. .e
 Ka haere wareware atu na koe. .e
 Koia i tau ai te haere i te aoturoa, e hine. .e. .i
 Ka wehea te po i konei, te ao i konei
 E hine aku. .e. .i.

Herein we recognize Hirauta, Hiratai, and other unexplained names, but apparently those of stars or some celestial phenomena. The first two Wero appear to be looked upon as males, and the other two as females. Uaki-motumotu is evidently the Ruaki-motumotu mentioned elsewhere. Whakaneke-pungarehu may be compared with Whare-pungarehu given by Wohlers.

Much interesting matter is contained in some of these songs composed to be sung to children, for the object was to familiarize them with the names of ancestors, historical incidents, &c.

TAMA-I-WAHO.—Ngati-Awa speak of this as a star-name. Apparently it represents the supernatural being of that name.

TARIAHO is given as a star-name by Mr. White. It is probably a form of Tariao.

TAUTAHI.—A Wairarapa native gave the name of Tautahi o Rongo, apparently as representing Tautahi, Takurua, and Tautoru; but the matter is not clear.

TE TIPI.—Given as a star-name at page 204 of vol. 16 of the *Polynesian Journal*.

URUAO.—Williams gives Uruao as a star that appears in January or February. In Maori myth this was the name of the vessel of Tama-rereti in which the stars were conveyed to the breast of the Sky Parent; hence one would suppose Uruao to be the more correct name of the Waka o Tama-rereti, the Tail of the Scorpion. The Maori says Te Ikaroa (Milky Way) and Tama-rereti have under their care all the "little suns," and they also guard their canoe. Again, a passage in the *Kauwae-runga* identifies Uruao with the Waka o Tama-rereti.

WAKA O RANGI.—In Mr. Beattie's collection of South Island native lore we are informed that the "Waka o Rangi" was the name of a very ancient vessel of the Polynesian explorers. It is now represented by a group of stars which has not been identified. It is also stated that the stars were partitioned out among various gods, and that one of these sky divisions was Tautari-nui o Matariki.

WHAKAAHU.—Stowell identifies this star as Castor. Williams gives the two forms of the name, Whakaahu and Whakaahu-te-ra, querying it as Castor or Pollux. At Samoa Fa'aafu is a star-name, as also is Fa-aahu at Tahiti. The latter is also a name applied to the month of February by Tahitians, as they call March Pipiri; and the Hawaiians term March Taelo (Takeru in Maori). At Home Island February and March are called Fakaafu-ola and Fakaafu-mate.

The following line from a song seems to imply that Whakaahu and Rigel appear at about the same time:—

Ka rewa ko Puanga, ka rewa ko Whakaahu.

Whakaahu seems to be essentially a summer star, and is sometimes used, apparently, to denote that season. We find in a quaint old myth that Oipiri (or Oipiriwhea), who represents winter and produces snow, and Whakaahu, who represents light and this world, were both daughters of Day and Night, and were born in space. Oipiri (apparently connected with Pipiri) was acquainted with all matters pertaining to Night and Winter, while Whakaahu followed the paths of Day, and represents the world of light, or *marama kehokeho*. Her name of Whakaahu also was equivalent to summer, and to Hiringa. This latter is one of the names of Tane (personified form of the sun, who is the origin of knowledge). Both these female beings (representing a winter and a summer star) were taken to wife by Rehua. The attendants of Oipiri and Whakaahu are ever contending with each other, but neither side ever gains a lasting victory. Here we have an allegorical myth illustrating the yearly contest between summer and winter, wherein night, day, summer, and winter are personified, while the two seasons are represented by star-names.

An old couplet runs as follows :—

Kotahi tangata ki Hawaiki, ko Whakatau anake ;
Kotahi tangata ki Aotearoa, ko Tama-uawhiti (ara ko Tama-
nui-te-ra).

(There is one person at Hawaiki, Whakatau only ; there is one person at Aotearoa, Tama-uawhiti—that is to say, Tama-nui-te-ra (the sun).

Whakatau is spoken of as a warrior, the equal of Oipiriwhea. Tama-uawhiti resembles Whakaahu (otherwise Hiringa), who represents mental desire for knowledge, and energy in the art of cultivating food-supplies for man, and other important matters—the source of knowledge.

Here we encounter yet another name for the sun, Tama-uawhiti, who is coupled with summer in opposition to Whakatau and winter. Of a verity the Maori was a past-master in the conception of personifications and allegorical teachings!

WHANUI.—This is another of the high-class stars, the *wheturangatira* of Maori lore. It not only serves as a season-marker and regulator of certain industrial pursuits, but it also provides portents in regard to divers matters. Whanui is identified as Vega. This star served as a pole-star for about two thousand years—from 12000 to 10000 B.C.

If this star appears to move slowly this is said to be the sign of a *tau kai*, or fat season—all food products will flourish, vegetable and animal ; but if it seems to move quickly, as though borne forward by the wind, then a lean season follows. Whanui gives the sign for the lifting of the *kumara* crop, and this must not be delayed too long after the heliacal rising of the star ; hence it takes place in the month of Poutu-te-rangi. As it is well known when Whanui will appear, storage-pits for the *kumara* are put in order in good time, and when Whanui appears the task of lifting the crop is commenced, after which comes the harvest festival—feasting and rejoicing, with indulgence in old-time games and pastimes.

A contribution from a native authority is as follows : “Another star in the heavens is Whanui, whose address to people is—‘O friends! Here am I, Whakakorongata, awake and rise! Seize your spade, and to work ; store the crop in the pits, then turn to rejoicing and sing your chants of joy, for all women and children are now joyful ; there is naught to disturb them.’”

The task of Whanui, we are told, is to provide *kumara* as food for the people of this world. Moreover, it was from Whanui that this tuber was originally obtained by man—a curious belief, paralleled by one noted in Indonesia, that rice was first obtained from the Pleiades. Pani-tinaku, who is looked upon as the mother of the *kumara*, was the wife of one Rongo-maui, who may or may not be identical with Rongo-marae-roa, and who was a *taina* (younger brother or relative) of Whanui. The latter would not part with any of his children, the *kumara* ; hence they were stolen from him by Rongo, who brought the seed to this world, and Pani gave birth to the tuber at the Wai o Mona-ariki. Pani was the aunt and foster-mother of the Maui brothers, whose father was Tangaroa-i-te-rupetu, a brother of Pani.

Another myth makes Whanui an ancestor of man, for one of his offspring was Mahanga-i-te-rangi, who married Te Uhi-o-te-rangi, from whom man is descended; hence the following in an old song:—

Tirohia e koe te rerenga mai o Whanui
Nana i ai mai ko to tupuna ko Mahanga-i-te-rangi.

Whanui never forgets his yearly boon to mankind; year by year he sends to him the *mana* of the prized tuber, the sweet potato. Yet he seems to have made man suffer for the act of theft committed by Rongomaui, for he said to Anuhe, and Toronu, and Moka, "Go you below and live upon Rongo"—hence we ever see those pests assailing the *kumara*. These are three species of caterpillar that attack the *kumara* plants.

WHETU-KAUPO.—Given by Williams as a star which sets in the evening in October and November. An East Coast native gave it as a name for a comet.

WHIRO.—Identified by Stowell as Mercury in his *Maori-English Tutor*, but as the planet Mars on a former occasion.

Such are the Maori star-names collected, and a poor showing it is, compared with what might have been obtained, for so few have been identified. These are the *ra ririki*, the little suns, the *apa whatu a Te Ahuru* that gleam in the sky above us.

A few expressions used in various contributions are puzzling, and remain unexplained, such as the *paetai o te rangi* and the Paetaku-o-Rongo to which Tane conveyed the stars when he obtained them from Wehi-nui-o-mamao. In another place this is given as the Paetaku o te rangi o Rongo, the threshold of the heaven of Rongo. Kikorangi is a word denoting the blue sky.

It will be seen that many star-names are also applied to months and seasons, a common custom in Polynesia.

COMETS.

The term *whetu* (star) is often applied to comets by the Maori, but he has a number of other names by which he designates them, such as the following:—

Auahi-roa.	Purereahu. (Stowell.)
Auahi-turoa.	Rongomai ?
Auroa. (Colenso.)	Tunui-a-te-ika ?
Manu-i-te-ra. (Stowell.)	Taketake-hikuroa.
Meto.	Upoko-roa.
Puaroa.	Wahieroa.
Puihihi-rere. (Stowell.)	Whetu-kaupo.

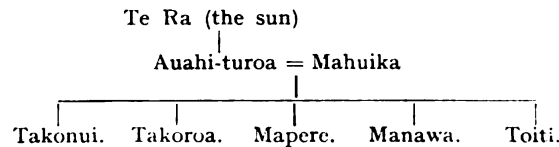
It is quite likely that the name of Tiramaroa is also applied to a comet. This Tiramaroa was described by a native as having long *puhihi* (rays), which are sometimes directed upwards and sometimes downwards. This looks somewhat like the tail of a comet. It is said to have been seen during the siege of Te Tapiri, in 1865, and again about the time of the Tarawera eruption (1886). Evidently it is neither star nor meteor.

AUAHI-ROA and AUAHI-TUROA are common names for a comet (*auahi* = smoke; *roa* = long). A curious myth is attached to Auahi-turoa among the Matatua tribes. He is said to be the offspring of the sun. Now, the son of Tangotango—that is to

say, the sun—bethought him of sending his child down to earth in order to convey a boon to mankind. Even so, he said to his son, Auahi-turoa, "Go you and carry a boon to our offspring on earth." Said Auahi-turoa, "In what form shall I bear it?" The reply was, "Give them five (*tokorima*). Take your offspring and attach them to those of Hine-te-iwaiwa and of the lightning. Give them fire to bring benefits to man. Do not approach the elder, but deal with the younger. Such is your task."

Thus Auahi-turoa came down to earth to bring a boon to mankind, and that boon was fire. He took to wife here in this world one Mahuika, younger sister of Hine-nui-te-po, the erst Dawn Maid, and she bore the five Fire Children, whose names are the names of the five fingers of the human hand. These are the Fire Children, born on earth, who produce fire for man.

In the secondary myth pertaining to this subject, the origin of fire, Maui begs the fingers of Mahuika as fire for man. After fire took refuge in Hine-kaikomako (personified form of a tree, *Pennantia corymbosa*) it became necessary for man to grasp and manipulate the fire-generating sticks so as to coax fire from the body of the Lady Kaikomako. So when you see the comet in the heavens, know that it is Auahi-turoa, he who brought fire to mankind. And fire is often called Te Tama a Auahi-roa, or Te Tama a Upoko-roa (the son of Auahi-roa, or of Upoko-roa), because it is the offspring of the comet.



These are the five Fire Children.

It is a singular coincidence that, in Persian myth, fire is said to have been the son of the sun and messenger of the gods, who was sent down to earth in the form of lightning.

TE MANU-I-TE-RA.—This singular name, which may be rendered as "The Bird from the Sun," is, according to Stowell, a comet-name. We have also seen that it is connected with the sun by some writers. It is worthy of note that a comet is called *manu* in the island of Nuguria, Solomon Group—a Polynesian dialect among Melanesian peoples.

In *Te Ika a Maui* (2nd ed., page 278) Taylor gives a singular myth connected with Te Manu-i-te-ra. At page 283 he states that the abode of Te Manu-i-te-ra was on the mountain of Hikurangi, a place where the evils of the world were unknown. He was a supernatural being, and his abode was called Totoka, a word meaning "congealed." In the sense of "frozen" it would be applicable to the summit of a mountain. On this place the lightning flashed; and when the Manu-i-te-ra flew abroad the heavens were illuminated.

In his *Maori History of the Taranaki Coast*, at page 149, Mr. S. P. Smith gives a version of the above myth in which the name of Te Manu-i-te-ra is replaced by that of Tama-nui-te-ra (a name for the sun), the difference between the two names being very

slight—namely, a single vowel-sound. In the song given, however, the name of Te Manu-i-te-ra appears. Mr. Smith considers the latter to be a name for the sun.

Another peculiar myth concerning the Manu appears in vol. 2 of the *Journal of the Polynesian Society*, at page 143.

METO.—It is now fairly certain that Meto is a comet-name. It is said to be a *whetu puhiki*—that is, it emits rays, or seems to be partially *auahi*, as a native described it. This word denotes smoke, but is also applied to haze or vapour. The rays or tail of Meto extend upwards; says a native; if its body be below the horizon, as a range of hills, its *puhiki* extend up above the horizon (*Ka hihi ake nga puhiki*). The appearance of Meto is said to be the portent of a hot summer. The Tuhoe folk claimed that the comet of 1907 was Meto.

PUAROA.—I am inclined to think that this is another comet-name. *Pua* means "smoky" or "hazy," and *roa* is "long." It seems probable that *pua* has been used as a noun in the past. At Samoa Pusaloa is a comet, and is rendered as "Long Smoker." Puaroa is said to have been regarded as a *tapu* phenomenon, and is said to possess or emit mist-like emanations, referred to by the name of *hiku makohurangi*, or misty tail. Again, the expression *au pukohu*, applied by natives to Puaroa, are appropriate words as applied to a comet. One native identifies Puaroa as Rere-ahiahi, which is doubtful. Another states that it is a *whetu tapu*. We have already seen that natives often term comets *whetu*.

RONGOMAI.—This is thought by Stowell to be the name of Halley's Comet, but that body scarcely shows itself often enough for the Maori to have a special name for it. It may be a generic term for comets. The Maori describes Rongomai as a body that moves through space, and appears to give off sparks. The Rev. R. Taylor tells us that when the Pakakutu *pa* at Otaki was being besieged Rongomai was seen in broad daylight, a fiery form rushing through space. It struck the ground and caused dust to rise. This looks like a meteorite. At Owhiro, near Island Bay, is a place named Te Hapua o Rongomai, where that *atua* (supernatural being) is said to have descended to earth in past times. Rongomai was quite an important deity of the Maori folk. In vol. 5 of the *Polynesian Journal*, at page 119, is an account of one Rongomai being transferred from the earth to the moon; but this may be a different myth.

TUNUI-A-TE-IKA.—This is apparently another name for a comet that is viewed as a supernatural being by the Maori, and is utilized as what we glibly term a "god"—that is, to impart power to ceremonies, rites, and charms. It is said that Tunui can be seen in daylight. Another such phenomenon apparently is the Po-tuatini, and both are termed *kikokiko*, or malevolent spirits. The appearance of a comet was considered to be an evil portent. Tunui was one of the gods or malignant beings that are termed *atua toro*, that are sent by their human mediums on errands to distant parts. Thus I was told by an old man of the Bay of Plenty that the Wairoa natives on one occasion sent Tunui-a-te-ika to the former district to slay Hatua,

of Awa. He added, "We saw Tunui-a-te-ika coming towards us through space."

Tutaka, of Tuhoe, stated that Tunui is not a star; it is a demon, a spirit that flies through space; it has a big head. Its appearance denotes the death of some person; hence, when it is seen, people ask, "Who has died?" Another says that Tunui and Te Po-tuatini are seen in space at night, and that both are *atua toro*, who have their human mediums who placate and influence them by means of ritual formulæ, &c. Thus Tunui is employed as a war-god, and certain invocations are addressed to him. The following is part of such a formula:—

Tenei taku aro
Ko to aro he aro kai manawa tangata
Auroki, aunguha, auwhekarō mai ki tenei pia,
Ki tenei tama nau, e Tunui-a-te-ika..e..i.

Tunui is the possessor, we are told, of a long tail, and, when seen, priestly adepts performed the *matapura* rite, in order to avert the threatened evil, whatever it may be.

TAKETAKE-HIKUROA (Long-tailed Taketake) is a comet-name. "Another name of Wahieroa is Taketake-hikuroa, and when that demon is seen in the heavens it is viewed as an evil portent for the tribe." So says the Maori.

WAHIEROA is a comet-name, and also appears in Maori myth in conjunction with those of Whaitiri, Tawhaki, Hema, and Hinetuahōanga, all of whom are personifications. A note in White seems to show that he viewed Matawhaura as a comet-name.

WHETUKAUPO is given as a star-name by Williams, but an East Coast native gives it as a comet-name. Good or evil omens were derived from its position, as to whether the tail (*hiku*) extended upward or downward. Hence one might ask, "*Kei te pēhea te upoko o te Whetu-kaupo?*" And one might answer, "*Kei te korakora*" ("It is sparkling or flashing"). This was an evil portent. Or the answer might be, "*Kei te auroki, puaho ana tera*" ("The light is calm and steady")—a good omen.

UNAHIROA is a doubtful name. It has been described as a comet-name, also as the name of some such phenomenon as *ignis fatuus*. Taylor gives it as Urahiroa—apparently a misprint, of which there are many in his little natural-history booklet.

The term *whetu puhii*, applied to comets, is a descriptive name, not a specific name or proper name such as Wahieroa, &c. The word *puhii* denotes the tail of the comet, which is said to be *auahi* (smoke, haze, vapour). *He roa te puhii, ara te auahi* (The *puhii* is long—that is to say, the *auahi*). Another description of a comet is *Penei me te auahi ahi ona hii, paku noa iho te tinana* (Its rays or appendages are like fire-smoke, its body exceedingly small).

Early writers tell us of native speculations anent the comet of 1843, and a Wellington newspaper stated that "the Maoris hailed it as an evil omen, and commenced howling very pathetically." Lieutenant Meade tells us of a comet seen during the native disturbance of the "sixties," the portent being

interpreted in totally different ways by the two parties of natives, friendly and hostile.

METEORS.

Meteors are termed *matakokiri*, *tumatakokiri*, *kotiri*, and *kotiritiri*, and are probably also referred to as the *unahi o Takero*. In the Bay of Plenty district the name of *tamarau* seems to be applied to them. Williams has "*marau* = a comet or meteor," which may be the same name in a mutilated form.

The appearance of a meteor was looked upon as an evil omen by the Maori. Samoan natives say that a meteor has gone to seek fire. Taylor tells us in *Te Ika a Maui* that a meteor was the *aria* or visible form of the supernatural being Rehua; but no corroboration seems to be forthcoming. He also says that the old image of Tane at Tahiti "was represented as a meteor, cone-shaped, with a large head, the body terminating in a point or long tail." This may be so, but it looks dubious. His anecdote of the appearance of a meteor just as he was preaching in a dark hut from the phrase "Behold I saw Satan like lightning fall from heaven," is good. "We all rushed out, and saw a splendid meteor, like a drawn sword. My congregation with almost one voice exclaimed, 'There is Satan falling from heaven.'"

An old warlock of the sons of Awa discourses on meteors: "Another ancestor is Tumatakokiri, who is seen darting at night. His appearance is that of a star flying through space. His task, as he so flies, is to foretell the aspect and conditions of the heavenly bodies, of winds, and of seasons. If he swoops downwards, the following season will be a windy one. If he just flies through space, a fruitful season follows; a season of plenty lies before the people. That ancestor is an *atua* (demon, supernatural being), but is really a star flying through space."

White has a note that reads: "The *matakokiri* are simply stars at their gambols." Again, we are told that meteors are falling stars that have wandered out of their places, and have been struck by their elders, the sun and moon. One says that a meteor appearing to approach one is a good sign. Marshall states that a meteor betokened the death of a chief.

MARU.

This is the name of some luminous appearance occasionally seen in the heavens. Williams queries it as "zodiacal light." It is viewed by the Maori as are comets, the rainbow, lightning, &c.—that is, as the visible form of an *atua* (supernormal being). Thus Maru was treated as what we call a god; he was appealed to and placated when his assistance was needed to help or protect the people. He was one of the *atua* employed to protect a village from all harmful influences.

Auguries were drawn from this celestial phenomenon, and according to its form it foretold good or evil. If seen in the form of a bow behind a travelling war-party it was a good omen. If it appeared to have an incomplete aspect, then it betokened

ill fortune. Oracles were delivered by this being through the mouths of its human mediums. The name of Maru is often associated with that of Haere and with that of Kahukura, two personified forms of the rainbow. There is some old, well-nigh forgotten myth about their having all been together at one time, but owing to some quarrel they separated. Maru is one of the secondary gods of the Maori, and was appealed to more by the west-coast tribes than those of the east side of the Island. He has many names, including that of Maru-te-whare-aitu.

The names Papakura, Umurangi, Imurangi, Ahi-manawa, and Makaka-o-te-rangi are also applied to some form or forms of celestial glow. Most of such things were held by the Maori to furnish portents of some nature. "Should the 'red demon' be seen gleaming in the heavens," said an old native, "know that it is Imurangi, and that the folk of the land near where it is seen are threatened by some evil fate. Let some adept at once discard his garments, and proceed to avert the danger." The rite to avert it must be performed by a nude person. This phenomenon is styled "sun-dog; fragmentary rainbow" in *Williams's Maori Dictionary*. The *ahi manawa* is said to have a flashing appearance.

The Aurora Australis is known as Tahunui-a-rangi. About 1869 a Whanganui native told Mr. John Hall that in past times, when the ancestors of the Maori crossed the seas to New Zealand, some of them continued their voyage to a far land in the south, where they settled. The light called by us the aurora is the reflection of huge fires kindled by the descendants of the old migrants, who are signalling to their far-sundered relatives in New Zealand.

RAINBOW.

Here we have another phenomenon that occupied an important place in Maori estimation, for the personified forms of the rainbow, or two of them, Kahukura and Uenuku, were important *atua* of the Maori pantheon.

The personified forms of the rainbow are Kahukura, Uenuku, Haere, and Pou-te-aniwaniwa. Uenuku is also known as Uenuku-rangi and Uenuku-kai-tangata; he was employed as a war-god, &c. White says that Kahukura was also known as Tahaereroa. There are said to be three Haere—viz., Haere-a-Tautu, Haere-waewae, and Haere-kohiko—though but little is heard of them. The ordinary names for a rainbow, the vernacular terms, are *aniwaniwa*, *aheahea*, and *kopere*, the latter perhaps a modern or descriptive name. Taylor also gives *puaheihēi*, which, however, does not seem to be recognized by our dictionary-makers. *Atua piko* and *atua tapiko* are descriptive names. *Anuanua* is a wide-spread name for the rainbow in Polynesia.

We are told that Kahukura is the descendant of Pou-te-aniwaniwa, and that he appears in the form of a bow in the heavens. He is a double bow; the upper dark-coloured bow is a male, and called Kahukura-pango; the red-hued lower one is a female, known as Pou-te-aniwaniwa. When they appear not

fully formed or developed it is an ill omen. They give signs concerning rain, the ceasing of rain. The correct ritual will avert any evil omen of rainbows.

Another pundit states that the name of the female bow is Tuawhio-rangi. Their offspring are the whirlwinds, and their parent is the Imurangi, whose wife is Tuhirangi. Yet another says that the lower bow is known as Kahukura-whare. Kahukura-i-te-rangi (Kahukura in the heavens) is a name sometimes employed, and the female bow is called by some the Atua-wharoro-mai-te-rangi. Kahukura is said to stand with one foot on land and one on the ocean. Again, Kahukura is said to be the offspring of Rongomai and Hine-te-wai, and the companion of Rongoiamo. Both parents of Rongomai seem to be rainbows, or were transformed into such. Paoka-o-te-rangi, Totoe-rangi, Tahaina, Te Kaurukiruki, and Te Hereumu seem to be similar phenomena—perhaps the differently coloured parts of a rainbow. We are not aware of the difference between Kahukura and Uenuku, or whether there is any.

Kahukura was a famed guide for mariners when making the long sea voyage to New Zealand. He stood in the heavens before the prow of the vessel as a guide during the day. At night he retired to the stern thwart of the vessel, and his sister, Hinekorako (a pale luminous arch in the heavens), went to the front as a guide. So saith the Maori; and who should know if he does not?

As for Uenuku-tawhana-i-te-rangi (Uenuku bow-like in the heavens), there is a weird story concerning him. Originally he was a denizen of this world—he dwelt on earth—where came to him one Hine-pukohu-rangi, the Mist Maiden, also known as Tairi-a-kohu, who is the personification of mist. She was accompanied by her sister Hinewai, who personifies light rain. But the Mist Maid never remained on earth during the hours of daylight; as dawn approached she disappeared and returned to the heavens. This story proceeds as it does in all other lands, even to far-distant Europe. The Mist Maid forbids Uenuku to make her known to his people until a child is born to them. He disregards the injunction, and she leaves him for ever. She sings a song of farewell to Uenuku; a column of mist is seen descending slowly from the heavens as she sings her song. It reaches and envelopes her just as she concludes the song. As the mist column rises again towards the sky the people look in vain for Tairi-a-kohu. The Mist Maiden has returned to her home. Uenuku was now disconsolate, and mourned the loss of his beautiful Mist Maid, but never again was he to see her. Even so, he wandered over far lands in his search for her, and at length death found him. So perished Uenuku, whom we now see in the heavens as a rainbow.

Omens, signs, and auguries are drawn from the rainbow. In some cases it is a sign of death. If it appears incomplete, or of a pale appearance, it is a portent of evil. If a war expedition sees such a bow before it, then the party returns home. Other signs pertain to storms and rain. A bow of many colours is a rain-sign. In Sir G. Grey's list of Maori sayings is—*Ki te koma te*

aniwaniwa, ka mate te tangata (If the rainbow is of a pale hue, man will perish).

The rainbow is a phenomenon that has attracted the attention of savage and barbaric man, and myths concerning it have been preserved after nations have attained a higher culture-stage. The rainbow was highly venerated in Peru, and old myths connected with it are found in European countries.

There are also some tokens in Maori lore that the whirlwind was personified and viewed as something supernormal, but the evidence is not clear. The ordinary term denoting it is *awhio-whio*, but it is referred to in ritual chants as the *anewa-o-te-rangi*. *Toi huarewa* seems to be a kind of honorific name for the same phenomenon.

La'amaomao was a rainbow-name at Samoa. In New Zealand Rakamaomao is connected with wind.

In his work on Cook Group myths Gill tells us that Hina formed a rainbow by which her mortal husband descended to earth to die; also that Tangaroa came to earth by the rainbow, and came to Hina as she was bathing in the waters of this world.

LIGHTNING.

The ordinary term for lightning is *uira*, a word far-spread throughout Polynesia; while other names are *hiko*, *kanapu*, and *kapo*. In addition to these we have the names of personified forms of lightning, as *Hine-te-uira*, *Tama-te-uira*, *Tupai*, and *Mataaho*. *Hine-te-uira*, the Lightning Maid, is said to have been one of the offspring of Tane, as also was *Hine-kapua*, the Cloud Maid. *Tama-te-uira* is included among the children of Rangi and Papa (Sky and Earth), and therefore precedes Hine. This Tama the Lightning is one of the guardians of the Lightning Family, *Te Hiko-ahoaho*, *Te Hiko-puaho*, and others, who represent different kinds of lightning. *Tupai* is the dread being who slays man during a thunderstorm. *Mataaho* personifies distant lightning, while *Tama-te-uira* is said to represent forked lightning; the latter is said to foretell fine weather.

The expression *Te ahi tipua a Hine-te-uira* is a saying denoting the fire she carries, and is made manifest in two ways.

Tawhaki seems to personify lightning, and in Maori myth he is connected, as we have seen, with personifications of other natural phenomena. In White's Moriori notes (collected by Deighton) occurs the remark: "Tawhaki is the *atua* of thunder and of lightning. When a thunderstorm occurs the Moriori folk invoke Tawhaki."

The expressions *rua koha* and *rua kanapu* are applied to distant lightning as seen playing on mountains and ranges, gleaming on the horizon. Portents were drawn from such phenomena according to the direction of the flashes. Such a display might portend some affliction or disaster to the people of the land, or possibly to some distant tribe. I have on several occasions heard natives ask who was dead, or about to die, when a landslip occurred, so that our friend the Maori is ever ready to read omens in almost any occurrence. *Te Peke* and *Maungapohatu*, on the *Huiarau* Range, are two famous *rua koha*.

THUNDER.

Thunder is personified in one *Whaitiri*, or *Hine-whaitiri* (the Thunder Maid), which is also a word of the vernacular denoting thunder. This personification is a female, and she is also known as *Whaitiri-papa*, *Whaitiri-pakapaka*, and *Whaitiri-matakataka*. The last three names seem to be applied to different kinds of thunderstorms—the first to one with quick, sharp explosions, the second to thunder unaccompanied by rain, and the third to crashing thunder. The abode of *Whaitiri* is said to be named *Raparapa-te-uira*, an expression denoting the flashing of lightning.

Other personifications of thunder much less frequently heard of are *Tane-matau* (a rainless storm); *Takamaitu* (one loud peal); *Takamai-i-awhea* (heard rumbling in several quarters); *Takamaiti-ahurangi* (two or three loud reports); *Ku*, *Pueaea*, *Rautupu*, *Epa*, and *Aputahi-a-pawa* (a single peal). Other names for thunder are *ngaruru-mairangi*, *puoro-rangi*, *rangi-whakarara*, *whaitiri-pao-rangi*, *rangaranga-tutumaiao*, and some others. An old saying is—*Whaitiri-papa, he tangata waha huka*, as applied to a boastful, untruthful, talkative person.

The various personified forms of thunder are said to speak while the *matatuhi* (seers) listen: that is, the latter listen to the different sounds of thunder and interpret their meaning to the people. As an old friend said to me, "Our ancestors who dwell in the heavens ever send boons to the people of this world. Thus *Pueaea*, *Whaitiri-papa*, *Ku*, *Whaitiri-pakapaka*, and *Marangai-areare* send us rain and also fine weather."

In the thunder-cave at *Matahina* was deposited a certain carved or inscribed gourd known as *Tipoki-o-rangi*. It was exceedingly *tapu*, and contained or represented thunder in some way. Persons of sufficient *mana* could cause it to release the thunder. This brings us to the *oho rangi*, a singular ceremonial performance of the *tohunga* or priestly adepts of yore. At certain important functions of a religious nature pertaining to the birth, sickness, or death, &c., of a person of rank these experts would perform the above act—that is, would cause thunder to resound. A successful performance had the effect of endowing the function with *mana*—i.e., rendered it effective. Natives firmly believe that their forbears were endowed with such powers. As *Pio*, of *Awa*, said to me, "My elder, *Te Kau*, had control over all the winds and thunder, but I cannot cause thunder to sound; the old ceremonial is no longer effective."

Rain was personified in *Te Ihorangi*, while there were names for different kinds of rain, as *Maroi* and *Uhiara*.

Tawhirimatea was the principal personified form of wind, but there are many others; the *Whanau Puh*i, or Wind Children, form a large family. There are also many ordinary wind-names.

CLOUDS.

The ordinary words used to denote a cloud are *ao* and *kapua*, while *au* seems to include the sense of mistiness. *Aorere* is scud, and *kekeao* a dark cloud. There are also a number of names

for personified forms of clouds, and these phenomena, like most others, find a place in the mythopoetical concepts of the Maori.

The expression *matahauriki* denotes layers of cloud—several strata, as it were—that are said to appear just before the south wind known as *tutaka-ngahau* springs up, to subside later into the gentler wind called *hau matariki*. A horizontal bank of clouds in the west illuminated by the setting sun is termed the *tatua o Te Kahu* (girdle of Te Kahu). A bank or layer of cloud that runs out into a point is said to forewarn men of a wind that will soon spring up from the quarter to which the cloud points. Small clumps, detached fragments of cloud, are *purei ao*, a term also applied to the Magellan Clouds. The cloud aspect known as “mare’s tails” is described by the word *iorangi*. *Ka ihiihi te kapua, he tohu hau* (When a cloud is sharp-pointed it is a wind-sign). The phrases *rangi taupuru*, *rangi tamaru*, and *rangi tukupu* denote a cloudy, overcast sky; *kikorangi*, the clear, blue sky. *Tahupokai* defines a reddened sky, and *tahu-kotea* a paler red. *Tahurangi* also means a red aspect of the heavens; and the red blankets brought hither by early traders and others were named *tahurangi* by the natives. The phrase *ka whakatutumaiiao te kapua* seems to mean that masses of cumulus are in evidence. Kaiwaka is a star-name, and is also, apparently, applied to some form of cloud; Williams says “threatening clouds,” while natives differ in their explanations. Some say it is applied to a cloud reddened by the setting sun. The star Kaiwaka is said to be a harbinger of the new year.

The *manawa rangi* is a *pokeao*, a clump or tuft of reddened cloud; while a *kohoka* is a long, narrow strip of cloud like a spit, which is the signification of the word. Omens are derived from these cloud aspects.

Pipipi, or the *pipipi o te rangi*, is yet another cloud aspect; Williams says “cirro-stratus clouds.” A native says that such clouds have long-drawn-out points, a sign of coming wind. Thus we hear the phrase *E tuhi ana te pipipi o te rangi*; or *Kei te tuhi te pipipi o te rangi, he marohi* (The *pipipi* of the heavens indicates rough weather). A Whanganui native says, “Another person who sends signs to the Maori folk is Te Pipipi-o-te-rangi.” With this tribe various omens seem to have been derived from the form of such clouds. An East Coast native delivered the following oration on the subject: “*Ki te tuhi nga ihi o nga kapua, he hau tena. Ki te hoka te pipipi o te rangi, ko te wahi i hoka ai kei reira te uru o te hau e ahu ana mai. Ki te mea he tahurangi te pipipi, he hau, he ua. Ki te mea he ma te pipipi, he hau anake. Ki te mea he pua kowhai te ahua o te pipipi, he hau tamaru, he paki tahuaroa, ara he pai. Na, ki te whakatutumaiiao te kapua, ko te wahi e kite atu ai koe i te kapua e tutumaio ana, e hoka ana ranei, kei reira te marangai e ahu ana mai. a ki te mea e tairanga ana ki runga te hoka a te kapua, he koma, he marangai ahua roa ka puta mai ai. Ki te pango te kapua, he marangai tuku tata tena.*” (“If clouds have sharply defined points wind ensues. If the *pipipi* of the heavens projects out, then from the quarter to which it points the wind will come. If the *pipipi* is of a red appearance wind and rain follow. If

the *pipipi* be of a pale hue it means wind only; if it is yellow it portends a gentle wind and fine settled weather. If the cloud has a *tutumaiao* aspect, then from wherever you see it of that form, or projecting out, the storm will come. If the cloud projects upwards, and is of a pale appearance, then a somewhat prolonged storm follows. If the cloud is dark-coloured the storm is near at hand.")

We will now discuss the origin of clouds, the *tupuni*, or covering, as they are termed, of Rangi, the Sky Parent. Tane said to Tawhirimatea (origin and personified form of winds), "Go forth and procure the moist emanations from the body of our mother, Papa-tuanuku. Then ascend and arrange them on the body of our father, Rangi-nui, as a covering to protect him." Even so Tawhirimatea procured the following: Te Ao-tu, Te Ao-hore, Te Ao-nui, Te Ao-roa, Te Ao-pouri, Te Ao-tutumaiao, Te Ao-kapua, Te Ao-tauhinga, Te Ao-parauri, Te Ao-whetuma—all cloud-names, some at least being personified forms of clouds.

Such are the names of the emanations from Papa, produced by her sorrow over her separation from Rangi, and by keenness of her lamenting him with voice and tears. Such are the clouds standing above us; and so the body of the Sky Parent became clothed.

One Tu-kapua is viewed as the principal personified form of clouds; he was one of the offspring of the primal parents, Sky and Earth. Although he is looked upon as the origin of clouds in one way, yet the mythopoetic mind of the Maori prompted him also to trace the origin of clouds to the warm and moist vapours emanating from the body of the Earth Mother, and from her copious flow of tears.

The clouds are said to dwell in the abode known as the Ahoaho-o-Tukapua, wherein abide Tukapua, Aoaonui, Aoaoroa, and Uhirangi (personified forms of clouds), also Takere-wai and Hine-pukohu-rangi (personified forms of mist). For ever this family, the Cloud Children, dread Huru-mawake, Huru-atea, Huru-nuku, and Huru-rangi (personified forms of the four winds), who are wont to assail and harry them, and drive them to the very bounds of Rangi-nui (the heavens).

In another account we are told that Tukapua, Te Ihorangi, Tawhirimatea, and Tawhiri-rangi (personified forms of clouds, rain, and wind) dwell in the sixth heaven (Tauru-rangi), where the clouds are seen. Te Ihorangi (personified form of rain), Te Mamaru, and Mawake-nui were stationed at the bounds of the heavens. Their task is to control and direct the clouds, so that they form a screen between Sky and Earth, and form a sheltering shade for the Earth Mother. They ever call on Hine-moana (the Ocean Maid) and Hinewai to send Hine-makohu-rangi (personified form of mist) as a covering for the body of the Sky Parent and as a shade for the Earth Mother. Such are the clouds above; they are warm exudations from Hinemoana, Hinewai, and Tuanuku (the ocean, fresh waters, and the earth), and hence are fogs, clouds, and rain.

Another old sage remarked: "Water is the life of all things, in conjunction with the sun and stars. Clouds and fog are

vapour and steam from the body of the Earth Mother ; for all things possess warmth and cold, each after the manner of its kind."

Hine-kapua, the Cloud Maid, one of the personified forms of clouds, was a daughter of Tane (the sun), which carries the mind to far-off India and its Apas, or Cloud Maidens.

Many simple rites and charms were employed by the Maori of yore in order to cause clouds to appear, to clear the sky and bring fine weather, to prevent frost, and to stop rain, &c. In several cases the performer takes a firebrand to the *mianga* of the village, and there waves it to and fro as he repeats the charm. Curiously enough, a similar act for the same purpose was formerly performed in Ireland.

White has a passage on the origin of clouds, but shows no connection between them and the beings mentioned. One Marikoriko (Glimmering Phantasm) was the offspring of Arohi-rohi (Shimmering Heat), or had been formed by that personification from Sun-reek and Echo. She was taken to wife by Tiki, and their offspring was Hine-kautataata, and then clouds appeared between Sky and Earth. They were Ao-tu, Ao-rere, Ao-pouri, Ao-potango, and Ao-whekere. These are personified forms of different kinds of cloud.

CONCLUSION.

The available data concerning Maori sky-lore is now exhausted, and this account must be closed. The knowledge gained by us of this subject is meagre and unsatisfactory, but it is now too late to remedy the deficiency. We have seen that all natives knew the principal stars, and that some made a close study of them. Angas relates how the children of the Tuhua district told him the names of stars, and wanted to know what he called them.

We have seen that the Maori combined astronomy and astrology ; that he studied and knew the movements of the stars, made use of them in navigation and in time-measurement ; that he also ascribed to them mythical powers and influence, mingled with puerile myths of folk-lore status. From far Babylonia, the home of primitive star-study, this noble science spread far and wide, and gradually sloughed off its false views until it came to its own. And so it will continue to be studied so long as man dwells on earth.

But the Maori, cut off from the world of knowledge and advancement, dwelling in small communities in far-spread isles of a great oceanic area, was out of touch with the progress of the science. And yet, by his study of the heavenly bodies, he was enabled to become the foremost neolithic navigator of the grey ages.

Tylor has said, " It always happens in the study of the lower races that the more means we have of understanding their thoughts the more sense and reason do we find in them." Early investigators did not grasp the meaning of Maori myths—even Grev and Shortland never peered below the surface—hence they

branded all classes of such myths as common folk-lore tales, and wrote of the Maori as lacking the power of abstract thought. They never recognized in hot-faced Tane, who treads the red west road and fertilizes the Earth Mother, the shining sun above. They told us of Dark Hina disappearing in the ocean, of her bathing in the *waiora* of Tane, of her relations with Maui, but no explanations of these concepts came from them. We are now gaining an insight into many of these old mythopoetical conceptions, and see that they contain much genuine knowledge clothed in the fanciful and allegorical garb beloved of barbaric man. And so, when the Maori sage taught that Tane-te-waiora succours and revives Dark Hina, and returns her to this world as Pale Hina the Beautiful, he is but stating in poetical terms our own blunt teaching that the sun again illumines the moon.

We know how man has advanced in his study of the heavenly bodies since rude savages alone gazed in wonder at sun and moon, stars, and comets. It is a far cry from the rude erection of sticks by which to line and observe the movement of a star (as practised by the Maori) to the huge telescopes of to-day.

All genuine Polynesians seem to look upon the isles of the Pacific as mere temporary abiding-places, sojourning-places to which they came from a far land. Ever their thoughts turn to the old home-land of the race in the far west; ever, as the body perishes, the freed spirit wings its way westward across vast ocean spaces to the loved father-land. And Tane the Eternal lays down the gleaming path by which the returning spirits pass over the rolling realm of Hinemoana to the far-off land of Irihia.

The wise men of yore passed long nights in gazing upon the glories of the Whanau Marama, and in adding to the hard-won lore of the *tatai arorangi*. They watched the world-old heavens above, and evolved the quaint concepts of Tane and Hina, of Kahukura and Auahi-turoa, in which to embody the results of their observations. The courageous sea-rovers of long-past centuries solved the mystery of the hanging sky, and roamed far and wide athwart the heaving breast of the Ocean Maid. They crept over the restless sea-roads, and explored the dark places of the earth; they sailed down into unknown realms, and founded new homes in a thousand sunlit isles. And ever the Whanau Marama, the Children of Light, lured them on, and guided them over the dark seas of Mahora-nui-atea. When Whiro cast the shades of night across the body of the Earth Mother there came Pale Hina, and the Fish of Maui, and the horde of little suns, to cheer the lone voyagers on troubled seas. When these retired there came by the reddened road of the east brave Tane, sire of the Dawn Maid—

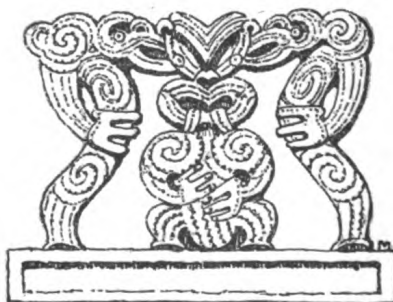
And lo! The sun himself; on wings
Of glory up the east he springs.

And so, from the far-off time when Vega was a pole-star, the Maori inherited the keen faculties that enabled him to perform his allotted task as an explorer. Albeit his knowledge was marred by many limitations, yet he clung to the half-truths he had inherited from the Sumerians, or some other old-time folk,

and brought the Pleiades year from hidden lands to these isles of the far south. With mast hoisted and sail atrim he followed his ancestor Tane in search of a home in the far east. The brown-faced Argonauts fared on with a golden faith in their own powers and in the protecting power of their gods. For, with Hine-korako and Kahukura to guide them, with Tutara-kauika and Ruamano to guard them, with Pale Hina and her younger relatives to illumine their path, wherefore should fears assail them?

Thus it was that the neolithic Maori made his long voyage, combating the wrath of Paraweranui and sailing calmly over summer seas during the *paki o Ruhi*—the long, long voyage that lasted for so many centuries. Little wonder that the Maori folk greet the Whanau Marama, the Children of Light, with welcoming song and tears. For those Shining Ones not only guided and protected them throughout long centuries of ocean wandering, but also tie them to the long-lost but ever-loved home-land—that hidden home-land to which their spirits return by the *ara whanui a Tane*, the gleaming sun-glade, the golden path of the setting sun.

And never shine the dim stars
But that his heart would go
Away and back to olden lands
And dreams of long ago.



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