

THE INSECT PEOPLE OF THE MAORI

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This work is a side-issue; it has arisen out of an attempt to discover something of New Zealand insects in pre-European times. Such knowledge is fundamental to our entomological researches; so many changes have occurred in the insect fauna through the impact of European settlement that all avenues must be explored to throw light on what insects (particularly destructive ones) are native to the country, and what are introduced—in most cases this is obvious, but there has been some doubt regarding others; to clear up such doubts is of importance, especially in the field of biological control where unneedful efforts and funds can be expended in searching overseas for natural enemies of an insect that could be a native of this country.

It was in the course of this search into the pre-European past that, quite apart from the basic purpose, a great amount of incidental pabulum accumulated. Too often, in similar cases, such incidental knowledge is cast aside; so I have endeavoured to set it down in this instance; I hope it will be of use to someone; I am well aware of its shortcomings; I know little of things Maori; and I have learned, in the course of my journeyings through the realms of Tikitiki-o-Rangi and of Rarohenga, that *e kore e ngaro tona pouritanga i te marama o te titiwaiti**; but even that first glimmer of light (which relieved the absolute darkness at times) would have been denied me, had I not been aided by the late Sir Peter Buck and Sir Apirana Ngata—I am very grateful to both of them.

Reference to insects in what follows does not apply solely to insects themselves, though they comprise the greater part of the subject. We are dealing with a Maori concept—with a tribe of his “Lice of the Earth-mother,” his Family, or Descendents of Torohuka (*Te Whanau a Torohuka*) (4), i.e., all living creatures, except man, that dwell

* Through the realms of “the Upper and Lower Worlds,” that “darkness cannot be dispelled by the light of a glow-worm.”

on the land and in the water thereof; this tribe, The Insect People (*Te Aitanga Pepeke*, or *Te Aitanga a Punga*), is, in itself, a polymorphous race comprised of insects and their larvae (as we have come to know them), and of spiders, mites, sand-hoppers, sandlice, crayfish, shrimps, crabs, woodlice, slugs, snails, centipedes, millepedes, worms of all kinds, and such like—what Elsdon Best aptly referred to as “the small deer”; of these animals, it should be mentioned that no molluscs (marine or fresh-water), except slugs and snails, are dealt with in the following; indeed, of marine animals, only shrimps and a polychaete worm (*Nereis*) are referred to.

The information has been collected from the general literature on the Maori, and from other sources; it is presented as an annotated list of the Maori nomenclature, together with an English summary in the form of a general index; the latest scientific names are given. In the English index, all Maori terms are not necessarily specific; far from it, though a few are, as indicated under the technical terms; several are generic, and many are general; some it is difficult to identify, although they were doubtless specific either in New Zealand, or beyond, in ancient times; and others simply refer to some feature associated with the insect in question.

In an endeavour to track down the meanings of some Maori terms, consideration has been given to the changes that have taken place in the country, together with the presence of an exotic element, due to European settlement, and to the undoubted reduction in abundance, or even disappearance, of some species. Extreme caution has been observed when searching for meanings in the derivation of Maori terms; I have kept in mind Sir Apirana Ngata's illustration, using the word “category,” of what could happen when a similar sort of thing was attempted by the Maori with English words—thus, “cat,” “e,” “gory” = “the gory cat.” Nevertheless, on rare occasions I have resorted to this method when it seemed reasonable; e.g., in the case of the cicadas, a comment by Sir Peter Buck (31), that the several terms for these insects are combinations of words indicating different varieties of sound, suggested that most of the terms were originally specific, and not synonymous—so, bearing in mind the supersensitive ear of the Maori, I

have attempted to analyse the derivations of the several onomatopoeic terms for the cicadas, and correlate them with the characteristic songs of the species. Another point worthy of attention is that, in the English index, the expression "Maori-bug" will not be found; it is a word just as offensive to the Maori as its odour is to the Europeans who coined the word; the insect is referred to under the popular term "Black-beetle," but more correctly under "Stink-roach."

About 385 Maori terms are dealt with below. By far the greatest number apply to butterflies and moths, together with their larvae and pupae, followed by beetles (with larvae and pupae), worms of all kinds, lice, spiders, and blowflies with their relatives, in that sequence; next in order come grasshoppers, locusts, cicadas, mosquitoes, ants, "vegetable caterpillar," fleas, *weta*, and sandflies—all of which account for about 83% of the terms; reference to the English index will indicate the distribution of the remainder. The point raised here is that the "small deer" most frequently referred to had a direct influence on the Maori; e.g., moths, butterflies, blowflies (and related species), sandflies, mosquitoes and spiders figured in his spiritual and mythological interpretations, and in the practice of the magic arts, while, in death, what could have been more symbolic than blowflies and their maggots? On the other hand, caterpillars, grasshoppers, locusts and beetle grubs jeopardized his vegetable food supplies; his personal comfort was influenced by mosquitoes, sandflies, lice, and by fleas to a less extent; also he relished certain beetles, moths, with their larvae, as well as cicadas and earthworms; the cicadas were a symbol of spring and the harvest; from the "vegetable caterpillar" was secured a black tattooing pigment for personal adornment; and in the ants, as well as in the lice, much profitable pabulum was found to point, and even barb, a figurative shaft.

A very absorbing feature of this study has been the origins of the Insect People. I have endeavoured to trace the genealogies of those People through the labyrinths of the varied, but picturesque, Maori versions of Creation, in the recording of which mythopoetic licence had free rein. In the ancient style of other classic historians, the Polynesian hierophants had developed the flair for personification to a high degree; and in an abbreviated form I attempt

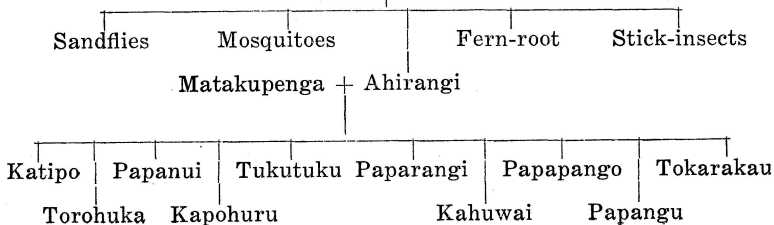
with Hinetuamaunga (Maid of the Mountains) and begat three monsters; one was Te Putoto, who mated and begat three of his kind; of the latter, Tuteahuru, mated and produced twenty-two offspring (10), in which we are interested in Pukupuku, founder of the caterpillar line; Moko-huruhuru, a phosphorescent being whose light is seen today in Titiwai, the glow-worm (2) and phosphorescent earth-worms; Torohu, who gave rise to forest-destroying grubs; Torotorohuka, ancestor of the Lice of the Earth-mother (already noted); and Tutewanawana, tutelary diety of reptiles. Another version (5) states that Tane mated with Punga (B), daughter of Te Ra (The Sun) and of Hinetakurua (Winter), and, amongst other things, begat Tutewanawana, the forebear of all lizards, spiders, insects and vermin (7); while in a third account Tangaroa (C), Lord of the ocean and Tane's brother, begat a son, Punga, who begat Tutewanawana. But whatever his origin, Tutewanawana begat an evil diety called Tutangatakino, president of the human stomach (TD) and cause of all pains therein (50), who dwelt at the Gates of Death. At this point we find a version (10) stating (D) that Peketua (also Tane's brother) was the origin of Tutangatakino (1). Now, there were two lines of descent from Tutangatakino according to different versions, but they are very similar; in one (the Tane-Tangaroa lines), the climax was vermin, insects, spiders and lizards; in the other (the Peketua line), lizards, some insects, centipedes and Mokotitiatoa (a black and grey spider (22), which perhaps refers to something in ancient Polynesian mythology).

TABLE 2

(E)

HAUMIA

Te Monehu



The fifth line of descent (E), as in the second table, was inaugurated by Haumia, Lord of Uncultivated Foods and claimed by some authorities to have been another brother of Tane. Haumia begat Te Monehu (Patron of Fern-root), given in another version as being a descendant from Tane (8). However, from Te Monehu there eventually arose a curiously mixed litter comprised of sandflies, mosquitoes, fern-root, stick-insects (12), while somewhere in the chain of events, there appeared a being named Ahi-rangi who mated with one Matakupenga, and begat the multitude of different kinds of spiders; of the last, the names of all but ten have been lost to posterity (20); these ten are *katipo*, *torohuka*, *papanui*, *kapohuru*, *tukutuku*, *paparangi*, *kahuwai*, *papapango*, *papangu* and *tokarakau*, of which *katipo* is specifically identified, while there is some indication of the forms *papanui* and *tukutuku* can be referred to.

Apart from the foregoing five genealogies, there are four other specific origins, all of which probably come into the descent from Tane:—

- (1) In the Tane line there arose, somewhere, Putehue (Origin of the Gourd-plant) (77), from which moths eventually appeared (14).
- (2) Nuhe, a celestial being, was the progenitor of *anuhe*, the Sphinx moth caterpillar (14).
- (3) Moenga-nui was the ancestor of Flies (14).
- (4) Hikawara was the ancestor of Cicadas (14).

MAORI NOMENCLATURE

ANUHE.

A large caterpillar, larva of *Sphinx convolvuli* = *hotete*, *awheto* (WD. 1); a well-tattooed head is likened to this picturesquely-marked caterpillar, "the handsome appearance for beauty, likened to the patterned caterpillar (*te anuhe tawatawa*)" (94); also applied to the larva of *Charagia virescens* (Ghost-moth) by the Urewera people as is obvious from the following record: "The *anuhe* is also eaten when it is in the *mokoroa* (cf.), or grub, stage of growth. In this state it bores holes in logs and enscones

itself therein, covering the mouth of the hole with a sort of lid" (105). *Anuhe* feeds on species of convolvulus, and it was a major pest of the *kumara*. It has been erroneously stated that *anuhe* feeds on the foliage of rata, *pohutukawa* (*Metrosideros tomentosa*). This error is obviously of European origin; Colenso (149) records what were obviously great numbers of the Sphinx-moth feeding on the nectar of *Metrosideros*, and assumed that the eggs were laid and the larvae fed upon the foliage of that tree; also there has been an obvious misinterpretation of the fact that *pohutukawa*, quite apart from the tree, is also a name given to a variety of the *kumara* (TD.) on account of its reddish-coloured substance resembling the colour of rata wood (150); and, further, *pohutukawa* was the name of the mythological *kumara* plantations of Rongo (God of cultivated plants) and of Tumatauenga (God of war) (151).

The Sphinx caterpillar has the following synonymy: cf., *awato*, *awhato*, *awheto*, *hawato*, *hawhato*, *hotete*, *haurangi*, *kaua*, *kauwaha*, *moka*, *moko*, *mokotawhana*, *muharu*, *muwaru*, *muwharu*, *ngurengure*, *toroku*, *torongu*, *toronu*, *tupeke*, *tupere*, *weri*. Of that list, *awhato*, *awheto* and *hotete* are now most commonly used, but I think that *anuhe* should be the recognised term and the others placed as synonyms, because, if for no other reason, *anuhe* is of mythological origin (91 and 92), being the personification of Nuhe, who dwelt in the heavens and handed on his characteristic markings to *anuhe* (12 and 14); the only other of the terms that could rank with *anuhe*, on the same grounds, would be *toronu*, the personification of the celestial Toronu (12); furthermore, confusion arises in the use of *awhato* and *awheto*, in that they are also terms for the so-called "vegetable caterpillars," which are not those of the Sphinx-moth. cf., *awhato*.

ARAPAKI.

To crack lice with the nails — *hapaki* (WD. 3), cf., *hakure*, *hamure*, *hapaki*, *harapaki*, *kura*, *pakirara*, *tapaki*, *tia*, *tipaki*, *tipakipaki*, *whakure*, also *kutu*, *riha*, *titope*.

AREINGA.

A cricket which "came about in large numbers during a wet season"; a Wanganui River record (84). Probably the black field cricket, *Gryllulus commodus* (considered to

be an early introduction from Australia, but not necessarily so), or the small black native species *Lissotrachelus mauricus*. cf., *pihareinga*, *piharenga*, *pirenga*, *tarakihi*, *tukarakau*.

AWATO (89) = *awhato*.

AWHATO.

A fungus parasitic on a kind of caterpillar (*Cordyceps robertsii*) (WD. 1; TD. 1); a large caterpillar, larva of *Sphinx convolvuli* (WD. 2); the caterpillar itself (TD. 2). cf., *anuhe*. Confusion has arisen in the double meaning of *awhato* in the belief that the fungus is parasitic on the Sphinx caterpillar; it is not, but upon species of porina, or subterranean, caterpillars of the genus *Oxycanus*, which abounded in *kumara* plantations and doubtless did some damage to the plants. Both Williams and Tregear give the fungus as the first meaning, and I think that *awhato*, with its synonyms, should apply to the fungus, and *anuhe* with its synonyms to the Sphinx caterpillar. cf., *awato*, *awheto*, *hawato*, *hawhato*, *horuhoru*, *hotete*, *ngutara*, *nutara*.

There are several species of *Cordyceps* attacking different insects. Three species infest porina caterpillars: *Cordyceps robertsii* on *Oxycanus enysii* and *dinodes*; *C. consumpta* on *Oxycanus* sp. (either *cervinata*, *signata* or *umbraculata*); and *C. craigii* on *O. enysii*, which is abundant in *kumara* plantations (136). Of other species, *C. sinclairii* attacks the pupae of the cicadas *Melampsalta cingulata* and *M. cruentata*, which would account, in a great measure, for the records of *awhato* being abundant under rata trees (99 and 149), while there is *C. aemonae* on the larvae of the longhorn beetle *Aemona hirta* in trees (136); finally, there is an unidentified species attacking the tree-boring caterpillars of *Charagia virescens* (137). cf., *ngutara*, *nutara*.

AWHETO = *awhato*.

ENGAIO.

A long, thin, white worm, parasite of *inanga* in Rotorua Lake, and which breeds in pools of standing water coiled up in knots of great length (160); possibly two worms are referred to, one parasitic on the fish, and the other in pools

a species of gordian worm parasitic on insects; apparently = *ngaio*.

EO.

Louse (WD.). cf., *kutu*.

HAKIHAKI.

Itch, skin disease (WD. 1; TD.); scabies caused by the itch-mite, a very common and troublesome complaint amongst Maoris (46); there could be more than one species of mite involved.

HAKURE.

= *whakure*, catch lice (WD. 1); search the head for lice (WD. 2); to search the head for vermin (TD.); to delouse by picking with fingers (31). cf., *arapaki*.

HAKUTURI.

Wood fairies, forest elves (The multitude of the forest elves). They were also called the "offspring of Tane, that is, of Tane-mahuta, the lord of the forests" (TD.). The *hakuturi* included all the insect inhabitants of trees (120).

HAMURE.

Catch vermin in the hair (Ngapuhi dialect) = *hapaki*, *hakure* (WD. 3). cf., *arapaki*.

HAPAKI.

To catch lice (WD.); to catch lice; to squeeze or crack lice as fleas, etc. (TD.); to catch and crack vermin was referred to as one act (124). cf., *arapaki*.

HAPUKU.

Larva of *Cicindela tuberculata* (WD. 2), the tiger, or butcher, beetle. The term could apply to any of the several species of *Cicindela*. Williams's first meaning is the "groper fish" (*Polyprion oxygeneios*), and the application of the term to the tiger beetle larva is possibly due to an imaginary resemblance of the large head and jaws of the insect to those of the fish; also the groper pulls heavily when hooked, while it is difficult to dislodge the tiger beetle larva from its hole in the clay bank owing to the grip the insect secures of its burrow wall by the powerful hooks on its back. cf., *kui*, *kurikuri*, *moeone*, *muremure*, *papapa*.

HARA.

Scolopendra sp.; large centipede (WD.); the great centipede (TD. 3). *Scolopendra* are small species; the

species referred to is doubtless *Cormocephalus rubriceps*, the largest native species. cf., *hura*, *peketua*, *weri*, *whaka-pihau*, *weheke*.

HARAPAKI.

To crack vermin with the nails = *hapaki* (WD. 4); to crack fleas or vermin between the thumb-nails (TD.). cf., *arapaki*.

HATARETARE.

Slug, snail (68). cf., *ngata*, *pikopiko*, *pupuharakeke*, *pupurangi*, *pupu whakarongotaua*, *putoko*.

HAWATO = awato.

(WD.), a synonym of *anuhe* (90); a caterpillar (68). cf., *anuhe*, *awhato*.

HAWHATO.

(*Cordyceps robertsii*), a genus of *Ascomycetous* fungi which attacks the caterpillar of the Ghost-moth (TD.); *Cordyceps* is a *Pyrenomycetes*. The Ghost-moth, *Charagia virescens*, is attacked by a fungus (137), but the species has not been determined. cf., *awhato*.

HEIRO.

Maggot (68). cf., *iro*.

HEREHERE-TUNA.

A bunch of worms for catching eels (WD. 3).

HIHI.

Feelers of a crayfish (WD. 2). cf., *puihihi*, *puihi*.

HIHUE.

Sphinx convolvuli, a moth (WD.). Derived from *hi* = to draw up, and *hue* = calabash gourd (*Lagenaria vulgaris*), in regard to this hawk-moth's habit of hovering over the flowers and inserting its proboscis to suck up the nectar (85): cf., *kowenewene*, *pepe*, *wenewene*.

HINAMOA.

Decayed, worm-eaten (WD. 1). cf., *kurupopo*, *pokara-kara*, *popo*, *tunga*.

HONI.

The mole-cricket (*Gryllotalpa vulgaris*) (TD.); a "mole-cricket" seldom met with unless digging as it lives underground (68; 122), recorded in 1848. It is said (138) that *G. vulgaris*, the European mole-cricket, is common in

New Zealand; this is not so, only one or two specimens having been found; it could hardly have been sufficiently abundant in 1848, or earlier, to have attracted the attention of the Maori. It is likely that the early and later observers mistook for *vulgaris* the native mole-cricket (*Triamescaptor aotea*) which is by no means common (at least now), or the very common native subterranean weta (*Onosandrus spp*). I think that *honi* should apply to one or both of those insects, which would not escape the eye of the Maori agriculturist.

HORUHORU.

Cordyceps robertsii; a fungus parasitic on certain caterpillars = *awhato* (WD. 2); the species could be one other than *robertsii*. cf., *awhato*.

HOTETE.

A large caterpillar, larva of *Sphinx convolvuli* (WD.) = *anuhe* (90); *Cordyceps robertsii* (68). cf., *anuhe*, *awhato*.

HOWAKA.

A beetle, *Chlorochiton suturalis* (WD.), but as there are other species of the genus similar to *suturalis* (and even of the less prevalent genus *Costleya*), I suggest that *howaka* is generic, rather than specific. cf., *mumu*, *tanguru*. On the other hand, the term is defined as "a cerambyx" which could be *Prionoplus reticularis*, *Blosyropus spinosus* or the smaller *Aemona hirta*, for example.

HUARANGI.

Larva of *Sphinx convolvuli* (WD. 2). cf., *anuhe*.

HUHU.

Grub of the longicorn beetle *Prionoplus reticularis*. Prized as an article of food (127); found in such timbers as *rimu*, *matai*, *kahikatea*, which it attacks at first sign of decay, as when the trees have been scorched by fire; the active grub is also known as *tungarakau* (103 and 127), or *tungahaere* (103); as the pre-pupa in its cell it is called *tataka*, and when the beetle emerges, but is still white, it is termed *pepe*, but after assuming its brown colour and flies as a beetle it is known as *tungarere* (103). *Huhu* is now loosely applied to the adult beetle. Another meaning is moth (68) which is unusual. cf., *howaka*, *kapapa*, *pepe te muimui*.

HURA.

The large centipede (TD. 2) ; centipede 4-5 inches long (71) ; possibly *Cormocephalus rubriceps*. cf., *hara*, *peketua*, *weri*, *whakapihau*, *weke*.

HURANGI.

A fly ; *hu* = to buzz, to whiz (68 ; TD.). This could be a blowfly, or a synonym of *tamumu-te-rangi* (cf.), the humming-fly, not a blowfly. cf., *ngaro*.

IRO, IROIRO.

Maggot, thread-worm, vermin (WD. 1) ; a maggot, fly-blow, a thread-worm (TD.) ; blow-fly eggs, south of Timaru (21) ; *iroiro*, a grub (68). Regarding "maggot" in connection with *whakairo* = ornamental pattern in carving, tattooing, weaving, etc. (TD. ; WD.), we should note *whakaironui* = to construct a large maggot, or worm, in carving (139). As to fly-blow, or blow-fly eggs, there is the proverb, *Iro te iro, ho mai kia kainga ka kai hoki ia i a au*—Never mind whether it is fly-blown or not ; hand it here ; I'll eat them now, for they'll eat me hereafter (54). For thread-worms cf., *ngaio*, *ngoiro* ; vermin cf., *kutu* ; maggot cf., *heiro*, *keto*, *ketoketo*, *kutukutu*, *wekoki*.

KAHUKURA.

Butterfly = *kakahukura* (WD. 3) ; *kakahu* = garment, and *hura* = red (TD.), also means "rainbow." The term could apply to a red-hued butterfly such as the red-admiral, *Pyraemis gonerilla*. cf., *kakahu*, *pepeatua*, *pepepepe*, *wairua atua* ; other terms include moths, etc., cf., *mokarakara*, *pepe*, *pepepe*, *pepetawhanawhana*, *purehurehu*, *purerehu*, *purerehua*.

KAHUWAI.

A kind of spider (20). As *kahuwai a rangi* was some red ornament for the head in olden times (TD.), it is possible that *kahuwai* could refer to the large and fairly common trap-door spider *Porrhothele antipodiana*, which has a bright red, or yellowish-red, forepart of the body. cf., *pungawerewere*.

KAKAHU.

(WD. 1b) = *kakahukura*. cf., *kahukura*.

KAKAHUKURA = *kahukura*.

KAKAPOWAI = *kapowai*.

(WD.). Dragonfly. cf., *kapokapowai*.

KAKARAITI.

Grasshopper (68). cf., *kapakapa*.

KAPAKAPA.

Oedipoda cinerascens, locust (WD. 3). Our knowledge of the New Zealand locusts is very inadequate and very much out of date. Dr. B. P. Uvarov, London, will look into the subject for us, and states that *cinerascens* has been abandoned; the name is *Locusta migratoria* ph. *solitaria*. Williams states that *kapakapa* is a frequentative of *kakapa* = *throb*, palpitate, flutter, quiver. *Ka marere ki te mania, ka ngau i te kapakapa kowhitiwhiti rangataua, ka huaina ko Ngaukapakapa a Kahu* (WD.)—He dropped down to the plain and attacked the fluttering, leaping grasshoppers, hence the name The-biting-of-grasshoppers-by-Kahu; in this we have *kapakapa* = fluttering and *kowhitiwhiti* = as leaping, both emphasizing *rangataua* (grasshoppers), while *kapakapa*, grasshoppers, occurs in *Ngaukapakapa a Kahu*. Some species of grasshoppers are winged, others wingless; some are small, others large. Of the several terms for grasshoppers and locusts some were obviously specific, some generic and others general. As far as can be concluded at present, the specific terms are *kapakapa*, *pahaurere*, *pakaurere*, *pakauroaroa*, *pakauroharoha*, and *rangataua*; wingless species probably come under *koeke*, *kowhitiwhiti*, *mamahiti*, and *mamawhiti*; while general terms seem to be *kakaraiti*, *kauwhitiwhiti*, *kawhitiwhiti*, *kowhitiwhiti*, *kowitiwiti*, *mawhitiwhiti*, *mawitiwiti*, *mowhitiwhiti*, *tukarakau*, and *whitiwhiti*.

KAPAPA.

A large cerambyx (68). Possibly *Prionoplus reticularis*, or *Blosyropus spinosus*. cf., *huhu*, *pepe te muimui*.

KAPOHURU.

A kind of spider (20). cf., *pungawerewere*.

KAPOKAPOWAI.

Dragonfly (69; WD.1). "There are four or five kinds of dragonflies, the largest, *kapokapowai*, is often seen from 4½ to 5 inches in length" (68; 69; 122), which clearly indicates *Uropetala carovei*. cf., *kakapowai*, *kapowai*, *kikitara*,

uruururoroa; other species, *kekewai*, *kikihi*, *kikipounamu*, *kikiwaru*, *tiemiemi*, *tititipounamu*.

KAPOWAI = *kapokapowai*.

(WD.; TD.).

KAPUKAPUAI.

(Moriore). Moth (81). cf., *purehurehu*.

KARAWAI.

Fresh-water crayfish (71). cf., *koura*.

KATIPO.

The venomous spider, *Latrodectus hasseltii*. cf., *punga-werewere*.

KAUA.

A large kind of caterpillar = *kauwaha* (WD.); larva of *Sphinx convolvuli* (31) as indicated in a lament by a Ngati-Ruanui on witnessing the destruction of his *kumara* plantations by insects: *Ka hinga te kaua*, *ka hinga te moeone*, *ka hinga awhato* (140)—Then fell the *kaua*, fell the *moeone*, destroyed was the *awhato*; in this *kaua* and *awhato* are synonymous, and *moeone* (cf.) is another insect. cf., *anuhe*.

KAUWAHA = *kaua*.

(WD.). In the lament illustrating *kaua*, the latter is sometimes rendered *kauwaha*, the large green caterpillar (79); a caterpillar (135).

KAUWHITIWHITI.

Grasshopper = *mowhitiwhiti* (WD.). cf., *kapakapa*.

KAUWHITIWHITI.

Grasshopper (16). cf., *kapakapa*.

KEHA.

Flea (68; WD. 1; TD. 2); *Po-tu-Keha* (Night-of-the-flea-awake = *Pou-tu-Keka*, verily deranged), one of the Tainui canoe (29). cf., *kutu-porenga*, *mororohu*, *puruhi*, *purui*, *te pakeha nohinohi*, *tuiau*.

KEKEREHU.

A beetle (101), perhaps = *kekerengu* since that insect is often called a black-beetle.

KEKERENGU.

Platyzosteria novae-seelandiae, black wood-bug, Maori bug = *kekereru* (WD.); the stink-roach. *I utaina mai ki*

taua waka he weri, he whe, he weta, he kekerengu (88)—These insects were brought in that canoe, the centipede, the stick-insect, the weta, and the stink-roach. cf., *kekerēhu*, *kekereru*, *kekeriru*, *keriru*, *kikararu*, *kiriwenua*, *kiriwhenua*, *kurikuri*, *papapa*.

KEKERERU = *kekerengu*.

KEKEREWAI.

A small green beetle (*Pyronota festiva*) (68: 111: 114); edible and much sought after, appears on flowering *manuka* (112); one of the phenological signs called *tohu* (113); not seen in winter (112); together with *tutaeruru* (cf.) called *te manu a Rehua* (6; 112; 114); a Tuhoe term, elsewhere named *kerewai*, *kiriwai* and *reporepowai* (115), also *kiriwai-manuka* (1). cf., also *ngututawa*.

KEKERIRU.

A large black wood-bug (68); found in *raupo* buildings; intolerable smell (69: 156) = *kekerengu*.

KEKEWAI.

The slender blue-bodied dragonfly (68; 122); *Austrolestes colenisonis*. cf., *kapokapowai*. *Paranephrops planifrons*, fresh-water crayfish (WD.). cf., *koura*.

KEREWAI.

Pyronota festiva, a small green beetle (115: WD.); could be applied to other species of *Pyronota* which resemble *festiva*. Derived from *kere* = to drift, float, and *wai* = water (31), on account of the large numbers that accumulate on the surface of streams and lakes. cf., *kekerewai*.

KERIRU = *kekeriru* (68) = *kekerengu*.

KEROA.

Mosquito = *waeroa* (WD.); used south of Timaru (21). cf., *waeroa*.

KETO.

Infested with maggots (WD. 2). cf., *iro*.

KETOKETO.

Maggot (68; WD. 2; TD. 2). cf., *iro*.

KEWAI.

Paranephrops planifrons, fresh-water crayfish (WD.). cf., *koura*.

KIHIKIHI.

Cicada, tree-locust (WD.) ; a kind of locust or cicada (TD.) ; chrysalis (68) ; grasshopper (68). *Kihikihi* is derived from *kihi* = to make a murmuring, indistinct sound, to make a sibilant sound (31). As even the European can recognise, by their distinctive songs, groups of cicada species, and sometimes individual species, it is reasonable to say that the Maori was more expert; so I suggest that *kihikihi* is referable to such species as *Melampsalta cingulata*, of clamorous song in which there is a dominating sibilance; in further support of this we have the proverbs: *Mehemea ka tae ki te waru, ka piri taua iwi, te kihikihi, ki to ratou tupuna ki a Tane—He kihikihi tara ki te waru* (WD.)—When the eighth month (December) arrives that tribe, the cicadas, cling to their ancestor Tane (trees)—The cicada that stridulates in the eighth month; hence another proverb in reference to a noisy party, *Me kihi kei te waru*—Like cicadas in the eighth month; also the Maori compared the comparably noisy English language to *kihikihi* (*He reo kihikihi*—The cicada language), and called the European *pakeha he kihikihi* (122); furthermore, *M. cingulata* commences to make itself heard in December, and its sibilance is so pronounced as to cause one's s's in conversation to assume a hissing sound (Myers). cf., *kihikihi kai, kihikihi-tara, kihikihiwawa, kikihi, kikihitara, kikitara, kikiwaru, tarakihiki, tarakikihiki, tatarakihiki, tukarakau*.

In the case of *kihikihi* = chrysalis, it is possible that the underground larva (cf., *matua kihikihi*), or the pupa and empty husks (cf., *ngengeti*) could be meant; and as to "grasshopper" cicadas are often referred to as locusts.

KIHIKIHI KAI.

Melampsalta muta, the smaller species, which was mashed into a paste, and used as an article of diet (WD.); the song is a muted version of *cingulata*'s. cf., *kihikihi*.

KIHIKIHI TARA = kihikihi.

(WD.). Most likely referable to *Melampsalta cingulata*, being a combination of *kihikihi* and *tara* (to sing), as in the proverb, *He kihikihi tara ki te waru*—The cicada that sings in the eighth month. cf., *kihikihi, kihikihi wawa*.

KIHIKIHI WAWA.

Melampsalta cingulata (WD.) particularly, and perhaps other species, e.g., *M. strepitans, M. sericea*. This is one

of the two terms yet retaining its specific meaning (cf., *kihikihi kai*), and it clearly describes the sibilant uproar when thousands of the insects are singing; *kihikihi* = sibilant (31), *wawa* = roaring noise (WD.), a sound like pattering rain (TD. 1), the last meaning being applicable to singing individuals. cf., *kihikihi*, *kihikihitara*.

KIHITARA.

A small red-bodied dragonfly (68; 122; TD.), *Xantho-nemis zelandica*.

KIKARARU.

"Its odour is disgustingly offensive, and it is often found in rush and other dwellings" (133), *Platyzosteria novae-seelandiae*. cf., *kekerengu*.

KIKIHI.

Rustle, make a faint sound (WD. 1); *Melampsalta cingulata* and *M. muta* (WD. 4). From the first meaning I suggest that neither *cingulata* nor *muta* is the species, but rather one having a feeble song, such as *M. scutellaris*. Williams's illustration is inappropriate as it refers to another insect; *Kia tangi noa mai te kikihi pounamu*—So that the green *kikihi* may sing; *kikihi pounamu* = *kikipounamu* (124), the green cricket, which is also feeble-voiced. cf., *kihikihi*, *kihikihi kai*, *kihikihi wawa*, *kikipounamu*.

KIKIHITARA = *kihikihi*.

Cicada, tree-locust (WD.); the term "tree-locust" should apply only to the tree weta. *Kikihitara* (*kikihi* = rustle, make a faint sound, *tara* = sing) could be specific to faintly (in contrast to feebly) singing species such as *Melampsalta leptomera*; however, the word is used by the Tuhoe people for the loud-voiced cicada (*M. cingulata*)—"that the cicada may freely cackle" (see example under *kikipounamu*), while in other dialects *kikihitara* = *kihikihi* (125). cf., *kihikihi*.

KIKIPOUNAMU.

Caedicia simplex; a green insect (WD.), the green cricket, or katydid. *Kia kata noa mai te kikitara, kotikotipa, e, kohurehure, kikipounamu, e tangi ana ki tona whenua* (125)—that the cicada may freely cackle, the bush wren laugh and the green insects too, lamenting the fate of their

land (124), but in some translations *kikipounamu* is rendered "green cicadas" (141). cf., *kikihi*, *kikiwaru*, *tititipounamu*.

KIKITARA = *kihikihī*.

Cicada, tree-locust (WD. 1)—the latter term should apply only to the tree weta; the cry of the cicada (WD. 2); dragonfly, synonym of *kapokapowai* (68). As "cicada," obviously applied by the Tuhoe people to a loud-voiced species (probably *Melampsalta cingulata*)—"the cicada may freely cackle" (see reference under *kikipounamu*), while in other dialects *kihikihī* is used for *kikitarā* (125). cf., *kihikihī*.

KIKIWARU.

A green kind of butterfly, a sort of cricket according to a southern Maori (21); *kiki* = to sing (31), *waru* = eighth month, i.e. December. The term is most likely referable to the green cricket, or katydid (*Caedicia simplex*). cf., *kikipounamu*. Butterfly can be ruled out by the context of the definition. If a cicada is inferred, then *Melampsalta muta* var. *subalpina* could be the species, the green cicada (*M. ochrina*) being a North Island species.

KIRIWAI.

A beautiful metallic-green beetle with red streaks, found on manuka (153), *Pyronota edwardsi*; a small green beetle = *kerewai* (WD. 2; TD. 2); doubtless also refers to other similar species of *Pyronota*. cf., *kekerewai*.

KIRIWAI MANUKA.

A small green beetle abundant on manuka, striped with green and red (1); obviously a species of *Pyronota*. cf., *kekerewai*.

KIRIWENUA.

A garden bug (68) = *kiriwhenua*.

KIRIWHENUA.

Several smaller "Maori-bugs," all more or less distinguished by their odour; several varieties are found in the woods and in fern (68; 69; 156); could apply to the immature stages of the black stink-bug (*Polyzosteria novae-seelandiae*), or to the related *Cutilia sedilloti*, or to the other three species of native cockroaches. cf., *kekerengu*, *kiriwhenua*.

KITA.

The chirp, stridulation of the cicada (WD. 1) ; to sing, stridulate as the cicada (TD. 2). cf., *takitakio*, *tara*, *whakakita*.

KOEKE.

Grasshopper (68; WD. 2; TD. 2), cf., *kapakapa*, *kowhitiwhiti*; shrimp (WD. 3; TD. 3), cf., *kouraura*; *Paranephrops planifrons*, fresh-water crayfish (WD. 4), cf., *koura*.

KOKOPURANGI.

A small water leech (WD.) ; small aquatic leeches were found very abundant in a creek at Dusky Sound (143) ; could apply to *Microbdella novae-zealandiae*, Lake Takapuna. cf., *ngata*.

KOKOROIHE.

Cockroach, non-Polynesian (WD.). cf., *papata*.

KOPA (1) = *kopi*.

KOPI.

A Moriori name of a chrysalis (TD. 2) ; chrysalis (68) called *kopi* from its power of shutting itself up in a bag (69) ; obviously the larva of the case-moth, *Oeceticus omnivorus*. cf., *kopa rakataura*, *raukatauri*, *whareatua*.

KOROITAKA.

A caterpillar (WD.).

KORUATAWHITO.

(Moriori). Insect (81).

KOURA.

Crayfish, both sea and fresh-water, the latter *Paranephrops planifrons*. cf., *karawai*, *kekewai*, *kewai*, *koeke*, *maehe*. *P. planifrons* inhabits the North Island and Northern South Island, so in other parts of the South Island the term could refer to *P. setosus* and *P. zealandicus*.

KOURAURA.

Shrimp (WD.). cf., *koeke*, *kowhitiwhiti-moana*, *mama-iti*, *mowhiti*, *puhihi*, *tarawera*.

KOWENEWENE.

Sphinx convolvuli; a moth = *wenewene* (WD.) ; used on East Coast of North Island (77) ; a name for the *hue*, or gourd plant (*Lagenaria vulgaris*) and applied to the Sphinx

moth from its habit of frequenting the flowers (78). cf., *hihue*, *pepe*, *wenewene*.

KOWHITIWHITI.

Grasshopper (WD. 2; TD. 1). As *kowhiti* = to spring up (WD. 4), and *whitiwhiti* = to jump or hop (31), the term could apply to wingless species. cf., *kapakapa*, *whitiwhiti*.

KOWHITIWHITI MOANA.

Shrimp (WD.). cf., *kouraura*.

KOWITIWHITI.

A small grasshopper (68). cf., *kowhitiwhiti*.

KUHARU.

An edible grub = *kuwharu* (WD. 1); a large, long, white, edible earth-worm (103), perhaps = *wharu* which = *tarao* (129).

KUI.

Larva of *Cicindela tuberculata* (WD.), the personification of the mythical Kui, wife of Tuputupuwhenua, who lived in the ground (80). cf., *hapuku*.

KUPAKUPA.

An insect; ? wood-louse (WD. 3). cf., *papapa*.

KURA.

To remove lice from the hair = *hakure* (WD.). cf., *arapaki*.

KUREKURE.

Blow, of flies. *Ko nga iwi o te ao ki te pao, ki te kai, ko nga ngaro o te ao ki te kurekure* (WD. 2)—The peoples of the world may crack open and eat, but the flies of the world blow (124). cf., *iro*, *kutikuti*, *mui*; to lay maggots (31); a species of earth-worm (WD. 1), a short red, or brown, edible worm, about 6 inches in length, found in stony places (103), *Notoscolex esculenta* and *N. sapida* (128). cf., *noke*.

KURIKURI.

A beetle (WD. 3). Could be a general term, but Williams's first meaning—fusty, evil smelling—and Tregear's definition—to stink, as a dirty dog—point to something more definite; though the term, as "fusty," could apply to some species of ground beetle (*Carabidae*), it is more likely applicable to the stink-roach (*Platyzosteria*

novae-seelandiae), often called "black-beetle." cf., *keke-rengu*. Another meaning is "a grub which makes a hole in the earth and afterwards turns into a green bronzed beetle speckled with white" (68); such a general description could point to the larva of a tiger beetle (*Cicindela*). cf., *hapuku*, *kui*.

KURUPOPO, KURUPOPOPO.

Rotten, worm-eaten of timber (TD.; WD.); things long dead (124). cf., *hinamoa*, *pokarakara*, *popo*, *tunga*.

KUTIKUTI.

Fly-blow (68). cf., *iro*, *kurekure*, *mui*.

KUTU.

Louse (WD. 1; TD. 1); vermin of any kind infesting human beings (WD. 2; TD. 2); parasite (33). Williams's and Tregear's illustration *nga kutu o te upoko o Rehua*—the lice from the head of Rehua—is a figurative expression meaning the fruits of the forest (according to Best), just as is *Te Whanau a Torohuka*—The lice of the Earth-mother—in reference to all living creatures; another illustration would be, *Ma te Whatanui, ma Tukino e wero nga kutu o te tipuaki*—It shall be for Te Whata-nui and Tukino to spear the lice (parasites) of thy head (34). cf., *eo*, *kutukutu*, *kutupapa*, *mokutukutu*, *pekeriki*; also *arapaki*, *riha*, *titope*.

KUTUKUTU.

Maggot; vermin of any kind (68; WD. 1, 2; TD. 1, 2). cf., *iro* and *kutu* respectively.

KUTU-PAPA.

(a) Some sort of vermin (WD.). cf., *iro*, *kutu*. As *papa* = shell, hard, flat, broad, earth, the term could apply to woodlice, or even to the large and conspicuous pill millipedes (*Sphaerotherium*), which would not escape Maori attention. (b) Scale blight (WD.), applicable to various scale-insects (*Coccidae*), in which New Zealand vegetation abounds, some species forming incrustations on foliage and bark, and are shell-like.

KUTU-PORENGA.

(Moriore). Flea (81). cf., *keha*.

KUWARU.

A grub (68) = *kuwharu*.

KUWHARU.

A grub formerly eaten by the natives = *kuharu* (WD. 1) ; the name of a species of grub (TD. 1). Perhaps Sphinx caterpillar which was eaten, cf., *muwharu*, which is possibly more likely than *huhu* (cf.).

MAEHE.

Paranephrops planifrons; fresh-water crayfish (WD. 2). cf., *koura*.

MAKOKORORI.

The name of a caterpillar, the looper caterpillar (*Geometrina*), or *ngata* (TD.), cf., *tawhana*; a caterpillar, larva of *Nyctemera annulata* (WD.), c.f., *tuahuru*, *tupeke*; a caterpillar (68).

MAMAHITI.

A species of small grasshopper (68). cf., *kowhitiwhiti*.

MAMAITI.

A large shrimp (TD.). cf., *kouraura*.

MAMAWHITI.

A small species of grasshopper (TD.). cf., *kowhitiwhiti*.

MANU A REHUA = *kekerewai* and *tutaeruru* (12).

MANUMANU.

A Urewera general name for insects (14).

MATA.

Cockroach (155) ; *Anisolabis littorea*, earwig (WD. 3), the littoral species.

MATIHOI.

Many, swarming; applied to insects (WD.). cf., *mui*, *pokai*, *whenua*, and comments on "caterpillar" under *tatarakihi*.

MATUA KIHIKIHI.

Larva of a cicada (WD.). cf., *ngengeti*.

MATUATUA.

The large native slug, *Atharacophorus giganteus*. This identification was given by an old Maori to Mr. W. M. Fraser, of Whangarei, to whom I sent a specimen.

MATUA WAIROA.

Crane-flies (68; 154), *Tipulidae*, daddy-long-legs. cf., *pekepekeharatua*, *tatau o te whare Maui*.

MAWHITIWHITI.

Grasshopper (68; WD. 1; TD.). cf., *mawitiwiti*.

MAWITIWITI.

Grasshoppers, some of which attain a large size, one of the largest, *pakauroaroa* (cf.), being of bright green colour; there is also a small black one (57). cf., *kapakapa*.

MOEONE.

A kind of grub (68; WD. 1); a kind of grub, the larva of the butcher beetle, *Cicindela* sp. (TD.); a form of earth grub, a pest in *kumara* fields (79; 96). As the term means "to sleep in the earth" (31), it could apply to any subterranean grub, including the butcher beetle larva (cf., *hapuku*), e.g. cockchafer grubs (*Odontria* spp.) and porina caterpillars (*Oxycanus* spp.), which abounded in *kumara* plantations; the latter, which were destructive, became the *awhato* (cf.). The term occasionally refers to a beetle (135), a small bronze beetle (89), which could be *Odontria zelandica* which occurs underground on emerging from pupa, and when ovipositing during the day (cf. *tutaeruru*), or *Eucolaspis brunneus*, both of which were, and are, very abundant.

MOEONEONE = *moeone* (WD.).

MOKA.

A kind of caterpillar (WD. 2; TD. 2); a grub used as food (131); leaf-tying, edible caterpillars (105), *Tineidae*; the personification of the celestial Moka, who, with Nuhe and Toronu, sent the *moka*, *anuhe* and *toronu* (the names of three species of caterpillars) to destroy the *kumara*, so that they are said to come from the sky (92). cf., *moko*, *tikopa*.

MOKAMOKA.

A caterpillar (WD. 2); an insect (22).

MOKARAKARA.

A butterfly (TD.); the black and spotted butterfly, according to a Southern Maori (21), and so could be the day-flying magpie-moth, *Nyctemera annulata*.

MOKO.

A caterpillar (68). cf., *moka*.

MOKOROA.

A large white grub, probably the larva of *Prionoplus reticularis*, which attacks *kahikatea* (white pine) and other trees. *He iti hoki te mokoroa, nana i kakati te kahikatea* (WD. 1)—Is the *mokoroa* grub insignificant, which gnaws the *kahikatea* tree? c.f., *huhu*; a small insect which bores its way into forest trees (TD.), and into heart of forest trees (44); a large caterpillar (68), a grub that perforates *puriri* trees (104); an edible grub in *houhi*, *mako* and *kaiweta* trees (13; 14; 105; 131); figuratively used as cause of pain (44). cf., *ngarara*.

Though *mokoroa* is a general term for grubs, it is specific for the *huhu*; also for the caterpillar of the ghost-moth (*Charagia virescens*), judging from the definition "caterpillar" and the reference to the edible grub boring in the three trees mentioned. cf., *anuhe*. Of course, small beetle grubs attacking these trees could be also involved, for "all was fish to the net," e.g., larvae of the beetles, *Tetrorea discedens*, *Artystona rugiceps* and *Navomorpha sulcatum*, together with the giraffe weevil, *Lasiorrhynchus barbicornis*; as to the small insect boring into the heart of forest trees there are the scolytids *Pachycotes* and *Platypus*.

MOKO-TA.

A sort of death-watch, said to live in the thatches of houses, never seen, but if heard regarded as an *aitua*; it is also called *tokewhenua* (WD. 3). Possibly some species of *Anobiidae*, medium-sized *Cerambycidae*, and *weta*, all of which make characteristic and audible sounds. cf., *takituri*, *tokerangi*, *tokere*, *toke-whenua*, *uhu*.

MOKO-TAWHANA.

Caterpillar (WD.). Williams refers *moko* to tattooing, and as one meaning of *tawhana* is "caterpillar" then some conspicuously patterned species is indicated; this is most likely *anuhe* (cf.), the pattern of which was compared with certain forms of tattooing (14). cf., *tawhana*.

MOKO-TITIA-TOA.

The black and grey spider (22), which I am unable to identify; the term occurs in mythological genealogies. cf., *pungawerewere*.

MOKUTUKUTU.

Vermin (WD.) ; plural of *kutu* (31). *Nei koa Taihakoia te muia nei e te mokutukutu, moe papatitaha ka mokohiti ki runga* (WD.)—Behold, here is Taihakoia, swarmed over by vermin, lying on one side, then jumping up (124). cf., *kutu*.

MOROROHU.

Flea (WD.; TD.). cf., *keha*.

MOWHITI, MOWHIWHITI.

Shrimp (WD. 2), cf., *koura*; sandhopper (WD. 3), the common and large one being *Talorchestia quoyana*, cf., *potipoti*.

MOWHITIWHITI = *kauwhitiwhiti*.

(WD.). cf., *kapakapa*.

MU.

Probably the Urewera name for a species of spider (13; 14), cf., *pungawerewere*; an insect (WD.), indicated as a general term for insects by: *Koia nei te timatanga o nga mea katoa i te ao nei, ahakoa tarutaru, rakau, kohatu, nga ika, nga manu, nga ngarara, nga papa, nga puwerewere, nga mu, nga purerehua* (WD.)—This is the origin of all things in this world, whether plants, trees, stones, fish, birds, vermin, lizards, spiders, insects, moths (124). cf., "Insect" in English index.

MUHARU = *muwharu* (124).

MUI.

To swarm around, to infest (WD. 1; TD. 1); *Ka muia koutou e te pongarongaro* (25)—You will be beset by swarms of midges. To be lighted on by swarms of flies, to be fly-blown (TD. 2); *Kua mate, e muia ana e te rango*—All dead and being infested by swarms of the blowfly (56). cf., *iro, kurekure, kutikuti*.

MUMU.

A large green beetle (WD.1); a large green beetle found in the forest (1). Most likely a species of *Chlorochiton*. cf., *howaka, pairu, tanguru*.

MUMUTAU.

A large brown beetle found on the sandhills (68); the elytra are remarkably soft, frequently attacked by a fungus (R. Taylor); the large sand-dune "stag-beetle" (130).

The term "stag-beetle" is misleading, the insect being obviously the scarab *Pericoptus truncatus* which, though hard when mature, is soft when freshly emerged from the pupa and is attacked by a fungus. cf., *mumutawa*, *mumuwaru*, *mumuwharu*, *ngungutawa*.

MUMUTAWA.

A thick-set beetle of the sand-hills (153). A large, brown beetle (*Pericoptus truncatus*) = *ngungutawa* (TD.). cf., *mumutaua*.

MUMUTU.

A large but short earth-worm (WD. 2). cf., *noke*.

MUMUWARU.

A large, brown beetle (68), *Pericoptus truncatus*. cf. *mumutaua*.

MUMUWHARU.

A species of beetle (TD.), *Pericoptus truncatus*. cf., *mumutaua*.

MUREMURE.

The name of a grub, the larva of the butcher beetle (*Cicindela* sp.) (1); a grub = *moeone* (WD. 2). cf., *hapuku*, *kui*, *kurikuri*.

MUWARU.

A caterpillar (68) = *muwharu*.

MUWHARU.

Caterpillar, grub (WD.); larva of *Sphinx convolvuli* (31). *Mahi atu taua ki te tukou no kai, e nohoia mai ana e te muharu; mahi atu taua ki te tokou no Rongo, e nohoia mai ana e te hotete* (83)—We grow the *kumara* for food, the devouring grub occupies it; we cultivate the *kumara* for Rongo, but the caterpillar settles on it (124). cf., *anuhe*, *kuwharu*, *muharu*, *muwaru*.

NAENAE.

Mosquito (68; WD.; TD.). cf., *waeroa*.

NAERO.

A place in Taranaki was called *Onaero*, Place of the Mosquito (27). cf., *waeroa*.

NAEROA.

Mosquito (WD.). cf., *waeroa*.

NAHONAHŌ.

Midge (WD. 2). Could apply to *Psychodidae*. cf., *naonao*.

NAMU.

Sandfly (12; 68; WD.; TD.), species of *Austrosimulium*, of which there are at least half a dozen recorded; sometimes mosquito (1; 81). cf., *namupoto*, *nanamu*, *naonao*, *ongaonga*.

NAMU KATIPO.

Native wasp (WD.). There are no native wasps in New Zealand, and it is unlikely that any accidental and slight sting by an ichneumon or pompilid would have been worthy of attention. As *namu* (cf.) sometimes refers to mosquito, it is here so used and qualified by *katipo* = to bite secretly by night. The sandfly attacks by day and the mosquito by night, as the Maori was well aware; e.g. the mosquito said to the sandfly, *E ki ana ahau, e taku taina, ina! waiho kia ahiahi ka haere ai taua ki te riri i to tuakana*—I say, my younger relative, let us wait till night to attack your elder relative (124), and *Ha ra ki te awatea, he namu ki te po*—The sun during the day and mosquitoes at night (1); thus Williams's illustration, *Ka karakia ko Hine-nui-te-po, ka tukua tana, he namu katipo*, would read, Then Hine-nui-te-po recited her spell, and sent her messenger, a mosquito (not wasp) to attack secretly by night. cf., *waeroa*.

NAMU-POTO.

Little sandfly (16); as an avenging messenger (74). Could be *Austrosimulium* spp., or quite likely the smaller biting midge *Acanthoconops myersi*. cf., *namu*.

NANAMU = *namu* (WD.).

NAONAO.

Midge, small moth (15; WD.; TD.); sandfly (16); small moth (68). Midge and small moth could apply to the small, whitish moth-midges (*Psychodidae*) which abound in New Zealand; could also refer to sandflies (*Austrosimulium*) and the biting midge (*Acanthoconops myersi*). Small biting flies, called *naonao*, in the Marquesas, rendered the Typee Valley uninhabitable (31), the flies being the sandfly *Simulium buissoni*, also called *no-no* (147). cf., *nahonaho*, *ngaungau*, *pongaringaro*, *tuiaua*, *whakanaonao*.

NGAEROA.

Mosquito. *Haere kia pokaia koe e nga ngaeroa o Hurihuri* (WD.)—Go, that the mosquitoes of Hurihuri may infest you. cf., *waeroa*.

NGAIO.

A small grub; also parasitic worms found in *kokopu* fish and *kaka* bird (WD. 2), which were emaciated by these parasites (41); during summer and autumn drought when streams and pools are low, *kokopu* "are infested with a long, thin, red flesh-worm, which cysts up in the flanks, and also lies in the thick muscles along the back. These, when the water improves, eat their way bodily out through the exterior" (142). The worms of *kaka* could be tape-worms, round-worms, or thread-worms. cf., *iro*, *ngoiro*.

NGAIROA.

Mosquito = *waeroa* (68).

NGARANGARA.

Mosquito larvae, Ngapuhi tribe at Lake Ngatu (144).

NGARARA.

A reptile, an insect (TD. 1); a sickness (TD. 3); insect, often regarded by the Maori as the cause of sickness (WD. 2); vermin (124); a general term for insects (14; 68). *Koia nei te timatanga o nga mea katoa i te ao nei, ahakoa tarutaru, rakau, kohatu, nga ika, nga manu, ngarara, nga papa, nga puwerewere, nga mu, nga purerehu* (WD.)—This is the origin of all things in this world, whether plants, trees, stones, fish, birds, vermin, lizards, spiders, insects, moths (124). *He ahakoa, e koro, he ngarara e patupatu atu e koe, e horo atu* (35)—However, my elder, these are insects which fall off when you strike them. *Na Turoa, mo te kainga a te ngarara i tona kaki* (36)—the caption of a lament, "By Turoa, concerning an insect biting his neck," doubtless referable to the disfiguring disease *hura* which attacked the neck and sides of the head (46); the lament describes the *ngarara* as the "gouging axe, the devouring god Rongotakawhiu who bit and opened twin holes in the back of my neck"; cf., *mokoroa*. Sometimes *ngarara* is translated "grub"; cf., *tuiau*.

NGARO = rango.

Fly, blowfly. *Haere ana taua ngaro nei, ko te ingoa ko Tamumu ki te Rangi* (WD. from 63)—And so that fly, which

was named He-that-buzzes-in-the-Sky, went on his way—which could refer to blowflies in particular, or to the humming-fly (cf. *ngaro tamumu*). Apparently *ngaro* refers to blowflies and flies resembling them (14). Of the blowflies specifically involved there are *Calliphora quadrimaculata* and *C. laemica*; e.g. the myriads of flies (48), *tini o te ngaro* (49), which oviposited on Maui. The blowfly also went by the honorific name *Te Potiki a Pohau* (60), from the verb *pohau* = to seek, sometimes showing confusion when seeking (124); another honorific name was *tuparau-nui* (cf.). The blowfly was a symbol of death and used figuratively in this sense, e.g. *A ka tamumu te ngaro* (73) —The blowfly murmurs now. In connection with *makutu*, the fly was called sometimes *ngaro ruahine*, *ngaro tamumu*, *ngaro tane*, or *ngaro tara*, representing the life, or spirit, of the person involved (WD.); I have no further data on *ngaro ruahine*, and *ngaro tane*, except that they were blowflies involved in certain rites, but *ngaro tamumu* and *ngaro tara* (cf.) were not blowflies. cf., also *hurangi*, *ngaro-iro*, *pohau*, *patupaearehe*, *rako*, *rango pango*, *rango-tua-marō*, *tautini-ariki*.

NGARO IRO.

A blow- or maggot-fly (*Calliphora quadrimaculata* and *C. laemica*), distinct from the humming, or buzzing, fly, *ngaro-* or *rango-tamumu* (cf.), as shown by: *Na, ka tukua te rango tamumu hei kimi—kahore i kitea. Ka tukua ko te ngaro iro nei, katahi ka kitea, ka hurahurahia nga mara-mara, ka tupono atu* (61) —The humming fly was despatched in search but did not find him. Then the common blowfly was sent; then 'twas found; the chips were cast aside, and the body discovered (124). cf., *ngaro*, *ngaro-tamumu*, *ngarotara*.

NGARO (RANGO)-TAMUMU.

The large metallic-looking fly, personification of the God of Flies, *Tautiniariki* (1), the humming-fly (61), not a blowfly. This metallic-looking humming-fly could be either the hover-fly *Helophilus hochstetteri*, or the gadfly *Scaptia adrel*; if the latter, it is of interest that a gadfly was also the prototype of Beelzebub—god of flies. cf., *ngaro*, *ngaro-iro*, *ngarotara*, *pairunui*, *tautiniariki*.

NGAROTARA.

A reddish-hued fly of considerable size, it is not a blow-fly, it never alights on food or foul matter (75; 76). On colour and size it could be species of the tachinid genera *Hystericina* and *Protohystericia*, but I think there can be little doubt for identifying the term with the large orange-patterned hover-fly *Helophilus trilineatus*, because "its buzz will be heard thus, *Kopio te whare, kopio ia*; when it is tired it will remain stationary in the air, whilst its wings continually vibrate" (76). cf., *ngaro, ngaroiro, ngarotamumu*.

NGATA.

Slug, leech (68); snail, slug, leech (WD. 1); a snail, a slug (TD. 1), a leech (TD. 2), the looper caterpillar (TD. 3). cf., (slug) *hataretare, putoko*; (snail) *hataretare, piko-piko, pupuharakeke, pupurangi, pupuwhakarongotaua*; (leech) *kokopurangi*; (caterpillar) *tawhana*.

There are several species of leeches in New Zealand. Some occur in ponds, streams and swampy places, and a large species amongst the fallen leaves in the *Nothofagus* forests; the aquatic and swamp forms attach themselves to one's bare feet; another large species occurs in the nests of mutton-birds (143). *Ngata* also embraces the land flat-worms, or planarians, as is clearly indicated by the statement (157) that there is "a considerable variety of land leeches; one bright red, another pale buff, a third deep chocolate, and a fourth chocolate with yellow border; they are found under stones and decayed timber, and seem to be perfectly harmless."

NGAUNGAU.

Midge (68). cf., *naonao*.

NGENGETI.

Pupa of *tatarakihi* (cicada), and cast-off skin of the same (WD. 1), cf., *matua-kihikihi*; sand-louse (WD. 2), which could be the common isopod *Ligia novae-zealandiae*.

NGOIRO.

The Maori was infested by two kinds of worms called *ngoiro* and *iro* (40). Being unconcerned by maggoty meat (124) the Maori doubtless suffered from intestinal myiasis, so *iro* could refer here to maggots, though that term also

applies to thread-worms; on the other hand, *ngoiro* = conger eel, young eels (WD.), and could apply to nematode worms. cf., *iro*, *ngaio*.

NGORU.

A species of earthworm (14). cf., *noke*, *noru*.

NGUNGUTAWA.

The name of a species of beetle (*Pericoptus truncatus*) = *mumutawa* (TD.).

NGUNGU.

Worm (WD.; TD.). cf., *noke*.

NGURENGURE.

A pest of *kumara*, applied by Ngati-Porou to larva of *Sphinx convolvuli* (82). cf., *anuhe*.

NGUTARA.

A grub found in trees (WD.); so-called "vegetable caterpillar" found under many rata trees (99); the living caterpillar of *awhato* (*Cordyceps robertsii*) (127). The statement, *He mea ke te ngutara, kai roto i te rakau tena* (WD.)—The *ngutara* is a different kind of grub found in trees—indicates that the term could refer to the caterpillar of the edible *Charagia virescens*, and to longicorn larvae (e.g., of *Aemona hirta*), both of which, also, are attacked by *Cordyceps*; the *Cordyceps* under trees could be on porina caterpillars and pupae of cicadas. cf., *awhato*, *hawhato*, *nutara*.

NGUTUTAWA.

A small green beetle (WD.). Most likely a species of *Pyronota*. cf., *kekerewai*. There are few other small green beetles in New Zealand, e.g., the longicorn *Calliprason sinclairi* and the weevil *Amylopterus prasinus*.

NIHINIHI.

An insect (WD. 3).

NOKE = toke.

Generic term for earthworms (14). cf., "Earthworms," English index.

NOKE-TAI.

A species of earthworm (14); a small light-coloured worm (103). cf., *noke*.

NOKE-WAIAU.

A species of earthworm (WD.). cf., *noke*.

NONOKO.

The ant (TD.). We should note the use of *nonoko* in the tribal disputes as to who brought the *kumara* to New Zealand (126); two lines in one song state, *I a nonoko-uri, I a nonoko-tea*—Of the dark-ant, Of the white-ant—which might suggest the dark, or true, ants (*Formicidae*), and the white-ants (*Termitidae*). The Maori certainly was well acquainted with the *Formicidae*, and that they lived underground in colonies from which they emerged from holes to explore, as is implied by the synonyms *poko*, *popokorua* and *torotoro* (cf.); also it is very unlikely that he was unaware of the *Termitidae*, two native species of which were, and are, abundant enough in fallen forest trees. However, as *uri* = dark, and *tea* = white, are frequently used in compound words in contrast (WD.), it is likely that the terms were added in the above song either to balance the two lines, or in some figurative sense; so I hesitate to apply the terms entomologically. cf., *poko*.

NORU.

A short white species of edible earthworm found in stony places (103). cf., *ngoru*, *pokotea*.

NUTARA.

Vegetable caterpillar, so-called = *awhato* (WD.). cf., *ngutara*.

ONGAONGA.

Sandfly (26; WD. 3), so-used figuratively; normally means prickly, nettle and stinging jelly-fish. *Ka kite ra koe te pokai ongaonga, i ahu mai tawhiti, te motu o Whakatu* (26)—There you will see the swarms of sandflies that come from afar, from the island where Whakatu (i.e. Nelson) was (124). cf., *namu*.

PAHAURERE (1) = *pakaurere*.

PAIRU = *pauru*.

A green beetle (WD. 1); a red fly (WD. 2). The beetle could refer to species of *Chlorochiton* (cf., *mumu*), or *Pyronota* (cf., *kekerewai*); there are no red "flies" (*Diptera*) in New Zealand, except that red is a prominent colour in several cecidomyid midges and the female of *Philia nigro-stigma*, and such flies can be very abundant; but reddish-orange enters into the colouring of larger, more conspicuous species of *Prothystricia*, *Hystericina* and *Helophilus*, while

of non-dipterous insects there are orange ichneumon-flies and the conspicuous digger-wasp *Salix wakefieldi*.

PAIRU NUI.

A large fly like a blowfly, but with a metallic sheen (WD.). This could apply to the common syrphid *Helophilus hochstetteri* (having a black thorax and brilliant violet-blue abdomen showing metallic reflections in sunlight), or to the gadfly *Scaptia adrel.* cf., *ngarotamumu*, *tautiniariki*.

PAKAURERE.

Oedipoda cinerascens, winged grasshopper (WD.). cf., *kapakapa*, the name now being *Locusta migratoria* ph. *solitaria*.

PAKAUROAROA.

A large bright green grasshopper (57); a large flying locust (68). Might refer to the green grasshopper, or katydid, *Caedicia simplex.* cf., *kapakapa*.

PAKAUROHAROA.

The winged grasshopper (TD.); *Oedipoda cinerascens* (WD. 1), but cf., *kapakapa*, *pahaurere*, *pakaurere*, *ranga-taua*.

PAKIRARA.

Catch lice or vermin (WD. 1). cf., *hakure*.

PAPAHU.

A large white grub, the larva of *Chlorochiton saturalis* (WD. 1). cf., *howaka*.

PAPAKA.

A beetle (WD. 3); a species of beetle (12).

PAPAKURA.

An insect (WD. 1); the name of an insect (TD.); a general term for insects, its literal meaning being "red-thighs" (31); seemingly insects in general, as indicated by the translation of Williams's illustration of the word, *Kei mahara iho koe ki te umu i taona ai e koe aku tamariki, ahakoa muia to ratou umu e te papakura ko te tae atu ano ahau ki Kaiapoi* (WD.)—Do not think that the oven in which you cooked my children will be forgotten; for although their oven may be infested by insect swarms I am determined to visit Kaiapoi (124). We should note that *papakura* also means "red glow," regarded as an omen of

impending disaster (WD. 2), and the above-quoted threat, ascribed to Te Rauparaha, proved to be no idle one.

PAPANGU.

A kind of spider (20). cf., *pungawerewere*.

PAPANUI.

A kind of spider (20), possibly those constructing sheet-like webs in shrubs, trees and dwellings (*Agelenidae*), on the assumption that the term is adapted from its meaning of "a stage in a tree used as a seat for a bird-snarer," or a "cloud or mist uniformly covering the sky." cf., *pungawerewere*.

PAPAPA.

Armadillium vulgare, wood-louse, slater (WD. 4), could also be the other common exotic species *Porcellio scaber*, but there is no reason why native species, of which there are several, should not be referred to, cf., *kupakupa*; so-called Maori-bug = *kekereru* (WD. 5), *Platyzosteria novae-seelandiae*, cf., *kekerengu*; *Cicindela tuberculata*, an insect (WD. 6), the tiger beetle, cf., *hapuku*.

PAPAPANGO.

A kind of spider (20). cf., *pungawerewere*.

PAPAPAPA.

The name of a small brown beetle (68; TD.) ; a small brown beetle very abundant in the evenings (R. Taylor); most likely *Odontria zelandica*. cf., *tutaeruru*.

PAPARANGI.

A kind of spider (20). cf., *pungawerewere*.

PAPATA.

An insect (WD. 2) ; a cockroach (101). cf., *kokoroihe*.

PARI KORI TAUA.

Owl moth, *Dasypodia selenophora* (158). cf., *tarapoa*.

PATIKI.

Fan to keep flies from a corpse (WD. 2). cf., *patungaro*.

PATUNGARO.

Fly-flap, fly-swat; ornaments similarly shaped at ends of plumes (*hihi*) of a canoe (55). cf., *patiki*.

PATUPAEAREHE.

Yellow blowfly (57), *Calliphora laemica*; normally sprite, fairy (WD.), with which insects were classed. cf.,

ngaro, *ngaroiro*, *rangotuamaro*; also blue-bottle fly, an omen of death (57), *Calliphora quadrimaculata*. cf., *ngaro*, *ngaroiro*, *rako*, *rango*, *rangopango*.

PAURU = *pairu* (WD.).

PEKEPEKE HARATUA.

Daddy-long-legs (15); *Macromastix holochlora* (WD.). cf., *matuawairoa*, *tatau o te whare o Maui*.

PEKERIKI.

Lice, vermin (WD.). cf., *kutu*.

PEKETUA.

Centipede (15; WD. 3). A progenitor of insects, brother of Tane (mythological) (11); *Tini o Peketua*, lizards, the black and grey spider (*moko titi a toa*, cf.), and numerous insects (22). cf., *hara*, *hura*, *puratoke*, *weri*, *whakapihau*, *weke*, *weke*.

PEPE.

A grub found in rotten wood (68; WD. 5; TD. 1); *koroi pepe*, white pine grub (68); doubtless *Prionoplus reticularis*, since *pepe* is applied to the pupa (103). cf., *huhu*, *tunga*. A moth (28; 68; WD. 6; TD. 2), cf., *pure-hurehu*; *Sphinx convolvuli* moth (86), cf., *hihu*; butterfly (3; 22; 68), cf., *kahukura*.

PEPE ATUA.

A species of butterfly (68; TD.), the form often assumed by spirits when they manifested themselves (68).

PEPEKE.

Insect, beetle (WD. 4); butterfly (28); a general term for insects (31), and other invertebrates, e.g., *Te aitanga pepeke*—The insect people; apparently applied to the larvae of cerambycid, buprestid and scolytid beetles which score patterns on the surface of wood under bark as indicated in the lament of the famous wood-carver, *Te Uamairangi*, on finding his carving tools stolen: *E tu ra, e whare e, ka mahue koe. Whaihanga ra, e te tuturi e; tarei ra, e te pepeke* (17)—Stand thou, o house, thou art abandoned. Make thy web, o spider; and fashion thou, o beetle.

PEPEPE.

Moth, butterfly (28; WD. 1); butterfly (TD. 1).

PEPEPEPE.

Butterfly (68).

PEPETAWHANAWHANA.

A species of moth (WD.).

PEPE TE MUI MUI.

Prionoplus reticularis beetle (15). cf., *huhu*, *tungarere*.

PEPETUNA.

A species of large green moth (TD.); a very large green moth (68), of which there is only one species in New Zealand (R. Taylor); this is obviously *Charagia virescens*.

PIA MANUKA.

An exudation from *manuka*, a kind of *manna* that was eaten by the Maori (106); associated with boring grub of *Aemona hirta* (107), and the hopper *Scolypopa australis* (108).

PIHAREINGA.

(123; WD.; TD.), *piharenga* (68; TD.), *pirenga* (68), the black field cricket, *Gryllulus commodus*, and perhaps *Lissotrachelus maoricus*. cf., *areinga*, *tukarakau*. Williams considers *pihareinga* to be non-Polynesian, said to be from "bushranger"; Hare Hongi (123) claims it as a genuine Maori term, being imbedded in the lore, e.g., *Te tatarakihi, te pihareinga ko nga manu ena o Rehua*—The cicada and the cricket are the singing birds of Rehua; also that the Maori taught that the grey-warbler (*riroriro*) and *pihareinga* are the sweetest songsters on earth: *Tangi e pihareinga, tohu o te raumati*—Sing on, O ye crickets, sing of the summer (123).

PIKOPIKO.

A land mollusc, a species of snail (WD. 2). cf., *ngata*.

PIRITAU.

A small phosphorescent earth-worm (TD.); glow-worm (159). cf., *puratoke*.

POHAU (to seek).

Te potiki a pohau—The child of Pohau, an honorific name for the blowfly. cf., *ngaro*.

POHOTAPU.

The name of an insect (TD.). Probably *pokotapu*.

POKAI.

Swarm of flies, flock of birds (WD. 2; TD. 2). *Ka kite ra koe te pokai ongaonga* (26)—There you will see the swarms of sandflies. cf., *matihoi, mui*.

POKARAKARA.

Full of worm holes as *totara* timber (WD. 1). cf., *hinamoa, kurupopo, popo, tunga*.

POKO.

The ant (68; TD.). *nonoko, pokopokorua, pokorua, popokoriki, popokorua, ro, roro, rororo, torotoro, upokorua*.

POKOPOKO.

Nymphae (WD. 2).

POKOPOKORUA, POKORUA, POPOKORUA.

Ant (WD. 2). cf., *poko*.

POKORUA.

Ant = *poko* (68).

POKOTAPU.

An insect = *upokotapu* (WD.). cf., *pohotapu*.

POKOTEA.

An earth-worm (WD.); a short white worm (103); *Notoscolex urewerae* (128); perhaps = *noru* (cf.). cf., *noke*.

PONGARONGARO.

Midge (25; WD.). *Ka muia koutou e te pongarongaro* (25)—You will be beset by swarms of midges. cf., *naonao*.

POPO, POPOPO, POPOPOPO.

Rotten, worm-eaten as timber (TD.); rotten, decayed, worm-eaten (WD. 1). cf., *hinamoa, kurupopo, pokarakara, tunga*.

POPOKORIKI.

Ant, Urewera (127). cf., *poko*.

POPOKORUA.

Ant, *Nga mano tini o popokorua* (52)—As the multitudes of the ants; "a large red species and a minute smaller one, a large black kind with another extremely diminutive" (69), from which it seems that the term is a general one, to include the large *Mesoponera castanea* with its chestnut-red females and bright red workers, the large *Huberia striata* with its black and reddish castes, together with small

black species; indeed, all the terms for "ant" seem to be generic. cf., *poko*.

POTIPOTI.

Talitrus locusta, sandhopper; a small crustacean (TD. 1; WD. 2), but this is not a New Zealand species, the common native amphipod, *Talorchestia quoyana*, the so-called "sand-flea," being more likely the one referred to, cf., *mowhiti*; a large moth (WD. 3), e.g., from *Oxycanus* sp. *Sphinx convolvuli*, *Dasypodia selenophora*, to the largest *Charagia virescens*; the "insect tribe" (98); a general name for swarming insects (TD. 2), *I hara taua*, *koia Ru*, *koia Whe*, *koia Potipoti*—My enemies are these, the earthquake, the caterpillar, and all devouring insects (97). cf., *matihoi*.

PUAWERE.

(68; 71; TD.), *puawerewere*. Spider = *pungawerewere* (WD.).

PUENE, PUENEENE.

A small creature having six legs, found under stones in streams (WD.); eaten by children (109); referable to the "toe-biter" or "black-creeper," larva of *Archichauloides dubitatus*, and to the larvae of stoneflies and mayflies.

PUHIHI.

Antenna of an insect, shrimp, etc. (WD. 3), cf., *hihi*, *puihi*; a shrimp (TD.), cf., *kouraura*.

PUIHI.

Antennae of a crayfish (WD. 2). cf., *hihi*, *puhihi*.

PUKAUWEREWERE.

A spider, south of Timaru (21). cf., *pungawerewere*.

PUKUPUKU.

Caterpillar (68; WD. 5); a kind of caterpillar (TD. 2).
PUKURUA.

Some earth grub (WD. 2) that attacked *kumara*; could be larva of *Odontria*, *Oxycanus* and *Elateridae*.

PUNEHUNEHU.

Moth (81).

PUNGAIWEREWERE.

Spider = *pungawerewere* (WD.).

PUNGAWERE = *pungawerewere*.

PUNGAWEREWERE.

Spider (WD.; TD.; etc.). cf., "Spider," English index. Of the several terms applied to spiders, *katipo* and *mokotitiatoa* are clearly specific, the former being *Latrodectus hasseltii*, and the latter the "black and grey" spider (22) which cannot be scientifically identified, however. Of the other terms, it is possible that *mu* and *kahuwai* are specific; the terms *kapohuru*, *papangu*, *papapango*, *paparangi*, *tokarakau* and *torohuka* are probably of generic, if not specific, application; but it would be purely guesswork to attempt any indication of what forms could be referred to. In the case of *papanui*, *tukutuku* and *tuturi*, however, the first possibly applies to the family *Agelenidae*, the second to the *Theridiidae*, since the term is applied to cob-webs, and the third to the orb-web builders, the *Epeiridae*, by inference from the figurative use of the term in relation to carving (17). On the other hand, the remaining terms, variations of *pungawerewere*, are apparently of general application to the spider class as a whole.

PUNGOUNGOU.

A kind of chrysalis (TD.) ; a large chrysalis (68), the pupa of *Charagia virescens*, *Sphinx convolvuli* and *Oxycaenus* spp., for example, but perhaps more particularly to *S. convolvuli*. cf., *tungoungou*.

PUPUHARAKEKE.

Flax snail, *Placostylus hongii* (148). cf., *ngata*.

PUPURANGI.

Paryphanta busbyi (148), a land snail. cf., *ngata*.

PUPU-WHAKARONGO-TAUA = *pupurangi* (WD.).

PURATOKE.

Glow-worm (WD. 1; TD. 1), larva of *Arachnocampa luminosa*, cf., *titiwai*; phosphorescent marine animalcules (WD. 2; TD. 2); anything glistening in the dark (WD. 3; TD. 3), cf., *piritaua*; a centipede luminous in the dark (159), which Dr. Gilbert Archey says is probably a species of the *Geophilidae*, many of which, particularly those that frequent damp situations, shine faintly, cf., *peketua*.

PUREHE.

(Moriore). A spider (81; TD.). cf., *pungawerewere*.

PUREHUA.

A moth (13; WD.; TD.); also called *wairua tangata* as personification of souls of men (67). cf., *purehurehu*.

PUREHUREHU.

Moth (WD. 2; TD.); a large butterfly (68), which could be *Dodonidia helmsi* and *Pyrameis gonerilla*; butterfly (Mori) (81). cf., *kahukura*, *kapukapuai*, *pepe*, *pepepe*, *pepetawhanawhana*, *potipoti*, *purehua*, *purerehu*, *purerehua*, *rehurehu*, *tarapoa*.

PUREREHU (WD. 1) = *purehurehu*.

PUREREHUA.

Moth (WD. 1); a generic name for moths, and possibly includes sombre-coloured butterflies (127); caddisfly (68). cf., *purehurehu*.

PURUHI.

Flea (68; WD. 1; TD.); used on east coast of North Island (31), and north of Timaru (21). cf., *keha*.

PURUI.

Flea (102). cf., *puruhi*.

PUTANGATANGA.

Hemideina megacephala (WD.), a species of *weta* (cf.), or tree-locust.

PUTOKO.

Slug (WD.). cf., *ngata*.

PUWEREWERE.

(68) (*puawere*) = *pungawerewere*.

RAKATAURA (19) = *raukatauri*.

RAKO.

Blue-bottle fly, south of Timaru (21), *Calliphora quadrimaculata*. cf., *ngaro*, *ngaroiro*, *rango*, *rangopango*.

RAKORAKORERE.

An insect (WD.). There is nothing to indicate what insect is referred to.

RANGATAUA.

Locusta migratoria ph. *solitaria*, locust, large grasshopper (WD.). cf., *kapakapa*.

RANGO.

Blowfly (16); large meat-fly (68); = *ngaro* (WD. 3); a fly (TD. 3); blue-fly (64), *Calliphora quadrimaculata*.

Kua mate, e muia ana e te rango—All dead and being blown by the blowfly (56). cf., *ngaro, patupaearehe, rako, rangopango*.

RANGOPANGO.

Large blue-bottle (57), *Calliphora quadrimaculata*. cf., *rango*.

RANGOTAMUMU = *ngarotamumu*.

RANGOTUAMARO.

The large yellow-bodied meat-fly (57), *Calliphora laemica*. cf., *ngaroiro, patupaearehe*.

RAUKATAURI.

The cocoon of *Oeceticus omnivorus*, found hanging on branches of trees and shrubs, which is also called *pu a raukatauri* (WD.), the flute of Raukatauri, goddess of music who now abides in this cocoon (19). cf., *kopa, kopi, raka- taura, whareatua*.

REHUREHU.

Moth = *purehurehu* (WD. 3). *Ka puta te rehurehu, ka rere te tiwakawaka, ki runga ki te tihi o te hamuti*—The moth flew by and the fantail settled on the excrement (24).

REPOREPOWAI.

Pyronota festiva, a small green beetle = *kerewai* (114; WD.); from *repo* = mud, and *wai* = water (31), large numbers becoming entrapped in the mud on the banks of streams and lakes. cf., *kekerewai*.

RIHA.

Nit, the egg of a louse (TD.; WD. 1). cf., *rihariha, riia, rika, riki*.

RIHARIHA = *riha* (WD. 1).

RIIA.

Nit (68) = *riha*.

RIKA.

Nit (68) = *riha*.

RIKI.

Egg of louse (68) = *riha*.

RO.

Acanthoderus sp., stick insect (WD.; TD.), but there are other genera that could be indicated; cf., *roa, whanga-whanga, whe*. Ant (15; 16); cf., *poko*. Mantis (18; 38; 39; 68; 122; 127); cf., *wairaka, whe*.

ROA.

(1). Stick insect = *ro*.

RORO.

Ant (51; 134). *E noho ana tera me he rua roro te noho a te tangata, a te wahine, a te tamariki*—These people were living like ants in a hole, men, women and children (51; 134). cf., *poko*.

RORORO.

Ant (51; 116). *Ki te kainga o tini, o te mano o te rororo, o tini o te hakuturi*—To the dwelling-place of the many, of the numberless of the ants, of the multitude of the imps (116). cf., *poko*.

TAEPO.

A goblin, a spectre, *tae* = to arrive, *po* = night (TD.), frequently spelt *taipo*; one of the beings that sits on the tops of houses at nights, but if a woman presumes to speak it immediately departs (72). A name sometimes applied to a *weta*, which is nocturnal, and of some species of which the Maori was frightened. By some authorities the term is considered non-Maori.

TAI, see **NOKE-TAI** (127).

TAIAMA, TAIOMA.

A white earthy substance, sometimes placed in a box with feathers to preserve them from moth (WD.); *taïoma* = pipeclay (TD.).

TAIPO = *taepo*.

TAKITAKIO.

A word to represent the stridulation of the cicada (WD.). cf., *kita, tara, whakakita*.

TAKITURI.

Death-watch beetle (WD.; TD.). cf., *moko-ta*.

TAMUMU.

Hum, buzz (WD.); hum (TD.).

TAMUMU TE RANGI.

Known as *Tamumu ki te rangi*—He-that-buzzes-in-the sky (62; 63)—a spirit in the form of a fly. cf., *ngaro, ngaro-tamumu*.

TANGAROA MONIPU.

(Moriiori). Fairies comprising vermin and insects that inhabit trees (118).

TANGURU.

A large green beetle found in the forest (153). A species of dark-green beetle (TD.); *Chlorochiton suturalis* (WD. 2); as *tanguru* = deep-toned, gruff, the term apparently refers to the sound of the beetle in flight. cf., *howaka*, *mumu*, *pairu*, *pauru*.

TAPAKI.

To crack lice with the finger-nails (WD.); to catch lice (TD.). cf., *arapaki*.

TARA.

To make a buzzing, rattling, or other inarticulate sound, stridulate (WD. 1); to make a noise like a grasshopper or cricket (TD. 4). cf., *kita*, *takitakio*, *whakakita*.

TARAKIHI.

Melampsalta cingulata and *M. muta*, tree-locust, so-called (WD. 2), but taking the derivation of the term in relation to cicada song, I think that *Melampsalta ochrina* and *M. cruentata* should be the species. cf., *kihikihi*. A locust (68), probably cicada. Sometimes the black cricket, *Gryllulus commodus* or *Lissotrachelus maoricus*, since the record (121) deals with a nocturnal experience when the fairies were singing like the cricket. cf., *areinga*.

TARAKIKIHI.

Very possibly specific to the cicada *Melampsalta mangu*. cf., *kihikihi*.

TARAO.

An edible earth-worm, *Rhododrilus edulis* (128) = *wharu* and perhaps *kuharu* (129); *noke-tarao* (WD.). cf., *noke*.

TARAPAKE.

An insect (WD.). Possibly a general term, e.g., *E kai*, *e te kutu*, *e kai*, *e te tuiau*, *e kai*, *e te tarapake*, *e tu ki turamoe* (30)—Bite thou, O louse, bite thou, O flea, and thou insect sting; contend with drowsiness (124). cf., *tarapeke*.

TARAPEKE.

A general term for insects; to hop or jump about (31). cf., *tarapake*.

TARAPOA.

A large brown moth (WD.) ; a large moth (127). The former could be the owl-moth, *Dasypodia selenophora* (cf., *parikoritaua*), the latter several species.

TARAWERA.

Shrimp (WD.). cf., *kouraura*.

TATAKA.

The *huhu* larva when it ceases to bore, remains in its cell and casts its skin (127), the pre-pupa of *Prionoplus reticularis*; pupa of *P. reticularis* and other beetles (WD.), and apparently of moths, judging from Williams's illustration: *Ko te anuhe ka hou ki roto ki te whenua, a, ka tataka*—The *anuhe* caterpillar forces its way into the ground and pupates (124)—from which it seems that the term can be also a verb "to pupate." cf., pupae under "Beetles" and "Moths" in English index.

TATARAKIHI.

Cicada (WD.; TD. 1); a caterpillar (TD. 2). This term could be specifically applied to the spatial, sibilant-voiced cicadas such as *Melampsalta cassiope*. cf., *kihikihi*. The interpretation "caterpillar" is found in the Maori version of Jeremiah, 51: 14: "Surely I will fill men as with caterpillars (*Ina, ka whakakia koe e ahau ki te tangata kei te tatarakihi te rite*) ; and they shall lift up a shout against thee." As *tatarakihi* is such an unusual term for "caterpillar," though it could be applied to locusts, and in case the Hebrew could be translated "locusts" as well as "caterpillars," I put the question to the Rev. Prof. A. F. Knight, of Knox College. He states that "caterpillars," in the Authorised Version of the Bible, is not the correct rendering of the Hebrew, neither would be "locusts"; but that the meaning should be "a swarm of insects," i.e., a plague of human beings would be brought against Babylon like a swarm of insects; thus *matihoi* would be the more appropriate Maori rendering.

TATAU O TE WHARE O MAUI.

The-door-of-the-house-of-Maui, an expression used by the southern Maori for a crane-fly (21). cf., *matuawairoa*, *pekepekeharatua*.

TAUTINIARIKI.

The god of flies, tutelary diety of the large metallic-looking fly, *rangotamumu* (1), the humming fly (61), not a blow-fly. cf., *ngarotamumu*, *pairunui*.

TAWHANA.

Bent like a bow (WD. 1); caterpillar (WD. 4). From the first meaning the term could apply to the geometrid looping caterpillars. cf., *makokorori*, *ngata*, *tawhanawhana*, *tawhangawhanga*, *whangawhanga*.

TAWHANAWHANA = *tawhana* (WD.).

TAWHANGAWHANGA.

A small green caterpillar (WD. 2). cf., *tawhana*, *whangawhanga*.

TE AITANGA PEPEKE.

The Insect People (WD.).

TE AITANGA A PUNGA.

The descendants of Punga (insects, etc.) (WD.).

TE PAKEHA NOHINOHI.

The little stranger, the flea; a derisive term for the European. cf., *keha*.

TIA.

To catch and kill vermin (WD.). cf., *hakure*.

TIEMIEMI.

A small species of dragonfly (WD. 2). This could refer to the damsel-flies *Austrolestes colenisonis* and *Xanthocnemis zelandica*, or *Procordulia smithii*, for example. cf., *kapo-kapowai*.

TIKOPA.

A caterpillar which was sometimes eaten, similar to *moka*, but larger; possibly so-called from its cocoon, which was made of a folded leaf (WD.), doubtless larvae of the leaf-tying family *Tineidae*. cf., *moka*.

TINGOINGOI = *tingoungou* (WD.).

TINGOUNGOU = *TUNGOUNGOU*.

Chrysalis of *Sphinx convolvuli*; a large moth (WD. 1), probably the same species; protuberance, knob (WD. 2), which could be the reason for the use of the term for the Sphinx pupa, the proboscis on which forms a handle-like protuberance.

TIPA.

A species of earth-worm (WD. 5). cf., *noke*.

TIPAKI, TIPAKIPAKI.

Crack vermin = *hapaki* (WD.).

TITITIPOUNAMU.

Katydid (127), *Caedicia simplex*. cf., *kikipounamu*.

TITIWAI.

Glow-worm (WD., etc.), *Arachnocampa luminosa* larva, cf., *puratoke*, *tongohiti*; a small luminous earth-worm (68), cf., *piritaua*.

TITOPE.

Bite as vermin (WD. 2). *Te pekeriki ra e titope i runga, whawha rawa ake, me he ri mangemange* (32)—The lice biting above (at my head), when the fingers clasp it, hold tenaciously as the mangemange vine (124). cf., *kutu*.

TOKARAKAU.

A kind of spider (20). cf., *pungawerewere*.

TOKE = noke.

Generic term for earth-worms (127).

TOKE PIRIPIRI.

A small kind of earth-worm (160; TD.). cf., *noke*.

TOKE PURAKARORO.

A large edible kind of worm (TD.), found in clefts of rocks (160). cf., *noke*.

TOKERANGI.

Death-watch (an insect), to hear which was regarded as an ill omen = *tokere* (WD. 1), cf., *moko-ta*; worms found in vessels of rain-water (WD. 2), and on tracks, etc., generally after a wet night (129); the earth-worm *Rhododrilus besti* (128), cf., *noke*, *tarao*.

TOKERE = tokerangi.

Death-watch (an insect). *He tokere taku, ka tangi ki te kaho o runga, he aitua; ki te kaho o raro, e mau ana ano* (WD. 4)—I have a death-watch. If it should make a sound from the topmost batten, that is an ill omen; if from the lowest batten, life will hold. cf., *moko-ta*.

TOKE TIPĀ.

A large edible worm eaten as a delicacy (160; TD.). cf., *noke*.

TOKE WARAU.

A large, common marine centipede (71), obviously a *Nereis*, a polychaete worm.

TOKE WETARA.

A short kind of worm (160; TD.). cf., *noke*.

TOKE WHENUA = *moko-ta* (WD.).

TOKE WHITI.

A species of earth-worm (WD. 7). cf., *noke*, *whiti*.

TOKORIRO.

Hemideina megacephala; an insect = *weta* (WD.); the name of an insect; a variety of *weta* (TD.). cf., *putangatanganga*.

TONGOHITI.

A glow-worm, the chief of a tribe of forest fairies (119). cf., *titiwai*.

TOROHU.

Forest-destroying grubs (10; 146).

TOROHUKA.

A kind of spider (20). The various beings (including spiders, insects, lizards, etc.) that dwell on the trees, on the earth and in the waters thereof are the family or descendents of Torohuka (*Te Whanau a Torohuka*)—The Lice of the Earth-mother (4). cf., *pungawerewere*.

TOROKU.

The Ngai-Tahu (South Island) form of *torongu* (WD.).

TORONGU.

Caterpillar, grub (WD.) = *anuhe* (82). *Ka tukua e Maui ki te huka te mahinga kai a Maru, kia mate. Ka pirau katoa nga kumara. Ka tukua e Maru ki toroku (= torongu), kia mate ta Maui mahinga kai. Ka mate, kahore hoki i tapu* (93)—Maui sent the frost to Maru's cultivation, to destroy it. All the kumara became rotten. Then Maru sent the caterpillars to ravage Maui's cultivation. It was ruined and did not grow (124). cf., *toroku*, *toronu*, *totorongu*.

TORONU = *anuhe*.

Personification of the heavenly Toronu, one of the ancestors of the *kumara* grub (91); the phonetic spelling of *torongu*.

TOROPAKIHI.

An insect (WD.).

TOROTORO.

An ant (WD. 7). cf., *poko*.

TOTORONGU.

Caterpillar (WD. 1). cf., *torongu*.

TUAHURU.

A hairy kind of caterpillar (WD. 2), perhaps *Nyctemera annulata*. cf., *makokorori*, *tupeke*.

TUATARA NOKE.

An insect (WD.). Some spinose insect or caterpillar seems to be indicated.

TUIAU.

Flea (68; WD. 1), used on west coast of North Island (31) and south of Timaru (21). cf., *keha*. Midge (23; 65; 127), small white sand-fly (WD. 2), doubtless referable to moth-midges, *Psychodidae*, as indicated by, *Ka kitea te tuiau e poi ana i te rakau i te taha o te wai i te ahiahi* (WD.)—The white sand-flies are seen swarming on the trees by the stream in the evening. cf., *naonao*. A grub (WD. 3); *He parareka pokapokanga na te ngarara tuiau* (WD.)—A potato full of holes pierced by the *tuiau* grub (124), but, on the other hand, *tuiau* also means "boring" (31), and, as *ngarara* is a general term for insects, the translation could be "pierced by the boring grub," in which case the term should be cited as *tuiau ngarara*; it is uncertain which of the possible underground grubs is referred to; though *parareka* is applied to the potato, it is the name of the edible roots of the horse-shoe fern, *Marattia fraxinea*, so that the grub could be a native wire-worm or the larva of the European tuber-moth, *Phthorimaea operculella*, which attack potatoes, or wire-worms and other native grubs that attack the *Marattia*.

TUIHUHU and TUITOKE, or NOKE.

Fishing bobs baited with *huhu* grubs and earth-worms, respectively (100).

TUKARAKAU.

Crickets and grasshoppers in Otago (21: 117); crickets could include cicadas here. cf., *areinga*, *kapakapa*, *kihikihi*.

TUKURERE.

An insect (WD.).

TUKUTUKU.

Web of a spider (WD. 2); a cobweb (TD. 3); a kind of spider (20), apparently includes the *Theridiidae*. cf., *pungawerewere*.

TUNGA.

Grub (68; 86); larva of *Prionoplus reticularis* (WD. 1) = *huhu*. Decayed tooth, toothache, also called *tunga raupapa* (WD. 2 and 3); as with many other races, the Maori ascribed pain to gnawing grubs (cf., *ngarara*, *moko-roa*), so *niho tunga* = toothache and decayed teeth, *tunga puku* = gum-boil, and *tunga raupapa* = toothache (42). Worm; chrysalis (Mori) (81). Worm-eaten timber (WD. 4). cf., *kurupopo*.

TUNGA HAERE.

cf., *huhu*.

TUNGA RAKAU.

cf., *huhu*.

TUNGA RERE.

Adult beetle developed from the *huhu* (127), *Prionoplus reticularis*. cf., *kapapa*, *pepe-te-muimui*.

TUNGONGO.

Chrysalis (68). cf., *tungoungou*.

TUNGOUNGOU.

Large chrysalis (68); chrysalis of *Sphinx convolvuli*, a large moth (WD.); chrysalis of *anuhe*, Wanganui River tribes (84); the *anuhe* caterpillar, Ngati-Porou tribe (82). It is possible that the origin of this word in its application to the *anuhe* caterpillar, lies in *tungou* = nod, beckon (WD.), to nod the head as a sign of dissent, to bow the head down (TD.), since it was a Maori belief that, if the caterpillar was held by the end of the body, head up, it would answer questions put to it by slowly moving its head forward, backward, or sideways, according to the reply sought (84). cf., *pungoungou*, *tataka*, *tingoungou*.

TUPARAUNUI.

An ancient diety who assumed the form of a large fly, which, by its keen sense of smell, discovered and buzzed over the corpse of Manaia's murdered son (59; TD.); this

was obviously a blowfly which would be *Calliphora quadrimaculata* in New Zealand. cf., *ngaro*.

TUPEKE.

A hairy caterpillar, larva of *Nyctemera annulata* (WD. 3), cf., *makokorori*, *tuahuru*; larva of *Sphinx convolvuli* (82; 95; 96), cf., *anuhe*.

TUPERE.

Larva of *Sphinx convolvuli*, Waikato tribes (82). cf., *anuhe*.

TUTAERURU.

Pyronota festiva, a small green beetle (WD.). cf., *kekerewai*. There seems to be some confusion regarding this term; though *Pyronota* is clearly indicated by "the small green beetle which was found on the *manuka* in the summer time" being called *kekerewai* or *tutaeruru* (112; 115), the statement is corrected by "these are quite distinct. The latter flies in the evening making a booming sound. The term *manu a rehu*, however, applies to both, and they are both eaten" (110; 115); so *tutaeruru* is obviously *Odontria zelandica*, or another of the less abundant species of that genus. cf., *papapapa*.

TUTURI.

Spider, as in the line from Te Uamamirangi's lament, *Whaihanga ra, e te tuturi*—Make thy web, O spider (17). Probably one of the orb-web builders, *Epeiridae*, since it is used in reference to carving designs. cf., *pungawerewere*.

TUWHAIPAPA, TUWHAITARA.

Lasiorrhynchus barbicornis, an insect (WD.); the god of a new-made canoe (White). This giraffe-weevil bears a striking resemblance to a Maori canoe.

UHU.

Larva of a small beetle which infests dry timber (WD.). The term could apply to *Anobium magnum* and *Xenocnema spinipes*, for example, and, in European times, to *Anobium punctatum* and *Lyctus* sp. cf., *moko-ta*.

UPOKORUA.

Ant (WD.; TD.); used south of Timaru (21). cf., *poko*.

UPOKOTAPU.

An insect = *pokotapu* (WD.); the name of an insect (TD.).

URUURUROROA.

Dragonfly (WD.). cf., *kapokapowai*.

WAEROA.

Mosquito (16; 68; W.D.; etc.). cf., *keroa*, *naenae*, *naero*, *naeroa*, *namu*, *namu katipo*, *ngaeroa*, *ngairoa*, *ngara-ngara*, *waewaeroa*, *waiwairoa*.

WAEWAEROA.

Mosquito (1) = *waeroa*.

WAIAU.

cf., *noke waiau*.

WAIRAKA.

Mantis, or stick insect (57; 122). cf., *ro*, *we*.

WAIRUA.

A spirit (WD. 1); an insect (WD. 5). cf., *wairua atua*, *wairua tangata*.

WAIRUA ATUA.

Butterfly (WD.); personification of the soul (66; 67). cf., *pepe atua*.

WAIRUA TANGATA.

Moths, personification of souls (67), and when caco-demons then *atua ngau tangata* (70).

WAIWAIROA.

Mosquito (132); a name given to a tall man, meaning "long-legs" (1). cf., *waeroa*.

WEKE.

A centipede smaller than *weri*, long, but little more than 1/12th inch in thickness, of light buff colour (71), which Dr. Gilbert Archey says is a species of the *Geophili-dae*. cf., *weri*, *weheke*.

WEKOKI = *wekokoki* (WD.).

WENEWENE.

Sphinx convolvuli, a large moth (WD. 2), used on east coast of North Island (77); an insect (68) = *hihue*, *kowene-wene*.

WERI.

Centipede (87; WD.; 4); the smaller centipede (TD. 2), of which there are several species; a centipede of a yellow buff colour, about half the size of *hura* and with more legs (71), which Dr. Gilbert Archey tells me is a species of the *Geophilidae* (cf., *hara*, *hura*, *peketua*, *wheke*). A caterpillar = *hotete* (68).

WETA.

A generic term for the tree locusts of the genera *Deinacridia* and *Hemideina*; it is doubtful that the term should be applied to the cave *weta* of the genus *Pachyrhamma*. cf., *honi*, *putangatanga*, *taepo*, *taipo*, *tokoriro*, *wetapunga*.

WETAPUNGA.

Deinacrida heteracantha (WD.), the giant tree-locust of the north, formerly very abundant. *Punga* apparently refers to the repulsive aspect of the insect, especially of the males, of which the Maori was frightened; *Punga* was the deity presiding over deformed and ugly things. cf., *weta*.

WHAKAKITA.

Make to stridulate as the cicada (WD.). cf., *kita*, *takitakio*.

WHAKANAONAO.

Appear like a speck in the distance, make like a midge (WD.). cf., *naonao*.

WHAKAPIHAU.

Centipede (WD.). cf., *peketua*.

WHAKURE = hakure (WD.).**WHANGAWHANGA.**

The chrysalis of the caterpillar *whe* (TD.), cf., *whe*; a small caterpillar which progresses by looping its body (WD. 2), a geometrid, cf., *tawhana*, also *whanga* = to span with the thumb and fingers spread (WD. 6). Pupa of the stick-insect, *Agrosarchus horridus* (WD. 3), but that insect has no pupa, though it is possible that stick-insect egg capsules, small as they are, could be called "pupae" by the layman, since the young insects, on emergence, resemble the adults; on the other hand it is possible that Williams had been misled by Taylor's statement, regarding the stick-insect, mantis and case-moth, that "there are several kinds

of mantis, *Ro*, *Wairaka*, green, red, and brown, the largest are nearly four inches long" (122)—these are obviously stick-insects, *A. horridus* being of the largest; Taylor further added to the confusion by bringing in what is clearly the cocoon of the case-moth in that "the grub of the mantis lives in a beautifully-formed case, *Whare Atua* (cf.), constructed of small twigs, cemented together externally, but internally lined with the softest silk, it forms a perfect bag" (122)—but the mantis has no grub, so possibly Williams, following Taylor, has referred the case-moth cocoon to *whangawhanga* as the "pupa of the stick-insect" (cf., *ro*).

WHARE ATUA.

The larva and case of *Oeceticus omnivorus* (68); though the reference is to "mantis" the description clearly indicates *Oeceticus*. This cigar-shaped case is the house of *Raukatauri* (cf.), goddess of music, so *whare* = house, and *atua* = supernatural being. cf., *kopi*.

WHARU.

A large worm, longer than *whiti*, found in loamy soil; this kind, and others which contain earth, are stripped with the fingers before being prepared for eating (103) = *tarao*, *Rhododrilus edulis* (128). cf., *noke*.

WHE.

Caterpillar (22; 37; 68; 87; 88; 97; WD. 1; TD.), seemingly a generic term for caterpillars. Stick-insect (38; 88); *Argosarchus horridus*, stick-insect (WD. 2), cf., *ro*. Mantis (38; 39; 43; 45; 127), cf., *ro*; as mantis, *we* is the *aria*, or material emblem, of the god Te-Ihi-o-te-Ra (152) who was stolen from the Hawaiki temple, Rangiatea, by Kuiwai, wife of Manaia (TD.). The distinction between the mantis and stick-insect was of importance to the Maori; if *we* alighted on a woman it was a sign of conception, and according to which kind of *we* (mantis or stick-insect) it was known whether the child would be a male or a female (38).

WHEKE.

A very small centipede (TD. 2). cf., *peketua*, *weke*.

WHEKOKI, WEKOKI.

Maggot (WD. 2). cf., *iro*.

WHENUA.

cf., *moko ta*.

WHITI.

A species of earth-worm (127). cf., *noke, toke whiti*.

WHITIWHITI.

Grasshopper, locust (WD. 1); to jump, or hop (31).
cf., *kowhitiwhiti*.

WINIWINI.

A deity, tutelary god of spiders; a son of Tane Mahuta (TD.). cf., *pungawerewere*.

WIWI.

A red and yellow stinging fly (WD. 2). One can merely guess that this might apply to some ichneumon, or to *Salix wakefieldi* which mildly stings when handled, but the colour is more orange than red.

ENGLISH SUMMARY OF MAORI NOMENCLATURE

Acanthoconops myersi. *namupoto*.

Anisolabis littorea. *mata*.

Aemona hirta. *awhato, howaka, ngutara, piamanuka*.

Anobiidae. *moko ta, takituri, tokerangi, tokere, tokewhenua, uhu*.

Ant. *nonoko, poko, pokopokorua, pokorua, popokoriki, popokorua, ro, roro, rorororo, torotoro, upokorua*.

Antenna. *hihi, puhiki, puihi*.

Aquatic larvae. *puene, pueneene, ngarangara*.

Arachnocampa luminosa. *piritaua, puratoke, titiwai, tongohiti*.

Archichauliodes dubitatus (larva). See Aquatic larvae.

Austrolestes colenisonis. *kekewai, tiemiemi*.

Austrosimulium. *namu, namu-poto, nanamu, naonao, ongaonga*.

Beetles. *howaka, kapapa, huhu, kekerehu, kekerewai, kerewai, kiriwai, kiriwai-manuka, kurikuri, moeone, moeoneone, moko ta, mumu, mumutaua, mumutawa, mumuwaru, mumuwharu, ngungutawa, pairu, papahu, papaka, papapa, papapapa, pauru, pepe, pepeke, pepe te muimui, reporepawai, takituri, tanguru, tokerangi, tokere, tokewhenua, tungarere, tutaeruru, tuwhaipapa, tuwhaitara; (grubs) hapuku, huhu, kui, kuwaru, kuwharu, moeone, moeoneone, mokorua, muremure, ngaio, ngarara, papahu, pepe, pepeke, pukurua, torohu, tuiau, tunga, tungahaere, tungarakau, uhu; (pupae) pepe, tataka*.

Black-beetle, or Stink-roach. See *Platyzosteria novae-seelandiae*.

Black creeper. See Aquatic larvae.

Blosyropus spinosus. *howaka, kapapa*.

Blowflies. *hurangi, ngaro, ngaroiro, patupaearehe, pohau, rako, rango, rangopango, rangotuamaro, tauparanui, tautiniariki; (eggs) iro; (maggots) heiro, iro, keto, ketoketo, kutukutu, wekoki, whekoki; (infested with) keto; (to lay maggots) kurekure; (to blow) kurekure, kutikuiti, mui*.

- Blue-bottle fly. See *Calliphora quadrimaculata*.
 Bugs, garden. *kiriwenua*, *kiriwhenua*.
 Buprestid. *pepeke*.
 Butterfly. *kahukura*, *kakahu*, *kakahukura*, *mokarakara*, *pepe*, *pepe-atua*, *pepepe*, *pepepepe*, *purehurehu*, *purerehu*, *purerehua*, *wairua-atua*.
 Buzz, to. *tamumu*.
 Caddisfly. *purerehua*.
 Caedicia simplex. *kikihi*, *kikipounamu*, *kikiwaru*, *tititipounamu*.
 Calliphora laemica. *ngaroiro*, *patupaearehe*, *rangotuamaro*.
 Calliphora quadrimaculata. *ngaro*, *ngaroiro*, *patupaearehe*, *rako*, *rango*, *rangopango*.
 Carabidae. *kurikuri*.
 Case-moth. See *Oeceticus omnivorus*.
 Caterpillars. *koroitaka*, *makokorori*, *mokamoka*, *mokoroa*, *ngutara*, *nutara*, *pukupuku*, *pukurua*, *tatarakihi?*, *totorongu*, *tuahuru*, *tupeke*, *we*; (loopers) *makokorori*, *ngata*, *tawhana*, *tawhana-whana*, *tawhanagawhanga*, *whangawhanga*; (leaf-tyers) *moka*, *tikopa*. See also *Sphinx convolvuli*.
 Centipedes. *hara*, *hura*, *peketua*, *puratoke*, *weri*, *whakapihau*, *weke*, *weke*.
 Cerambycidae, larvae. *mokoroa*.
 Charagia virescens. (moth) *chepetuna*; (larva) *ngutara*, *mokoroa*, also *awhato*, *hawhato*; (pupa) *pungoungou*.
 Chirp. See *Cicadas*.
 Chlorochiton spp. *howaka*, *mumu*, *pairu*, *pauru*, *tanguru*; (larva) *papahu*.
 Chrysalis. See Beetles and Moths.
 Cicadas. *kihikihi*, *kihikihi kai*, *kihikihitara*, *kihikihi wawa*, *kikihi*, *kikihitara*, *kikitara*, *kikiwaru*, *tarakihi*, *tarakikihi*, *tatarakihi*, *tukarakau*; see also *awhato*; (larva) *matua kihikihi*; (pupae and exuvia) *ngengeti*; (chirp, stridulate) *kita*, *takitakio*, *tara*, *whakakita*. cf., *Melampsalta*.
 Cicindela tuberculata. *moeone*, *papapa*; (larva) *hapuku*, *kui*, *kuri-kuri*, *moeone*, *muremure*.
 Coccidae. *kutupapa*.
 Cockroach. *kokoroiki*, *papata*.
 Cordyceps. *awato*, *awhato*, *awheto*, *hawato*, *hawhato*, *horukoru*, *hotete*, *ngutara*, *nutara*.
 Cormocephalus rubriceps. *hara*, *hura*.
 Costleya. *howaka*.
 Crane-fly. *matuawairoa*, *pekepeke haratua*, *tatau o te whare o Maui*.
 Crayfish (fresh-water). *karawai*, *kekewai*, *kewai*, *koeke*, *koura*, *maehe*.
 Cricket, black. See *Gryllus commodus* and *Lissotrachelus maoricus*.
 Cricket, green. See *Caedicia simplex*.
 Daddy-long-legs. See *Crane-fly*.
 Damsel-fly, blue. See *Austrolestes colenisonis*.
 Damsel-fly, red. See *Xanthocnemis zelandica*.
 Dasypodia selenophora. *parikoritaua*, *tarapoa*.
 Death-watch. See *Anobiidae*.
 Deinacrida heteracantha. *weta punga*.
 Dragonflies. *kakapowai*, *kapokapowai*, *kapowai*, *kekewai*, *kikitara*, *tiemiemi*, *uruururoroa*.
 Earthworms. See *Worms*.

Earwig. See *Anisolabis littorea*.

Flea. *keha, kutu-porenga, mororohu, puruhi, purui, te pakeha nohi-nohi, tuiaua*.

Flies. *hurangi, ngaro, ngaroiro, ngarotamumu, ngarotara, pairu, pairunui, patupaearehe, rako, rango, rangopango, rangotamumu, rangotuamaro, tamumu te rangi, tautiniariki*; (fly-blow) *iro, iroiro, kurekure, mui*; (swarms) *matihoi, mui, pokai*.

Fly-flap. *patiki, patungaro*.

Ghost-moth. See *Charagia virescens*.

Giraffe-weevil. See *Lasiorrhynchus barbicornis*.

Glow-worm. See *Arachnocampa luminosa*.

Gordius. *engaio*.

Grasshoppers. *kakaraiti, kapakapa, kawhitiwhiti, kawhitiwhiti, kiki-pounamu, kikiwaru, koeke, kowhitiwhiti, kowitiwiti, mamahiti, mamarwhiti, mawhitiwhiti, mawitiwiti, mowhitiwhiti, pahaurere, pakaurere, pakaurorao, pakauroraroa, rangataua, tititipounamu, tukarakau, whitiwhiti*.

Green cricket. See *Caedicia simplex*.

Grubs. See Beetles, Blowflies, Caterpillars.

Gryllulus commodus. *areinga, pihareinga, piharenga, pirenga, tarakihi, tukarakau*.

Gumboil. *tunga-puku*.

Hawk-moth. See *Sphinx convolvuli*.

Helophilus hochstetteri. *ngarotamumu, pairunui, tautiniariki*.

Helophilus trilineatus. *ngarotara*.

Hemideina megacephala. *putangatanga, taepo, taipo, tokoriro, weta*.

Hum, to. *tamumu*.

Hystericina. *ngarotara*.

Itch. *hakahaki*.

Insect. *koruatawhito, kupakupa, manumanu, mokamoka, mu, ngarara, nihinihi, papakura, papata, pepeke, pohotapu, pokotapu, potipoti, rakorakorere, tangaroa-monipu, tarapake, tarapeke, te aitanga pepeke, te aitanga a puna, toropakihi, tuatara-noke, tukurere, upokotapu, wairua*; (swarms) *matihoi, mui, pokai, potipoti*.

Katydid. See *Caedicia simplex*.

Larvae. See Aquatic, Beetles, Blowflies, Caterpillars, Cicadas.

Lasiorrhynchus barbicornis. *mokoroo, tuwhaipapa, tuwhaitara*.

Latrodectus hasseltii. *katipo*.

Leech. *kokopurangi, ngata*.

Lice. *eo, kutu, kutukutu, kutupapa, mokutukutu, pekeriki, tarapake*; (to catch, search for, kill) *arapaki, hakure, hamure, hapaki, harapaki, kura, pakirara, tapaki, tia, tipaki, tipakipaki, whakure*; (to bite as) *titope*; (nit) *riha, rihariha, riia, rika, riki*.

Ligia novae-zealandiae. *ngengeti*.

Lissotrachelus maoricus. *areinga, pihareinga*.

Locusta migratoria ph. solitaria. *kapakapa, pahaurere, pakaurere, pakauroraroa, rangitaua*.

Locusts. See Grasshoppers.

Macromastix holochlora. *pekepekeharatua*.

Maggots. See Blowflies.

Magpie-moth. See *Nyctemera annulata*.

Manna. *pia-manuka*.

Mantis. See *Orthodera ministralis*.

Mayfly larvae. See Aquatic larvae.

- Melampsalta cassiope, *tatarakihi*; *M. cingulata*, *kihikihi*, *kihikihitara*, *kihikihi wawa*, *kikitara*; *M. leptomera*, *kihikihitara*; *M. mangu*, *tarakikihi*; *M. muta*, *kihikihi kai*; *M. muta* var. *sub-alpina*, *kikiwaru*; *M. ochrina*, *M. cruentata*, *tarakihi*; *M. scutellaris*, *kikihi*.
- Microbdella novae-zealandiae. *kokopurangi*.
- Midges. See Acanthoconops and Psychodidae.
- Millepedes. See Procyclosoma.
- Mole-cricket. See Triamescaptor aotea.
- Mosquitoes. *kerua*, *naenae*, *naero*, *naeroa*, *namu*, *namu katipo*, *ngaeroa*, *ngairoa*, *waeroa*, *waewaeroa*, *waiwairoa*; (larva) *ngara-ngara*.
- Moths. *hikue*, *kapukapuai*, *kowenewene*, *mokarakara*, *pari-kori-taua*, *pepe*, *pepepe*, *pepetawhanawhana*, *pepetuna*, *potipoti*, *punehunehu*, *purehua*, *purehurehu*, *purerehu*, *purerehua*, *rehurehu*, *tarapoa*, *wairuatangata*, *wenewene*; (larvae) see Caterpillars; (pupae) *pokopoko*, *pungoungou*, *tataka*, *tingoingoi*, *tingoungou*, *tunga*, *tungongo*, *tungoungou*, *whangawhanga*, also *Oeceticus*.
- Moth-midge. See Psychodidae.
- Nereis. *toke warau*.
- Notoscolex esculenta, *kurekure*; *N. sapida*, *kurekure*; *N. urewerae*, *pokotea*.
- Nyctemera annulata. *mokarakara*; (larva) *makokorori*, *tuahuru*, *tupeke*.
- Nymphae. *pokopoko*.
- Odontria sp. *moeone*, *moeoneone*, *papapapa*, *tutaeruru*; (larva) *moeone*, *pukurua*.
- Oeceticus omnivorus (larva and cocoon). *kopa*, *kopi*, *rakataura*, *raukatauri*, *whangawhanga*, *whare-atua*.
- Onosandrus sp. *honi*.
- Orthodera ministralis. *ro*, *wairaka*, *whe*.
- Owl-moth. See Dasypodia selenophora.
- Oxycanus spp. *awhato*, *horuhoru*, *moeone*, *pukurua*.
- Paraneptrops sp. *kekewai*, *kewai*, *koeke*, *koura*, *mahe*.
- Paryphanta busbyi. *pupurangi*, *pupu whakarongo taua*.
- Pericoptus truncatus. *mumutaua*, *mumutawa*, *mumuwaru*, *mumuwharu*, *ngungutawa*.
- Placostylus hongii. *pupuharakeke*.
- Planarians. *ngata*.
- Platypus, larva. *mokoroa*.
- Platyzosteria novae-seelandiae. *kekerehu*, *kekerengu*, *kekereru*, *kekerriru*, *keriru*, *kikararu*, *kiriwenua*, *kiriwhenua*, *kurikuri*, *papapa*.
- Porcellio scaber. *papapa*.
- Popina = Oxycanus.
- Prionoplus reticularis. *howaka*, *huhu*, *kapapa*, *pepe te muimui*, *tungarere*; (larva) *huhu*, *mokoroa*, *pepe*, *tunga*, *tungahaere*, *tungarakau*; (pre-pupa) *tataka*; (pupa) *pepe*, *tataka*; (fishing bob) *tuihuhu*.
- Protohystricia sp. *ngarotara*, *pairu*.
- Psychodidae. *nahonaho*, *naonao*, *ngaungau*, *pongarongaro*, *tuiau*, *whakanaonao*.
- Pupae. See Beetles, Cicadas, Moths.
- Pyrameis gonerilla. *kahukura*, *pepetawhanawhana*, *purehurehu*.
- Pyronota spp. *kekerewai*, *kerewai*, *kiriwai*, *kiriwai manuku*, *ngutu-tawa*, *reporepowai*, *tutaeruru*.
- Rhododrilus bestii, *tokurangi*; *R. edulis*, *kuharu*, *tarao*, *wharu*.

- Salix wakefieldi. wiwi.*
 Sandfly. See *Acanthoconops* and *Austrosimulium*.
 Sand-hopper. See *Talorchestia quoyana*.
 Sand-louse. See *Ligia novae-zealandiae*.
 Scale-insects. See *Coccidae*.
Scaptia adrel. ngarotamumu, pairunui, tautiniariki.
Scolypopa australis. pia-manuka.
Scolytidae, larvae. pepeke.
 Shrimp. *koeko, kouraura, kowhitiwhiti-moana, mamaiti, mowhiti, puhiki, tarawera.*
 Slugs. *hataretare, ngata, putoko.*
 Snails. *hataretare, ngata, pikopiko, pupuharakeke, pupurangi, pupu whakarongotaua.*
Sphaerotherium sp. kutupapa.
Sphinx convolvuli. hihue, kowenewene, pepe, wenewene; (larva) anuhe, hotete, huarangi, kaua, kauwaha, moka, moko, moko tawhana, muharu, muwaru, muwharu, ngurengure, toroku, torongu, toronu, tupeke, tupere, weri; (pupa) pungoungou, tataka, tingoingoi, tingoungou, tungoungou.
 Spiders. *kahuwai, kapohuru, katipo, moko titiatoa, mu, papangu, papanui, papapango, paparangi, puawere, puawerewere, pukauwere-were, pungaiwerewere, pungawere, pungawerewere, purehe, puwere, puwerewere, tokarakau, torohuka, tukutuku, tuturi, winiwini.*
 Stick-insects. *ro, roa, wairaka, whangawhanga, whe.*
 Stink-roach. See *Platyzosteria novae-seelandiae*.
 Stone-fly larvae. See *Aquatic larvae*.
 Stridulate. See *Cicadas*.
 Swarming, of insects. *matihoi, mui, pokai, potipoti.*
Talorchestia quoyana. mowhiti, potipoti.
 Thread-worms. See *Worms (parasitic)*.
 Tiger beetle. See *Cicindela tuberculata*.
 Tipulidae. See *Crane-fly*.
 Toothache, decayed tooth. *tunga.*
 Triamescaptor aotea. *honi.*
Uropetala carovei. kakapowai, kapokapowai, kikitara.
 "Vegetable Caterpillar." See *Cordyceps*.
 Vermin. *iro, iroiro, kutu, kutukutu, kutupapa, ngarara, pekeriki.*
 Woolly-bear. See *Nyctemera annulata (larva)*.
 Worms. (earthworms) *kuharu, kurekure, mumutu, ngoru, ngunu, noke, noke-tai, noke-waiiau, noru, piritaau, pokotea, tai, tarao, tipa, toke, toke pipipiri, toke purakaroro, tokerangi, toketipa, tokewetara, tokewhenua, tokewhiti, tunga, waiiau, whenua, whiti; (fishing bob) hereheretuna, tuinoke, tuitoke; (parasitic worms) engaio, iro, iroiro, ngaio, ngoiro.*
 Worm-eaten (of timber). *hinamoa, kurupopo, kurupopopo, pokarakara, popo, popopo, popopopo, tunga.*
Xanthocnemis zelandica. kihitara.

ABBREVIATIONS

- BM. *The Maori*, Elsdon Best, 1924.
 BMB. Bishop Museum Bulletin, No. 98, 1932.
 Bul. 9. Dominion Museum Bulletin, No. 9, 1925.
 Bul. 10. Dominion Museum Bulletin, No. 10, 1924.

- D. Dieffenbach's *Travels in New Zealand*, Vol. 2, 1843.
 F. *Fishing Methods of the Maori*, Elsdon Best, 1929.
 FL. *Forest Lore of the Maori*, Elsdon Best, 1942.
 G5. Appendix Journal House of Representatives, 1889.
 G8. Appendix Journal House of Representatives, 1880.
 H. *Butterflies and Moths of New Zealand*, G. V. Hudson, 1928.
 HT. Gudgeon's *History and Traditions of the Maori*, 1885.
 Ika, 1. *Te Ika a Maui*, R. Taylor, 1855.
 Ika, 2. *Te Ika a Maui*, R. Taylor, 1870.
 J. Journal Polynesian Society.
 Jo. Jouan's *La Nouvelle Zélande et la peuplement de la Polynésie*, 1885.
 LNH. *Leaf from Natural History of New Zealand*, R. Taylor, 1848.
 M. Grey's *Nga Moteatea*, 1853.
 MM. Davies's *Maori Mementoes*, 1855.
 MR. Tregear's *Maori Race*, 1904.
 NA. Powell's *Native Animals of New Zealand*, 1947.
 NM, 1. Ngata's *Nga Moteatea*, pt. 1, 1928.
 NM, 2. Ngata's *Nga Moteatea*, pt. 2, 1929.
 P, 16. Grey's *Proverbial and Popular Sayings of the Maori*, 1857.
 PMC. *Maori Carvings*, W. J. Phillipps, 1941.
 PNZ. Polack's *New Zealand*, 1838.
 PZS. Proceedings Zoological Society, London.
 S, 23. McGregor's "*Maori Songs*", 1893.
 S, 2. McGregor's *Maori Songs*, Supplement, 1898.
 ST. Shortland's *Traditions and Superstitions*, 2nd ed., 1856.
 T, 1. Grey's *Nga Tupuna*, 1st ed., 1854.
 T, 2. Grey's *Nga Tupuna*, 2nd ed., 1885.
 TD. Tregear's *Maori Comparative Dictionary*, 1891 (1, 2, 3, etc., = 1st, 2nd, 3rd meanings).
 TN. Thomson's *Naturalisation of Animals and Plants*, 1922.
 Tr. Transactions of the New Zealand Institute.
 W. White's *Ancient History of the Maori*, 6 vols., 1887-1890.
 WD. Williams's *Maori Dictionary*, 1921 (1, 2, 3, etc. = 1st, 2nd, 3rd meanings).
 WW. Percy Smith's *Lore of the Whare-Wananga*, 1913-15.

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| 1. Source misplaced. | 16. WW., 1:132. |
| 2. Bul. 10, p. 47. | 17. NM, 2, song 175. |
| 3. HT., pp. 98-99. | 18. J., 7:74. |
| 4. WW., 1:136. | 19. HT., pp. 172-173. |
| 5. Bul. 10, p. 73. | 20. WW., 1:159. |
| 6. J., 8:106 (footnote). | 21. Tr., 52:65. |
| 7. J., 8:99. | 22. WW., 1:157. |
| 8. J., 8:115. | 23. J., 9:191. |
| 9. Bul. 10, p. 104. | 24. M., p. 251. |
| 10. WW., 1:159. | 25. M., p. 347. |
| 11. Bul. 10, p. 44. | 26. S, 23, No. 70; |
| 12. Tr., 41:241. | NM, 1, song 68. |
| 13. Tr., 41:240. | 27. W., 4:109. |
| 14. Tr., 41:238. | 28. W., 4:224. |
| 15. WW., 1:128. | 29. W., 4:218. |

30. M., p. 200.
31. Peter Buck,
correspondence.
32. M., 139.
33. J., 11:145-146.
34. J., 11:147-148.
35. T, 1, p. 36.
36. M., 7.
37. J., 7:190-191.
38. J., 15:3.
39. Ika, 1, p. 164.
40. BM., 2:50.
41. Tr., 35:111; 41:261.
42. Tr., 37:72; BM., 2:49;
J., 14:15.
43. BM., 2:5.
44. MM., p. 203.
45. Tr., 37:101.
46. Tr., 37:68.
47. P, 16, p. 96.
48. T., 2, pp. 11-12; W., 2:92.
49. T., 2, p. 14.
50. W., 1:95-96.
51. J., 22:174-179.
52. P, 16, p. 76.
53. J., 20:31.
54. P, 16, p. 33.
55. Tr., 55:355-356.
56. G8., pp. 13 and 27.
57. Ika, 1, p. 419.
58. W., 2:186-187.
59. Ika, 2, p. 264;
Ika, 1, pp. 121 and 122.
60. J., 31:111.
61. J., 7:37.
62. T, 2, p. 115.
63. T, 2, p. 96.
64. Tr., 37:156.
65. Tr., 37:33.
66. Tr., 38:225;
Bul. 10, p. 138.
67. BM., 1:299.
68. LNH., pp. 5 and 6.
69. Ika, 1, p. 420.
70. J., 13:234.
71. Ika, 2, p. 639.
72. Ika, 1, p. 49.
73. W., 5:72.
74. Tr., 34:86, 4th line.
75. MR., p. 510.
76. J., 3:172.
77. Bul. 9, p. 129.
78. Bul. 9, p. 131.
79. J., 14:148-149.
80. G8., pp. 15 and 29.
81. G5.
82. J., 40:1.
83. NM, 2, song 158.
84. J., 46:207-208.
85. Bul. 9, p. 112.
86. ST., p. 292.
87. W., 2:189.
88. W., 2:172 (Maori sec.).
89. Ika, 1, p. 118;
Ika, 2, p. 260.
90. Tr., 13:11.
91. Bul. 9, p. 51.
92. Tr., 41:256.
93. Tr., 7:36.
94. J., 6:57-58.
95. Bul. 10, p. 202;
BM., 2:388.
96. Bul. 9, p. 112.
97. W., 2:3?; TD. 2.
98. W., 4:3 (English and
Maori).
99. Tr., 40:222.
100. F., p. 101.
101. D., 2:367.
102. D., 2:318.
103. Tr., 35:64.
104. W., 4:125.
105. Tr., 35:63.
106. FL., p. 80.
107. Tr., 60:394.
108. Tr., 59:404.
109. Tr., 35:79.
110. Tr., 35:110.
111. FL., p. 411.
112. Tr., 40:234.
113. Tr., 40:235.
114. Tr., 35:110.
115. FL., p. 84.
116. Tr., 14:13; W., 3:19.
117. J., 26:109.
118. J., 3:91.
119. Ika, 2, p. 255.
120. T, 2, p. 69.
121. T, 2, p. 183.
122. Ika, 2, p. 643.
123. J., 27:226.
124. Apirana Ngata,
correspondence.
125. NM, 1, song 19, lines 14-17.
126. W., 4:21.
127. Tr., 41:239.
128. PZS. (1904), 2:220-263.
129. Tr., 37:282-283.
130. Jo., p. 316.
131. BM., 1:432.

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| 132. PNZ., 1:319. | 146. WW., 1:155. |
| 133. PNZ., 1:320. | 147. BMB., p. 103. |
| 134. WW., 2:100. | 148. NA., p. 33. |
| 135. Ika, 2, pp. 283-284. | 149. Tr., 11:304. |
| 136. Tr., 53:372-382. | 150. Tr., 14:28. |
| 137. H., p. 358. | 151. Tr., 14:36. |
| 138. TN., p. 269. | 152. Bul. 10, p. 137. |
| 139. PMC., p. 29 and fig. 9. | 153. Ika, 2, p. 641. |
| 140. S, 2, 83. | 154. Ika, 2, p. 645. |
| 141. J., 11:53-54. | 155. Ika, 2, p. 642. |
| 142. Tr., 31:83-84. | 156. Ika, 2, p. 644. |
| 143. Tr., 17:197; 33:99;
39:180. | 157. Ika, 2, p. 647. |
| 144. W. J. Phillipps,
correspondence. | 158. Ika, 1, p. 421 and pl. 1,
fig. 2. |
| 145. Ika, 1, p. 67. | 159. LNH., p. 4. |
| | 160. Ika, 2, p. 646. |