

Terrestrial arthropods from the Poor Knights Islands, New Zealand

J. Charles Watt*

The paper lists records of adult and immature stages of terrestrial arthropods so far collected from the Poor Knights Islands, to the east of the North Auckland Peninsula. Most collections are from Tawhiti Rahi; 24 orders and 273 species are recorded for the first time.

Five new combinations are made within the Coleoptera. A biogeographic analysis indicates that 16% of the species recorded are either probably or possibly endemic, owing to the lack of a mainland link in the last glaciation.

Ecological data are summarised, certain and possible plant associations are recorded, and suggestions for further research are made.

INTRODUCTION

This paper has two purposes: firstly, to record all terrestrial arthropods collected during the Offshore Islands Research Group (OIRG) expedition to Tawhiti Rahi, Poor Knights Islands, during 6-12 September 1980. The second aim is to provide an account of the collecting methods used and the sites examined during this expedition.

The Poor Knights Islands lie approximately 26 km northeast of Tutukaka, Northland, New Zealand. Tawhiti Rahi, the northern-most and largest island, has an area of approximately 145 ha, rises to 204 m, and is almost completely girt by cliffs.

Since 1937, when pigs were exterminated on Aorangi, the Poor Knights have been completely free of mammals. The vegetation was extensively modified by Maoris in pre-European times, but the islands were abandoned early last century and have had no permanent residents since. They are now clothed in fairly diverse native coastal forest and scrub. Biologically, they are well known as the only nesting place of Buller's shearwater, *Puffinus bulleri*, the original home of the spectacular lily, *Xeronema callistemon*, and as an important refuge for the tuatara, *Sphenodon punctatus*, as well as for other reptiles and large, flightless invertebrates. See Hayward and McCallum (in press) for an account of the OIRG Expedition and of the history and topography of the Poor Knights.

All terrestrial arthropods, except some spiders, are held in the N.Z. Arthropod Collection (NZAC), Entomology Division, DSIR, Auckland. In order to make records of beetles as complete as possible, all accessible Poor Knights specimens collected on earlier expeditions and also deposited in NZAC have been recorded. With the exception of type material and of ants from the National Museum, Wellington (NMNZ), the latter already identified and recorded by A. W. Don, the following categories have not been included: material held in the NZAC but not covered in Somerfield (1973) and Poor Knights material held in the Auckland Institute and Museum (AMNZ) and the National Museum.

During 30 November-12 December 1980, a party of five entomologists from Entomology Division, DSIR, and Mr K. A. J. Wise from the Auckland Museum, visited Tawhiti Rahi. As all material from that and from the November 1981 visit to Aorangi has not been processed at the time of preparing this account, records from these visits are excluded. All orders known to occur on the Poor Knights Islands are listed in Table 1, to give an idea of the total fauna. The table lists 24 orders for the first time, although the

* Entomology Division, DSIR, Private Bag, Auckland, New Zealand.

presence of some (e.g., Lepidoptera and Chilipoda) was obvious to many previous visitors to the islands. The 348 species now known from the islands (a more than ten-fold increase over previous records) are still unlikely to represent more than half the total fauna and may be a considerably smaller proportion. Previous records of insects from the Poor Knights are the descriptions of wetas by Salmon (1950) and Richards (1962), of a giant weevil by Spiller (1942), and a list of 27 species of insect by Somerfield (1973). For the sake of completeness, all previous published records are included in the account below.

METHODS, CONVENTIONS, AND ABBREVIATIONS

Original data are all recorded in full at Entomology Division. In the list below, they are summarised and partly abbreviated. Where a collecting period spans parts of two months, all records are arbitrarily assigned to one month, as noted. Records are from Tawhiti Rahi unless specifically stated as from Aorangi or Motu Kapiti. Apparently there has been no collecting on any of the other islands of the group.

Summary of collecting

March 1934; A. W. B. Powell; Tawhiti Rahi.

20-29 November 1940; E. G. Turbott; Aorangi; AMNZ.

15-24 January 1943; Majors Buddle and Wilson; Tawhiti Rahi.

28 December 1955-12 January 1956 ("Jan. 1956"); J. C. Watt; Tawhiti Rahi, with one day (9 January) on Aorangi; collecting by beating, turning logs and stones, and cutting up dead wood; almost exclusively adult Coleoptera collected.

24 April 1961; F. J. Newhook; Aorangi, Tawhiti Rahi.

28 October-3 November 1965 ("Nov. 1965"); K. G. Somerfield; Tawhiti Rahi, Motu Kapiti; collecting mainly by hand; larger insects (see Somerfield, 1973).

28 April 1970, 10 August 1970; B. M. May; Tawhiti Rahi; mostly specialised collecting for beetle larvae.

18-23 November 1973; L. C. Hudson; Aorangi; NMNZ.

December 1973; C. R. Veitch; Tawhiti Rahi; litter samples (see below).

6-12 September 1980; most specimens collected by J. C. Watt; others by I. A. E. Atkinson, F. Brook, D. H. Court, R. V. Grace, B. W. Hayward, J. McCallum, A. E. Wright; Tawhiti Rahi; two malaise traps, 12 pit traps, five pan traps, seven unsifted litter samples (see below); beating, turning logs and stones, digging in soil, stripping dead bark and cutting dead wood, examining ground and tree trunks at night, examining foliage.

All specimens are in the N.Z. Arthropod Collection unless stated otherwise.

Malaise traps

These were first used on the Poor Knights during the OIRG expedition as far as we know. Despite the generally cool, windy and frequently wet weather experienced, reasonable catches were obtained. Both traps were "Townes" type, with lower parts painted black with spray paint. One was erected in a clearing in Shag Bay, near Charles Stream, 35 m, surrounded by low, scrubby *Metrosideros excelsa*, *Cassinia leptophylla* and *Phormium tenax*, with *Scirpus nodosus*, *Hypochoeris manicata* and other herbs in the clearing itself. The other was erected in a small clearing created by a windfall in *Metrosideros excelsa* forest, on a flat area of the ridge leading from Shag Bay to the Summit Plateau, at about 130 m (see pit trap 80/84 below for further information).

Litter samples

These were taken in standard canvas bags, about 400 × 500 mm, which hold about 9 l (0.009 m³) of material (allowing room to tie the top of the bag). Dry weight of samples is 200-500 g. Leaf litter and the humus-rich surface layer of the soil were taken. As none of the individual sample code numbers coincide, year abbreviations are omitted in lists of

material examined. All were collected on Tawhiti Rahi; collectors' names are abbreviated.

73/153: Dec. 1973; leaf litter; CRV.

80/67: Summit Plateau; 200 m; 10 Sept. 1980; JCW. Litter under *Metrosideros excelsa* (canopy), *Coprosma macrocarpa*, *Pittosporum crassifolium* and *Carmichaelia arborea*.

80/68: Summit Plateau; 200 m; 10 Sept. 1980; JCW. Litter under *Xeronema callistemon* clump, under *Metrosideros excelsa* canopy.

80/69: side of rockfall; 160 m; 11 Sept. 1980; JCW; shearwater burrowing area. Litter under *Metrosideros excelsa* (15 m), *Dysoxylum spectabile*, *Melicytus ramiflorus*, *Macropiper excelsum*, *Paratrophis banksii* — ground bare.

80/70: Summit Plateau; 200 m; 11 Sept. 1980; JCW. Litter under *Metrosideros excelsa* (10 m); understory — *Melicytus ramiflorus*, *Myrsine divaricata*, *Paratrophis banksii*; ferns on ground.

80/71: east side of Summit Plateau; 170 m; 11 Sept. 1980; JCW. Litter at edge of shearwater burrowing area, under *Metrosideros excelsa* (15 m); understory — *Melicytus ramiflorus*; ground bare.

80/72: Shag Bay; 30 m; 12 Sept. 1980; JCW. Litter under *Metrosideros excelsa* (4 m), *Myoporum laetum* (2 m), *Phormium tenax*, *Coprosma macrocarpa*; ground bare.

80/73: Shag Bay; 40 m; 12 Sept. 1980; JCW. Litter under *Pittosporum crassifolium* (3-5 m), *Coprosma macrocarpa* juv., *Macropiper excelsum*, *Melicytus ramiflorus*, *Hebe bollonsii*; ground cover sedge, *Arthropodium cirratum*.

Pit traps (Pitfall traps)

These were polythene pottles, 650 ml capacity, 100 mm top internal diameter. Each was filled about one-third full with equal amounts of colourless ethylene glycol and brown, peaty stream water. All traps on Tawhiti Rahi were installed and collected by J. C. Watt. Both pit traps and litter samples covered a range of vegetation and altitude from Shag Bay to the Summit Plateau.

80/75: Shag Bay; 30 m; 6-12 Sept. 1980. Under *Metrosideros excelsa* (4 m), *Myoporum laetum* (2 m), *Phormium tenax* (2 m), *Coprosma macrocarpa* (1.5 m); ground almost bare.

80/76: Shag Bay; 35 m; 6-12 Sept 1980. Under *Pittosporum crassifolium* (2 m); amongst *Scirpus nodosus* and seedling *Coprosma macrocarpa*.

80/77: Shag Bay; 35 m; 6-12 Sept. 1980. Same clearing as malaise trap, amongst *Scirpus nodosus* and *Hypochoeris manicata*.

80/78: Shag Bay; 35 m; 2 m from Charles Stream; 6-12 Sept. 1980. Under *Pittosporum crassifolium* (3 m), *Coprosma macrocarpa* (3 m), *Carmichaelia arborea* (3 m); ground bare.

80/79: Shag Bay; 40 m; 7-12 Sept. 1980. Under *Pittosporum crassifolium* (3.5 m), *Coprosma macrocarpa* (3.5 m), juvenile *Macropiper excelsum*, *Melicytus ramiflorus*, *Hebe bollonsii*; ground cover sedge and *Arthropodium cirratum*.

80/80: ridge [from Shag Bay to Summit Plateau]; 60 m; 7-12 Sept. 1980. Under *Macropiper excelsum* (3.5 m), *Coprosma macrocarpa* (3.5 m), *Melicytus ramiflorus* (3.5 m), seedling *Planchonella novo-zelandica*, no ground cover.

80/81: ridge; 100 m; 7-12 Sept. 1980. Under large, spreading *Planchonella novo-zelandica* (approx. 6 m); understory — *Coprosma macrocarpa*, *Macropiper excelsum*, *Melicytus ramiflorus*.

80/82: ridge; 110 m; 7-12 Sept. 1980. Under *Myrsine divaricata* (5 m) *Coprosma macrocarpa* (5 m), seedling *Vitex lucens*, *Macropiper excelsum*; ground cover sparse *Asplenium lucidum*.

80/83: ridge; 120 m; 7-12 Sept. 1980. Under larger, spreading *Metrosideros excelsa* (10 m); understory — *Melicytus ramiflorus*, *Coprosma macrocarpa*; ground cover sparse sedge.

80/84: ridge; flat area; 130 m; 7-12 Sept. 1980. On edge of clearing created by windfall. Canopy large, old *Metrosideros excelsa*, sapling *Dysoxylum spectabile* underneath, also a few *Paratrophis banksii*; ground cover *Asplenium lucidum*.

80/85: Side of rockfall; 160 m; 9-12 Sept. 1980; shearwater burrow area. Under *Metrosideros excelsa* (15 m), *Dysoxylum spectabile*, *Melicytus ramiflorus*, *Macropiper excelsum*, *Paratrophis banksii*; ground bare.

80/86: Summit Plateau; 200 m; 9-12 Sept. 1980. Under *Metrosideros excelsa* (10 m); understory — *Myrsine divaricata*, *Pseudopanax lessonii*, *Coprosma macrocarpa*, *Pittosporum crassifolium*, *Geniostoma ligustrifolium*; ground cover *Phymatodes diversifolium*, *Asplenium lucidum*, sedge.

Pan traps

These were plastic trays, c. 300 mm in diameter and painted bright yellow inside. The bright colour attracts many flying insects, and other ground- and foliage-inhabiting insects jump or fall into them. The bottom of each tray was covered with water to which a few drops of detergent were added. Pan traps were set near pit traps 76, 77, 81, and 84 as well as 3 m from Charles Stream, under low open *Metrosideros excelsa*, amongst *Phormium tenax*. Specimens from pan traps near pit traps 81 and 84 were recorded as "pan traps in forest".

TAXONOMY AND NOMENCLATURE

Orders and families are listed in systematic sequence. For ease of reference, genera are listed alphabetically within each family, and species are listed alphabetically within each genus. Within the Coleoptera, the weevil families Apionidae and Curculionidae are recorded and discussed by Kuschel (1982); these are included in the biogeographical analysis.

The taxonomic status of Poor Knights populations reflects a range from morphological identity with mainland populations, through consistent but minor differences indicating a geographic form (which may merit subspecific rank) to differences distinctive enough morphologically and ecologically to merit specific rank. Of the last, only three have been described as species — the giant weta *Deinacrida fallai*, the giant cave weta *Gymnoplectron giganteum*, and the giant weevil *Phaeophanus turbotti*. (The latter has since been found on the Three Kings Islands.)

While a faunistic paper is an inappropriate place to describe new species — except in groups for which comprehensive revisions exist — there is no point in perpetuating usage of a name, combination, or status known to be wrong but which can be easily corrected; thus, several nomenclatural changes are made below by R. R. Forster, G. Kuschel, and J. C. Watt. The authority for each recombination, change of status, and synonymy is quoted in the appropriate place.

GEOGRAPHICAL DISTRIBUTION

A list of arthropods known to occur on the Poor Knights is only of biogeographic use when seen in the context of known distributions of the species or their close relatives elsewhere. Table 2 summarises such data for groups other than Coleoptera; except for Lepidoptera and Psocoptera, few unpublished records are available, and all distributions must be regarded as minimum ranges. Distribution and biological information for weevils is included in Kuschel (1982); data on thrips were provided by A. K. Walker. In neither group were the data sufficiently detailed for tabulation.

Table 3 summarises data on the distribution of Coleoptera, except Apionidae and Curculionidae; it is based on published records and on specimens in the NZAC. The column indicating island occurrence does not include records from the Three Kings; while there is a high degree of endemism on them, the status of their populations has not been critically examined. The few records from Cuvier also do not justify inclusion.

BIOGEOGRAPHY

Examination of broad patterns of distribution is more instructive than comparing distributions over islands and mainland areas, which have not been collected uniformly. The following analysis was done on 251 species and is based on data held on file in the NZAC. Distribution patterns are discussed in order of dominance.

Of the samples collected, 43.8% represented species widespread in the North Island and occurring also in the South Island. The 110 species collected are mostly dispersible, with a broad ecological tolerance or occurring on widely-spread host plants. As noted earlier, many of these do not extend farther than the northern coastal parts of the South Island. A few are probably genuinely disjunct. Of particular interest are species such as *Coccinella leonina*, which do not occur on the northern part of the mainland.

16% of the species were either probably or possibly endemic ones. Apparently

endemism is virtually confined to Coleoptera (14% of the samples) and to the orthopteroid orders (53%). Most are flightless; a few appear to be fully winged. Some may eventually be found in Northland, on other northern islands, or on both, but as about half are large, conspicuous, well-collected insects (e.g., *Deinacrida fallai*, *Mimopeus* sp.) this is not true in all cases.

North Island species — those which extend into the southern half of the North Island but which do not reach the South Island — accounted for 10.4%.

The overseas species, 7.6%, were generally unusually dispersible species such as aphids.

Northern North Island species, those which extend as far south as Waikato or the Bay of Plenty, accounted for 5.6%.

Species common to both Northland and Auckland areas totalled 5.2%.

Species common to Northland, Auckland, and Coromandel totalled 3.2%.

Two per cent of the species (e.g. *Mecodema* sp. and *Baecocera* sp.) have previously been recorded from Northland only.

Species collected earlier from northern islands only (e.g. *Truncula insularis*, *Clypeolus veratus*) amounted to 1.6%, 1.2% each represented Moko Hinau only (*Zealandius sandageri*, *Omedes nitidus*, *Notacalles floricola*) and the Three Kings only (e.g., *Arthracanthus* sp., *Anagotus turbotti*). The same percentage represented species common to Northland and Coromandel together.

Auckland-only species totalled 0.8%; Coromandel only, 0.4% (*Navomorpha neglecta*).

Previous analyses of beetle faunas of northern islands (Watt, 1957, 1962), although based on inadequate samples and fragmentary data on distributions, came to similar conclusions about the dominance of widely-distributed species and about the general relationships of the faunas with nearby mainland areas. Hen Island has no known endemics. Great Barrier Island has at least one apparent endemic (*Sericospilus watti* Given), but as several species of this genus have very limited ranges on the northern mainland, it is doubtful whether isolation by sea played any part in its speciation. Mayor Island is a young, Pleistocene island, with endemics neither known nor expected. Further collecting will certainly show that some species have more extensive ranges than is now known, although it seems unlikely that the relative proportions of the first six categories listed above will change much. Inclusion of members of highly-dispersible groups such as Collembola, Diptera, Hymenoptera, and Acari would no doubt increase percentages in the widely distributed categories, even though there could be endemism within the flightless Diptera and Hymenoptera. Lepidoptera are mostly very widespread, though an apparently-endemic Poor Knights tortricid was collected in December 1980 (J. S. Dugdale, pers. comm.).

The Poor Knights and Three Kings were the only northern island groups separated from the mainland when the sea level fell 100 m during the last glaciation. This correlates well with the endemism documented for the terrestrial fauna and flora of the two groups. As the Poor Knights (unlike the Three Kings) were probably part of the mainland during the further-lowered sea levels of the previous glaciations, speciation evident now has probably occurred since the penultimate glaciation.

Moko Hinau Islands have a single certainly-endemic insect, the stag beetle *Dorcus ithaginus* Broun (which, regrettably, is probably extinct). That three beetles formerly thought to be confined to Moko Hinau are known now from the Poor Knights as well may be significant. Similarly, three species are known only from the Three Kings and the Poor Knights, and other Poor Knights endemics appear to be most closely related to Three Kings species. The reason for these relationships is obscure, unless the species, or their common ancestor, once occurred on the Northland Peninsula as well and later became extinct there. Four further species occur on the Poor Knights and other northern islands but not on the mainland.

Poor Knights endemism is probably mainly primary — that is, a result of evolution in isolation on the islands. This is certainly the case with such species as *Deinacrida fallai*,

Mimopeus sp. nov., and *Gastrosarus* sp. nov., whose closest relatives (sister species) occur on the mainland and on other northern islands. However, some large flightless species may have become extinct on the mainland because of predation by rats, cats, mustelids, and the like. A possible example is *Anagotus* sp. nov., which, because giant weevils seem to be particularly susceptible to predation by mammals (Kuschel, 1971; Watt, 1975), would not have survived in a mainland environment.

Why some species (especially small insects, which could not themselves be prey to mammals) are largely or entirely confined to islands may not be explained by adventive mammalian predator pressure. Some of these species are usually or exclusively associated with nesting sea birds, themselves mostly confined to islands. In other cases, the island environment is in some way more favourable than that of the mainland — for example, a milder climate without frosts. Certain insects — e.g., several *Holoparamesus* species — are abundant on islands but rare on the mainland.

ECOLOGY

A special search was made for insects possibly associated with the endemic Poor Knights Lily, *Xeronema callistemon*. The only visible damage of the plants was frequent scraping on the surface of the thick, fleshy leaves by an unidentified slug. Litter sample 68 was taken under a large clump of *Xeronema* and contained (among other things) a new species of *Anagotus*. Some species of the latter feed on the edges of leaves of *Phormium* (*A. fairburni*) or *Astelia*, but the characteristic type of damage was not seen on *Xeronema*. Kuschel (1982) says that the *Anagotus* is likely to be associated with some kind of grass. Nothing was found attacking the flowers or the leaf bases of *Xeronema*.

The ecological information summarised below covers all groups but Diptera and Lepidoptera, nearly all of which were caught in malaise or pan traps, flying, or resting on tents. A complete listing of ecological information is available in manuscript at Entomology Division. As details from pan and malaise traps have limited ecological value, these data have been excluded.

Litter samples

67: 25 spp.: 4 Diplopoda, 1 Chilopoda, 1 Orthoptera, 4 Hemiptera, 10 Coleoptera, 3 Hymenoptera, 1 Opiliones, 1 Acari.

68: 34 spp.: 3 Isopoda, 4 Diplopoda, 3 Chilopoda, 1 Psocoptera, 1 Hemiptera, 19 Coleoptera, 2 Hymenoptera, 1 Opiliones.

69: 29 spp.: 3 Isopoda, 2 Diplopoda, 21 Coleoptera, 1 Hymenoptera, 2 Acari.

70: 13 spp.: 1 Diplopoda, 1 Chilopoda, 1 Hemiptera, 8 Coleoptera, 1 Hymenoptera, 1 Opiliones.

71: 28 spp.: 2 Isopoda, 3 Diplopoda, 1 Chilopoda, 1 Psocoptera, 18 Coleoptera, 2 Hymenoptera, 1 Opiliones.

72: 36 spp.: 3 Isopoda, 6 Diplopoda, 4 Chilopoda, 3 Hemiptera, 1 Thysanoptera, 17 Coleoptera, 2 Opiliones, 1 Acari.

73: 45 spp.: 3 Isopoda, 5 Diplopoda, 3 Chilopoda, 1 Orthoptera, 2 Hemiptera, 1 Thysanoptera, 25 Coleoptera, 1 Hymenoptera, 1 Opiliones, 3 Acari.

Pit traps

75: *Ctenognathus novaezealandiae*, *Liodes* sp., *Siphonethus* sp., *Weta* sp.

76: *Chelaner antarcticus*, "*Omalium*" *spadix*, *Talitropsis* sp.

77: *Chelaner antarcticus*, *Lissotes* sp. nov., *Sphaerillo danae*.

78: unidentified Collembola, Acari, etc.

79: *Heteroponera brouni*, *Mesoponera castanea*, "*Omalium*" *spadix*.

80: *Heteroponera brouni*, *Odontria* sp. nov.

81: *Crotonia* sp., *Hemiandrus* sp., *Heteroponera brouni*, *Megalopsalis* sp., "*Omalium*" *spadix*.

82: *Acosmetus* sp.

83: unidentified Collembola, etc.

- 84: *Amphiplatys lawsoni*, "Omalium" *spadix*.
 85: *Exomesites* sp., *Schedotrigona* sp. B, *Weta* sp.
 86: *Heteroponera brouni*, *Weta* sp.

Other locations

- Under stones in clearing: *Eumastigonus* sp., *Lissotes* sp. nov., *Platyzosteria novaeseelandiae*.
 Under stones in forest: *Celatoblatta undulivitta*, *Cryptos* sp., *Ctenognathus novaeseelandiae*, *Deinacrida fallai*, *Demetriida nasuta*, *Maoriella macrostigma*, *Mecodema* sp., *Mimopeus elongatus*, *Soerensenella prehensor*, *Trogoderma maestum*.
 Under logs: *Anisolabis* sp., *Mecodema* sp., *Platyzosteria novaeseelandiae*, *Triregia* sp.
 On rock exposures at night, Shag Bay: *Gymnoplectron giganteum*, *Scutigera smithi*.
 On ground at night: *Celatoblatta undulivitta*, *Chrysopeplus expositus*, *Cormocephalus rubriceps*, *Cryptops* sp., *Ctenognathus novaeseelandiae*, *Mimopeus elongatus*, *Mimopeus* sp. nov.
 On ground amongst dead twigs: *Anisolabis* sp.
 Ex soil: *Amphisalta cingulata* (nymph), *Cormocephalus rubriceps*, *Ctenicera* sp. (larva), *Odontria* sp. nov. (larva).
 On ground under *Muehlenbeckia complexa*: *Chelaner antarcticus*, *Ctenognathus novaeseelandiae*.
 Remains near harrier roosting place: *Deinacrida fallai*.
 On roof of cave; on land; western side of Tawhiti Rahi: *Gymnoplectron giganteum*.
 Under bark of standing dead tree trunk: *Sternaulax zealandicus*.
 On tree trunks and branches at night: *Artystona erichsoni* (incl. larva), *Chrysopeplus expositus*, *Ctenognathus novaeseelandiae*, *Cubaris murina*, *Deinacrida fallai*, *Gymnoplectron giganteum*, *Hemiandrus* sp., *Leperina brouni*, *Mimopeus* sp. nov., *Ornatiblatta maori*, *Talitropsis* sp., sp. aff. *Talitropsis*, *Weta* sp.
 Ex rotten wood: *Ceratognathus irroratus*, *Mimopeus* sp. nov.
 Ex dead but not entirely rotten wood: *Chrysopeplus expositus*, *Pachyops dubius*, *Pentarthrum zealandicum*.
 In saline pools: *Opifex fuscus* larvae; adults nearby.
 At light: *Odontria* sp. nov.; also various Diptera and Lepidoptera.

Insects collected from specific plants

The following list includes beating records, which provide only an indication of possible plant associations; further evidence is needed to document reliable plant associations in such cases.

Agavaceae — *Phormium tenax*: on leaves at night, *Deinacrida fallai*; feeding on edges of leaves at night, *Anagotus fairburni* (larvae in green leaf bases); in dead rhizome, *Hadracalles fuliginosus*.

Violaceae — *Melicytus ramiflorus*, beating: *Clypeolus pascoei*, *Didymus intutus*, *Gastrosarus* sp. nov., *Hybolasius vegetus*, *Loberus nitens*, *Navomorpha lineata*, *Phymatophaea testacea*, *Psepholax femoratus*, *Sericotrogus subaenescens*, *Stenellipsis aegrota*, *S. nana*, *Tanychilus metallicus*, *Thoramus laevithorax*, *Xylotoles griseus*, *X. inornatus*, *X. latus*.

Pittosporaceae — *Pittosporum crassifolium*, beating: *Aneuma rubricale*, *Cacephatus huttoni*, *Chaetoptelius mundulus*, *Loberus nitens*, "Scymnus" *tristis*, *Thelyphassa latiuscula*, *Xylotoles griseus*.

Myrtaceae — *Leptospermum ericoides*, beating: *Pentarthrum brevicorne*, *Stenellipsis nana*.

Leptospermum scoparium, beating: *Coccinella leonina*, *Exilis lawsoni*.

Metrosideros excelsa, under loose bark and feeding on bark or algae on bark at night: *Leperina brouni*; ex dead wood, melandryid larvae, *Strongylopterus hylobioides* (including larvae); beating: "Anthribus" *brouni*, *Neocyba metrosideros*, *Notagonum lawsoni*, *Phloeophagosoma pedatum*, *Tarphiomimus* sp.

Fabaceae — *Carmichaelia arborea*, beating: "Anthribus" *brouni*, "A." *hetaera*, *Dysnocryptus inflatus*, *Exilis lawsoni*, *Hybolasius vegetus*, *Ithris gracilis*, *Loberus nitens*, *Notacalles* sp., *Notothetus nigellus*, *Peristoreus glottis*, *P. sexmaculatus*, *P. sudus*, *Phymatophaea opiloides*, *Stenellipsis aegrota*, *S. nana*, *Touropsis brevirostris*, *Xylotoles laetus*.

Araliaceae — *Pseudopanax lessonii*, beating: *Andracalles* sp., *Didymus intutus*, *Pactola variabilis*, "Scymnus" *minutulus*, *Sericotrogus subaenescens*, *Stenellipsis nana*, *Xylotoles griseus*.

Sapotaceae — *Planchonella novo-zelandica*, ex dead standing trunk: *Eumastigonus* sp., *Lomemus* sp. (larva), *Sphaerillo danae*, *Strongylopterus hylobioides* (larva), *Thoramus laevithorax* (larva).

Loganiaceae — *Geniostoma ligustrifolium*, beating: *Aneurys* sp., *Anotylus brunneipennis*, *Artystona erichsoni*, *Dasytes* sp. 2, *Didymus intutus*, *Metacalles* sp. 2, *Psepholax femoratus*, *P. sulcatus*, *Trioza vitreoradiata*.

Rubiaceae — *Coprosma macrocarpa*, ex dead bark: *Macroscytalus remotus*; undecayed wood: *Psepholax mediocris*; beating: *Anagotus rugosus*, *Clypeolus veratrus*, *Phymatophaea opiloides*, *Praolepra fulltoni*, *Praolepra* sp., *Psepholax femoratus*, *Stenellipsis aegrola*, *Thelyphassa latiuscula*, *Xylotoles griseus*. *Coprosma repens*, beating: *Coccinella leonina*, *Loberus nitens*, "*Scymnus*" *consors*, "*S.*" *tristis*.

Asteraceae — *Olearia* sp., beating: *Hybolasius vegetus*.

Scrophulariaceae — *Hebe* sp. in flower, beating: *Arthracanthus* sp. 2, *Dasytes* sp. 2, *Navomorpha sulcata*, *Nothotelus nigellus*, *Salpingus bilunatus*, *S.* sp. nov., *Simachus montanus*, *Tysius bicornis*.

Myoporaceae — *Myoporum laetum*, beating: *Arthracanthus* sp. 2, *Dasytes* sp. 2, *Navomorpha lineata*.

FURTHER RESEARCH

While the expedition of December 1980 collected species of insect previously unknown from the Poor Knights, we still can not be confident that even the beetle fauna of Tawhiti Rahi alone will be adequately known after all the material has been studied and recorded. A single specimen of a giant weevil, apparently representing a new genus, was discovered near the Tawa Grove by Dr Kuschel. Another giant, and probably endemic, weevil — *Anagotus* sp. nov. — is still known from only one specimen, and one wonders how many secretive, strongly seasonal, or genuinely rare species are yet to be discovered. We know about as much of the terrestrial arthropod fauna of the Poor Knights as we knew of birds and higher plants of the area forty years ago, and the need for more research is obvious. The fields of ecology and life-history studies provide even more scope for research: Immature stages of relatively few species are known, and little work has been done on life histories. We do not know the host plants of many of the phytophagous species. The larger endemic arthropods would be good subjects for detailed ecological field studies. In short, the area as a whole holds out many opportunities for present and future workers.

ORDER ISOPODA (Det. J. Playfair)

In addition to the four species listed below, three others occur on the Poor Knights, but they require further study.

FAMILY LIGIIDAE

Ligia novaezealandiae Dana, 1853

1 specimen: Sept. 1980; Shag Bay.

FAMILY STYLONISCIDAE

Styloniscus sp.

8 specimens: Sept. 1980; lit. 68, 69, 71, 72, 73; 30-200 m.

FAMILY ARMADILLIDAE

Cubaris murina Brandt, 1833

19 adults, 35 juveniles: Sept. 1980; lit. 68, 69, 72, 73; on tree trunks at night; beaten at night.

Sphaerillo danae Heller, 1868

18 adults, 8 juveniles: Sept. 1980; lit. 68, 69, 71, 72, 73; pit 77; under stones, ridge; ex dead standing *Planchonella novo-zelandica*.

ORDER DIPLOPODA (Det. P. M. Johns)

Mr Johns writes "As yet I cannot say whether or not Poor Knights has any **endemics**

— so little is known of the adjacent mainland fauna, and of course many species are undescribed. I would expect some endemics and perhaps *Schedotrigona*; the Dalodesmids and Cryptodesmids are the most likely candidates.”

FAMILY POLYXENIDAE

Propolyxenus sp.

1 specimen: Sept. 1980; lit. 72; 30 m.

FAMILY DALODESMIDAE

Genus nov. A sp.

13 specimens: Sept. 1980; lit. 67, 68, 70, 71; 170-200 m.

Genus B sp.

1 specimen: Sept. 1980; lit. 71; 170 m.

FAMILY CRYPTODESMIDAE

Genus et species indet.

86 specimens: Sept. 1980; lit. 67, 69, 71, 72, 73; 40-200 m.

FAMILY SCHEDOTRIGONIDAE

Schedotrigona sp. A

48 specimens: Sept. 1980; lit. 67, 68, 71, 72, 73; 30-200 m.

Schedotrigona sp. B

53 specimens: Sept. 1980; lit. 67, 68, 69, 70, 71, 73; pit 85; 40-200 m.

FAMILY CAMBALIDAE

Eumastigonus sp.

5 specimens: Sept. 1980; lit. 68; under stones in clearing; ex dead standing *Planchonella novo-zelandica*.

FAMILY SIPHONOPHORIDAE

Siphonophora sp.

5 specimens: Sept. 1980; lit. 67, 68, 72; 30-200 m.

FAMILY POLYZONIDAE

Siphonethus sp.

74 specimens: Sept. 1980; lit. 72, 73; pit 75; 30-40 m.

FAMILY SPIROBOLELLIDAE

Spirobolellus antipodarus (Newport, 1844)

3 specimens: Sept. 1980; lit. 72, 73; 30-40 m. This species is endemic in the northern North Island, where its distribution almost coincides with that of *Agathis australis*. The genus is widespread in the Indonesian-Australian area. The closest relative of *S. antipodarus* is a New Caledonian species (P. M. Johns, pers. comm.).

ORDER CHILOPODA (Det. P. M. Johns)

FAMILY SCUTIGERIDAE

Scutigera smithii (Newport, 1844)

2 specimens: Sept. 1980; running rapidly on rock outcrops at night, Shag Bay (near camp).

FAMILY SCOLOPENDRIDAE

Cormocephalus rubriceps (Newport, 1844)

2 adults, 1 juvenile: Sept. 1980; Shag Bay; on ground at night; ex soil. Others seen at

night, but not captured. This large centipede is reputed to have a very painful bite. In Jan. 1956, a tuatara (*Sphenodon punctatus* Gray), while being photographed, regurgitated the unmistakable remains of a full-grown specimen. The centipedes are apparently eaten also by rats, as they do not occur on small rat-inhabited islands, although co-existing with rats on the mainland.

FAMILY SCHENDYLIDAE

Ballophilus hounsellii Archey, 1936

7 specimens: Sept. 1980; lit. 68, 72, 73; 30-200 m.

FAMILY CRYPTOPIIDAE

Cryptops sp.

2 specimens: Sept. 1980; on ground near camp; under stones, ridge.

FAMILY CHILENOPHILIDAE

Maoriella macrostigma Attems, 1903

2 specimens: Sept. 1980; on ground and under stones.

Maoriella zelanicus (Chamberlin, 1920)

4 specimens: Sept. 1980; lit. 70, 72; 30-200 m.

FAMILY LITHOBIIDAE

Lamyctes emarginatus (Newport, 1844)

9 specimens: Sept. 1980; lit. 68, 72, 73; 30-200 m.

FAMILY HENICOPIDAE

Anopsobius neozelanicus Silvestri, 1909

28 specimens: Sept. 1980; lit. 67, 68, 69, 71, 72, 73; 30-200 m.

ORDER BLATTODEA (Det. G. W. Ramsay)

FAMILY BLATTIDAE

Celatoblatta undulivitta (Walker, 1868)

7 specimens: Sept. 1980; beaten and on ground at night; under stones.

Platyzosteria novaeseelandiae (Brunner von Wattenwyl, 1865)

4 specimens: Nov. 1965, 3; Sept. 1980, 1; in grass and under rotten logs; under stone in clearing.

FAMILY BLATTELLIDAE

Ornatiblatta maori (Rhen, 1904)

4 adults, 5 nymphs: Sept. 1980; lit. 68; pan traps in forest; on tree trunks and beaten at night; 30-200 m.

Parellipsidion latipennis (Brunner von Wattenwyl, 1865)

1 adult: Sept. 1980, beaten at night.

ORDER DERMAPTERA (Det. G. W. Ramsay)

FAMILY LABIDURIDAE

Anisolabis sp. aff. *kaspar* Hudson, 1973

3 adults: Sept. 1980; under log; on ground. This is either a geographical race of *A. kaspar*, previously known only from the Three Kings Islands, or a closely related, Poor Knights endemic species (G. W. Ramsay, pers. comm.). The common coastal earwig *Anisolabis littorea* (White, 1846) has not, so far, been found on the Poor Knights.

ORDER ORTHOPTERA (Det. G. W. Ramsay)**FAMILY STENOPELMATIDAE*****Deinacrida fallai* Salmon, 1950 (Geissler MS)**

8 adults: Jan. 1956, 1 (AMNZ); Jan. 1958, 2; Feb. 1959, 2; Sept. 1980, 3. 4 small nymphs: Sept. 1980. On tree trunks at night; under stone; beaten at night (nymphs); pan trap (nymph). Other adults seen on tree trunks and *Phormium tenax* at night, but not collected. 30-170 m, not seen on Plateau.

Type material: Holotype ♀ "Type ♀, Poor Knights Is., —/2/34, Coll. W. R. B. Oliver"; Allotype ♂ "Poor Knight Isld., 22.11.40, E. G. Turbott"; Paratypes ♀ "Poor Knights Isd., 23.8.36, Capt. Yerex"; ♂ "Poor Knights Is., 4.12.24., H. Hamilton" (all pinned specimens, NMNZ). Paratypes 2♂ "Deinacrida fallai, ♂, Geissler; *Deinacrida heteracantha* Wh. Det. J. T. Salmon; *Deinacrida fallai* Paratype Det. J. T. Salmon" (pinned, AMNZ); Paratypes 2♂, 2♀ "Poor Knights Is., E. G. Turbott, 22-29 Nov 1940"; ♂ no data (in alcohol, AMNZ).

R. G. Ordish writes: 'The reason for the choice of the specific name, incidentally, would seem to lie in an old MS by Carl Geissler, "read before the Auckland Institute 2nd October 1935" but not published. This was entitled "A new species of Giant Weta from the Poor Knights Island" and described *Deinacrida fallai*. A letter from F. J. Turner, Editor TRSNZ, suggested it be resubmitted with more details as suggested by the referee, but presumably this was not done. This also explains Geissler's name appearing on labels of the AMNZ pinned specimens.

Deinacrida fallai is undoubtedly the largest and best known Poor Knights insect. Adult females weigh up to 40 g and measure up to 73 mm in body length. Only the closely related Wetapunga *Deinacrida heteracantha* White, 1846 is larger in New Zealand. Both species were the subject of a detailed study by Richards (1973), and there is little I can add to her account. Observations of predation by harriers *Circus approximans gouldi* Bonaparte, 1850 were further substantiated by J. McCallum, who found remains of several giant wetas amongst other food remains near harrier roosting places.

Harriers are diurnal feeders, so wetas on which they feed must be visible and accessible during daylight. Although one *D. fallai* was found under a stone during daylight, this is unusual, and most of them probably hide in trees during the day. Their nocturnal activity is mostly arboreal, and they are not often seen on the ground. Mating apparently takes place in daylight (Richards, 1973).

Although there are no definite specimen records from Aorangi, it is certain that some of them were collected there. On the basis of our limited observations on Tawhiti Rahi, it is not possible to give any population estimate, although there is no reason to question Richards' statement that *D. fallai* is "reasonably plentiful".

A pair of adults were brought back alive to the laboratory. Although they were observed to copulate, and the female later went through the motions of ovipositing, no eggs were found. The male died on 11 February 1981, and the female in October 1981; both have been preserved.

***Hemiandrus* sp. nov. aff. *anomalous* Salmon, 1950**

4 adults: Sept. 1980; on tree trunks at night; pit 81; pan trap. Apparently a Poor Knights endemic.

FAMILY RHAPHIDOPHORIDAE***Gymnoplectron giganteum* Richards, 1962**

Type material: Holotype ♂ "Poor Knights Is., E. G. Turbott, 22-29 Nov. 1940" (in alcohol, AMNZ), Allotype ♀ "Poor Knights Is., Tawhiti Rahi, 24 Apr. 1961, F. J. Newhook, in cave". Paratypes 3♂ (1 pinned), ♀, with same data as allotype.

Other records: Jan. 1956, 2 (AMNZ); Apr. 1961, 3; Sept. 1980, 3. In cave; on tree trunks at night; on rock outcrop at night.

This is another Poor Knights endemic, and the largest rhabdiphorid in New Zealand, males measuring about 450 mm from tip of antennae to apex of hind tarsi, but

the actual body length is only one tenth of this. Apparently it is most closely related to *Gymnoplectron spinosa* Richards, 1962, from near Rotorua but is much larger and differs in several structural characters. Apart from the cave, it is not uncommon near the rockfall area, which provides deep crevices for shelter during daylight. Individuals are surprisingly active and difficult to catch, except in cold weather.

***Neonetus* sp.**

1 specimen: Oct. 1965. Said by Somerfield (1973) to be fairly prevalent, especially towards the northern end of Tawhiti Rahi, but not found during the OIRG expedition. Occurs also on the mainland.

***Talitropsis* sp. nov.**

9 specimens: Sept. 1980; on tree trunks and beaten at night; pan traps in forest; malaise trap; 40-150 m. Probably a Poor Knights endemic.

Genus aff. *Talitropsis* sp. nov.

8 specimens: Sept. 1980; beaten and on tree trunks at night; pit 76. Probably a Poor Knights endemic.

***Weta* sp. nov.**

10 specimens: Sept. 1980; on tree trunk at night; pan traps in forest; lit. 67, 73; pit 75, 85, 86. Probably a Poor Knights endemic.

FAMILY GRYLLIDAE

***Metioche maoricum* (Walker, 1869)**

11 specimens: Sept. 1980; pan traps (mostly in open). A common native cricket.

***Pteronemobius bigelowi* Swan, 1972**

2 specimens: Sept. 1980; Shag Bay; pan traps. Also a common native cricket.

ORDER PHASMATODEA (Det. G. W. Ramsay)

FAMILY PHASMIDAE

***Glitarchus* sp. aff. *hookeri* (White, 1846)**

3 specimens: Sept. 1980; at night. Possibly an endemic species; if not, then certainly a definable geographical race.

ORDER PSOCOPTERA (Det. S. K. Wong)

FAMILY LEPIDOPSOCIDAE

***Echmepterys hamiltoni* (Tillyard, 1923)**

2 adults: Sept. 1980; malaise trap; beaten at night.

FAMILY CAECILIIDAE

***Caecilius flavus* Smithers, 1969**

1 adult: Sept. 1980, malaise trap; Shag Bay.

FAMILY ECTOPSOCIDAE

***Ectopsocus briggsi* McLachlan, 1889**

2 adults: Sept. 1980; malaise trap; beaten at night.

***Ectopsocus punctatus* Thornton and Wong, 1968**

2 adults: Sept. 1980; lit. 68; pan traps in forest.

FAMILY ELIPSOCIDAE

***Spilopsocus annulatus* Smithers, 1969**

1 adult: Sept. 1980; malaise trap; 130 m.

FAMILY PHILOTARSIDAE

***Zelandopsocus kuscheli* Thornton, Wong and Smithers, 1977**

10 adults: Sept. 1980; pan traps, Shag Bay; malaise trap; lit. 71; 40-150 m.

ORDER HEMIPTERA (Det. C. F. Butcher, except Aphididae, Cicadidae)

FAMILY CIXIIDAE

Cixius sp. cf. *aspilus* Walker, 1858

5 specimens: Sept. 1980; pan traps; beaten at night.

FAMILY DELPHACIDAE

Ugyops rhadamanthus Fennah, 1965

4 specimens: Nov. 1965, 2; Sept. 1980, 2. On low vegetation; pan trap; lit. 73.

FAMILY CICADIDAE

Amphipsalta cingulata (Fabricius, 1775) (Det. J. S. Dugdale)

8 nymphs: Sept. 1980; Shag Bay; ex soil.

FAMILY CICADELLIDAE

Myerslophia sp. aff. *tri-regia* Knight, 1973 (Ulopinae)

14 specimens: Sept. 1980; lit. 67, 68, 72, 73; 30-200 m. This may be a Poor Knights endemic. It is closely related to *M. tri-regia* from the Three Kings Islands. Members of this genus are flightless and confined to litter.

Paracephalus sp. cf. *hudsoni* (Myers, 1923) (Ulopinae)

1 female: Sept. 1980; Shag Bay; pan trap. Males are needed for certain identification in this genus. This genus occurs on the mainland on rushes.

Xestocephalus ovalis Evans, 1966 (Xestocephalinae)

4 specimens: Sept. 1980; pan trap.

FAMILY PSYLLIDAE

Trioza vitreoradiata (Maskell, 1879)

7 specimens: Sept. 1980; pan traps; on *Geniostoma ligustrifolium*

FAMILY APHIDIDAE (Det. R. Sunde)

Hyperomyzus lactucae (Linnaeus, 1758)

1 alate: Sept. 1980; malaise trap; 130 m.

Rhopalosiphum padi (Linnaeus, 1758)

1 alate: Sept. 1980; malaise trap; 130 m.

Toxoptera aurantii (Boyer de Fonscolombe, 1841)

1 alate: Sept. 1980; pan trap.

FAMILY COCCIDAE

Ctenochiton viridis Maskell, 1879

1 specimen: Sept. 1980.

FAMILY ANTHOCORIDAE

Cardiastethus sp.

3 specimens: Sept. 1980; beaten at night.

FAMILY MIRIDAE

Genus species indet. (Tribe Phylini)

1 specimen: Sept. 1980; beating.

FAMILY REDUVIIDAE

Ploearia sp.

1 nymph: Sept. 1980; lit. 69; 160 m.

FAMILY ARADIDAE

Aneurus sp.

1 nymph: Sept. 1980; on *Geniostoma ligustrifolium*

FAMILY LYGAEIDAE

Targarema stali White, 1878 (Rhyparochrominae)

9 specimens: Sept. 1980; lit. 67, 70, 72; beating; 180-200 m.

Tomocoris ornatus (Woodward, 1953) (Rhyparochrominae)

2 specimens: Sept. 1980; lit. 67; 200 m.

Truncula insularis Malipatil, 1977 (Rhyparochrominae)

6 specimens: Sept. 1980; lit. 67, 72; 30-200 m. This species has so far been found only on northern islands.

FAMILY ACANTHOSOMATIDAE

Rhopalimorpha lineolaris Pendergrast, 1950

1 specimen: Nov. 1965; on low vegetation.

ORDER THYSANOPTERA (Det. L. A. Mound and A. K. Walker)

The information given below on distribution and ecology was kindly supplied by A. Walker (letter of 25 July 1981).

FAMILY THIRIPIDAE

Apterothrips secticornis (Trybom, 1896)

Sept. 1980; lit. 73; 40 m. Widespread in New Zealand, Sept-Mar, mainly in pasture, but has occurred in birds' nests on the Chatham Islands.

Thrips australis (Bagnall, 1915)

Sept. 1980; Shag Bay, malaise trap. The eucalyptus thrips; widespread in New Zealand, occurs throughout the year, but collected infrequently; has been collected on *Eucalyptus* leaves at Rotorua, and occurs on a wide variety of other adventive and native plants.

Thrips obscuratus (Crawford, 1941)

Sept. 1980; malaise trap; 130 m; Shag Bay. The N.Z. flower thrips; the most common and widespread thrips in New Zealand, an endemic species found throughout the year on flowers and leaves of both native and introduced plants.

FAMILY PHLAETHRIPIDAE

Baenothrips moundi (Stannard, 1970)

Sept. 1980; lit. 72; 30 m. The most common litter-inhabiting thrips in New Zealand; also occurs in Australia.

Cartomothrips manukae Stannard, 1962

Sept. 1980; beaten at night. Found throughout New Zealand, common on *Leptospermum scoparium*.

ORDER COLEOPTERA (Det. J. C. Watt, unless otherwise stated)

FAMILY CARABIDAE

Ctenognathus novaezealandiae Fairmaire, 1843 (Agoninae)

Fig. 1

41 adults: Jan. 1956, 9; Nov. 1965, 13; Sept. 1980, 19; pit 75; under stones; on ground, tree trunks and vegetation at night; 20-40 m. 2 larvae: lit. 72, 73. Found only at lower elevations near coastline, common at night (many others seen but not collected). Exclusively coastal.

Demetriida nasuta White, 1846 (Lebiinae)

1 adult: Jan. 1956; Aorangi; under stone.

***Mecodema* sp. (Broscinae)**

15 adults: Jan. 1956, 8; Nov. 1965, 2; Aug. 1970, 2; Sept. 1980, 3. Under stones on higher parts of island, especially near rockfall, and under rotten logs near *Puffinus bulleri* burrows. Mr J. I. Townsend writes that Poor Knights specimens are distinct from all others, but closest to, and probably conspecific with, an un-named taxon of the *curvidens* group from Whangarei Heads.

***Notagonum lawsoni* (Bates, 1874) (Agoninae)**

1 adult: Jan. 1956; beaten from *Metrosideros excelsa*

***Pelodiaetodes prominens* Moore, 1980 (Bembidiinae)**

8 adults: Aug. 1970, 3; Sept. 1980, 5; lit. 68, 69, 71; 160-200 m. A minute litter species.

***Pentagonica vittipennis* Chaudoir, 1877 (Pentagonicinae)**

1 adult: Sept. 1980; lit. 72; 30 m.

FAMILY HISTERIDAE

"*Abraeus*" *brouni* Lewis, 1879

6 adults, 3 larvae: Sept. 1980; lit. 69; 160 m.

***Sternaulax zealandicus* Marseul, 1862**

1 adult: Jan. 1956; under bark on dead standing tree trunk.

FAMILY LEIODIDAE

***Mesocolon nesobium* Jeannel, 1936**

2 adults: Sept. 1980; lit. 69, 71. 12 larvae: Sept. 1980, lit. 73. 40-170 m. This species is found almost exclusively on islands, usually in association with nesting sea birds.

FAMILY SCYDMAENIDAE (Det. G. Kuschel)

***Euconnus calvus* (Broun, 1880)**

4 adults: Dec. 1973, 1; Sept. 1980, 3; lit. 153, 68, 72; 30-200 m.

***Neuraphoconnus relatus* (Broun, 1893)**

2 adults: Dec. 1971; Sept. 1980; lit. 153, 68.

***Neuraphoconnus* sp. nov. (*ambiguus* group)**

1 adult: Sept. 1980; lit. 71; 30 m. Probably a Poor Knights endemic.

***Sciacharis allocera* (Broun, 1893)**

5 adults: Dec. 1971, 2; Sept. 1980, 3; lit. 153, 67, 71; 170-200 m.

FAMILY SCAPHIDIIDAE

***Baecocera* sp. 2**

1 adult: Sept. 1980; lit. 70; 200 m.

FAMILY STAPHYLINIDAE

***Amriathaea* sp. 17 (Aleocharinae)**

2 adults: Sept. 1980; lit. 71, 170 m. This species appears to lack functional eyes, is weakly pigmented and unusually elongate, and is probably primarily a soil dweller. Its nearest known relative is *Amriathaea* sp. 14 from Old Man Range, Central Otago.

***Anotylus brunneipennis* (Macleay, 1873) (Oxytelinae)**

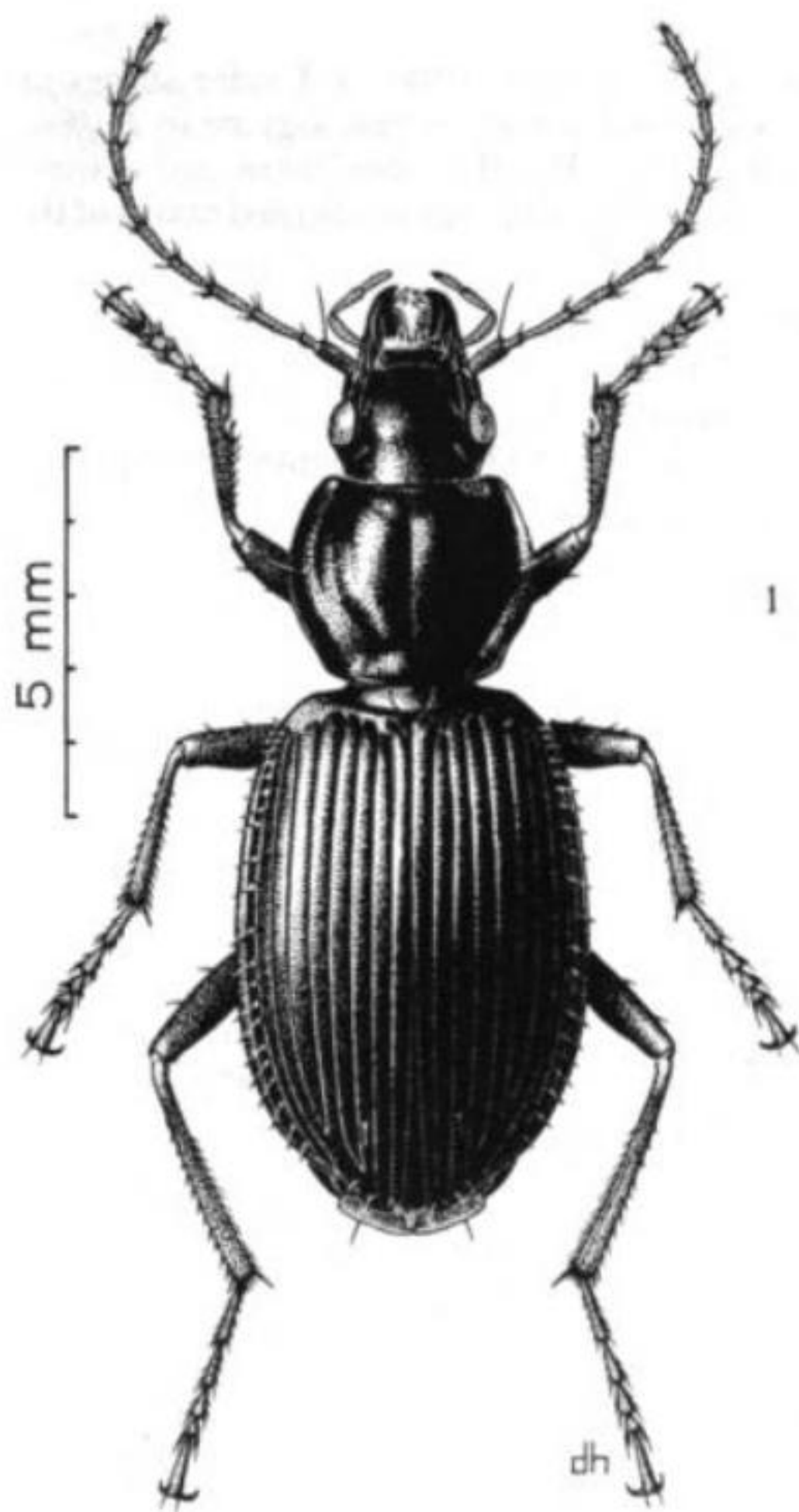
1 adult: Sept. 1980, on *Geniostoma ligustrifolium*. Originally an Australian species, it was first found in garden rubbish at Mt Roskill, Auckland in Mar. 1948, and has since been collected at Mt Smart Domain, Auckland, and on the Noisies Islands.

***Anotylus vinsoni* (Cameron, 1936)**

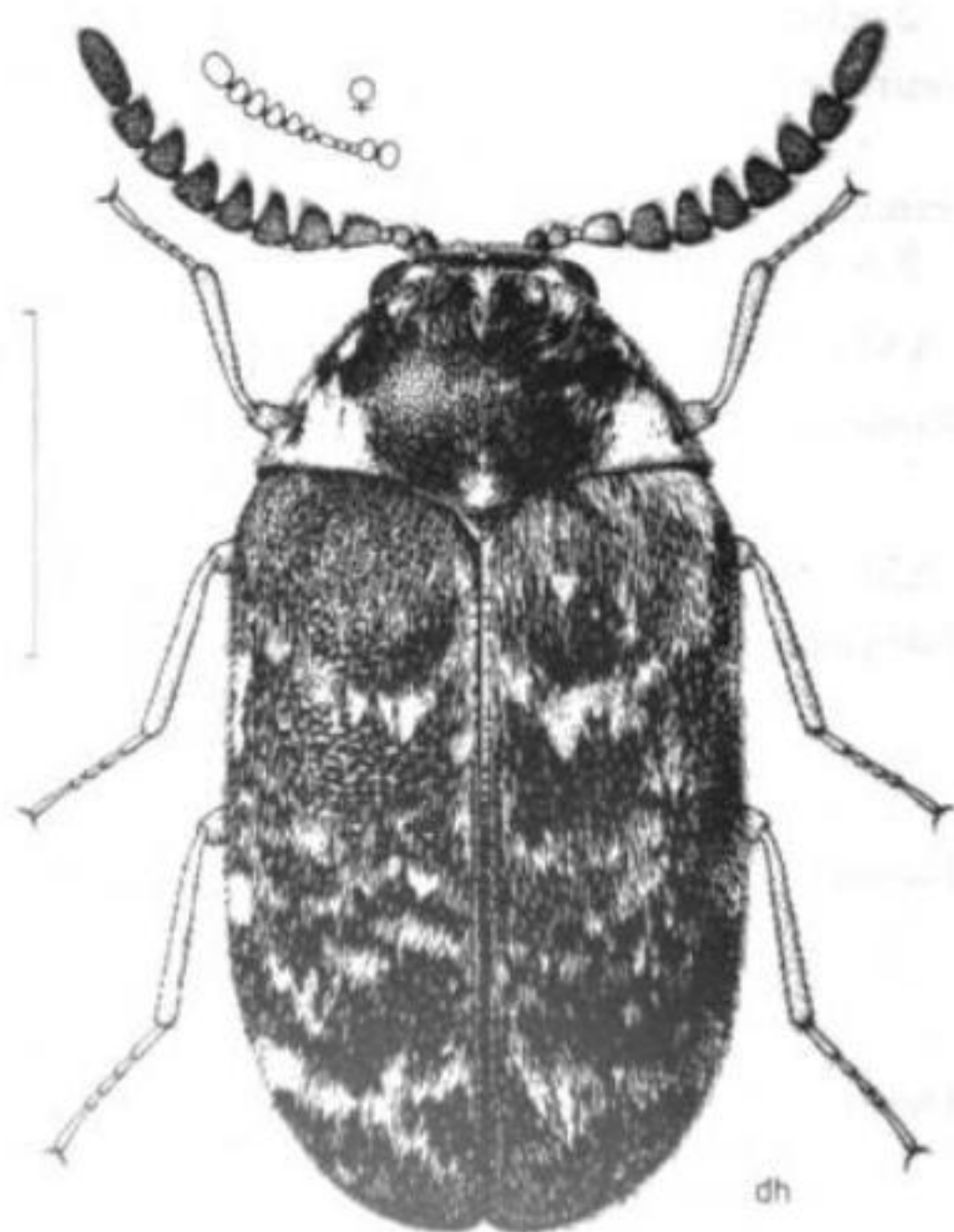
1 adult: Sept. 1980; lit. 71; 170 m. Also introduced, first described from Mauritius, but widely distributed elsewhere.

***Anotylus* sp. nov.**

7 adults: Sept. 1980; lit. 71; 170 m. Apparently endemic to Northland and Auckland; identified under a manuscript name by Mr P. M. Hammond, British Museum (Natural History).



1



2

Coleoptera occurring on the Poor Knights Islands. Fig 1 — *Ctenognathus novaezealandiae*; Fig. 2 — *Trogoderma maestum*.

"Dasynotus" sp. (Aleocharinae)

5 adults: Sept. 1980; lit. 68, 70; pan traps in forest; pit 81. Possibly a Poor Knights endemic.

Ocalea socialis (Broun, 1880) (Aleocharinae)

7 adults: Sept. 1980; lit. 70, 71; pan traps in open and in forest. 30-200 m.

"Omaliium" spadix (Broun, 1880) (Omaliinae)

59 adults: Sept. 1980; lit. 67, 69, 71, 73; pit 76, 79, 81, 84; pan traps in forest; 35-170 m. This species was labelled in 1949 by W. O. Steel as "*Omaliomimus spadix*". It does not agree with Steel's (1964) description of *Omaliomimus*, so in the meantime, it is best retained in its original genus.

Sepedophilus acerbus (Broun, 1880) (Tachyporinae)

2 adults: Sept. 1980; lit. 69; 71; 160-170 m.

Thamiaraea sp. nov. (Aleocharinae)

48 adults: Sept. 1980; lit. 69, 70, 71, 73; pan traps in forest and open; 40-200 m. Possibly a Poor Knights endemic.

FAMILY PSELAPHIDAE

Dalma sp.

2 adults: Sept. 1980; lit. 67, 68; 200 m.

Eupines sp.

16 adults: Sept. 1980; lit. 68, 72; 30-200 m.

Eupines sp.

1 adult: Sept. 1980; lit. 72; 30 m.

Sagola insignis Broun, 1893

4 adults: Sept. 1980; lit. 72, 73; 30-40 m.

Zeatyryus lawsoni Sharp, 1881

5 adults: Sept. 1980, lit. 68, 200 m.

Zelandius sandageri (Broun, 1893)

8 adults: Sept. 1980; lit. 69, 73; 40-160 m.

FAMILY LUCANIDAE

Ceratognathus irroratus (Parry, 1845)

1 adult: Jan. 1956, ex rotten wood.

Lissotes sp. nov.

2 adults: Sept. 1980; pit 77; under stone in clearing. This is a Poor Knights endemic, apparently most closely related to *L. oconnori* Holloway, 1961, from the Spirits Bay area, and *L. triregius* Holloway, 1963, from the Three Kings Islands, at least on superficial characters. This species is probably the most significant entomological find of the expedition. Strangely, both specimens were found in a small clearing, which had apparently been used previously as a camp site, near Charles Stream. It is one of the most modified sites on Tawhiti Rahi (see notes on malaise trap and pit 77).

FAMILY SCARABAEIDAE

Odontria sp. nov.

9 adults: Jan. 1956, 1; Sept. 1980, 8; at light, in or near camp; pit 80. 4 larvae: Shag Bay; ex soil. Found so far only near Shag Bay, but probably widely distributed. Another Poor Knights endemic, apparently most closely related to *Odontria xanthosticta* (White, 1846), which occurs on most of the northern islands.

FAMILY ELATERIDAE

Amphiplatys lawsoni Sharp, 1877

32 adults: Dec. 1971, 19; Sept. 1980, 13. 3 larvae: Sept. 1980; lit. 67, 70, 73, 153; pit 84; 40-200 m. A common leaf litter species.

***Ctenicera* sp. nov.**

3 adults: Sept. 1980; near camp, beaten at night; lit. 73. 1 larva: Sept. 1980, ex soil in forest. 30-50 m. Appears to be closest to *Ctenicera antipoda* (White, 1846); possibly a Poor Knights endemic.

***Lomemus* sp.**

1 larva: 11 Sept. 1980; ex dead standing *Planchonella novo-zelandica*.

***Ochosternus zealandicus* (White, 1846)**

1 larva: Sept. 1980; lit. 68; 200 m. A common coastal and lowland species in rotten wood: adults come to light in summer.

***Thoramus laevithorax* White, 1846**

2 adults: Jan. 1943, Jan. 1956; beaten from *Melicytus ramiflorus*. 2 larvae: Sept. 1980; ex dead standing *Planchonella novo-zelandica*.

FAMILY CANTHARIDAE

***Asilis* sp.**

1 larva: Sept. 1980; lit. 69; 160 m.

FAMILY DERMESTIDAE

***Trichelodes vulgata* (Broun, 1880)**

6 larvae: Sept. 1980; lit. 68; 200 m. These larvae are virtually identical with larvae of this species from the mainland. As dermestid larvae are as easily distinguished specifically as the adults, and only one species of the genus is known in New Zealand, I am confident in the identification.

***Trogoderma maestum* Broun, 1880**

1 adult: Sept. 1980; under stone.

Fig. 2

FAMILY TROGOSSITIDAE

***Leperina brouni* Pascoe, 1876**

8 adults: Jan. 1943, 3; Jan. 1956, 4; Sept. 1980, 1. Under *Metrosideros excelsa* bark, beaten from dead foliage. Found on virtually all the northern islands; strictly coastal on the mainland. Adults are frequently found on tree trunks at night, and have been observed feeding there, probably on green algae rather than on the bark itself. Larvae are apparently predators of wood-boring larvae.

FAMILY CLERIDAE

***Phymatophaea opiloides* Pascoe, 1876**

11 adults: Jan. 1942, 1; Jan. 1956, 10. Beaten from *Coprosma macrocarpa* and *Carmichaelia* sp.

***Phymatophaea testacea* Broun, 1881**

1 adult: Jan. 1956, beaten from *Melicytus ramiflorus*.

FAMILY MELYRIDAE

***Arthracanthus* sp. 2**

9 adults: Jan. 1956; beaten from flowering *Myoporum laetum* and flowering *Hebe* sp. Apparently an undescribed species, occurring also on the Three Kings Islands.

***Dasytes laticeps* Broun, 1880**

3 adults: Nov. 1965, 1; Sept. 1980, 2; beaten from shrubs.

***Dasytes* sp. 2**

44 adults: Jan. 1956, 28; Nov. 1965, 3; Sept. 1980, 13. Beaten from flowering *Hebe* sp., from flowering *Myoporum laetum*, from *Geniostoma ligustrifolium*. Apparently a Poor Knights endemic.

***Halyles semidilutus* Broun, 1886**

4 adults: Nov. 1965, 1; Sept. 1980, 3. Beaten from shrubs.

FAMILY CUCUJIDAE

Cryptamorpha brevicornis (White, 1846)

2 adults: Nov. 1965, Sept. 1980; 30 m.

FAMILY CRYPTOPHAGIDAE

"*Cryptophagus*" sp. aff. *rutilus* Broun, 1880

5 adults: Sept. 1980; pan trap, Shag Bay; beaten at night. This apparently undescribed species occurs also on the mainland (Auckland, Taranaki). No native New Zealand species are genuine *Cryptophagus*. Although Crowson and Sen Gupta proposed over ten years ago to erect new genera, these have not yet been published.

Salltus ruficeps (Broun, 1880)

3 adults: Sept. 1980; lit. 73; 40 m.

FAMILY LANGURIIDAE

Loberus nitens (Sharp, 1876) Watt, comb. nov. (from *Telmatophilus*)

21 adults: Jan. 1956; beaten from *Coprosma repens*, *Pittosporum crassifolium*, *Melicetyus ramiflorus*, *Carmichaelia* sp. 8 larvae: Sept. 1980; lit. 69; 30-160 m. This species and *Loberus depressus* (Sharp, 1876) Grouvelle, 1919 were originally described in *Telmatophilus* Heer, 1841, a strictly Palaearctic genus (Crowson, 1955) belonging in Cryptophagidae. Both species agree with the genus *Loberus* Leconte, 1861, as defined by Sen Gupta and Crowson (1971).

FAMILY CERYLIDAE

Hypodacne rubripes (Reitter, 1880)

3 adults: Sept. 1980, lit. 73, 40 m.

FAMILY CORYLOPHIDAE

Anidomeristes sharpi Matthews, 1886

20 adults: Sept. 1980; lit. 67, 72, 73. 8 larvae: Sept. 1980; lit. 68, 72, 73. 30-200 m.

Holopsis rotundatus Broun, 1893

1 adult: Sept. 1980; lit. 69, 160 m.

Holopsis sp. 2

8 adults: Sept. 1980; lit. 72, 73. 25 larvae: Sept. 1980, lit. 73. 30-40 m.

Holopsis sp. 3

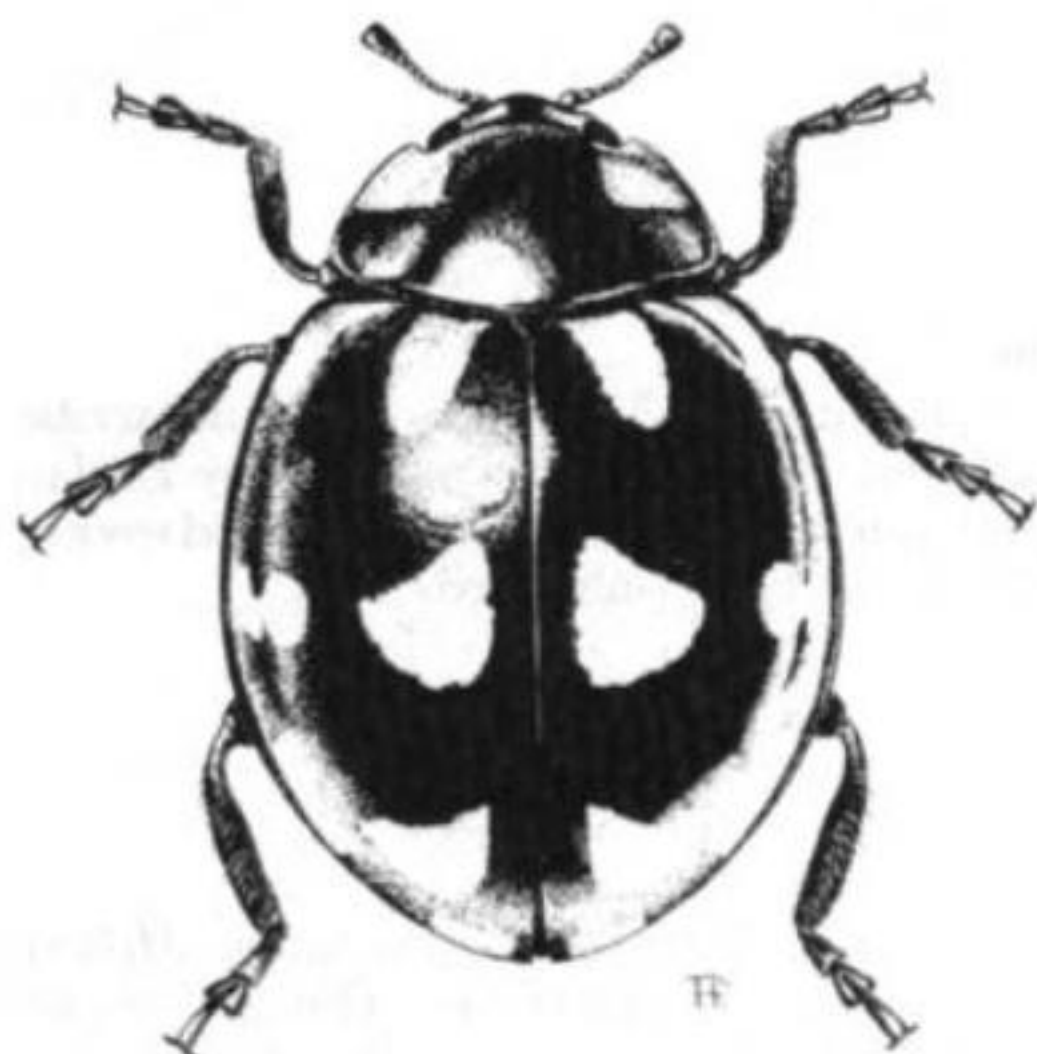
1 adult: Sept. 1980, lit. 72, 30 m. Possibly a Poor Knights endemic, but more likely occurs elsewhere but yet to be recognised.

FAMILY COCCINELLIDAE

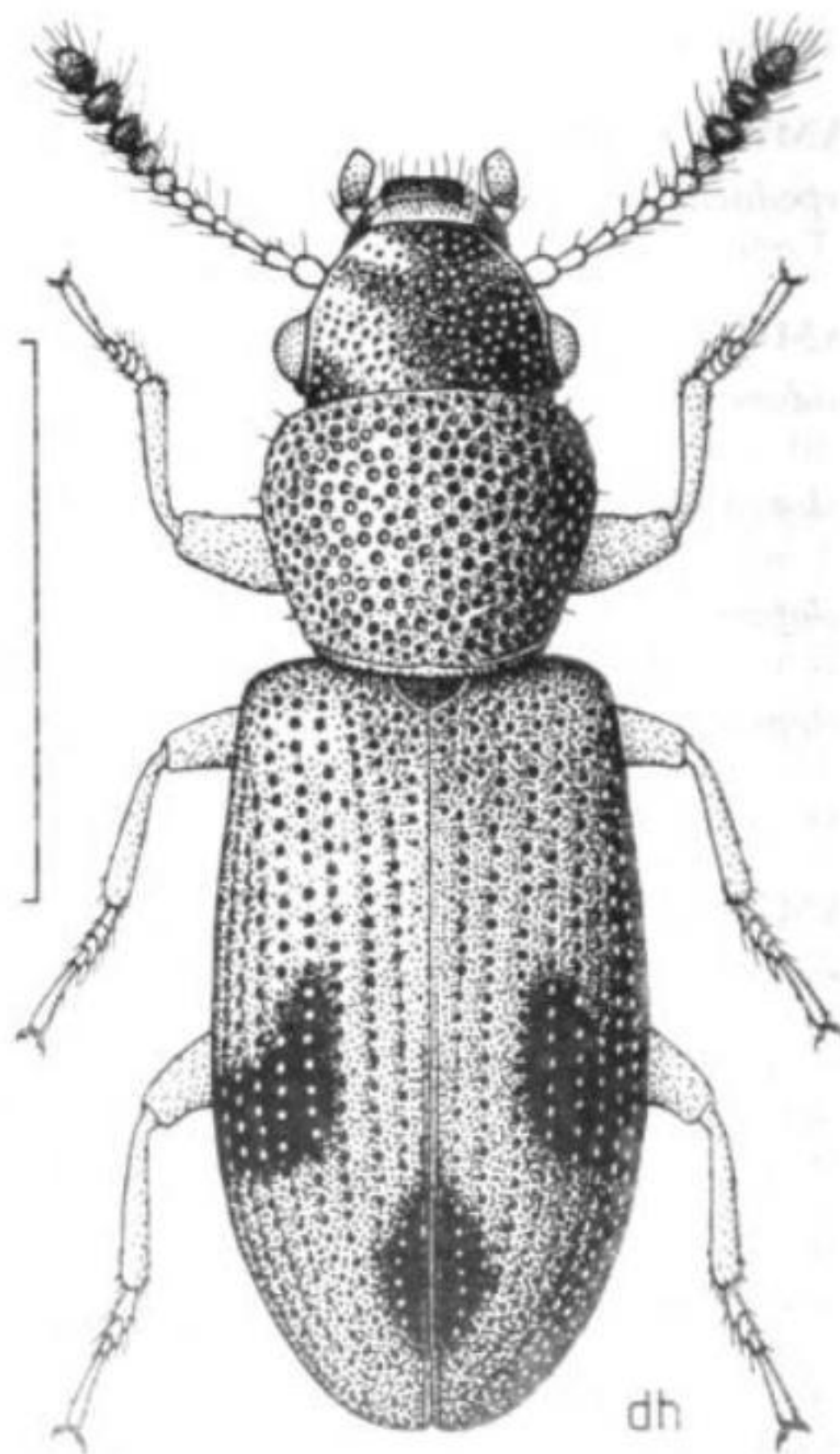
Coccinella leonina Fabricius, 1775

(Fig. 3)

8 adults: Jan. 1943, 1; Jan. 1956, 3; Nov. 1965, 2; Sept. 1980, 2. beaten from *Leptospermum scoparium* and *Coprosma repens*, shrubs at night; in tent. This common native ladybird does not occur on the mainland in Northland, Auckland, or Coromandel although it occurs on several northern islands. It appears to be a general feeder on aphids, and occurs frequently in pastures and adventive crops, as well as native habitats, in the southern North Island and in the South Island. As it is a common, conspicuous beetle where it occurs, it is unlikely that it has been overlooked in northern areas of the mainland. Its restriction to islands in the north cannot be explained by either climate alone or habitat modification. It seems most likely that it extended to the far north in pre-European times, although it was better adapted to the climate farther south. The European ladybird *Coccinella undecimpunctata* Linnaeus, 1758 was introduced to New Zealand in the first half of the nineteenth century. This species, which is also a general predator on aphids, is climatically versatile. Apparently, *Coccinella leonina* was unable to compete successfully with *C. undecimpunctata* in the north, although it has held its own further south. This hypothesis



3



4

dh

Fig 3 — *Coccinella leonina*; Fig 4 — *Salpingus bilunatus* Figs 1, 2, 4 del D W Helmore Fig 3 del A C. Harris

is supported by the absence of the European species on northern islands where *C. leonina* occurs, and vice versa.

***Harmonia conformis* (Boisduval, 1835)**

1 adult: Jan. 1956. The only island record of this introduced Australian species.

"*Scymnus*" *consors* Broun, 1880

1 adult: Aorangi; 9 Jan. 1956; beaten from *Coprosma repens*. None of the native ladybirds belong in *Scymnus*. Some fall under *Veronicobius* Broun, 1893, but all require further study.

"*Scymnus*" *minutulus* Broun, 1880

1 adult: Jan. 1956; beaten from *Pseudopanax leasonii*.

"*Scymnus*" *tristis* Broun, 1880

3 adults: Jan. 1956; beaten from *Coprosma repens*; Aorangi, beaten from *Pittosporum crassifolium*.

"*Scymnus*" sp. aff. *rarus* Broun, 1880

1 adult: Sept. 1980; lit. 72; 30 m.

FAMILY MEROPHYSIIDAE

***Holoparamecus* sp. 4**

27 adults: Sept. 1980; lit. 68, 71, 72, 73; 30-200 m. Apparently a Poor Knights endemic, closest to *Holoparamecus* sp. 2, an undescribed species from the Three Kings Islands.

***Holoparamecus* sp. 8**

5 adults: Sept. 1980; lit. 68, 72; 30-200 m. A Poor Knights endemic, or a geographical race of *Holoparamecus* sp. 6 from other northern islands.

FAMILY LATHRIDIIDAE

***Lithostygnus sinuosus* (Belon, 1884)**

8 adults: Sept. 1980; lit. 68, 73; 40-200 m. MacKechnie-Jarvis (1972) reinstated *Lithostygnus* Broun, 1886, which had previously been synonymised with *Metophthalmus* Motschulsky, 1850. This reinstatement seems to be soundly based, so the three New Zealand species recognised by Watt (1969) should be known as *L. sinuosus*, *Lithostygnus minor* Broun, 1893, and *Lithostygnus serripennis* Broun, 1914.

"*Melanophthalma*" *zealandica* Belon, 1884

11 adults: Sept. 1980, beaten at night.

FAMILY COLYDIIDAE

***Acosmetus* sp. nov. aff. *granulatus* Broun, 1880**

1 adult: Sept. 1980; pit 82; 110 m. Possibly a Poor Knights endemic.

***Bitoma vicina* Sharp, 1876**

1 adult: Sept. 1980; beating.

***Coxelus* sp.**

10 adults: Sept. 1980; lit. 73; 40 m.

***Epistranus* sp. aff. *humeralis* Broun, 1880**

1 adult: Sept. 1980; lit. 73, 40 m. Possibly a Poor Knights endemic.

***Ithris gracilis* Sharp, 1876**

1 adult: Jan. 1956; beaten from *Carmichaelia* sp. There are very few specimens of this widely distributed species in collections.

***Pristoderus* sp. nov. aff. *asper* (Sharp, 1876)**

1 adult: Sept. 1980; beaten at night. Possibly a Poor Knights endemic.

***Pycnomerus simplex* Broun, 1880**

1 adult: Sept. 1980; lit. 69; 200 m.

***Syncalus* sp. nov.**

3 adults: Sept. 1980; lit. 69, 70; 160-200 m.

***Tarphiomimus* sp. nov. aff. *indentatus* Wollaston, 1873**

7 adults: Jan. 1956, 1; Sept. 1960, 6. Beaten from *Metrosideros excelsa*, at night; pan trap in forest. Probably a Poor Knights endemic.

FAMILY TENEBRIONIDAE***Artystona erichsoni* (White, 1846) (Tenebrioninae)**

29 adults: Jan. 1943, 10; Jan. 1956, 4; Apr. 1961, 1 (Aorangi); Nov. 1965, 9; Sept. 1960, 5; on tree trunks and branches at night. 2 larvae: Sept. 1980; on tree trunk and on foliage of *Geniostoma ligustrifolium* at night.

***Chrysopeplus expolitus* (Broun, 1880) (Tenebrioninae)**

34 adults: Jan. 1943, 2; Jan. 1956, 5 (incl. Aorangi); Nov. 1965, 16 (incl. Motu Kapiti); Aug. 1970, 9; Sept. 1980, 17. Cut from dead wood; in forest litter; on trunks, branches and ground at night. 1 larva: Sept. 1980; lit. 73. This is a strictly coastal species, on the mainland restricted to the east coast of Northland, Auckland, and Coromandel and occurring on almost all northern islands.

***Mimopeus elongatus* (Brême, 1842) (Tenebrioninae)**

19 adults: Jan. 1943, 2; Jan. 1956, 2 (incl. Aorangi); Nov. 1965, 15 (incl. Motu Kapiti); under stones; on ground at night. 1 larva: Sept. 1980, under log. A common coastal species in most parts of New Zealand, abundant on islets without rats (e.g. Bream Islets). Apparently much more common on Tawhiti Rahi during late spring and summer than in September, when no adults were seen.

***Mimopeus* sp. nov. aff. *opaculus* (Bates, 1873)**

44 adults: Mar. 1934, 2; Jan. 1943, 8; Jan. 1956, 6; Nov. 1965, 13; Apr. 1961, 2 (Aorangi); Aug. 1970, 1; Sept. 1980, 12. Under stones; in rotten logs and stumps; on ground at night; pit 75, 78. 30-150 m (not seen on Plateau). This is a Poor Knights endemic. Its closest relative *M. opaculus*, is the common large *Mimopeus* of the southern North Island and much of the South Island. Its northernmost mainland occurrence is Hamilton, Waikato; but it extends farther north on islands (Aldermen and Cuvier). The Poor Knights species is readily kept in captivity: 6 adults collected in Sept. 1980 were still alive and active in Aug. 1981, together with a single large larva reared totally in captivity. They were fed with a mixture of "Sanitarium" Muesli and brewer's yeast.

***Omedes nitidus* Broun, 1893 (Alleculinae)**

1 adult: Nov. 1965. This is the only specimen collected since the original series from Moko Hinau.

***Tanychilus metallicus* White, 1846 (Alleculinae)**

1 adult: Jan. 1956, beaten from *Melicytus ramiflorus*.

***Xylochus* sp. cf. *spinifer* Broun, 1893 (Alleculinae)**

1 adult: Jan. 1956, Aorangi. This specimen is a female, and in the present state of knowledge of this genus, only males can be identified with certainty. However, the Poor Knights female more closely resembles specimens of *X. spinifer* than it does either of the other two species. *X. spinifer* is known with certainty only from the Moko Hinau group.

FAMILY SALPINGIDAE***Salpingus bilunatus* Pascoe, 1876**

(Fig. 4)

2 adults: Jan. 1956, Sept. 1980; beaten from flowering *Hebe* sp.; beaten at night.

***Salpingus* sp. nov.**

1 adult: Jan. 1956, beaten from flowering *Hebe* sp. Possibly a Poor Knights endemic.

FAMILY MELANDRYIDAE***Hylobia* sp.**

1 adult: Sept. 1980, lit. 70; 200 m.

Genus species indet.

1 larva: Sept. 1980, ex dead *Metrosideros excelsa* wood. This larva has very short, small

urogomphi borne on the high, prominent, upcurved sclerotised apex of segment 9. Similar larvae have been collected (rarely) on the mainland, but they have not yet been associated with adults.

FAMILY SCRAPTIIDAE

The genus *Nothotelus* Broun, 1914, was established for a single species *ocularis* Broun, 1914, from Wallacetown, Southland, and referred to Melandryidae. This species is close to *Hylobia usitata* Broun, 1880. These species, and *Hylobia nigella* Broun, 1880 are undoubtedly Scaptiidae as defined by Boving and Craighead (1931) and Crowson (1955). Adults have pubescent tibial spurs, and larvae have the "body terminating in a deciduous ovate appendage".

Mr R. D. Pope, British Museum (Natural History), kindly permitted me to examine the type specimens of these three species. Lectotypes for the two northern species are designated below (*N. ocularis* is based on the unique holotype).

***Nothotelus usitatus* (Broun, 1880) Watt, comb. nov.**

Broun, 1880, Man. N.Z. Col. 1: 407 (*Hylobia*). Lectotype ♀, BMNH, is the left-hand syntype of two mounted on a single card, which bears the following labels: "719 [green]/New Zealand. Broun Coll. Brit. Mus. 1922-482 [printed]/Tairua/*Hylobia usitata* [Broun's hand]". 2.6 × 0.9 mm. Poor Knights records: 6 adults: Sept. 1980; beaten at night; pan trap in forest. Larvae in lit. 70, 72 and 73 may be this or the following species.

***Nothotelus nigellus* (Broun, 1880) Watt, comb. nov.**

Broun, 1880, Man. N.Z. Col. 1: 407 (*Hylobia*). Lectotype ♀, BMNH, is the right-hand specimen of two mounted on a single card, which bears the following labels: "720 [green]/New Zealand. Brit. Mus. 1922-482 [printed]/*Hylobia nigella* [Broun's hand]". 2.0 × 0.8 mm. Poor Knights records: 6 adults: Jan. 1956; beaten from *Hebe* sp. and *Carmichaelia* sp.

FAMILY OEDEMERIDAE

***Thelyphassa latiuscula* (Broun, 1880) subsp. nov.**

12 adults: Jan. 1956, 8; Nov. 1965, 4. Beaten from *Coprosma macrocarpa* and *Pittosporum crassifolium*. Hudson (1975) notes that specimens from the Poor Knights Islands are all fuscous in colour (compared with specimens from elsewhere, which are testaceous or fulvous). There are numerous less obvious differences in shape, sculpture and clothing which warrant recognition of the Poor Knights population as a 'strong' subspecies, or possibly a separate species.

FAMILY CERAMBYCIDAE

***Gastrosarus* sp. nov. (Cerambycinae)**

3 adults: Jan. 1956, 2; Dec. 1980. Beaten from *Melicytus ramiflorus*. A Poor Knights endemic. The common mainland species *G. nigricollis* is a twig girdler in a wide range of host species, but especially *Leptospermum scoparium*.

***Hybolasius vegetus* Broun, 1881 (Lamiinae)**

9 specimens: Jan. 1956, 6 (incl. Aorangi); Nov. 1965, 1; Sept. 1980, 2. Beaten from *Melicytus ramiflorus*, *Olearia* sp., *Carmichaelia* sp.

***Hybolasius viridescens* Bates, 1874**

1 adult: Sept. 1980, pan trap in forest.

***Navomorpha lineata* (Fabricius, 1775) (Cerambycinae)**

2 adults: Jan. 1956; beaten from *Melicytus ramiflorus* and *Myoporum laetum*.

***Navomorpha neglecta* Broun, 1880**

1 adult: Jan. 1956, beaten from *Melicytus ramiflorus*. This is the only specimen of this species in a New Zealand collection, it previously being known only from the unique holotype (from Tairua, Coromandel) in London.

***Navomorpha sulcata* (Fabricius, 1775)**

2 adults: Jan. 1956; beaten from flowering *Hebe* sp.

***Stenellipsis aegrota* (Bates, 1874) Kuschel, comb. nov. (Lamiinae)**

21 specimens: Jan. 1943, 1; Jan. 1956, 16; Nov. 1965, 3; Sept. 1980, 1. Beaten from *Melicytus ramiflorus*, *Coprosma macrocarpa*, and *Carmichaelia arborea*. Previously in *Xylotoles*.

***Stenellipsis nana* (Bates, 1874) Kuschel, comb. nov.**

48 adults: Jan. 1956, 40 (incl. Aorangi); Sept. 1980, 8. Beaten from *Carmichaelia arborea*, *Leptospermum ericoides*, *Melicytus ramiflorus* and *Pseudopanax lessonii*. Previously in *Xylotoles*.

***Somatidia* (*Tenebrosoma*) sp. nov. (Lamiinae)**

8 adults: Dec. 1973, 4; Sept. 1980, 4. Lit. 67, 69, 70, 71, 153. A Poor Knights endemic (det. G. Kuschel).

***Xylotoles griseus* (Fabricius, 1775) (Lamiinae)**

39 adults: Jan. 1943, 1; Jan. 1956, 6; Nov. 1965, 3; Sept. 1980, 18. Beaten from many species of woody plants, including *Coprosma macrocarpa*, *Pseudopanax lessonii*, *Pittosporum crassifolium* and *Melicytus ramiflorus*, especially at night. In Poor Knights specimens, the patches of orange or yellow pubescence on the elytra are much larger than in any other population.

***Xylotoles inornatus* Broun, 1880**

5 adults: Jan. 1956, 3 (incl. Aorangi); Sept. 1980, 2. Beaten from *Melicytus ramiflorus*; beaten at night.

***Xylotoles laetus* (White, 1846) subsp. nov.**

4 adults: Jan. 1956; beaten from *Melicytus ramiflorus* and *Carmichaelia arborea*. The Poor Knights specimens are larger than any mainland specimens (10.4-11.8 *D* 3.5-4.0 mm, compared with 6.1-8.7 *D* 2.0-3.1 mm). Mainland specimens have small, dense, orange patches of pubescence on head, pronotum and elytra. In Poor Knights specimens, the patches are much less dense, and pale yellow in colour. Poor Knights specimens have stronger and more numerous transverse wrinkles on the pronotum, and stronger dorsal microsculpture than mainland specimens. The Poor Knights population is certainly a "strong" subspecies and is perhaps specifically distinct..

FAMILY CHRYSOMELIDAE***Eucolaspis* sp. nov. aff. *vittiger* Broun, 1893 (Eumolpinae)**

25 specimens: Jan. 1956, 8 (incl. Aorangi); Nov. 1965, 12; Sept. 1980, 5. *Eucolaspis brunneus* of Shaw (1957) appears to be a complex of several species. The Poor Knights specimens have much stronger microsculpture than any of the complex, but they appear to be closest to *E. vittiger*.

FAMILY ANTHRIBIDAE (Det. B. A. Holloway)**"*Anthribus*" *brouni* Sharp, 1876**

6 adults: Jan. 1956, 5; Sept. 1980, 1. Beaten from *Carmichaelia arborea* and *Metrosideros excelsa*; beaten at night.

"*Anthribus*" *hetaera* Sharp, 1876

1 adult: Jan. 1956; beaten from *Carmichaelia arborea*.

***Cacephatus huttoni* (Sharp, 1876)**

1 adult: Jan. 1956; beaten from *Pittosporum crassifolium*.

***Dysnocryptus inflatus* (Sharp, 1876)**

5 adults: Jan. 1956, 1; Sept. 1980, 4. Lit. 72, 73; beaten from *Carmichaelia arborea*.

***Exilis lawsoni* (Sharp, 1873)**

11 adults: Jan. 1956, 9 (incl. Aorangi); Dec. 1971, 2. Beaten from *Carmichaelia arborea* and *Leptospermum scoparium*.

FAMILY APIONIDAE

Neocyba metrosideros (Broun, 1880)

See Kuschel (1982) for details.

FAMILY CURCULIONIDAE

See Kuschel (1982). The following list is in alphabetical order. Subfamily names are given by Kuschel.

Agacalles sp. nov.*Allanalcis* sp. nov.*Anagotus fairburni* (Brookes, 1932)*Anagotus rugosus* (Broun, 1883)*Anagotus turbotti* (Spiller, 1942)*Anagotus* sp.*Andracalles* sp. nov.*Aneuma rubricale* (Broun, 1880)*Chaetoptelius mundulus* (Broun, 1881)*Clypeolus pascoei* (Broun, 1880)*Clypeolus signatus* (Broun, 1880)*Clypeolus veratrus* (Broun, 1893)*Crisius variegatus* Broun, 1880*Crisius* sp. nov.*Didymus intutus* (Pascoe, 1876)*Didymus* sp. nov.*Ectopsis* sp. nov.*Eiratus parvulus* Pascoe, 1877*Exomesites* sp. nov.*Getacalles ventralis* (Broun, 1885)*Gymnaetron pascuorum* (Gyllenhal, 1813)*Hadracalles fuliginosus* Broun, 1893*Irenimus compressus* (Broun, 1880)*Macroscytalus remotus* (Sharp, 1878)*Mandalotus irritus* (Pascoe, 1877)*Metacalles* sp. 1*Metacalles* sp. 2*Microtribus huttoni* Wollaston, 1873*Microtribus* sp. nov.*Neomycta rubida* Broun, 1880*Notacalles floricolus* (Broun, 1886)*Notacalles* sp.*Novitas dispar* Broun, 1893*Nyxetes bidens* (Fabricius, 1775)*Pachyops dubius* (Wollaston, 1873)*Pactola variabilis* (Pascoe, 1876)*Paelocharis clarus* (Broun, 1880)*Pentarthrum brevicorne* (Broun, 1914)*Pentarthrum zealandicum* (Wollaston, 1873)*Peristoreus glottis* (Pascoe, 1877)*Peristoreus sexmaculatus* (Broun, 1881)*Peristoreus stramineus* (Broun, 1881)*Peristoreus sudus* (Broun, 1881)*Phloeophagosoma brouni* (Kuschel, 1982)*Phloeophagosoma pedatum* (Wollaston, 1874)*Phrynixus* sp. nov.*Praolepra fultoni* Broun, 1886*Praolepra* sp. nov.*Psepholax femoratus* (Broun, 1880)*Psepholax mediocris* (Broun, 1886)*Psepholax sulcatus* White, 1846*Scelodolichus* sp. nov.*Sericotrogus subaenescens* Wollaston, 1873*Simachus montanus* Broun, 1886*Stephanorhynchus lawsoni* Sharp, 1876*Strongylopterus hylobioides* (White, 1846)*Touropsis brevirostris* (Sharp, 1878)*Tychanopais* sp. nov.*Tysius bicornis* (Fabricius, 1781)

ORDER DIPTERA

FAMILY CULICIDAE

Opihex fuscus Hutton, 1902

2 adults; Nov. 1965; larvae very common in high tidal saltwater pool [none collected]; adults common in vicinity. The saltpool mosquito; common on rocky coasts throughout New Zealand.

FAMILY ASILIDAE

Neoitamus varius (Walker, 1849)

2 adults; Nov. 1965; on larger vegetation of ground cover; in tent.

FAMILY LAUXANIIDAE

Sapromyza neozelandica Tonnoir and Malloch, 1926

3 adults; Nov. 1965; on vegetation; on walls of tent.

ORDER LEPIDOPTERA (Det. J. S. Dugdale)

FAMILY MICROPTERYGIDAE

"Sabatinca" zonodoxa Meyrick, 1888

3 adults; Sept. 1980; pan traps; pan trap in forest. This appears to be the first record of Micropterygidae from a long-isolated island around New Zealand.

FAMILY TINEIDAE

***Crypsitricha pharotoma* (Meyrick, 1888)**

2 adults: Sept. 1980; pan trap; pan trap in forest.

***Dryadaula myrrhina* Meyrick, 1905**

2 adults: Sept. 1980; pan trap in forest.

***Endophthora pallacopis* Meyrick, 1918**

1 adult: Sept. 1980, Shag Bay, malaise trap.

***Erechthias exospila* Meyrick, 1901**

2 adults: Sept. 1980; Shag Bay, malaise trap; malaise trap, 130 m.

***Eschatotypa* sp. cf. *derogatella* Walker, 1863**

1 adult: Sept. 1980, Shag Bay, malaise trap.

***Monopis dimorphella* Dugdale, 1971**

3 adults: Sept. 1980; Shag Bay, malaise trap, pan trap.

***Trithamnora certella* Walker, 1863**

3 adults: Sept. 1980; Shag Bay; malaise trap.

FAMILY PSYCHIDAE

***Scoriodyta conisalia* Meyrick, 1888**

1 adult: Sept. 1980; Shag Bay; malaise trap.

FAMILY CARPOSINIDAE

***Paramorpha marginata* Philpott, 1931**

1 adult: Sept. 1980; Shag Bay; malaise trap.

FAMILY GLYPHIPTERIGIDAE

"*Glyphipteryx*" *tungella* Felder, 1875

1 adult: Sept. 1980; Shag Bay; malaise trap.

FAMILY CHOREUTIDAE

***Tebenna bradleyi* Clarke, 1971**

1 adult: Sept. 1980; Shag Bay; malaise trap. This species occurs throughout New Zealand, and also from India to Rapa. Its larvae feed on Compositae, especially herbaceous species (J. S. Dugdale).

FAMILY TORTRICIDAE

"*Argyroploce*" *chlorosaris* Meyrick, 1914

1 adult: Sept. 1980; pan trap in forest.

***Capua semiferana* complex, sp. A**

1 adult: Sept. 1980; Shag Bay; pan trap. Larvae live in forest litter (J. S. Dugdale).

"*Cnephasia*" *jactatana* (Walker, 1863)

5 adults: Sept. 1980; Shag Bay, malaise trap, pan trap; pan trap in forest; lit. 73.

***Ctenopseustis servana* (Walker, 1863)**

2 adults: Sept. 1980; Shag Bay, malaise trap; malaise trap, 130 m. This species has a patchy coastal distribution from the Three Kings Islands to Wellington (J. S. Dugdale).

***Prothelymna antiquana* (Walker, 1863)**

2 adults: Sept. 1980; malaise trap; 130 m. The larva makes galls in twigs of *Myoporum laetum* (J. S. Dugdale).

***Strepsicrates parthenia* Meyrick, 1888**

1 adult: Sept. 1980; Shag Bay; malaise trap.

***Strepsicrates zopherana* Meyrick, 1881**

1 adult: Sept. 1980; Shag Bay; pan trap. Larvae feed on *Leptospermum*.

FAMILY GELECHIIDAE

"Athrips" zophochalca (Meyrick, 1918)

1 adult: Sept. 1980; Shag Bay; malaise trap. The larva mines young stems of *Carmichaelia* (J. S. Dugdale).

FAMILY MOMPHIDAE

***Zapyrastra calliphana* Meyrick, 1889**

1 adult: Sept. 1980; Shag Bay; malaise trap. The larva mines leaves of *Muehlenbeckia* (J. S. Dugdale).

FAMILY COLEOPHORIDAE

***Batrachedra arenosella* (Walker, 1864).**

2 adults: Sept. 1980; Shag Bay; malaise trap.

FAMILY OECOPHORIDAE

***Stathmopoda* sp. cf. *skelloni* auct.**

15 adults: Sept. 1980; Shag Bay; malaise trap; pan trap.

***Tingena armigerella* (Walker, 1864)**

1 adult: Sept. 1980; lit. 73; 40 m.

***Tingena basella* (Walker, 1863)**

3 adults: Sept. 1980; lit. 71; 170 m.

***Tingena chloradelpha* (Meyrick, 1905)**

1 adult: Sept. 1980; pit 75; 30 m.

***Tingena* sp. (12 mm wingspan, speckled)**

1 adult: Sept. 1980; Shag Bay; malaise trap.

***Tingena* sp. (17 mm wingspan, patterned with brown)**

3 adults: Sept. 1980; lit. 72; Shag Bay; malaise trap.

FAMILY PTEROPHORIDAE

***Aciptilia monospilalis* Walker, 1864**

1 adult: Sept. 1980; Shag Bay; pan trap. Larvae feed on Araliaceae (J. S. Dugdale).

***Platyptilia repletalis repletalis* Walker, 1864**

1 adult: Sept. 1980; Shag Bay; malaise trap. Larvae feed on *Plantago* (J. S. Dugdale).

FAMILY PYRALIDAE

***Pareromene* sp.**

1 adult: Sept. 1980; Shag Bay; pan trap.

Genus species indet. (Pyraustinae)

1 adult: Sept. 1980; Shag Bay; pan trap.

***Scoparia* sp. (*philerga* group)**

1 adult: Sept. 1980; Shag Bay; malaise trap.

FAMILY GEOMETRIDAE

***Gellonia dejectaria* (Walker, 1860)**

2 adults: Sept. 1980; Shag Bay.

***Homoditis megaspilata* (Walker, 1862)**

1 adult: Sept. 1980; pan trap. Larvae feed on forest litter.

"Horisme" bipartita Prout, 1958 (nomen nudum)

1 adult: Sept. 1980; pan trap in forest. Larvae feed on *Coprosma*.

FAMILY ARCTIIDAE

***Nyctemera annulata annulata* (Boisduval, 1832)**

1 adult: Sept. 1980; swept. Larvae feed on *Senecio* (Asteraceae).

FAMILY NOCTUIDAE

***Graphania lignana* (Walker, 1857)**

1 adult: Sept. 1980; Shag Bay; malaise trap.

***Homohadena fortis* (Butler, 1879)**

1 adult: Sept. 1980; beaten. Larvae feed on *Hymenanchera* (Violaceae).

FAMILY LYCAENIDAE

***Lycaena rauparaha* (Fereday, 1877)**

1 adult: Sept. 1980, on *Muehlenbeckia complexa*, the larval food plant.

ORDER HYMENOPTERA

FAMILY ICHNEUMONIDAE

***Diadegma* sp.**

1 adult: Nov. 1965.

Genus species indet.

1 adult: Nov. 1965.

FAMILY FORMICIDAE (Det. A. W. Don)

***Amblyopone australis* Erichson, 1842**

11 adults: Nov. 1973, 10 (Aorangi, NMNZ); Sept. 1980, 1; lit. 68; 200 m.

***Chelaner antarcticus* (White, 1848)**

138 adults: Nov. 1973; 123 (Aorangi, NMNZ); Sept. 1980, 15; pit 76, 77; under *Muehlenbeckia complexa*.

***Chelaner smithi* (Forel, 1892)**

1 adult: Nov. 1973; Aorangi, NMNZ.

***Discothyrea antarctica* Emery, 1895**

2 adults: Sept. 1980; lit. 68, 69; 160-200 m.

***Heteroponera brouni* (Forel, 1892)**

38 adults: Nov. 1973, 12 (Aorangi, NMNZ); Sept. 1980, 26; lit. 67, 71, 73; pit 79, 80, 81, 86; 30-200 m.

***Mesoponera castanea* (Mayr, 1865)**

6 adults: Sept. 1980; lit. 67, 69, 71; pit 79; 40-200 m.

***Strumigenys perplexa* (Fr. Smith, 1876)**

2 adults: Sept. 1980; lit. 67, 70; 200 m.

FAMILY VESPIDAE

***Polistes humilis humilis* (Fabricius, 1781)**

3 adults: Nov. 1965. Recorded under the synonymous name *Polistes tasmaniensis* Saussure, 1853, by Somerfield (1973), who states: "Fairly common in sunny situations. A nest 2.5 cm in diameter, attached to a flax leaf, was found by D. Merton."

ORDER OPILIONES (Det. R. R. Forster)

FAMILY PHALANGIDAE

***Megalopsalis* sp.**

7 specimens: Sept. 1980; lit. 70, 71; pit 81; pan traps in forest; 100-200 m.

FAMILY TRIAENONYCHIDAE

***Nuncia sulcata* Forster, 1954**

4 specimens: Sept. 1980; lit. 67, 72; 30-200 m.

***Pristobunus hilus* (Forster, 1954)** Forster, stat. nov.

28 specimens: Sept. 1980; lit. 68, 72, 73; 30-200 m. This species was originally given the rank of subspecies of *Pristobunus acentrus* Forster, 1954.

***Soerensenella prehensor* Pocock, 1903**

3 specimens: Sept. 1980; under stones, *Metrosideros excelsa* forest.

***Triregia* sp. cf. *fairburni* Forster, 1954**

1 specimen: Sept. 1980; under log.

ORDER ACARI (Det. G. W. Ramsay)

FAMILY PHTHIRACARIDAE

Genus species indet.

Sept. 1980; lit. 72, 73; 30-40 m.

FAMILY EUPHTHIRACARIDAE

Genus species indet.

Sept. 1980; lit. 67, 68, 69, 73; 40-200 m.

FAMILY CROTONIIDAE

***Crotonia* sp.**

Sept. 1980; lit. 69, 72, 73; pit 81.

FAMILY LIODIDAE

***Liodes* sp.**

Sept. 1980; pit 75; pan traps; beaten.

	Poor Knights	New Zealand		Poor Knights	New Zealand
CRUSTACEA			HEXAPODA (continued)		
Isopoda	7	68	Phthiraptera	+	192
Amphipoda	+	14	Hemiptera	18	754
MYRIAPODA			Thysanoptera	5	54
Diplopoda	10	81	Neuroptera	+	12
Chilopoda	8	41	Coleoptera	167	4822
Symphyla	+	14	Siphonaptera	+	28
HEXAPODA			Diptera	3+	1870
Collembola	+	354	Trichoptera	1	141
Diplura	+	10	Lepidoptera	40	1490
Archaeognatha	1	1	Hymenoptera	10+	407
Thysanura	1	4	ARACHNIDA		
Odonata	1	13	Pseudoscorpiones	+	67
Blattodea	4	30	Opiliones	5	169
Isoptera	1	13	Araneae	46	1200
Dermaptera	1	21	Acari	4+	697
Orthoptera	8	102			
Phasmatodea	1	30			
Psocoptera	6	51			
			TOTAL	348+	12 750

+ = present; number of species not known. Totals of species for New Zealand are from various sources--primarily Wise (1977) and Johns (1981).

Table 1 — Orders occurring on the Poor Knights Islands.

	E	ND	AK	CL	BP	WO	SN	SO	OS
ISOPODA : Lygiidae									
<i>Lygia novaezealandiae</i>	-	+	+	-	+	-	+	+	-
 Armadillidae									
<i>Cubaris murina</i>	-	+	+	-	+	+	+	+	+
<i>Sphaerillo danae</i>	-	+	+	-	-	-	-	-	-
CHILOPODA : Scutigerae									
 Scutigerae									
<i>Scutigera smithi</i>	-	+	+	+	-	-	-	-	-
 Scolopendridae									
<i>Cormocephalus rubriceps</i>	-	+	+	+	-	-	+	-	+
 Schendylidae									
<i>Ballophilus hounselli</i>	-	+	+	-	+	+	+	-	-
 Chilenophilidae									
<i>Maoriella macrostigma</i>	-	+	+	-	+	-	+	+	-
<i>Maoriella zelanicus</i>	-	+	+	-	-	+	+	-	-
 Lithobiidae									
<i>Lamyctes emarginatus</i>	-	+	+	-	+	+	+	+	-
 Henricopidae									
<i>Anopsobius neozelanicus</i>	-	-	+	-	-	-	+	+	-
BLATTODEA : Blattidae									
<i>Celatoblatta undulivitta</i>	-	+	+	+	+	+	+	+	-
<i>Platyzosteria novaezeelandiae</i>	-	+	+	-	+	-	+	+	-
 Blatellidae									
<i>Ornatiblatta maori</i>	-	+	+	+	-	-	-	-	-
<i>Parellipsidion latipennis</i>	-	+	+	+	+	+	+	+	-
DERMAPTERA : Labiduridae									
<i>Anisolabis</i> sp. aff. <i>kaspar</i>	?	-	-	-	-	-	-	-	-
ORTHOPTERA : Stenopelmatidae									
<i>Deinacrida fallai</i>	+	-	-	-	-	-	-	-	-
<i>Hemiandrus</i> sp. aff. <i>anomalous</i>	+	-	-	-	-	-	-	-	-
 Rhaphidophoridae									
<i>Gymnoplectron giganteum</i>	+	-	-	-	-	-	-	-	-
<i>Neonetus</i> sp.	-	+	+	-	-	-	-	-	-
<i>Talitropsis</i> sp. nov.	+	-	-	-	-	-	-	-	-
Gen. aff. <i>Talitropsis</i> sp. nov.	+	-	-	-	-	-	-	-	-
<i>Weta</i> sp. nov.	+	-	-	-	-	-	-	-	-
 Gryllidae									
<i>Metioche maoricum</i>	-	+	+	+	-	-	+	-	-
<i>Pteronemobius bigelowi</i>	-	+	+	+	-	-	+	-	-
PHASMATODEA : Phasmidae									
<i>Clitarchus</i> sp. aff. <i>hookeri</i>	?	-	-	-	-	-	-	-	-
PSOCOPTERA : Lepidopsocidae									
<i>Echmepteryx hamiltoni</i>	-	+	-	-	+	+	+	+	-
 Caeciliidae									
<i>Caecilius flavus</i>	-	+	+	-	+	+	+	+	+

Table 2 — Known distribution of some species of terrestrial arthropods from the Poor Knights Islands.

	E	ND	AK	CL	BP	WO	SN	SO	OS
Ectopsocidae									
<i>Ectopsocus briggsi</i>	-	+	+	-	+	+	+	+	+
<i>Ectopsocus punctatus</i>	-	+	+	-	+	+	+	+	+
Elipsocidae									
<i>Spilopsocus annulatus</i>	-	-	-	-	-	-	+	+	-
Philotarsidae									
<i>Zelanopsocus kuscheli</i>	-	+	-	-	+	-	+	+	-
HEMIPTERA : Delphacidae									
<i>Ugyops rhadamanthus</i>	-	+	+	-	-	-	+	-	-
Cicadidae									
<i>Amphipsalta cingulata</i>	-	+	+	+	+	+	+	-	-
Cicadellidae									
<i>Myerslopiia sp. aff. triregia</i>	+	-	-	-	-	-	-	-	-
<i>Xestocephalus ovalis</i>	-	+	+	-	+	-	+	+	-
Psyllidae									
<i>Trioza vitreoradiata</i>	-	+	+	-	+	-	+	+	-
Aphididae									
<i>Hyperomyzus lactucae</i>	-	+	+	-	-	+	+	+	+
<i>Rhopalosiphum padi</i>	-	+	+	+	+	-	+	+	+
<i>Toxoptera aurantii</i>	-	+	+	-	+	+	+	-	+
Coccidae									
<i>Ctenochiton viridis</i>	-	-	+	+	+	-	+	+	-
Lygaeidae									
<i>Targarema stali</i>	-	+	+	-	+	+	+	-	-
<i>Tomocoris ornatus</i>	-	+	+	-	+	-	+	-	-
<i>Truncula insularis</i> [islands only]	-	+	+	+	-	-	-	-	-
Acanthosomatidae									
<i>Rhopalimorpha lineolaris</i>	-	+	+	+	+	+	+	+	-
LEPIDOPTERA : Micropterygidae									
<i>"Sabatinca" zonodoxa</i>	-	+	+	-	+	-	+	-	-
Tineidae									
<i>Dryadaula myrrhina</i>	-	+	+	+	+	+	+	-	-
<i>Endophtora pallacopis</i>	-	+	+	+	+	+	+	-	-
<i>Erechthias exospila</i>	-	+	+	-	-	-	-	-	-
<i>Monopis dimorphella</i>	-	+	+	+	+	+	+	+	-
<i>Trithamnora certella</i>	-	+	+	+	+	+	+	+	-
Psychidae									
<i>Scoriodyta conisalia</i>	-	+	+	+	+	+	+	+	-
Carposinidae									
<i>Paramorpha marginata</i>	-	+	+	-	-	-	-	-	-
Glyphipterigidae									
<i>"Glyphipteryx" tungella</i>	-	+	+	+	+	+	+	+	-
Choreutidae									
<i>Tebenna bradleyi</i>	-	+	+	+	+	+	+	+	+
Tortricidae									
<i>"Argyroplote" chlorosaris</i>	-	+	+	+	+	+	+	-	-
<i>Capua sp. A</i>	-	+	+	+	+	+	+	+	-

	E	ND	AK	CL	BP	WO	SN	SO	OS
<i>"Cnephasia" jaotatana</i>	-	+	+	+	+	+	+	+	-
<i>Ctenopseustis servana</i> [coastal]	-	+	+	+	-	+	+	-	-
<i>Prothelymma antiquana</i>	-	+	+	+	+	+	+	+	-
<i>Strepsicrates parthenia</i>	-	+	+	+	+	+	+	+	-
<i>Strepsicrates zopherana</i>	-	+	+	+	+	+	+	+	-
Gelechiidae									
<i>"Athrips" zophochalca</i>	-	+	+	+	+	+	+	+	-
Momphidae									
<i>Zapyrastra calliphana</i>	-	+	+	+	+	+	+	+	-
Coleophoridae									
<i>Batrachedra arenosella</i>	-	+	+	-	-	-	-	-	+
Oecophoridae									
<i>Stathmopoda</i> sp.	-	+	+	+	+	+	+	+	-
<i>Tingena armigerella</i>	-	+	+	-	-	-	-	-	-
<i>Tingena basella</i>	-	+	+	-	-	-	-	-	-
<i>Tingena chloradelpha</i>	-	-	+	+	+	+	+	-	-
Pterophoridae									
<i>Aciptilia monospilalis</i>	-	+	+	+	+	+	+	+	-
<i>Platyptilia r. repletalis</i>	-	+	+	+	+	+	+	+	-
Geometridae									
<i>Gellonia dejectaria</i>	-	+	+	+	+	+	+	+	-
<i>Homodotis megaspilata</i>	-	+	+	+	+	+	+	+	-
<i>"Horisme" bipartita</i>	-	+	+	+	+	+	+	+	-
Arctiidae									
<i>Nyctemera a. annulata</i>	-	+	+	+	+	+	+	+	-
Noctuidae									
<i>Graphania lignana</i>	-	+	+	+	+	+	+	+	-
<i>Homohadena fortis</i>	-	+	+	+	+	+	+	+	-
Lycaenidae									
<i>Lycaena rauparaha</i>	-	+	+	+	+	+	+	+	-
HYMENOPTERA : Formicidae									
<i>Amblyopone australis</i>	-	+	+	+	+	+	+	-	+
<i>Chelaner antarcticus</i>	-	+	+	+	+	+	+	+	-
<i>Chelaner smithi</i>	-	+	+	-	-	-	+	+	-
<i>Discothyrea antarctica</i>	-	-	+	-	-	-	-	+	-
<i>Heteroponera browni</i>	-	+	+	+	+	+	-	-	-
<i>Mesoponera castanea</i>	-	+	+	+	+	-	+	+	-
<i>Strumigenys perplexa</i>	-	+	+	+	-	+	-	-	+
Vespidae									
<i>Polistes h. humilis</i>	-	+	+	+	+	-	-	-	+
OPILIONES : Triaenonychidae									
<i>Nuncia sulcata</i>	-	+	+	-	+	-	-	-	-
<i>Pristobonus hilus</i>	-	-	+	-	-	-	-	-	-
<i>Soerensenella prehensor</i>	-	+	+	+	+	-	-	-	-
TOTALS (88 spp.)	7+2?	73	75	46	56	46	62	46	13
PERCENTAGES	10	83	85	52	64	52	70	52	15

Abbreviations: E+ = species present or probably endemic; ND = Northland; AK = Auckland area; CL = Coromandel area; BP = Bay of Plenty area; WO = Waikato area; SN = southern North Island, including islands; OS = overseas (i.e., anywhere outside New Zealand plus offshore islands). Area abbreviations include islands (see Crosby, Dugdale, and Watt, 1976).

	E	Is	ND	AK	CL	BP	WO	SN	SO	OS
CARABIDAE										
<i>Ctenognathus novaezealandiae</i>	-	+	+	+	+	-	+	-	-	-
<i>Demetrida nasuta</i>	-	+	-	+	-	+	-	+	+	-
<i>Mecodema</i> sp.	-	-	+	-	-	-	-	-	-	-
<i>Notagonum lawsoni</i>	-	+	+	+	-	-	-	+	+	-
<i>Pelodiaetodes prominens</i>	-	+	+	-	-	-	-	-	-	-
<i>Pentagonica vittipennis</i>	-	-	+	+	-	-	-	+	+	-
HISTERIDAE										
" <i>Abraeus</i> " <i>brouni</i>	-	+	+	-	-	-	-	-	-	-
<i>Sternaulax zealandicus</i>	-	+	+	+	-	+	+	-	-	-
LEIODIDAE										
<i>Mesocolon nesobium</i>	-	+	+	-	+	+	+	+	-	-
SCYDMAENIDAE										
<i>Euconnus calvus</i>	-	+	-	+	+	-	+	+	+	-
<i>Neuraphoconnus relatus</i>	-	+	+	+	+	+	-	+	-	-
<i>Neuraphoconnus</i> sp.nov.	+	-	-	-	-	-	-	-	-	-
<i>Sciacharis allocera</i>	-	-	+	+	+	+	-	+	+	-
SCAPHIDIIDAE										
<i>Baeocera</i> sp.	-	-	+	-	-	-	-	-	-	-
STAPHYLINIDAE										
<i>Amriathaea</i> sp. 17	?	-	-	-	-	-	-	-	-	-
<i>Anotylus brunneipennis</i>	-	+	-	+	-	-	-	-	-	+
<i>Anotylus vinsoni</i>	-	-	+	+	-	-	-	+	+	+
<i>Anotylus</i> sp.nov.	-	+	+	+	-	-	-	-	-	-
<i>Dasynotus</i> sp.	?	-	-	-	-	-	-	-	-	-
<i>Ocalea socialis</i>	-	+	+	+	+	-	-	+	-	-
" <i>Omalius</i> " <i>spadix</i>	-	+	+	-	+	-	+	-	+	-
<i>Sepedophilus acerbus</i>	-	-	+	+	-	+	+	-	-	-
<i>Thamiaraea</i> sp.nov.	?	-	-	-	-	-	-	-	-	-
PSELAPHIDAE										
<i>Sagola insignis</i>	-	+	+	+	-	+	+	+	+	-
<i>Zeatyus lawsoni</i>	-	-	+	+	-	-	-	-	-	-
<i>Zealandius sandageri</i>	-	+	-	-	-	-	-	-	-	-
LUCANIDAE										
<i>Ceratognathus irroratus</i>	-	+	+	+	-	+	-	+	+	-
<i>Lissotes</i> sp.nov.	+	-	-	-	-	-	-	-	-	-
SCARABAEIDAE										
<i>Odontria</i> sp.nov.	+	-	-	-	-	-	-	-	-	-
ELATERIDAE										
<i>Amphiplatys lawsoni</i>	-	+	+	+	+	+	+	+	+	-
<i>Ctenicera</i> sp.nov.	?	-	-	-	-	-	-	-	-	-
<i>Ochosternus zealandicus</i>	-	+	+	+	+	-	-	+	+	-
<i>Thoramus laevithorax</i>	-	-	-	+	+	-	-	+	+	-
DERMESTIDAE										
<i>Trichelodes vulgata</i>	-	+	+	+	+	+	+	+	+	-
<i>Trogoderma maestum</i>	-	+	+	+	-	+	-	-	-	-
TROGOSSITIDAE										
<i>Leperina brouni</i>	-	+	+	+	-	+	-	-	-	-
CLERIDAE										
<i>Phymatophaea opiloides</i>	-	-	+	+	+	+	-	+	+	-
<i>Phymatophaea testacea</i>	-	-	-	-	-	-	-	+	-	-

Table 3 — Known distribution of some species of Coleoptera from the Poor Knights Islands.

	E	Is	ND	AK	CL	BP	WO	SN	SO	OS
MELYRIDAE										
<i>Arthracanthus</i> sp.nov.	-	+	-	-	-	-	-	-	-	-
<i>Dasytes laticeps</i>	-	+	+	-	+	-	-	-	-	-
<i>Dasytes</i> sp.nov.	+	-	-	-	-	-	-	-	-	-
<i>Halyles semidilutus</i>	-	+	-	+	+	-	-	+	-	-
CUCUJIDAE										
<i>Cryptamorpha brevicornis</i>	-	+	+	+	+	-	-	+	+	-
CRYPTOPHAGIDAE										
" <i>Cryptophagus</i> " sp.aff. <i>rutilus</i>	-	-	-	+	-	-	-	+	-	-
<i>Salltius ruficeps</i>	-	+	+	+	-	-	-	-	-	-
LANGURIIDAE										
<i>Loberus nitens</i>	-	+	+	+	+	+	-	+	+	-
CERYLIDAE										
<i>Hypodacne rubripes</i>	-	+	+	+	+	+	-	+	+	-
CORYLOPHIDAE										
<i>Anisomeristes sharpi</i>	-	+	+	+	+	+	-	-	-	-
<i>Holopsis rotundatus</i>	-	-	+	+	-	-	-	-	-	-
<i>Holopsis</i> sp. 2	-	+	+	+	-	-	-	-	-	-
<i>Holopsis</i> sp. 3	+	-	-	-	-	-	-	-	-	-
COCCINELLIDAE										
<i>Coccinella leonina</i>	-	+	-	-	-	+	-	+	+	-
<i>Harmonia conformis</i>	-	-	+	+	-	-	-	-	-	+
" <i>Scymnus</i> " <i>consors</i>	-	-	+	+	+	-	-	+	+	-
" <i>Scymnus</i> " <i>minutulus</i>	-	+	-	+	-	-	-	-	-	-
" <i>Scymnus</i> " <i>tristis</i>	-	-	+	+	+	+	-	+	+	-
" <i>Scymnus</i> " sp.aff. <i>rarus</i>	?	-	-	-	-	-	-	-	-	-
MEROPHYSIIDAE										
<i>Holoparamecus</i> sp. 4	+	-	-	-	-	-	-	-	-	-
<i>Holoparamecus</i> sp. 8	+	-	-	-	-	-	-	-	-	-
LATHRIDIIDAE										
<i>Lithostygnus sinuosus</i>	-	+	+	+	-	+	-	-	-	-
" <i>Melanophthalma</i> " <i>zealandica</i>	-	+	+	+	-	+	-	+	+	-
COLYDIIDAE										
<i>Acosmetus</i> sp.nov.	?	-	-	-	-	-	-	-	-	-
<i>Bitoma vicina</i>	-	-	+	+	+	-	-	-	-	-
<i>Coxelus</i> sp.	-	-	+	+	-	+	-	-	-	-
<i>Epistranus</i> sp.nov.	?	-	-	-	-	-	-	-	-	-
<i>Ithris gracilis</i>	-	-	-	+	+	-	-	-	+	-
<i>Pristoderus</i> sp.nov.	?	-	-	-	-	-	-	-	-	-
<i>Pycnomerus simplex</i>	-	-	+	-	-	-	-	-	-	-
<i>Syncalus</i> sp.nov.	?	-	-	-	-	-	-	-	-	-
<i>Tarphiomimus</i> sp.nov.	+	-	-	-	-	-	-	-	-	-
TENEBRIONIDAE										
<i>Artystona erichsoni</i>	-	+	+	+	+	+	-	+	+	-
<i>Chrysopeplus expositus</i>	-	+	+	+	+	+	-	-	-	-
<i>Mimopeus elongatus</i>	-	+	+	+	+	+	+	+	+	-
<i>Mimopeus</i> sp.nov.	+	-	-	-	-	-	-	-	-	-
<i>Omedes nitidus</i>	-	+	-	-	-	-	-	-	-	-
<i>Tanychilus metallicus</i>	-	+	+	+	+	-	-	+	+	-

	E	Is	ND	AK	CL	BP	WO	SN	SO	OS
SALPINGIDAE										
<i>Salpingus bilunatus</i>	-	+	+	+	+	+	-	+	+	-
<i>Salpingus</i> sp.nov.	?	-	-	-	-	-	-	-	-	-
SCRAPTIIDAE										
<i>Notothenelus nigellus</i>	-	+	+	+	-	-	-	-	+	-
<i>Notothenelus usitatus</i>	-	+	+	+	-	-	-	+	+	-
OEDEMERIDAE										
<i>Thelyphassa latiuscula</i>	(+)	+	+	+	-	-	-	-	-	-
CERAMBYCIDAE										
<i>Gastrosarus</i> sp.nov.	+	-	-	-	-	-	-	-	-	-
<i>Hybolasius vegetus</i>	-	+	+	+	-	-	-	+	-	-
<i>Hybolasius viridescens</i>	-	+	+	+	-	+	-	+	+	-
<i>Navomorpha lineata</i>	-	+	+	+	+	+	-	+	+	-
<i>Navomorpha neglecta</i>	-	-	-	-	+	-	-	-	-	-
<i>Navomorpha sulcata</i>	-	+	+	+	+	+	+	+	+	-
<i>Stenellipsis aegrota</i>	-	+	-	+	-	-	-	-	-	-
<i>Stenellipsis nana</i>	-	+	+	+	-	-	-	-	-	-
<i>Stenellipsis parvula</i>	-	+	+	+	-	-	-	+	+	-
<i>Tenebrosoma</i> sp.nov.	+	-	-	-	-	-	-	-	-	-
<i>Xylotoles griseus</i>	-	+	+	+	+	+	+	+	+	-
<i>Xylotoles inornatus</i>	-	+	+	+	-	+	+	-	-	-
<i>Xylotoles laetus</i>	(+)	+	-	+	+	-	-	+	-	-
CHRYSOMELIDAE										
<i>Eucolapsis</i> sp.nov.	+	-	-	-	-	-	-	-	-	-
ANTHRIBIDAE										
" <i>Anthribus</i> " <i>browni</i>	-	+	+	+	+	+	-	+	+	-
" <i>Anthribus</i> " <i>hetaera</i>	-	+	+	+	+	+	+	+	+	-
<i>Cacephatus huttoni</i>	-	+	+	+	+	+	+	+	+	-
<i>Dysnocryptus inflatus</i>	-	+	+	+	+	+	-	+	+	-
<i>Exilis lawsoni</i>	-	+	+	+	+	-	-	-	-	-
TOTALS (Poor Knights 100 spp.)		58	63	65	36	34	34	14	36	3

+ = species present or probably endemic (first column); (+) = endemic subspecies. Is = occurs on at least one of the following islands: Hen I., Chicken Is., Moko Hinau Is., Great Barrier I., Little Barrier I., Noisies Is., inner Hauraki Gulf islands, Mercury Is., Aldermen Is., Mayor I. ND = Northland area; AK = Auckland area; CL = Coromandel; BP = Bay of Plenty; WO = Waikato; SN = southern North Island area; SO = South Island; OS = overseas.

ACKNOWLEDGEMENTS

I thank Mr B. D. Heather and Mr R. Moynihan (leader and organiser of the first expedition in which I participated) and the then Commissioner of Crown Lands, Auckland, for the opportunity to visit and work on Tawhiti Rahi during Dec 1955-Jan 1956. I am indebted to the Hauraki Gulf Maritime Park Board and Dr B. W. Hayward for the opportunity to work on Tawhiti Rahi and participate in the OIRG expedition in Sep 1980; and to the Board for permission to work on the island again during 30 Nov-12 Dec 1980.

Contributions of the various collectors listed in the introduction is acknowledged. Dr K. G. Somerfield deposited his Poor Knights specimens in NZAC and provided additional information on his visit to Tawhiti Rahi.

I am indebted to Dr G. Kuschel, who identified Scydmaenidae, and the general NZAC collection of Cerambycidae so that it was a relatively easy matter to identify Poor Knights specimens of that family. I thank other specialists who identified material of various groups, and often provided information on distribution and ecology, i.e. Ms C. F. Butcher (most Hemiptera), Mr A. W. Don (Formicidae), Mr J. S. Dugdale (Cicadidae, Lepidoptera), Dr R. R. Forster (Opiliones), Dr B. A. Holloway (Anthribidae), Mr P. M. Johns (Chilopoda and Diplopoda), Dr L. A. Mound and Ms A. K. Walker (Thysanoptera), Ms J. Playfair (Isopoda), Dr G. W. Ramsay (Orthopteroid orders, some Acari), Mr R. G. Sunde (Aphididae), Mr J. I. Townsend (*Mecodema*), Dr S. K. Wong (Psocoptera).

Mr R. G. Ordish and Mr K. A. J. Wise kindly provided information about type specimens of Poor Knights species in NMNZ and AMNZ respectively.

REFERENCES

- Boving, A. G., and F. C. Craighead. 1931. An illustrated synopsis of the principal larval forms of the Order Coleoptera. *Entomologica Americana (N.S.)* 11: 1-351.
- Court, D. J. 1982. Spiders from Tawhiti Rahi, Poor Knights Islands, New Zealand. *Journal of the Royal Society of N.Z.* 12:
- Crosby, T. K.; J. S. Dugdale; J. C. Watt. 1976. Recording specimen localities in New Zealand: an arbitrary system of areas and codes defined. *N.Z. Journal of Zoology* 3: 69.
- Crowson, R. A. 1955. The natural classification of the families of Coleoptera. Nathaniel Lloyd and Co. Ltd.: London.
- Hayward, B. W., and J. McCallum. In press. Offshore Islands Research Group Expedition to Tawhiti Rahi, Poor Knights Islands, 1980. Introduction, history, archaeology, geology, reptiles and birds. *Journal of the Royal Society of New Zealand* 13.
- Hudson, G. V. 1934. New Zealand beetles and their larvae. Ferguson and Osborn Ltd. Wellington 236 pp. 16 pl.
- 1950. *Fragments of New Zealand Entomology*. Ferguson and Osborn Ltd.: Wellington.
- Hudson, L. 1975. A systematic revision of the New Zealand Oedemeridae (Coleoptera, Insecta). *Journal of the Royal Society of N.Z.* 5: 227-274.
- Johns, P. M. 1981. *Checklist of New Zealand Terrestrial and Freshwater Arthropod Families* University of Canterbury: Christchurch.
- Kuschel, G. 1971. Entomology of the Aucklands and other islands south of New Zealand: Coleoptera: Curculionidae. *Pacific Insects Monograph* 27: 225-259.
- 1982. Apionidae and Curculionidae (Coleoptera) from the Poor Knights Islands, New Zealand. *Journal of the Royal Society of N.Z.* 12: 273-282.
- MacKechnie-Jarvis, C. 1973. *Lithostygnus serripennis* Broun (Col. Lathridiidae) and other Coleoptera in London, NW1, with a diagnostic note and key. *Entomologist's Monthly Magazine* 108: 186-189.
- Richards, A. M. 1962. Revision of the Rhaphidophoridae (Orthoptera) of New Zealand, Part XI — A new species belonging to the genus *Gymnoplectron* Hutton, 1897, from the Poor Knights Islands. *Transactions of the Royal Society of N.Z., Zoology* 2: 203-207 5 figs, 1 pl.
- 1973. A comparative study of the giant wetas *Deinacrida heteracantha* and *D. fallai* (Orthoptera: Hemicidae) from New Zealand. *Journal of Zoology* 169: 195-236, 10 pis.
- Salmon, J. T. 1950. A revision of the New Zealand wetas, Anostostominae (Orthoptera: Stenopelmatidae). *Dominion Museum Records, Entomology* 1: 121-177.

- Sen Gupta, T., and R. A. Crowson. 1971. A review of the family Languriidae (Coleoptera: Clavicornia) and the place of the Languriidae in the natural system of Clavicornia. *Memoirs of the Zoological Survey of India* 15 (2): 1-42.
- Shaw, S. 1957. A revision of the New Zealand genera *Eucolaspis* Sharp and *Atrichatus* Sharp (Coleoptera, Chrysomelidae) with descriptions of two new species. *Annals and Magazine of Natural History* (12) 10: 641-655.
- Somerfield, K. G. 1973. Insects from the Poor Knights Islands, New Zealand. *Proceedings of the N.Z. Ecological Society* 20: 53-57.
- Spiller, D. 1942. A giant weevil *Phaeophanus turbotti* n. sp. from the Poor Knights Islands. *Records of the Auckland Institute and Museum* 2: 265-267.
- Watt, J. C. 1957. Coleoptera from Great Barrier Island and Mayor Island. *Tane* 7: 58-63.
- 1962. Coleoptera from Hen Island (Taranga), Northland, New Zealand. *Records of the Auckland Institute and Museum* 5: 255-269.
- 1969. Keys to genera and some species of New Zealand Lathridiidae (Coleoptera). *N.Z. Entomologist* 4 (2): 49-67.
- 1975. The terrestrial insects. In G. Kuschel (Ed.), *Biogeography and Ecology in New Zealand*. W. Junk: The Hague, Pp. 507-535.
- Wise, K. A. J. 1977. A synonymic checklist of the Hexapoda of the New Zealand Sub-region. The smaller orders. *Bulletin of the Auckland Institute and Museum* 11: 1-176.