

# Motu-o-Kura (Bare Island): report on invertebrates in pitfall traps

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# Introduction

There were two sets of samples to sort and identify from Motu-o-Kura (Bare Island) (39° 50'S, 177° 01' E).

## SET 1

Combined pitfall trap samples (30) for the island for the period 10 December 1991 to 18 February 1992 (70 days).

## SET 2

30 pitfall trap samples for the island for the period 7 February 1995 to 20 March 1995 (41 days), at 3 different sites:

Area 1, sooties;  
Area 2, platform;  
Area 3, rocks.

The specimens were sorted from the samples and counted by Mrs Grace Hall. Identifications to species level were done as follows:

Coleoptera: Carabidae (carabid beetles), Mr Andre Larochelle;  
Orthoptera (weta and crickets), Dr Graeme W. Ramsay;  
Araneae (spiders), Mrs Grace Hall;  
Diptera: Calliphoridae (blow flies), Dr Trevor K Crosby.

The results are summarised in Tables 1 to 4 following the text.

## Noteworthy or significant invertebrates

1. *Mecodema sulcatum* (Sharp, 1886). Basically a South Island species, with only one published record of it occurring in the North Island before, at Wellington. However, Ian Townsend (pers. comm. 1995) has further records from the Wellington region and on the Wairarapa Coast, and at Pourerere some 30 km south of Bare Island.
2. *Anomotarus variegatus* Moore, 1967. A species self-introduced from Australia. Originally recorded from Auckland by Ian Townsend (Townsend, I.J. 1973. Records of *Anomotarus variegatus* (Coleoptera: Carabidae) in NZ. N.Z. entomologist 5(3-4): 343-345). Now well established in the Northland, Auckland, and Nelson areas; found also in the Palmerston North/Levin area, New Plymouth, Raukumara, New Plymouth,

and one specimen was collected from Napier in 1960. It is an interesting record in context of the Hawkes Bay region.

3. *Holcaspis sinuiventris* (Broun, 1908). A North Island species, collected in many localities. Up to now only about 15 specimens in NZAC; and previously known from about 35 specimens (Townsend, pers. comm. 1995). However, with more than 100 specimens collected from Bare Island, this means the Island has the largest known population of the species thus far!
4. *Gymnoplectron edwardsi* (Scudder, 1869). This cave weta is widespread in the North Island south of Auckland, and reaches into the northern area of the South Island. It was surprising so many were collected on the island in 1991/92.
5. *Miturga* sp. (large brown ground spider). It was surprising to catch so many specimens of this unnamed species; it is the highest number seen for an area. These nocturnal hunting spiders usually shelter in bush, in fallen logs, or under loose rocks.
6. A noticeable absence was that there were no terrestrial amphipods at all. As a group they are very common in New Zealand, so their lack was a surprise.

## Major differences between the years

There are differences between the years, with significantly fewer invertebrates in 1995 than 1991/92 samples. It is not possible to draw firm conclusions about differences from these samples because the period of overlap is small (7-18 February only). Furthermore, Hawkes Bay experienced a major drought between July 1994 and January 1995, and this quite likely had an adverse impact on the invertebrate fauna.

There were 16 cave weta, *Gymnoplectron edwardsi*, in 1991/92, but in 1995 there were none. In 1995 there were fewer spiders, particularly of the large *Miturga* species (1991/92, 57; 1995, 14). There were fewer carabids in 1995 (23) compared with 1991/92 (130). In 1991/92 there were nearly 100 blow flies caught, but in 1995 there were none.

The blow fly numbers in 1991/92 indicate that some samples were not well preserved, probably because of the presence of bulky spiders and cave weta, and therefore attracted blow flies. The lack of blow flies in 1995 indicates the samples were well preserved. It is interesting that the blow fly species attracted was *Calliphora billi*, which is the less commonly collected of the two golden-haired blow fly species. [This species lays maggots enclosed within an egg sheath, from which the maggot escapes immediately. It is a species from Australia, and has been found laying maggots on piles of dead bogong moths in the Canberra district, Australia.]

Table 1. List of specimens according to group (not by species)

Taxon	1992 number	sooties Area 1	platform Area 2	rocks Area 3	1995 number
Coleoptera					
Carabidae	130	4	2	17	23
others	106	50	28	39	117
larvae	1 (weevil)				
Diptera					
long antennae	20	2	1	-	3
short antennae	20	5	4	15	24
blow flies	9				
larvae	2	few	lots	few	lots
Lepidoptera					
adults	30	2	1	.	3
larvae	6	2	-	1	3
Hemiptera					
long antennae	4	1	-	1	2
short antennae	10	1	1	2	4
Aphididae	6				
Cicadidae	4 + 1 pupa				
Hymenoptera					
Formicidae	lots	4	10	2	16
Blattodea	6				
Neuroptera	6				
Siphonaptera					
Orthoptera	24				
Collembola	few	lots	lots	few	lots
Acari (mites)	few	few	few	few	few
Araneae (spiders)	103	10	5	8	23
Opiliones	1	-	-	3	3
Chilopoda (centipedes)	3	-	-	6	6
Diplopoda (millipedes)	6				
Pseudoscorpiones	4				
Isopoda	9	-	3	5	8
Amphipoda					
Onychophora					
Mollusca	5	-	1	-	1

**Table 2. List of Coleoptera (beetle) families and number of specimens**

Taxon	1992 number	sooties Area I	platform Area2	rocks Area3	1995 number
Anobiidae					
Anthicidae	3	1	3	-	4
Cerambycidae	2				
Colydiidae	2	1	2	-	3
Corylophidae	3	1	2	-	3
Curculionidae	15	1	2	3	6
Histeridae					
Hydrophilidae	1	1	-	1	2
Lathridiidae	8	2	-	2	4
Leoididae	10				
Oedemeridae	2				
Pselaphidae	10	-	2	5	7
Ptilodactylidae	3				
Ptinidae	11	13	8	-	21
Salpingidae	12	5	-	-	5
Scydmaenidae	-	-	1	6	7
Staphylinidae	17	-	7	21	28

**Table 3. List of species and number of specimens**

Taxon	1992 number	sooties Area 1	platform Area 2	rocks Area 3	1995 number
Coleoptera: Carabidae					
<i>Holcaspis sinuiventris</i> (Broun,1908)	103	-	1	17	18
<i>Mecodema sulcatum</i> (Sharp,1886)	19	4	1	-	5
<i>Demetrida nasuta</i> White, 1846	4				
<i>Dicrochile cephalotes</i> Broun, 1894	2				
<i>Anomotarus variegatus</i> Moore, 1967					
<i>Allocinopus</i> sp.	1				
Coleoptera:Tenebrionidae					
<i>Mimopeus</i> sp. small	4	25	-	-	25
<i>Mimopeus</i> sp. large					
Diptera: Calliphoridae					
<i>Calliphora hilli</i> Patton	92				
<i>Calliphora vicina</i> Robineau-Desvoidy	4				
Orthoptera: Rhabdophoridae					
<i>Gymnoplectron edwardsi</i> (Scudder, 1869)	16 (+9 eggs)				
Orthoptera:Acrididae					
<i>Phaulacridium marginale</i> (Walker, 1870)	2				
Orthoptera: Gryllidae					
<i>Bobilla nigrauus</i> (Swan, 1972)	7				

Table 4. List of spider species (Araneae) and number of specimens

Taxon	1992 number	sooties Area 1	platform Area 2	rocks Area 3	1995 number
Miturgidae <i>Miturga</i> sp.	57	6	4	4	14
Hexathelidae <i>Porrhothele</i> sp.	4				
Stiphidiidae <i>Cambridgea</i> sp.	15	2	-	-	2
Clubionidae	3				
Gnaphosidae	9	-	-	3	3
Mimetidae undescribed species	4				
Thomisidae <i>Sidymella</i> sp.	1				
Others	10	1	-	1	2