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NOTES ON THE NATURAL HISTORY OF TENEBRIONIDAE (COLEOPTERA) IN CANTERBURY

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In "The Natural History of Canterbury" (1969, G. A. Knox editor), Harrison (p. 374) states that in Canterbury forests **Menimus** is the commonest genus of Tenebrionidae. Harrison and White (p. 385) state that "the genus **Menimus** is perhaps the most widespread in the open lowland grasslands" of Canterbury.

Dr. Harrison writes (in litt.) that in these statements, "**Menimus**" is a lapsus calami for **Mimopeus. Menimus** is not known to occur in the South Island, the majority of the New Zealand species being confined to the northern half of the North Island, while only one species extends as far south as Wellington. The genus is widely distributed in the western Pacific, species being recorded from Japan, Micronesia, Indonesia, New Guinea, New Caledonia, Fiji and Samoa. There are also a few species in India, but the genus seems to be unknown from Australia.

In New Zealand, **Menimus** adults and larvae are found in rotten logs and stumps, often when very wet. The wood almost always contains hard, thin black zones associated with previous attack by certain heart-rot Polyporaceae (e.g. **Elfvingia** spp). Occasionally **Menimus** specimens are extracted from forest litter, where presumably they inhabit wet decaying twigs.

Menimus adults may be distinguished from other New Zealand Tenebrionidae by the following characters: Antennae 10-segmented. Middle coxae without exposed trochantins, their cavities closed laterally by meso- and metasterna. Their larvae are recognisable as follows: Body weakly sclerotised, without distinct sclerites. Antennae 2-segmented, first segment very short, second segment conical, not pubescent.

The common ground-dwelling Tenebrionidae of Canterbury forests belong to the genera **Mimopeus** and **Pheloneis. Mimopeus opaculus** (Bates) is confined largely to forests, and is almost absent from the Canterbury plains, but is represented by a structurally distinct form on Banks Peninsula, which resembles populations from the Cook Strait area. Adults of **M. opaculus** are found under logs and stones, while larvae are false wireworms which inhabit dry rotten wood, or the surface layer of dry, humus-rich soil.

Pheloneis zealandicus (Bates) inhabits forest remnants on Banks Peninsula, and is still found occasionally near Christchurch City. A similar species, **P. intermedius** (Sharp), is not uncommon in **Nothofagus** forests in the foothills of the Southern Alps, at Bealey, Mt. Algidus, Pudding Hill, Mt. Hutt, etc. **P. gratiosus** (Broun), the largest species of the genus, is characteristic of high,

wet **Nothofagus** forests from Mt. Owen to Arthur's Pass, and occurs commonly at Lewis Pass and Bealey. Adults of all these species hide during the day under logs and stones, while larvae are extracted frequently from moist leaf litter. They are normally in considerably wetter habitats than **Mimopeus opaculus.**

Other frequently encountered Tenebrionidae in Canterbury forests are **Artystona** spp., adults and larvae of which hide during the day in short galleries in dead twigs and branches, or under loose bark, whence they emerge at night to feed on epiphytic lichens. In the higher altitude **Nothofagus** forests **Zolodinus zealandicus** Blanchard larvae are sometimes common in rotten logs, while adults occur under logs or in rotten logs. Also in these wet forests is **Cerodolus chrysomeloides** Sharp, usually under loose bark of moist decaying tree trunks, stumps and logs. In similar habitats will be found **Syrphetodes crenatus** Broun, but this is not strictly a Tenebrionid. Another Tenebrionid-like beetle from high wet **Nothofagus** forests is **Chalcodrya variegata** Redtenbacher, which is beaten occasionally from vegetation, while the larvae inhabit short refuge galleries in standing dead branches and stems. The larvae are strikingly similar to **Artystona** larvae, and like them probably emerge at night to feed in the open. **Aphthora rufipes** Bates occurs occasionally in rotten logs in lowland forest.

The common Tenebrionidae of Canterbury grasslands and associated scrub are all species of **Mimopeus. M. thoracicus** (Bates) is a relatively small species which is found on or near the coast under mat plants, marram grass, etc., on shingle or sandy beaches, but also occurs inland in such habitats as river flats and Christchurch gardens. **M. costellus** (Broun) has a restricted distribution in an area extending from Rangiora, where it was found in numbers in an old garden, to the Hurunui Gorge. **M. granulosus** (Breme) is confined to Banks Peninsula, where it occurs under stones in tussock grassland or in dry forest remnants. **M. tibialis** (Sharp) is a fairly rare species which has been found at various localities from Balmoral to Fairlie, and apparently occurred in Christchurch, but has not been found there for almost a century. **M. impressifrons** (Bates), a characteristic species of Central Otago, is common also in the MacKenzie Basin, where it is found with an undescribed species related to **M. tibialis. M. lateralis** (Broun) inhabits **Discaria** scrub and similar biotopes in dry mountains of North Canterbury, and is recorded also from near Albury. **Mimopeus** spp. are rarely found in improved pastures, but are likely to occur in native tussock grasslands, especially where the soil is light, or in tussock and scrub growing on stable screes, particularly in the drier areas.

As noted by Pilgrim (p. 365), **Actizeta albata** Pascoe is found on and in loose sand on coastal sand dunes, but **Chaerodes trachyscelides** White, which is abundant under seaweed on many sandy beaches in New Zealand, is apparently absent from Canter-

bury. The Alleculine **Omedes fuscatus** Broun is a coastal species which occurs at Kaikoura and probably elsewhere in Canterbury.

In crops, and sometimes in improved pastures, a species of **Enneboeus** is common. This is almost certainly an introduction from overseas, and its specific identity is still in doubt, as also is the correct systematic position of the genus.

There is little that can be added to the account by Johns (pp. 391-399) on the mountain invertebrate fauna at present. There are endemic alpine Tenebrionidae in northern and southern Canterbury, apparently with very restricted distributions, in **Mimopeus** and **Artystona.** There are also predominantly lowland species which extend upwards into the alpine zone (= "lower nival zone"), as noted by Johns. The alpine Tenebrionidae of New Zealand have not been adequately collected, but undescribed species are known from the mountains of Nelson, Marlborough, Canterbury, Westland and Otago, usually with apparently very restricted distributions; although this may in part be due to inadequate sampling.

KEYS TO GENERA AND SOME SPECIES OF NEW ZEALAND LATHRIDIIDAE (COLEOPTERA)

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SUMMARY

A key to genera of Lathridiidae (including Merophysiidae) known to occur in New Zealand is presented. These are **Holoparamecus, Enicmus, Lathridius, Microgramme, Adistemia, Cartodere, Aridius, Metophthalmus, Corticaria, Melanophthalma** sens. lat., and **Rethusus. Diarthrocera** is synonymised with **Corticaria.** Partial or complete keys to species are presented in all genera except **Melanophthalma.** The information will enable identification of all species of Lathridiidae recorded from New Zealand on crops, pastures or stored products. New synonymy, recombinations and new distribution records are noted.

INTRODUCTION

Lathridiidae are small beetles, which may be recognised in the New Zealand fauna by the following combination of characters: Size small, 1 - 3 mm long. All tarsi genuinely 3-segmented (not pseudo-trimerous with second segment lobed and third segment small and fused with base of fourth) or 2-3-3 in some males. Elytra completely cover abdomen.

Crowson (1955) split off the Merophysiinae, including **Holoparamecus,** as a separate family. While there is much to be said in favour of a family Merophysiidae, the majority of genera of both Merophysiinae and Lathridiinae are inadequately studied, especially as larvae, and as poorly known forms may partly bridge the gap between the two groups, I have followed the traditional classification for the present.