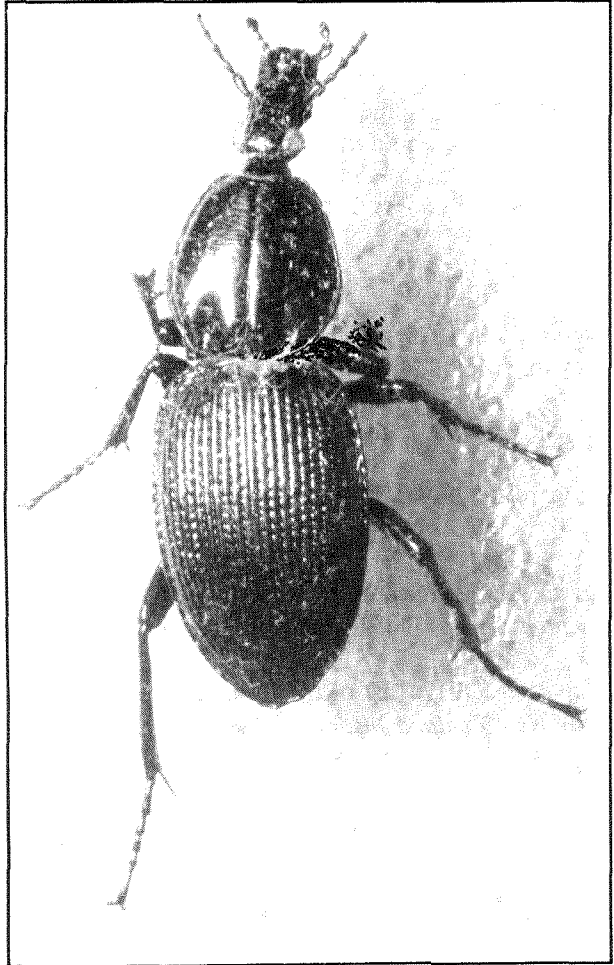


A NOTE ON *MAORIPAMBORUS FAIRBURNI* (COLEOPTERA: CARABIDAE:
CYCHRINI)

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Maoripamborus fairburni (Brookes, 1944) is a carabid beetle of unusual appearance, 19 - 21 mm long. It differs from other New Zealand Carabinae in having the prothorax apically rounded, narrowed and attenuated, while the head is very narrow and elongated. (fig 1). Although it is very rare and is now found only around Waimatatenui (east of the Waipoua Kauri Forest, ND) and in the north west, numerous subfossil remains in central North Island caves attest to a former abundance and to a wider distribution.

In early January 1979, a male *M. fairburni* was observed on the forest floor near Waimatatenui eating a small unidentified *Rhytida* sp. in a manner similar to that recorded for European *Cychnus* sp. (fig 2). A few days later four specimens of this beetle were found at Waimatatenui in a forest margin on a clay bank. The *M. fairburni* were beside the burrows of a *Neocicindela* species, and all were recently dead with their heads broken off.



Maoripamborus fairburni Brookes.

Carabid beetles comprise a relatively uniform group, almost all of the species being ground predators. The most pronounced morphological variations are related to specialised modes of nutrition (Thiele, 1977). Species of the tribe Cychrini are extreme snail predators. The thorax and head are much narrowed and elongated,

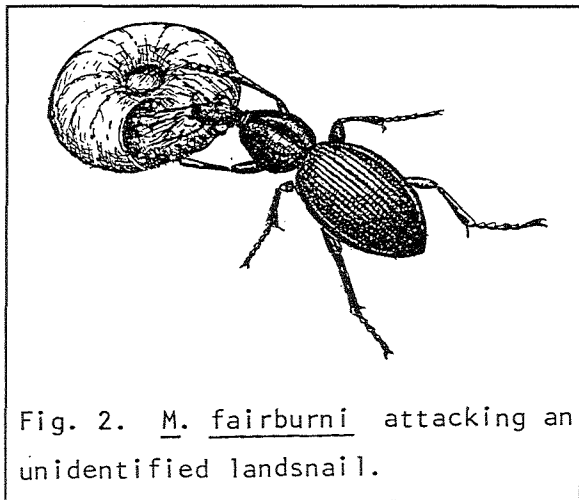


Fig. 2. M. fairburni attacking an unidentified landsnail.

enabling the beetle to crawl into the snail shell and pull out the soft body. To this end, the deep constrictions between head and thorax and between thorax and abdomen enhance the beetle's flexibility. European authors have stated that these adaptations enable the beetle to bite into its prey and follow the twisting shell, at the same time keeping its own body stationary. The mandibles are long, forming a pinsette, with the aid of which the animal is able to penetrate the snail shell,

following its natural structure. Because the most extreme form of this modification occurs in the European genus *Cychrus*, Krumbeigel in 1960 (quoted by Thiele, 1977) termed this complex of characters 'cychrization'. They appear to have been developed by convergent evolution in unrelated beetles with the same habits. For example, *Ablattaria laevigata* (Fabricius) (Silphidae) has very much the same general shape as *M. fairburni* and not surprisingly, attacks snails. Linssen (1959, p 172; fig.37) described this and a species attacking a snail in the following way:

A. laevigata will bite the foot of the snail several times, causing it to withdraw into its shell. The beetle follows, preventing the snail from emerging by making further bites and also by squirting a liquid from its rectal glands. In the meantime, the snail defends itself by trying to seal up the entrance with viscous slime, soon filling up the whole of the entrance. What occurs next has been closely observed in respect of the beetle *Phosphuga atrata* (L.) (a siphid of similar form); it eats its way through the slime apparently with the assistance of a secretion which has a dissolving action, not only on the slime but also on the snail's tissues. (Fig. 3, after Linssen, 1959).

Maoripamborus Brookes is related to the autochthonous Australian genus *Pamborus* Latreille, of which Moore, Weir, and Pyke (1987) listed 14 species.

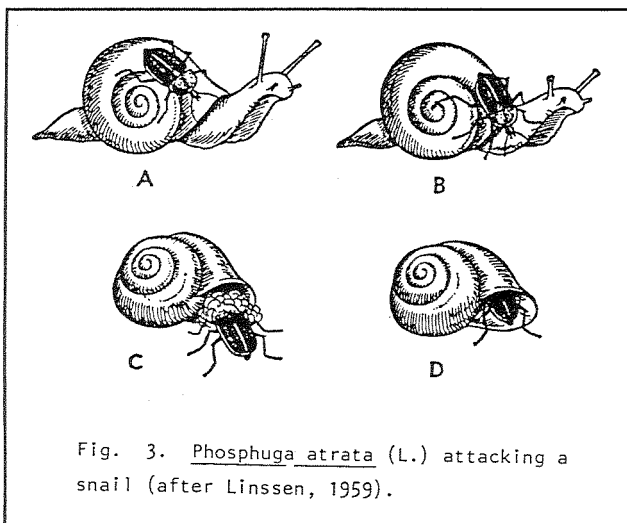


Fig. 3. *Phosphuga atrata* (L.) attacking a snail (after Linssen, 1959).

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