

*Two New Species of Magadina.*

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[Read before the Otago Institute, 11th December, 1923; received by Editor, 31st December, 1923; issued separately, 30th July, 1924.]

THE two species here described are close relatives of *M. browni* Thomson (*Trans. N.Z. Inst.*, vol. 47, pp. 399, 402, 1915), but in general shape and inflation somewhat intermediate between that species and such Australian forms as *M. compta* (Sow.) and *M. cumingi* (Davidson). They both occur at the same locality, but in beds of slightly different age; these beds are, however, probably of approximately the same age as those from which the only two other New Zealand species have been obtained—viz., *M. browni* Thomson and *M. waiparaensis* Thomson—but the locality is much farther south. Thomson (*loc. cit.*, vol. 52, p. 369, 1920) has indicated the existence of a third species, and this may possibly belong to one of the present forms.

*Magadina clifdenensis* n. sp. (Fig. 1.)

Shell small, sub-shield-shaped, longer than wide, greatest breadth just below hinge-line; sides at first gently curved, but curve rapidly increasing anteriorly and then diminishing quickly, giving rise to a marked taper; hinge-line still straighter than in *M. browni*; dorsal valve very lightly convex, with a long, narrow, and increasingly pronounced anterior sinus, having the appearance of a shallow trough traversing half the shell; ventral valve highly raised, very strongly but bluntly carinate, the ridge being of regular prominence from inception at beaks to termination at valve-margin, and not noticeably widening over its whole extent; commissures with very strong, narrow, and sudden fold, dorsal valve being much bent inwards in a narrow tongue; beaks short, not in-

curved, truncated almost horizontally by rather small, elongate-oval foramen, whose rim is not rounded and slightly thickened as in *M. browni*, but thin and sharp, forming with beak-ridges distinct telae; beak-ridges sharp, forming a false area, most of which (more than in *M. browni*) is occupied by a lightly concave pseudo-deltidium. Internally valves agree with *M. browni*, except for the following differences: In dorsal valve socket-ridges are much smaller, relatively less solid, and much closer together, especially posteriorly, where they slant towards each other; they do not end in sharp point, and notch between them, viewed posteriorly, is much narrower; hinge-trough is narrower and deeper, and cardinal process much smaller than in *M. browni*, a fact probably indicative of greater antiquity of present species. Another factor that would support this is that the two branches of loop are more closely cemented to median septum than in *M. browni*—i.e., junction of ascending and descending branches is merged in septum, instead of forming a continuation ridge as in the Waipara species, so that *M. browni* would seem to have a slightly more advanced type of Magadiniform loop than has *M. clifdenensis*. Outline of loops, too, is less circular, and muscular impressions more restricted to upper part of shell. In ventral valve hinge-teeth are much closer and even more strongly

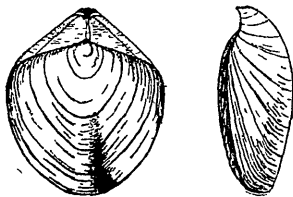


FIG. 1.

Type, *Magadina clifdenensis* n. sp.

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bifid. Surface of both valves unsculptured except for growth-lines, but the shell-substance is everywhere elegantly and fairly finely punctate. Thomson has not mentioned this as an attribute of *M. browni*, but it exists in that species, though more difficult to observe on account of the rubbed surface of most specimens; the punctation is slightly finer than in *M. clifdenensis*. Easily distinguished also from *M. browni* by smaller size, narrower and much deeper sinuation, and especially much flatter dorsal valve and more convex and very strongly carinate ventral valve.

Holotype—Length, 8 mm.; breadth, 7.2 mm.; thickness, 3.3 mm.

Paratype—Length, 7 mm.; breadth, 6.6 mm.; thickness, 3 mm.

Type and many paratypes, from Clifden, Southland—bands 7A (type) and 7B (Hutchinsonian ?)—in author's collection.

*Magadina thomsoni* n. sp. (Fig. 2).

As in the case of *M. waiparaensis* Thomson (*loc. cit.*, vol. 47, p. 403, 1915), this species is best described by comparison with one nearly related—in this case the previous new species. From this it differs at sight especially in its much smaller size and even flatter dorsal valve, which posteriorly is almost perfectly flat and anteriorly lightly concave. This fact is due to the earlier inception of the median sinus, which noticeably begins to flatten the valve at the upper third of the shell and very rapidly deepens, though remaining only about half the width of that in *M. clifdenensis*. At the anterior end of sinus the valve is sharply bent in as in that species, but

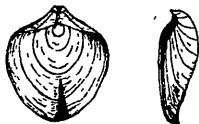


FIG. 2.

Type, *Magadina thomsoni* n. sp.

tongue is narrower, more pointed, and usually not so long. Beaks are much lower, and margins forming them distinctly concave instead of straight as in the three other New Zealand species; this impression is heightened by greater rounding of margins near hinge, giving the shell a subcircular outline, pointed at both ends. Ventral valve very similar to that of preceding species, but more pointed and less raised anteriorly, with a similar very strong and blunt but slightly narrower carination. Remaining external details, pseudo-deltidium, punctation, &c., approximately the same in the two species. Internally the species are also much alike, but septum dies almost entirely away before reaching socket-ridges, and cardinal process is minute—even smaller than in *M. clifdenensis*. In ventral valve teeth are a little smaller and closer, and anterior median ridge separating muscular impressions is slightly lower.

Holotype—Length, 5.3 mm.; breadth, 4.9 mm.; thickness, 1.6 mm.

Paratype—Length, 5.5 mm.; breadth, 4.7 mm.; thickness, 1.7 mm.

Type and several paratypes, from Clifden, Southland—band 6A (Ototaran ?)—in the author's collection. Separate valves are fairly common, but only three perfect specimens have so far been obtained; of these the best preserved is taken as the type, though the ventral valve, as the figure shows, is bent back a little at margin; this is due to accident, and normal specimens have a regularly convex valve as in *M. clifdenensis*.

The species is named in honour of Dr. Thomson, Director of the Dominion Museum, in acknowledgment of much freely-given advice and assistance. Apart from its occurrence in older beds, *M. thomsoni* shows, in its less-developed beaks, its earlier-developed dorsal sinuation, and its more primitive cardinal process, features that stamp it as ancestral to its near relative, *M. clifdenensis*.