

A REVIEW OF AUSTRALIAN HELMET SHELLS
(FAMILY CASSIDIDAE—PHYLUM MOLLUSCA)

BY

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(Plates xxxi-xxxii.)

No connected account of the shells known as Helmet Shells has yet appeared in Australian literature, though many species have been listed by Hedley, Verco, May, Pritchard, Gatliff and Gabriel. The majority of these occur in temperate Australian waters, and many different interpretations of the species exist. An attempt is here made to correlate the information available by means of the material gathered together in the Australian Museum, supplemented by loan of specimens from the workers above named, and to supply a criticism of literature. This review was begun some years ago and has proved of a very complex nature, both as regards the literary side and the conchological aspect.

True Helmet Shells are common to the tropics, one or two species reaching into northern Australia, but in Australia, more numerous in the southern parts, many species of what may be termed "False Helmet" shells occur. Hitherto these two main groups have been commonly recognized, but sometimes only subgeneric rank has been allowed the latter. Many sub-groups have been accepted, but generally authors have differed as to the extent and nomination of these groups. In the present essay the names proposed are detailed so that easy criticism may ensue; small groups are utilised, as, though fossil forms are known, only in few instances can lineage be traced, and in these cases the recent forms have been found to have persisted practically unchanged since the Eocene. Little has been done in connection with the comparative anatomy of the groups, but years ago Troschel recorded that the radula showed differences in the two main groups that were worthy of generic rank, and that differences were visible in other species to which he allotted subgeneric value. As Troschel's values were higher than those of present day usage further comparisons will undoubtedly emphasise the separative features and confirm the smaller groupings advocated. All the types and the specimens figured are in the Australian Museum. The beautiful figures provided are from the brush of Miss Joyce K. Allan, of this Museum, to whom my best thanks are here tendered, for the illustrations enhance the value of this paper two-fold. It should be recorded that the bulk of the paper deals with what has been known as the "*pyrum-achatina*" series, and the paintings refer more especially to this group.

As no list of Australian Cassids has previously been prepared, a summary of the conclusions here published will be acceptable.

Cassid cornuta (Linné 1758, *Buccinum*). North Queensland.

spinosa (Meuschen 1781, *Buccinum*). Australia.

[*flammea* (Linné 1758, *Buccinum*). Australia. Error.]

- Nannocassis nana* (Tenison-Woods 1879, *Cassis*). South Queensland, Northern New South Wales.
torva Iredale 1927. South Queensland.
- Hypocassis fimbriata* (Quoy and Gaimard 1833, *Cassis*). Western Australia.
bicarinata (Jonas 1839, *Cassis*). Western Australia, South Australia, Victoria.
- Cypræcassis rufa* (Linné 1758, *Buccinum*). North Queensland.
- Phalium glaucum* (Linné 1758, *Buccinum*). Queensland.
areola (Linné 1758, *Buccinum*). Queensland, northern New South Wales.
bandatum (Perry 1811, *Cassidea*). Queensland, northern New South Wales, North Western Australia.
agnitum Iredale 1927. Western Australia.
- Xenophalium hedleyi* Iredale 1927. New South Wales.
- Semicassis diuturna* Iredale 1927. Queensland, northern New South Wales, Northern Territory(?).
- Casmaria erinaceus* (Linné 1758, *Buccinum*). North Queensland.
vibex (Linné 1758, *Buccinum*). North Queensland.
ponderosa (Gmelin 1791, *Buccinum*). Queensland, northern New South Wales.
- Xenogalea pyrum* (Lamarck 1822, *Cassis*). Southern New South Wales, Victoria, Tasmania.
stadialis (Hedley 1914, *Cassidea*). New South Wales, Victoria, Tasmania (?).
thomsoni (Brazier 1875, *Cassis*). New South Wales.
sophia (Brazier 1872, *Cassis*). New South Wales, south Queensland (Kermadec Islands).
nivea (Brazier 1872, *Cassis*). West Coast of Tasmania, South Australia.
paucirugis (Menke 1843, *Cassis*). Western Australia.
lucrativa Iredale 1927. North Queensland.
labiata (Perry 1811, *Cassidea*). New South Wales, South Queensland, Victoria(?), Norfolk I.
insperata Iredale 1927. New South Wales, south Queensland.
angasi Iredale 1927. South Queensland, and northern New South Wales.
- Antephalium semigranosum* (Lamarck 1822, *Cassis*). Victoria, Tasmania, South Australia, south Western Australia.
adcocki (Sowerby III, 1896, *Cassis*). Victoria, South Australia, south Western Australia.
sinuosum (Verco 1904, *Cassidea*). South Australia, Victoria.

FOSSIL FORMS.

It is necessary to survey the known fossil forms of any group when dealing with deep water shells, but in the present instance very little information is available, so the little may be here incorporated.

Tate in 1889¹ catalogued the known fossil species as follows: *Semicassis transenna* Tate (p. 166, pl. viii, fig. 2) from Lower Beds, Muddy

¹Tate—Trans. Roy. Soc. S. Australia, xi, 1888 (April, 1889).