

# A REVISION OF QUEENSLAND LITHOPHAGINE MUSSELS 435 (BIVALVIA, MYTILIDAE, LITHOPHAGINAE)

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## INTRODUCTION

Among mytilid bivalves, boring in coral or calcareous rocks has evolved as one of the major life styles. Current nomenclature distributes the species of boring mytilids among the "genera" *Lithophaga* Roding, 1798, *Adula* Adams and Adams, 1857, and *Botula* Mörch, 1853, but there is little agreement on the subdivisions and relationships of these major groups.

A preliminary survey shows that there are about a dozen species of *Lithophaga* in the Indo-West Pacific Region but their nomenclature is confused and their distribution uncertain. Data are presented in this paper on the nomenclature, morphology, ecology and distribution of the species of *Lithophaga* found on the Great Barrier Reef.

The work began in September 1970 when I visited Heron I., Michaelmas Cay, Low Isles and other Queensland localities, and continued when I participated in the malacological workshop meeting at Lizard I. in December 1975. The anatomical data are based primarily on specimens collected at Lizard I. except where indicated otherwise. I have also collected these mussels at many other areas of Western Australia, S.E. Asia and the western Pacific and these specimens have provided a helpful source of comparative material. In particular I was able to study in detail the anatomy and ecological distribution of lithophagines at Kendrew I., Dampier Archipelago, during a study of the Crown of Thorns Starfish there in the years 1972-1974, and at Malaupaina I., Solomon Islands while I was the guest of Dr Walter Starck aboard the vessel "El Torito" in October-November, 1975.

## MATERIALS AND METHODS

Specimens were studied anatomically either alive or after preservation in 10% formaldehyde. Dissections were done under a binocular microscope and drawings were done free-hand. In the anatomical notes the general organisation of mytilids is assumed to be understood (see List, 1902; Field 1922; White, 1937; Wilson, 1967; Yonge, 1976) and only those characters of interest and significance to the taxonomy of lithophagids in particular are described. The anatomy of *L. teres* is described in most detail. For the other species only those characters considered to differ significantly are indicated; other anatomical characters may be assumed to have been examined and found to be not significantly different to *L. teres*.

Locality records are based principally on the collections of the Western Australian Museum and the Australian Museum, although occasionally adequately illustrated literature records are referred to. All the anatomical material examined is now preserved and catalogued in the Western Australian Museum.

Shell parameters measured are illustrated in Fig. 1.

### Abbreviations:

AM	Australian Museum (Sydney)
WAM	Western Australian Museum
BM (NH)	British Museum (Natural History)
MNHN (Paris)	National Museum of Natural History (Paris)
MNHN (Santiago)	Museum National History Natural (Santiago)

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