# Rediscovery of the Echinoid *Clypeaster tumidus* (Tenison-Woods) and an Emended Description

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Plates 29 and 30. Figs. 1-7. Manuscript received 31.7.63

In 1878 Tenison-Woods described under the name *Echinanthus tumidus* an echinoid which was housed in the Australian Museum and which was believed to have come from the coast of New South Wales. The specimen was damaged in the region of the actinostome and the test was almost devoid of spines. Holes had been bored through the actinal surface, possibly with a view to mounting the specimen on a board. Bell (1884, plates II and III) amplified Tenison-Woods's brief description and erected a new genus, *Anomalanthus*, to accommodate the species. Subsequently, Mortensen (1948) placed the species in the genus *Clypeaster* but added little to knowledge of the species.

For decades the holotype remained the only representative of the species. Bell (1884) considered the species to be rare and possibly dying out whilst Lambert and Thiéry (1914) considered that the holotype was a fossil, and they attributed it to the Pliocene of Australia. However, in 1960 a specimen was dredged off Ball's Pyramid, Lord Howe Island, in 50-100 fathoms, and in 1961 another specimen was dredged off the coast of southern Queensland. Study of the new material and a re-examination of the holotype have revealed that many of Bell's (1884) statements concerning this species are both erroneous and misleading. In view of this, and also because of the inadequacy of Tenison-Woods's original description, it was decided to redescribe the species and to provide illustrations of the spines and pedicellariae.

The Lord Howe Island and Queensland specimens are illustrated in plates 29 and 30. Measurements for these specimens and for the holotype are as follows:—

| Length (mm.) | Width (mm.) | Height (mm.) | Petaloid area (mm.) | Locality | Australian Museum No. |
|---|---|---|---|---|---|
| 142 | 120 | 59 | 119 | N.S.W.? | J. 1348 |
| 119 | 104 | 59 | 95 | Lord Howe Is. | J. 7300 |
| 71 | 63 | 28 | 49 | Queensland | J. 7343 |

*Shape*

The test in all three specimens is high and the margin elongate ovoid in outline. Both Tenison-Woods (1878) and Mortensen (1948) stated that the holotype is regularly arched. However, in all specimens there is a slight flattening (most pronounced in the Queensland specimen) around the test at the level of the distal ends of the poriferous zones. Thus the tests have short margins. Bell (1884) states that the test slopes " rather more sharply anteriorly than posteriorly ". Actually, the reverse is the case. Angles of slope for the three specimens are as follows:—

| Specimen | Anterior | Posterior |
|---|---|---|
| Holotype .. .. | $46\frac{1}{2}^\circ$ | $50^\circ$ |
| Lord Howe Is. .. | $50\frac{1}{2}^\circ$ | $51\frac{1}{2}^\circ$ |
| Queensland .. | $43^\circ$ | $44^\circ$ |