

## II. Colony Formation in *Selenaria nitida* Maplestone

### ABSTRACT

*Selenaria nitida*, known only from the Peronian faunal province in Recent seas, is refigured from one of Maplestone's syntypes. Evidence suggests that the New Zealand material that Livingstone (1929) assigned to *S. nitida* Maplestone belongs to *S. squamosa* Tenison-Woods instead. The astogeny of *S. nitida* is discussed, with particular reference to the mode of ancestrular budding, and comparisons are made with *S. cupola* (Tenison-Woods) var. *spiralis* (Chapman) from the Victorian Tertiary. It is considered that this taxon should be given specific status in view of its spiral mode of budding. The budding mechanism in *Selenaria nitida* was found to be substantially similar to that of multiserial encrusting cheilostomes, being initiated by two distal first-generation zooecia which bud off lateral-proximal successors to surround the ancestrula. These zooecia then bud off serially, giving rise to the radial arrangement of zooecia in the adult colony. The same budding mechanism is exhibited by *S. cupola* (Tenison-Woods), another Victorian Tertiary fossil, and also *S. squamosa* Tenison-Woods, an Australasian species.

### INTRODUCTION

The writer became aware of the abundance of *Selenaria nitida* Maplestone whilst sorting through bulk collections of Polyzoa dredged by the *Endeavour* Expedition (1909-1914) from 30-50 fathoms off Twofold Bay, New South Wales, and deposited in the Australian Museum.

A check with Maplestone's syntypes (Australian Museum Cat. No. U.196) confirmed the identity of the *Endeavour* material (A.M. Cat. No. E.6802), but revealed substantial differences from fragmentary material from Little Barrier Island, New Zealand (Mortensen Collection A.M. Cat. No. U.2716), which Livingstone (1929: 62) assigned to Maplestone's species. The larger dimensions of the zoarial fragments (Livingstone p. 62) and the zooecia, as well as the elongated opesia, suggest that Livingstone's specimens should be referred to *S. squamosa* Tenison-Woods instead. (For description and figs. of *S. squamosa* see Brown 1952: 145).

Several juvenile zoaria of *S. nitida* from the *Endeavour* material show various stages of development, and placed in an ontogenological sequence they provide useful information on the early phases of astogeny. Stach (1936: 65, plate 3, figs. 1, 2, text-figs. 1, 3) described in some detail the early stages of colony formation in *S. spiralis* (Chapman) from the Victorian Tertiary. This taxon was formerly regarded as a variety of *S. cupola* (Tenison-Woods). Stach concluded (p. 66) that *S. cupola* exhibited a similar mode of budding. It will be shown, however, that ancestrular budding in Chapman's species is genetically distinct from that in *S. cupola*. Information on a rather different type of budding as demonstrated by *S. nitida* Maplestone is supplied.

### SYSTEMATIC DISCUSSION

Genus **Selenaria** Busk, 1854

Type species (by monotypy): *Selenaria maculata* Busk, 1854. Recent: Bass Strait.

*Selenaria nitida* Maplestone plate 1, figs. 1, 2, 3, 5, 6, 7.

1909 *Selenaria nitida* Maplestone, p. 271, plate 77, fig. 8.

1921 *Selenaria nitida* Maplestone: Waters, p. 407.

Not 1929 *Selenaria nitida* Maplestone: Livingstone, p. 62 (= *S. squamosa* Tenison-Woods).

1952 *Selenaria nitida* Maplestone: Brown, p. 142, text-figs. 87-89. (New Zealand fossil material).