

The characters recognized in keying out the genera of the Subfamily Plumulariinae are as follows:—For *Nemertesia* [(as *Antennularia*) Nutting, 1900] for *Antennella* and *Plumularia* (Bedot, 1921) and for *Pycnotheca*, *Halicornopsis* and *Halopteris* (Totton, 1930): For the present the genera *Pycnotheca* and *Halicornopsis* are included within the Plumulariinae and not in Stechow's (1921) Subfamily Kirchenpaueriinae, and the genera of the Subfamily Aglaopheniinae (based on the characters of the gonosome) as defined by Leloup (1932a), except that the genus *Thecocarpus* as keyed above, is recognized as possessing the combined characters of Leloup's genera *Bithecocarpus* and *Trithecocarpus*. Two genera only, in the Subfamily Aglaopheniinae—namely, *Halicornaria* and *Nematocarpus* (not known from New Zealand) have the gonosome unprotected by accessory structures. The short glossary below (after Pennycuik, 1959) is given as a guide to the terminology in current usage for the gonosome accessory structures which in general are modified hydrocladia and often called "phylactocarps".

(1) *Primary hydrocladia* (Fig. 10, f (1)); (= gonocladia of Totton (1930)); modified hydrocladia belonging to the same series as the unmodified hydrocladia of the rest of the stem. They may, or may not, bear secondary hydrocladia.

(2) *Secondary hydrocladia I* (Fig. 10, f (2)); (= cretes basales of Billard (1913) ; gonohydrocladia of Totton). Hydrocladia, often much modified, springing from the primary hydrocladia. This series found only in association with the gonosome.

(3) *Secondary hydrocladia II* (Fig. 10, f (3)); (= costae); the third order of modified hydrocladia forming the ribs of the corbulae of *Thecocarpus* and *Aglaophenia*. Each arises from a secondary hydrocladium I.

(4) *Secondary hydrocladium III* (Fig. 10, f (4)) (= costal apophysis); the fourth order of modified hydrocladia arising from secondary hydrocladia II and found only in certain species of *Thecocarpus*.

In the absence of the gonosome, two features of the erect stem are fairly reliable in distinguishing species of the genus *Halicornaria*. Most species of this genus, including both those already known from New Zealand, have tiny needle-like chitinous processes bordering the hydropore (Fig. 7, f) and pear-shaped (Fig. 7, i) rather than tubuliform lateral nematothecae flanking the hydrotheca. As yet no reliable erect stem characters have been found to distinguish *Aglaophenia*, *Thecocarpus* and *Monoserius*.

ANTENNELLA Allman, 1877

Erect stem simple, representing the hydrocladium of other plumularians and divided, apart from the basal region, into alternating athecate and thecate internodes; occasionally a few irregularly placed lateral shoots similar in structure to the stem are found; hydrotheca with lateral nematothecae; nematothecae not attached to hydrotheca.

Only *A. ritchiei* Totton, 1930 and *A. africana* Broch, 1914 are known from New Zealand. Through the kindness of Dr. N. Millard, specimens of *A. africana* from South Africa have been examined resulting in the identification of *A. serrata* Totton, 1930 with *A. africana* Broch. Both Totton (1930) and Millard (1957) foresaw the possibility of *A. serrata* being a synonym of *A. africana*.

Material of *A. ritchiei* and *A. africana* is meagre in the present collection, approximately 50 stems of the former from one locality and some 20 stems of the latter from three localities. *A. ritchiei* is a New Zealand species and *A. africana* is also known from South Africa.

KEY TO THE SPECIES OF *Antennella* IN NEW ZEALAND

1. (2) A well marked oblique node below the first two hydrothecae otherwise nodes not readily observed; internodes between hydrothecal internodes, with two mesial nematothecae; hydrotheca projecting well out from the internode, with flared margin but nearly cylindrical when