

Beania australopacifica new species
Plate 7C-D

Beania ?plurispinosa: Hayward & Ryland, 1995a: 542, fig. 5B.

Type material Holotype: NHM 2000.4.11.1623 (ex. 6.37), 501-87.
Paratypes: SBMNH 365088-090, 501-87.

Other material examined NHM 2000.4.11.346,545,1622, Cleveland Bay, Sq.5B, Station 986, Queensland, Australia.

Description Colony loosely attached to substratum by rhizoids. Autozooids boat-shaped and excessively spinous (ca 0.70 x 0.35 mm), loosely spaced in biserial lobes, six tubes connecting each to its neighbours although often outer proximal lateral tube produces a rhizoid, slightly suberect distally, lateral margins curving inwards, forming a constriction just proximal to operculum. Distal orificial rim with eight equally spaced slender long spines and two rows of similar spines basally, 15-20 slender straight spines on each lateral margin proximal to operculum, almost as long as autozoid is wide, those in middle of lateral walls longer than those proximal or distal to them. Numerous (up to around 50) additional long spines over basal surface, most in groups running basal to marginal spines, perpendicular to wall itself, many almost as long as autozoid, basal surface between connecting tubes fairly devoid of spines. Ovicells and avicularia not observed.

Remarks *Beania australopacifica* is characterised by its excessive spinosity and by its loose, biserial pattern of autozooids. It differs from *B. plurispinosa* Uttley & Bullivant, 1972, from New Zealand, to which it has been assigned previously (Hayward & Ryland, 1995a), by its looser, more recumbent arrangement of autozooids and their growth biserially rather than as a sheet, but also by its apparent lack of ovicells and avicularia.

Specimens of *Beania hirtissima* (Heller, 1867) have also previously been assigned to *Beania plurispinosa*. Heller's species was originally described from the Adriatic Sea but has since been reported from temperate and tropical waters throughout the World (c.g. Hayward, 1988), though see Hayward & McKinney (2002). However, examination of material assigned to *B. hirtissima* has shown it to be a complex of morphologically and geographically distinct species. *B. hirtissima sensu stricto* from the Adriatic Sea has far fewer and shorter lateral marginal spines, and overall it has a less spiny appearance than *B. australopacifica*. *B. hirtissima* also bears rare small, frontal, lateral oral avicularia as illustrated by Hayward & McKinney (2002) in the lectotype material they nominated; they synonymised *Beania robusta* (Hincks, 1881) under Heller's species.

It is worth noting at this point that two varieties of *Beania hirtissima* have been previously described, i.e. *B. hirtissima* forma *cylindrica* (Hincks, 1886), from the Mediterranean Sea, and *B. hirtissima* var. *conferta* MacGillivray, 1886 in Waters (1889), from southern Australia. Gordon (1984) synonymised Waters' variety with *B. plurispinosa*. However, material from Port Phillip Heads, Victoria (MOV F45602 [slides 63516 & 63517], NHM 1888.11.14.190 & NHM 1897.5.1.382), Portland, Victoria (MOV F45602 [slide 63515]), and "Australia" (NHM 1899.7.1.911), although probably Victorian itself, differs from *B. plurispinosa* in a number of ways: it has six long, robust distal orificial spines (the two most distal spines are more spread in ovicellate zooids); 10-12 pairs of lateral marginal spines, which are short and curved, overarching the frontal membrane, meeting at the midline but not joining or

overlapping each other; no basal spines; however, it does have ovicells of a similar shape. Thus Waters' variety is here raised back to specific status, as *Beania conferta* MacGillivray, 1886 and MOV F45602 [slide 63517] is here nominated as the Lectotype, with MOV F45602 [slide 63516], NHM 1888.11.14.190 & NHM 1897.5.1.382 here nominated as Paralectotypes. *Beania hirtissima* forma *cylindrica* on the other hand appears to be a complex of species with a superficially similar autozooidal and colony morphology. Collection material assigned to this variety has been examined as a result of this study.

Material from the Mediterranean Sea (see Hayward & McKinney, 2002: fig. 9A,B) assigned to *Beania hirtissima* var. *cylindrica* shows autozooids with straight gracile spines arranged in an erect unilaminar way, but folded so that the frontal of the zooids is on the outside of the cylinder. However, the two lateral edges do not join or fuse. Instead free edges are left and thick "stolonic" kenozooidal rhizoids can be seen to run down the centre of the colony. Material from Brisbane, northeastern Australia (NHM 1865.5.29.9), has a similar morphology. On the other hand, material from the Murray Island, Torres Strait (NHM 1890.3.24.14) has larger autozooids, with short robust overarching marginal spines and oral spines that are thicker and longer than those from the Mediterranean. The colony produced is also truly cylindrical, i.e. it has no free edges, and appears to lack the central stolonic kenozooidal rhizoids. Harmer (1926) described material from the Flores Sea (NHM 1928.3.6.245) attributing it to Hincks' forma *cylindrica*. This material differs again from the two sets of material described above. It consists of small loosely connected autozooids with very short spines. No impression of the colony morphology is apparent in the Canada Balsam preparation slide. Hayward & McKinney (2002) recognised Hincks' variety as distinct from *B. hirtissima sensu stricto* giving it full species status, a conclusion that is accepted here. They noted the need for the re-examination of material assigned to the cylindrical variety from outside of the Mediterranean Sea. It is apparent, as discussed above, that at least one, perhaps, two distinct species can be separated from the Indo-Pacific material assigned to "forma *cylindrica*", one from the Torres Strait, and the other from the Flores Sea.

Several other specimens (noted below) originally attributed to *Beania hirtissima* have been examined and appear to be very similar to *Beania australopacifica*. However, they differ on a number of points mainly with regard to their autozooidal size and shape, the size and number of marginal spines and the presence of avicularia and ovicells. To this end three separate new species can be recognised from the three species mentioned above and all appear to be geographically localised, one species from Funafuti (NHM 1903.1.29.5,6), one from the Red Sea and Mauritius (described as *B. hirtissima* by Hayward, 1988) (NHM 1934.10.6.22) and another from off Ghana (described by Cook, 1985) (NHM 1972.3.3.26). A species from the Cape Verde Islands (NHM 1899.7.1.923) recorded by Cook (1968b) as *Beania* aff. *robusta* requires further investigation. These will be described and discussed in a future publication.

Etymology From *australis*, L. southern. Named for its range in the southern Pacific Ocean.

Distribution *Beania australopacifica* was found encrusting coral debris from Heron Island and Cleveland Bay on the Great Barrier Reef. A single colony was found from Anuha Reefs, the Florida Islands.

