Calyptotheca perpendiculata Tilbrook, 2006, p.222, pl.48C-D.

Calyptotheca perpendiculata new species
Plate 48C-D

Schizoporella sanguinea Philipps, 1899: 440 (Not *Hemeschara sanguinea* Norman, 1868).
Calyptotheca tenuata Harmer, 1957 (part): 1016.
Calyptotheca tenuata: Ryland & Hayward, 1992: 259, fig. 18b,c.

Type material — Holotype: NHM 1996.2.23.118, Station 14, Heron Island, Australia.

Other material examined — SBMNH 365647, **501-87**; NHM 1980.2.1.22, Lifu, Loyalty Islands; NHM 2000.4.11.730, Great Astrolabe Reef, Fiji.

Description — Colony encrusting, silvery grey-black when dried. Autozooids large, rectangular or irregularly polygonal (ca 0.85 x 0.60 mm), frontal shield perforated by large, round pores (80–100). Primary orifice oval, wider than long (ca 0.22 x 0.17 mm), with shallow, concave proximal sinus, condyles small, rounded, medially directed. Small, raised, ridge of calcification distal to orifice along proximal wall of distal zooid. Avicularia large, sutural, at widest part of zooid, perpendicular to longitudinal axis, rostrum elongate, half width of zooid, triangular, medially directed. Ovicells prominent, wider than long, partially immersed in frontal of succeeding autozooid, perforations smaller and less dense than that of frontal shield, crossed by sutures, orifice dimorphic.

Etymology — From *perpendicularis*, L. at right angles. Named for the positioning of the adventitious relative to the midline of the zooid.

Remarks — ***Calyptotheca perpendiculata*** is characterised by its oval orifice, with small condyles and distal ridge of calcification, and its large sutural avicularia, set perpendicular to the midline at the widest point of the zooid. This species also has the largest autozooids of the three *Calyptotheca* species described here, and is the only one with ovicells crossed by sutures.

Calyptotheca perpendiculata is distinguished from *C. tenuata*, which has identical shaped avicularia, by their positioning, i.e. in ***C. perpendiculata*** they lie perpendicular to the midline at the widest point of the zooid, whereas in *C. tenuata* they lie at 45° to the midline, proximomedially directed along the proximolateral edge of the orifice. The orificial condyles in ***C. perpendiculata*** are also far smaller than those seen in *C. tenuata*.

Calyptotheca perpendiculata and *C. tenuata* differ from *C. parcimunita* Harmer, 1957 and *C. wasinensis* (Waters, 1913) in the shape of their orifices, but more obviously in the shape and size of their avicularia: *C. parcimunita* has rather small, narrow, paired, medially directed sutural, avicularia positioned distal to the orifice; *C. wasinensis* has small, paired, triangular, or oval, proximomedially directed avicularia at the distolateral 'corners' of the zooid.

In their description of this species, as *Calyptotheca tenuata*, Ryland & Hayward (1992) described the ovicells as wider then long, rather flattened frontally and partly immersed in the succeeding autozooid. A single partially covered ovicell and brooding zooid are present in the single colony found from the Solomon Islands, however its assignment to their species is made on the basis of the avicularian shape but more importantly by the shape of the orifice and its small lateral condyles.

Distribution — ***Calyptotheca perpendiculata*** has previously been recorded, as *C. tenuata*, from the southern Great Barrier Reef at Heron Island and the Loyalty Islands. It is also present on Fiji and the Solomon Islands and thus appears to be limited to the Coral Sea. In the Solomon Islands a single colony was found at Anuha Reefs, Florida Islands.

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