

TWO NEW SPECIES OF HALECIIDAE (HYDROZOA: HYDROIDA) FROM SOUTHERN AUSTRALIA

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Two new species of Haleciidae are described from southern Australia. *Halecium amphibolum* sp. nov. is a seagrass epiphyte and *Campalecium algoicum* sp. nov. is epizoic on a crustose bryozoan. The latter species is the first record of *Campalecium* from Australia.

TWO new species of hydroids referable to the family Haleciidae were found during ecological studies in Port Phillip Bay, Victoria. One of the species, belonging to *Halecium*, occurs in the epiphytic hydroid community of the seagrass *Amphibolis antarctica* (Labill.) Sonder & Aschersen at Queenscliff, near Port Phillip Heads. The other species, belonging to *Campalecium*, is epizoic on a crustose bryozoan growing on a jetty in shallow water. It is the first record of *Campalecium* from Australia.

Type material lodged in the Museum of Victoria is denoted by the prefix NMV.

Family HALECIIDAE Hincks, 1868

Halecium amphibolum sp. nov.

Fig. 1A–D

Etymology. The specific name refers to the host plant.

Type material. Holotype NMV F59426, microslide, female colony from *Amphibolis antarctica*, 3 m, Queenscliff, Victoria, coll. J. E. Watson, 16 Nov. 1986. Paratype NMV F59427, male colony (formalin preserved) on *Amphibolis antarctica*, 3 m, Queenscliff, Victoria, coll. J. E. Watson, 24 Jun. 1986.

Description. Colonies consisting of up to six small, branched stems.

Hydrorhiza tubular, thick and robust, 0.1 mm in width, adherent to seagrass leaf. Stems short, un fascicled, up to 6 mm in height, taller stems bearing several hydrothecae but many hydrothecae borne directly on hydrorhiza. Perisarc of primary stem or pedicel thick, with at least three deep proximal annulations above junction with hydrorhiza, these continuing into distal region but sometimes fading into smooth perisarc. Primary pedicel straight, 0.3–0.7 mm long, proximal

width 0.08–0.14 mm, distal width below hydrotheca 0.12–0.15 mm, secondary and later pedicels arising from geniculation just below primary hydrophore. Branching sympodial to roughly dichotomous, occurring below proximal hydrotheca on older stems.

Hydrotheca deep, not sessile, expanding to margin. Margin at right angles to axis of pedicel, strongly everted, with outrolled rim, width 0.18–0.23 mm, diaphragm distinct, width 0.11–0.13 mm, depth from margin to diaphragm 0.05–0.08 mm, a few desmoeytes visible in empty hydrothecae. Up to three hydrothecal replications common in older stems, replicated hydrothecae given off from diaphragm of preceding one, pedicel short to absent. Hydranth large, robust, with about 20 tentacles.

Colonies dioecious. Gonothecae of both sexes similar in overall shape and size, irregularly ovate, laterally flattened, length 0.7–0.9 mm, maximum width 0.5–0.8 mm, perisarc smooth, borne on short, thick pedicel 0.10–0.15 mm long, arising below a hydrotheca on proximal stem region or from hydrorhiza. Aperture of male gonotheca circular, 0.17–0.20 mm wide, with small upraised collar distally situated on one side of capsule, spermatogenic mass contained within reticulated spadix. Aperture of mature female gonotheca an angular notch in summit; gonophore containing up to eight large ova.

Perisarc of colonies honey-coloured, hydranths yellow, gonophores creamy-pink, aperture of gonotheca dark brown.

Remarks. In size of colony, *Halecium amphibolum* sp. nov. resembles some of the smaller species of Haleciidae such as *H. pusillum* Sars, 1857, *H. nanum* Alder, 1859 and *H. corrugatissimum* Trebilcock, 1928. However, careful

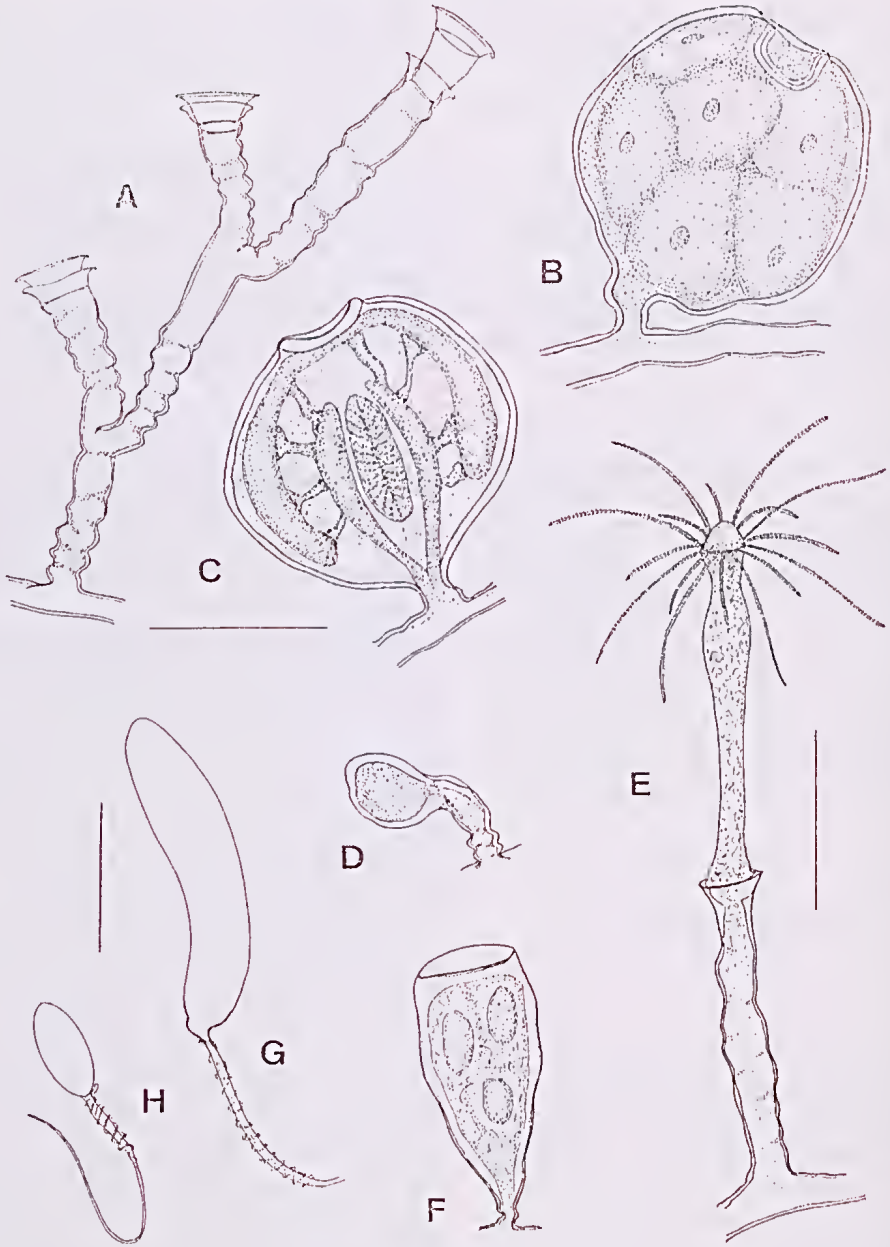


Fig. 1. A-D, *Halecium amphibolum* sp. nov. A, stem from holotype colony. B, female gonotheca with mature gonophore. C, nearly mature male gonophore. D, immature male gonophore. E-H, *Campalecium alcoicum* sp. nov. E, hydrophore with extended hydranth. F, gonotheca with nearly mature medusoid gonophores. G, microbasic mastigophore from tentacles. H, oral microbasic mastigophore. Bar scales: A-D, 0.5 mm; E, 0.25 mm; G, H, 10 mm. F not drawn to scale.

examination of a large sample of fertile material revealed no evidence of a degenerate hydranth associated with the female gonophore such as occurs in *H. nanum*; the gonothecae are lenticular in shape with smooth perisarc, unlike the rugose gonothecae of *H. corrugatissimum*; and the aperture of the female gonotheca is a notch in the perisarc, not tubular as in *H. pusillum*.

Ecology. *Halecium amphibolum* sp. nov. is a seagrass obligate epiphyte (Watson 1992), found only at the type locality of Queensliff in south-eastern Australia. The colonies grow in the sheltered microhabitat of the axils of the seagrass leaves. They have a life-span of a few weeks from settlement to senescence and are fertile in spring.

Campalecium alcoicum sp. nov.

Fig. 1E–F

Type material. Holotype NMV F51789, a colony (alcohol preserved) on a bryozoan from wharf piles, 3 m, Point Henry, Port Phillip Bay, Victoria, coll. J. E. Watson, 11 Jan. 1992.

Description. Colony stolonial, many hydrophores arising from tubular hydrorhiza 0.04–0.06 mm in width. Hydrophores tubular, to 0.3–0.4 mm high, of same diameter as hydrorhiza, distal end expanded into shallow dish-shaped hydrotheca 0.01 mm deep and 0.04–0.07 mm wide at margin. A ring of desmocytes present.

Fully extended hydranth at least twice as high as hydrophore, column thin, thickening a little below origin of tentacles. Hypostome conical, surrounded by single, amphicoronate whorl of 18–20 fine, filiform tentacles.

Nematocysts small microbasie mastigophores, capsule 6–7 μm \times 2 μm , shaft about same length as capsule, thread very long (to 500 μm), numerous on tentacles; a few larger microbasie mastigophores around hypostome, capsule banana-shaped, 20 \times 4 μm , shaft very thick and rosy, about 35 μm long, thread a little thinner, at least twice length of shaft.

Gonotheca arising from base of hydrophore and larger than it, top-shaped, widening distally to truncated summit, walls smooth, perisarc thin, containing three medusa buds at different stages of development.

Colonies transparent to white. Each medusa bud with a yellow spot.

Remarks. The bryozoan substrate of *Campalecium alcoicum* sp. nov. was on the mussel *Mytilus edulis planulatus* (Lamarek) growing on wharf pilings in sheltered water. The single

gonotheca found on the colony was damaged before measurements could be made.

Campalecium is best known from one widely distributed species, *C. medusifera* Torrey, 1902. The hydroid phase of *C. medusifera* has been recorded from the Mediterranean Sea, the Indo-West Pacific Ocean and the California coast, and the medusa has been recorded from the Mediterranean Sea, the tropical Atlantic Ocean and Malaysia.

Millard & Bouillon (1975) reported fertile colonies (without liberated medusae) of *Campalecium cirratum* (= *Eucheilota cirrata* Hackel, 1879) from the Seychelles and included *C. medusifera* in its synonymy. Boero (1981), however, doubted that these species are conspecific because: (i) the newly liberated medusa of *C. medusifera* is different from that of *C. cirratum*; and (ii) the endome of the Seychelles species differs from that of *C. medusifera*, the former containing microbasie mastigophores and "several other types of nematocyst in the tentacles" (Millard & Bouillon 1975: 8) while the latter has both macrobasie and microbasie mastigophores. He thus considered the Seychelles specimens probably to represent a new species.

Campalecium alcoicum is not closely related to either *C. medusifera* or *C. cirratum*?, the differences being: (i) the larger hydrocaulus and the several kinds of tentacular nematocysts in the Seychelles species, compared with two kinds both of smaller size in *C. alcoicum*; (ii) the oral macrobasie mastigophores of *C. medusifera* (see Boero 1981, fig. 5) were not found in *A. alcoicum*; and (iii) the absence of an intertentacular web from *C. alcoicum*.

The finding of microbasie mastigophores in *C. medusifera* would bring the apparent relationship between this species and *C. alcoicum* much closer. Examination of living material revealed no trace of an intertentacular web. If present, it is so reduced as to be vestigial. Since an intertentacular web is diagnostic of *Campalecium*, its absence from the Australian species suggests that the concept of the genus needs to be revised to accommodate varied development of this structure.

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