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A new species of *Halopteris* (Hydrozoa: Leptothecata) and redescription of *Plumularia rotunda* from Victoria, Australia

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Abstract Watson, J.E. 2015. A new species of Halopteris (hydrozoa: leptothecata) and redescription of Plumularia rotunda from Victoria, Australia. *Memoirs of Museum Victoria* 73: 41–46.

Halopteris urcoelata sp. nov. is described from Port Phillip. *Plumularia rotunda* Mulder and Trebilcock, 1911 is redescribed from the adjacent Victorian coast and its relationship to *Plumularia wilsoni* Bale, 1926 discussed.

Keywords Victorian coast, *Halopteris urceolata* sp. nov., *Plumularia rotunda* Mulder and Trebilcock, 1911, *Plumularia wilsoni* Bale, 1926.

Introduction

This paper reports on three species of hydroids, *Halopteris urceolata* newly described from Port Phillip, Victoria, and *Plumularia rotunda* Mulder and Trebilcock, 1911, poorly known from the central Victorian coast. The status and relationships of *Plumularia rotunda* to a closely related species, *Plumularia wilsoni* Bale, 1926 is examined. Type and voucher material is lodged in Museum Victoria (NMV).

Halopteris urceolata sp. nov.

Figure 1A-F

Material examined. NMV F207310, holotype, malinol mounted microslide, infertile colony on the bryozoan *Amathia tortuosa*, coll: J. Watson, St Leonards pier, Port Phillip, 29/10/2012, depth 2 m; NMV F207310, remainder of holotype colony preserved in 70% ethanol.

Description. Hydrorhiza a smooth tubular stolon of same diameter as stem, running along branches of the bryozoan host, giving off single delicate stems at irregular intervals. Stems to 15 mm high, straight, monosiphonic, cylindrical, with one or two basal ahydrocladiate internodes with weakly oblique to transverse nodes, distalmost node strongly oblique, following internodes alternately athecate and thecate, athecate internode with transverse proximal and strongly oblique distal node.

Hydrocladia alternate, planar, basal hydrocladia opposite in some stems. Apophysis of stem cylindrical with transverse distal node. Hydrocladia with up to five hydrothecae, arising from behind frontal cauline hydrotheca, sometimes a short secondary hydrocladium bearing two or three hydrothecae given off from behind first hydrocladial hydrotheca. Hydrocladial internodes alternately athecate and thecate; thecate internode with oblique nodes, distal node sometimes reduced to a notch in perisarc, athecate internode with a single nematotheca about halfway along internode.

Hydrotheca seated about halfway along thecate internode at an angle of approximately 40° to hydrocladial axis, jug-shaped, abcauline wall almost straight to weakly concave, slightly thickened, adcauline wall distinctly concave, floor asymmetrically curved, margin circular in anterior view, transverse to hydrothecal axis, rim slightly thickened.

One or two large nematothecae on basal stem internodes and one halfway along athecate cauline internode, base of nematotheca long and slender, cup large, adcaudally foreshortened; nematothecae on hydrocladial internode, base of median inferior short and stout, cup adcaudally foreshortened, not reaching hydrothecal floor, base of paired laterals long, without pedicel, cup smaller than others, not reaching hydrothecal margin.

Cnidome comprising microbasic euryteles all of same size, capsule elongate oval, 10 x 5 μm, shaft 7 μm long, spinous.

Colony transparent white, perisarc thin.

Remarks. It was originally considered that the species may be *Plumularia campanula* var. *geelongensis* Mulder and Trebilcock 1916, recorded by them only once from Corio Bay in Port Phillip. Careful search of the hydroid collections in Museum Victoria found no specimen of the variety *geelongensis* it is assumed that no specimens were ever lodged.

Their figure of var. *geelongensis* (p.76, pl. 11, figs 2, 2a-c) shows a deep cup-shaped, straight-sided hydrotheca, suggesting that the specimen may have been a variant of *Halopteris campanula* (Busk, 1852), a species common in Victorian oceanic habitat.

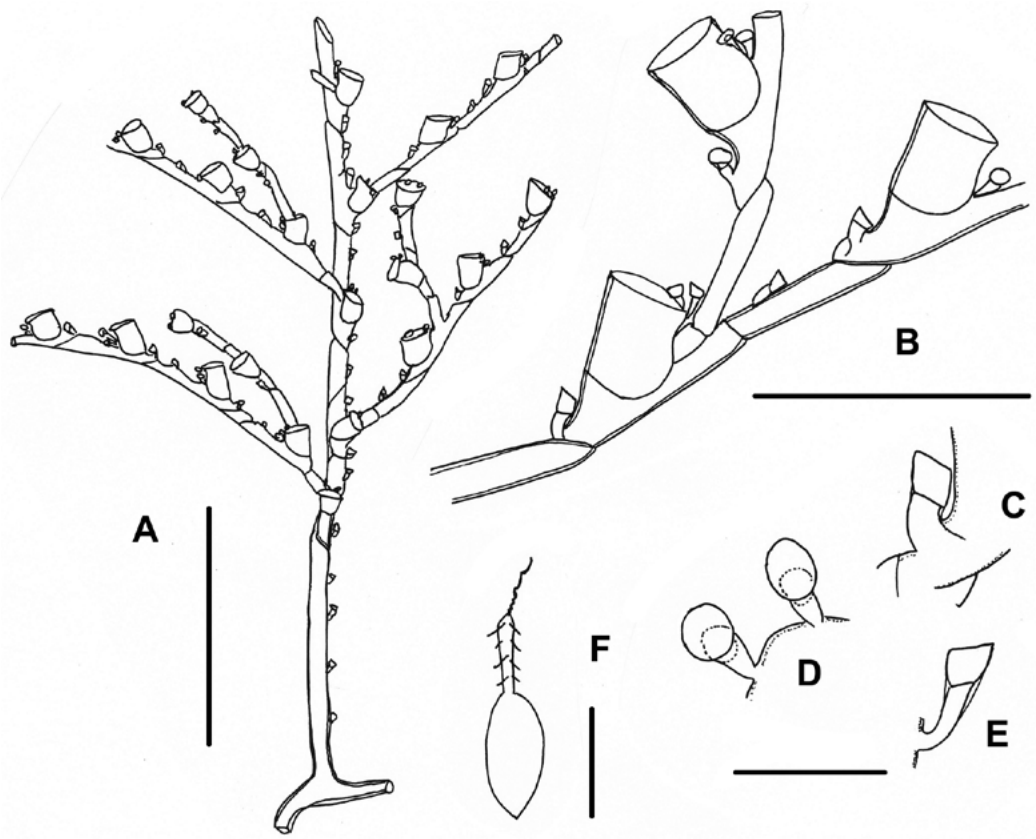

Figure 1A-F. *Halopteris urceolata* sp. nov. A, part of stem of holotype colony (NMV F207310) showing secondary branching. B, branched hydrocladium. C, median inferior nematotheca. D, twin lateral nematothecae. E, cauline nematotheca. F, microbasic eurytele. Scale bar: A, 1.0 mm; B, 0.3 mm; C-E, 0.1 mm; F, 10 μm.

Table 1. Measurements (μm) of *Halopteris urceolata*

Hydrorhiza, diameter of stolon	64-102
Stem internode	
length	576-696
width at node	100-108
Hydrocladium	
length of athecate internode	120-140
length of thecate internode	300-340
width at node	60-76
Hydrotheca	
length of adcauline wall	160-180
length of abcauline wall	112-120
diameter of margin	152-168
Nematotheca	
total length of cauline	176-200
total length of lateral	132-152

The secondary hydrocladial branching seen in *Halopteris urceolata* somewhat resembles that of *Schizotricha* (=*Halopteris*) *simplex* Warren, 1914 from South Africa. The paired basal branching present in some hydrocladia of *H. urceolata* sometimes also occurs in *Halopteris tenella* (Verrill, 1874) from the North Sea (see Schuchert (1997) and also occasionally in *H. campanula* from southern Australia (Watson unpubl.).

Schuchert (1997) mentioned difficulty in deciding whether the cnidome of *Halopteris campanula* comprises microbasic mastigophores or microbasic euryteles. As the present material of *Halopteris urceolata* was preserved prior to examination only a few partially discharged nematocysts were found; these suggest that the cnidome probably also comprises microbasic euryteles.

Ecology. The species occurs in sheltered habitat on jetty piles.

Etymology. Named for the jug-shaped hydrotheca.

Plumularia rotunda Mulder and Trebilcock, 1911

Figure 2A-G

Plumularia delicatula var. *rotunda* Mulder and Trebilcock, 1911: 116, pl. 2, fig. 2.

Plumularia rotunda Bale, 1919: 343, pl. 17, fig. 1.– Stranks, 1993: 13.–Bouillon *et al*., 2006: 370.

Material examined. NMV F57984, microslide, Museum Victoria Trebilcock collection, labelled "Type, *Plumularia delicatula* var. *rotunda* Bream Creek"; NMV F207643 microslide, malinol mounted, coll: J. Watson 15/04/2012, reef 21 m deep, 1.5 km off Barwon Heads, Victoria.

Description (from live, preserved and mounted material). Colony infertile, hydrorhiza a rugose stolon with internal flexion joints. Stems straight, monosiphonic, to 7 mm high, of same diameter throughout, basal one third to half of stems ahydrocladiate with some transverse joints and cauline nematothecae, apophyses at sites of previously shed hydrocladia.

Stem internodes short, straight, expanding a little distally, nodes oblique to transverse, some a deep V-shaped joint, younger internodes without internal septa, older ones with several transverse intranodal septa.

Hydrocladia alternate, planar, given off at or near distal cauline internode, apophysis short, proximal node transverse or slightly oblique, distal node a broad transverse shoulder. Hydrocladium with one or usually two hydrothecae, proximal athecate internode short, expanding distally from apophysis, with one or two deep transverse internal septa and deep indentations in perisarc, occasionally athecate internode extended distally by several secondary nodes; if two or more hydrothecae present on hydrocladium, these separated by a long athecate internode with internal septa, often bearing a median nematotheca.

Hydrotheca occupying two thirds of internode, base of internode straight below hydrotheca; infrathecal hydrothecal chamber large, adcauline wall of hydrotheca entirely adnate to internode, convexly curved, abcauline wall strongly convex to rounded, a hook-shaped thickening passing down from abcauline wall to margin (lateral view), appearing as a submarginal septum in anterior view. Margin of hydrotheca facing obliquely backwards, sub-rectangular in anterior view, rim weakly lobate, in lateral view partly obscured by submarginal septum and abcauline wall. Hydranth with about 18 tentacles.

Nematothecae all of same size, base conical, cup quadrangular in outline, wall slightly adcaudally foreshortened, one about halfway along and closely adpressed to stem internode, one in axil of apophysis, one median behind infrathecal chamber, base slightly wider than others; twin laterals with slender base below hydrotheca, not reaching hydrothecal margin.

Cauline perisarc thick, stem pale brown at base fading to colourless or white below first hydrocladium.

Remarks. This redescription of *Plumularia rotunda* from fresh material augments the descriptions of Mulder and Trebilcock (1911) and Bale (1919).

Table 2. Measurements (μm) of *Plumularia rotunda*

Hydrorhiza, width	104–120
Stem internode	
length	280–332
width at node	56–100
Apophysis	
adcauline length	40–44
width at distal node	56–60
Hydrocladium	
length athecate internode	60–72
length thecate internode	240–260
Hydrotheca	
maximum depth	148–168
maximum length	160–220
width of margin	92–120
Nematotheca	
length of base	30–50
width of cup	30–36

The Trebilcock hydroid collection of Museum Victoria contains some fragmented, poorly labelled and several unlabelled microslide specimens of *Plumularia delicatula* var *rotunda* Mulder and Trebilcock, 1911 those labeled being from the central Victorian coast. The authors considered it to be a variety of *P. delicatula* Bale, 1882 but their figure provides little morphological information. A microslide (NMV F57984) labelled "*Plumularia delicatula* var. *rotunda* Mulder and Trebilcock, 1911 Type", is suggested a possible syntype by Stranks (1993) and I designate this microslide as lectotype of *Plumularia rotunda*. I also designate as paralectotypes of *Plumularia rotunda* Mulder and Trebilcock's microslide NMV F222407, labelled "co-type" from Bream Creek; microslide NMV F222408 from Barwon Heads displaying two gonothecae, and microslide NMV F222409 from Bream Creek, labelled "abnormal growth". I further designate as paralectype of *Plumularia rotunda* a microslide (NMV F222406) in the Bale hydroid collection of Museum Victoria, labelled in Bale's handwriting "*Plumularia delicatula* var. *rotunda*, Mr Mulder, 1907 Geelong". Based on this microslide, Bale (1919) provided a more detailed description and better figures of the variety *rotunda*, raising it to specific rank.

Ecology. Although Mulder and Trebilcock left no traceable field notes about collection of specimens it is assumed that their specimens were from algae cast up on local ocean beaches. The underside of the common prostrate leathery red alga *Peysonnelia* from which the present fresh specimens were collected provides secure habitat for small cryptic hydroids.

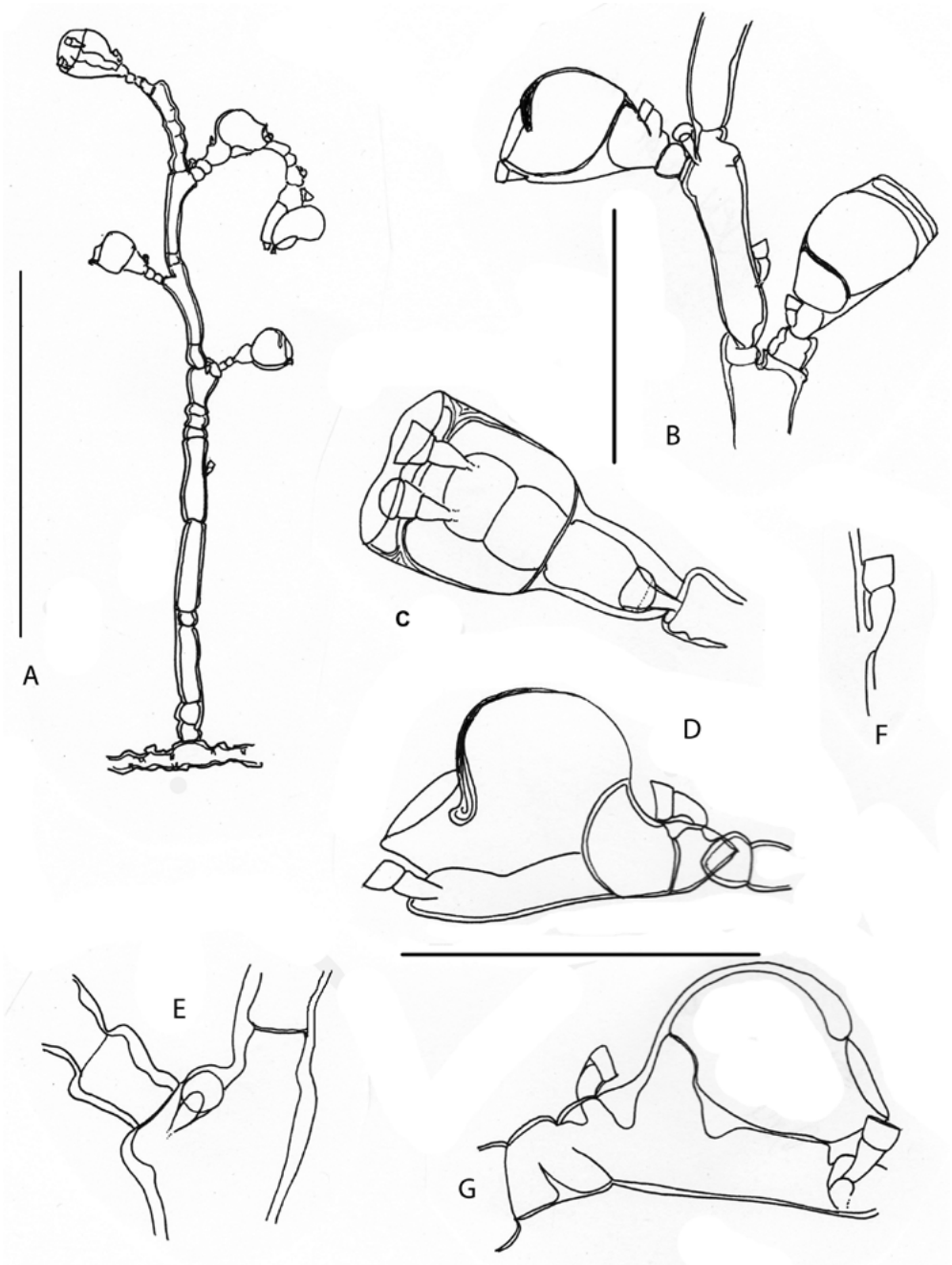

Figure 2 A-G. *Plumularia rotunda* (NMV F207643) from Barwon Heads. A, stem. B, stem internode and hydrothecae, C, hydrotheca, ventral view. D, hydrotheca, lateral view showing deep submarginal ridge. E, *Plumularia rotunda,* hydrotheca of (NMV F57984) lectotype of *Plumularia delicatula* var. *rotunda* Mulder and Trebilcock, 1911 for comparison with D. F cauline internode, and axillar nematotheca of (NMV F207643). G, cauline nematotheca of (NMV F207643). Scale bar: A, 1.0 mm; B, 0.5 mm; C-G, 0.2 mm.

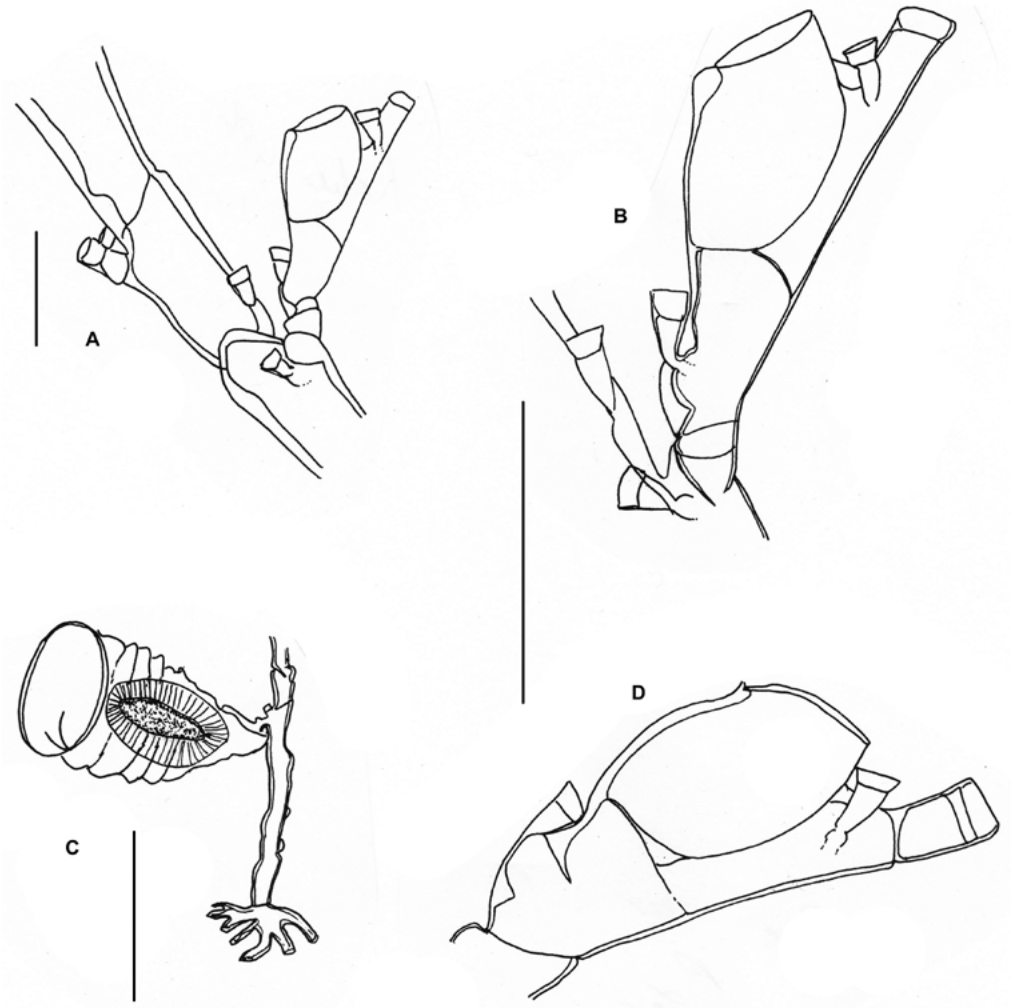

Figure 3 A-D. *Plumularia wilsoni*. (A-C, from Robe, South Australia, author's collection). A, stem internodes with hydrotheca. B, hydrocladium and hydrotheca. C, male gonotheca.. D, hydrotheca of lectotype (NMV F59050). Scale bar: A, B, D, 0.2 mm; C, 1.0 mm.

Note on *Plumularia wilsoni* Bale, 1926

Figure 3A-D

A microslide NMV F59050 in the Bale collection of Museum Victoria displays two infertile stems labelled "*Plumularia delicatula* Bale, 1882, Griffiths Point, 1881, J.R.Y. Goldstein". Stranks (1993) suggested it may be a syntype of *P. delicatula*. I designate this microslide as lectotype of *Plumularia delicatula* Bale, 1882. Bale (1882, 1919) provided good descriptions of *P. delicatula* but because of pre-occupation of the name [now *Lytocarpia delicatula* (Busk, 1852)] in 1926 he renamed the species *Plumularia wilsoni*.

Plumularia wilsoni has since been recorded from New Zealand (Ralph 1961) and Tasmania (Watson 1975). Vervoort and Watson (2003) suggested that *Plumularia wilsoni* may be an extreme variant of *Plumularia setaceoides* Bale, 1882, however, comparison of the lectotype of *P. delicatula* with material from Tasmania and South Australia (author, unpubl.) shows constant morphological features that clearly distinguishes *P. wilsoni* from *P. setaceoides*.

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