

A tall New Zealand plumularian up to 59.0 cm in height with polysiphonic athecate main stem and branches; the hydrocladia, up to 6.0 mm in length arise from the distal end of each stem and branch internode in alternating whorls of four; branches irregularly arranged, up to 9.0 cm in length and of similar structure to the stem, are found one or two centimetres apart towards the distal end of the stem as the lower branches are shed as growth proceeds; hydrorhizae forming a tangled mass of fine tubes; stem approximately 1.5 mm in diameter at the base; nodes of stem transverse, most readily seen in the distal region of the stem and branches; nodes of hydrocladia oblique and best seen at the base of each thecate internode; first short athecate internode of hydrocladium not divided from the apophysis; apophysis approximately 0.40 mm in length; stem internodes 0.40 to 1.0 mm in length and 0.20 to 0.25 mm in width; internodes of branches 1.10 to 1.20 mm in length and approximately 0.30 mm in width; frequently no distinction into short athecate and longer thecate internodes in the proximal region of the hydrocladium; proximal internodes of hydrocladium 0.35 to 0.45 mm in length; distal short athecate internodes approximately 0.11 mm in length; distal thecate internodes 0.25 to 0.36 mm in length; hydrocladia approximately 0.10 mm in width measured at the base of the hydrotheca; short internodes where distinguishable, usually with proximal and distal septal ridges; longer thecate internodes show in addition to the proximal and distal septal ridges three other ridges, one between the proximal ridge and the base of the hydrotheca, one at the level of the base of the hydrotheca and another above the hydrotheca and between it and the distal ridge; hydrothecae small, campanulate, with smooth entire margin, which viewed from the side forms a low convex curve from the front to the back of the hydrotheca; aperture at 90° to the long axis of the internode; abcauline length of hydrotheca approximately 0.07 mm; width viewed laterally, of hydrotheca at margin approximately 0.07 mm and width at the base 0.03 to 0.05 mm; a tall, distally directed tubular "mamelon" in the centre of the upper surface of each stem and branch apophysis; nematothecae bithalamic with the upper cup scoop-shaped, the outer side being the higher; depth of upper cup about one-third that of the lower tapering region; a pair of nematothecae flank the axil of the stem and branch apophyses; a single nematotheca on each short internode; when short internodes not distinguishable the hydrothecate internodes show two nematothecae below each hydrotheca with that nearer the hydrotheca arising from a well developed swelling of the internode; two laterally placed nematothecae above the hydrotheca reaching nearly to the end of the internode; nematothecae 0.075 to 0.10 mm in length and the upper cup 0.025 to 0.032 mm in width at the margin; gonothecae, carried on the apophysis of the branches, slightly curved, narrow at the base and obliquely truncated above, with wide circular aperture, the rim of which slopes towards the adcauline side; length of gonotheca up to 0.60 mm and up to 0.30 mm in width; width of aperture approximately 0.20 mm.

LOCALITY. Type locality, off Three Kings Islands, New Zealand, 100 fathoms (Totton, 1930): off Cape Turakirai, Cook Strait, approx. 50 fathoms (M. Buchler), 9/4/60, 726.

The present specimen is infertile and the description and figure of the gonotheca is from British Museum (Natural History) material.

Nemertesia cymodocea (Busk, 1851). Fig. 6, k.

1851. *Antennularia cymodocea* Busk, p. 119.

1876. *Nemertesia* (*Antennularia*) *decussata* Kirchenpauer, p. 52, Pl. II, fig. 24; Pl. III, fig. 24; Pl. VII, fig. 24.

1890. *Antennularia decussata* Kirchenpauer. Marktanner-Turneretscher, p. 258, pl. VI, fig. 7.

1907. *Antennularia hartlaubi* Ritchie, p. 542, Pl. III, fig. 4, a-b.

1957. *Nemertesia cymodocea* (Busk). Millard, p. 234 (synonymy).

A tall species, with stem up to 49.0 cm in height, arising from a mass of small hydrorhizal tubes; main stem and branches athecate and polysiphonic; stem approximately 2.5 mm in width at the base; branches found towards the distal region of the stem and irregularly arranged; the hydrocladia up to 6.0 mm in length, arise in whorls from the distal end of each stem and branch internode, but whorls rather variable in arrangement; whorls frequently in alternate pairs, but there may be two alternating whorls of three hydrocladia per internode; no regularity as to the positional arrangement on stem or branches of the internodes with alternating whorls of two hydrocladia or those with alternating whorls of three hydrocladia; occasionally on some branches at the base of the stem there is one hydrocladium per internode alternately arranged and in one plane; hydrorhizae forming a mass of fine tubes; nodes of stem transverse, most readily seen in the distal regions of the stem and branches; nodes of the hydrocladia oblique and dividing each hydrocladium into short athecate internodes and longer thecate internodes; hydrocladia carried on an apophysis of the stem or branch; apophyses 0.25 to 0.40 mm in length; stem and branch internodes 0.85 to 1.25 mm in length and 0.20 to 0.30 mm in width; short internodes of hydrocladium