NATIONAL INSTITUTE OF
WATER AND ATMOSPHERIC RESEARCH (NIWA)

The Marine Fauna of New Zealand:

Leptothecata (Cnidaria: Hydrozoa) (Thecate Hydroids)

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NIWA Biodiversity Memoir 119

2003

Hydroid a stolonal colony, typically epizootic on other hydroids, with spindle-shaped hydrotheca rising from a tubular, often anastomosing stolon. Size of hydranth variable, 0.6–2 mm; length of pedicel also varied, almost non-existent to surpassing that of hydrotheca, generally smooth; proximal part of hydrotheca either gradually tapering into pedicel or with rounded base. Distal part of hydrotheca with characteristic gabled roof formed by 2 pleated, semicircular opercular plates suspended between 2 triangularly produced stiff extensions of the hydrothecal wall. The pleated plates open by pressure from the hydranth inside to permit its passage. Hydranth not particularly long, with about 12 tentacles in unicoronate whorl around conical proboscis. Gonothecae of same general shape as hydrothecae but much bigger, pedicel varied in length; 4 medusa buds, apical most advanced in development.

RECORDS FROM NEW ZEALAND: A common epizootic hydroid on other New Zealand hydroids in the area: 25°–53° S, 159.5° E–178° W, 65–457 m depth. Gonothecae found in June.

REMARKS AND DISTRIBUTION: Size of hydrotheca and length of pedicel may vary greatly. In the young specimen from NZOI Stn Q72 the hydrothecae have a short pedicel and reach a total length of only 650 µm. The life history is discussed by Edwards (1973). Circumglobal in boreal, temperate, subtropical, and tropical seas.

Stegolaria Stechow, 1913a

TYPE SPECIES: *Cryptolaria geniculata* Allman, 1888

In this genus the following species have been considered.

Stegolaria geniculata (Allman, 1888)
Stegolaria operculata Nutting, 1905
Stegolaria irregularis Totton, 1930

Free medusae may be produced but life histories insufficiently known.

Stegolaria irregularis Totton, 1930 (Fig. 2A–C)

Stegolaria irregularis Totton 1930: 154; Ralph 1957: 849, fig. 8j-m; 1961d: 236; Edwards 1973: 594; Gravier-Bonnet 1979: 16; Hicks *et al.* 1991: 7; Dawson, 1992: 14.

MATERIAL EXAMINED:

NZOI Stns: B488, large, fragmented colony, no gonothecae; RMNH-Coel. slide 2780; **E640**, large colony about 150 mm high, width about 120 mm, many fragments, no gonothecae; 3 RMNH-Coel. slides 2240; **E803**, Colony about 80 mm high, width 60 mm, irregularly branched, no gonothecae; 3 RMNH-Coel. slides 2167; **E861**, 5 colonies, 60 x 60 mm, no gonothecae; 2 RMNH-Coel. slides 2189; **F109**, single colony of 50 x 50 mm in poor condition; **F145**, 5 colonies about 40 mm high on empty worm(?) tubes; **F150**, 2 colonies, 60 and 110 mm high, smaller with several gonothecae; RMNH-Coel. slide 2852; **G268**, mutilated colony, 60 mm high; **J665**, 60 mm high colony attached to stone and detached stem with some hydrothecae; **J975**, large, fan-shaped colony 80 x 80 mm and several smaller colonies and fragments, no gonothecae; RMNH-Coel. slide 2264; **K825**, 2 colonies about 60 mm high, no gonothecae; **Q25**, small colony, 25–30 mm high, no gonothecae; **R437**, 2 colonies, 60 x 50 mm, no gonothecae, and a few fragments; 2 RMNH-Coel. slides 2237; **S13** [Slide 4220 JEW Colln]; **U594**, colony about 80 mm high, no gonothecae; RMNH-Coel. slide 2930 of small branch; **V369**, branched colony, 45 mm high, attached in soft sediment by means of fibres; part in RMNH-Coel. slide 2933; **W257**, 2 fragments, 20 and 30 mm high.

NMNZ: BS 438, fragmented, large colony, about 150 x 150 mm, no gonothecae; NMNZ Co. 661; 2 RMNH-Coel. slides 3031; **BS 571**, many strongly branched colonies, up to 150 mm high, on antipatharian axis; no gonothecae. NMNZ Co. 401; **BS 630**, well developed, branched colony about 80 mm high and a much abraded fragment; no gonothecae; NMNZ Co. 427; 40°44.28' S, 176°52.47'E, 23.Jan.1995, 2 large, partly fragmented colonies; main axis thick, anchoring by means of broad disk. Hydrothecae in very bad condition. Egg capsule of dogfish attached to bigger colony. NMNZ Co. 646.

NMNZ Ralph Collection: Loc. 154, NMNZ Co. 1013: 30 mm long colony and 2 fragments, 1 in RMNH-Coel. slide 3679. Very few good hydrothecae. No gonothecae. Two stained Canada Balsam slides in RSC as *Stegolaria irregularis*, no further data. Also partly dried out slide under same name, no data.

TYPE LOCALITY: Off North Cape, New Zealand, *Terra Nova* Stn 96.

DESCRIPTION: Strongly polysiphonic, irregularly branched colonies with thick axis and branches, composed of many intertwining tubes, only extreme distal part of branches monosiphonic. Branching, though irregular, typically more or less in 1 plane. Hydrothecae in monosiphonic parts of colonies initially biseriate, with short pedicel, tubiform, smoothly curving outwards, base of hydrotheca closely adpressed, to axis and partly covered by secondary tubules. Hydrothecae with operculum comparable to that of *Modeeria rotunda* (Quoy & Gaimard, 1827), i.e., 2 semicircular pleated plates suspended between 2 stiffened triangular portions of the hydrothecal wall. Perisarc initially hyaline and thin, firmer on older parts of colony and there honey to deep honey coloured. Hydranth [according to Ralph (1957: 849)] with 10–12 tentacles and with annular attachment to hydrotheca near its base.

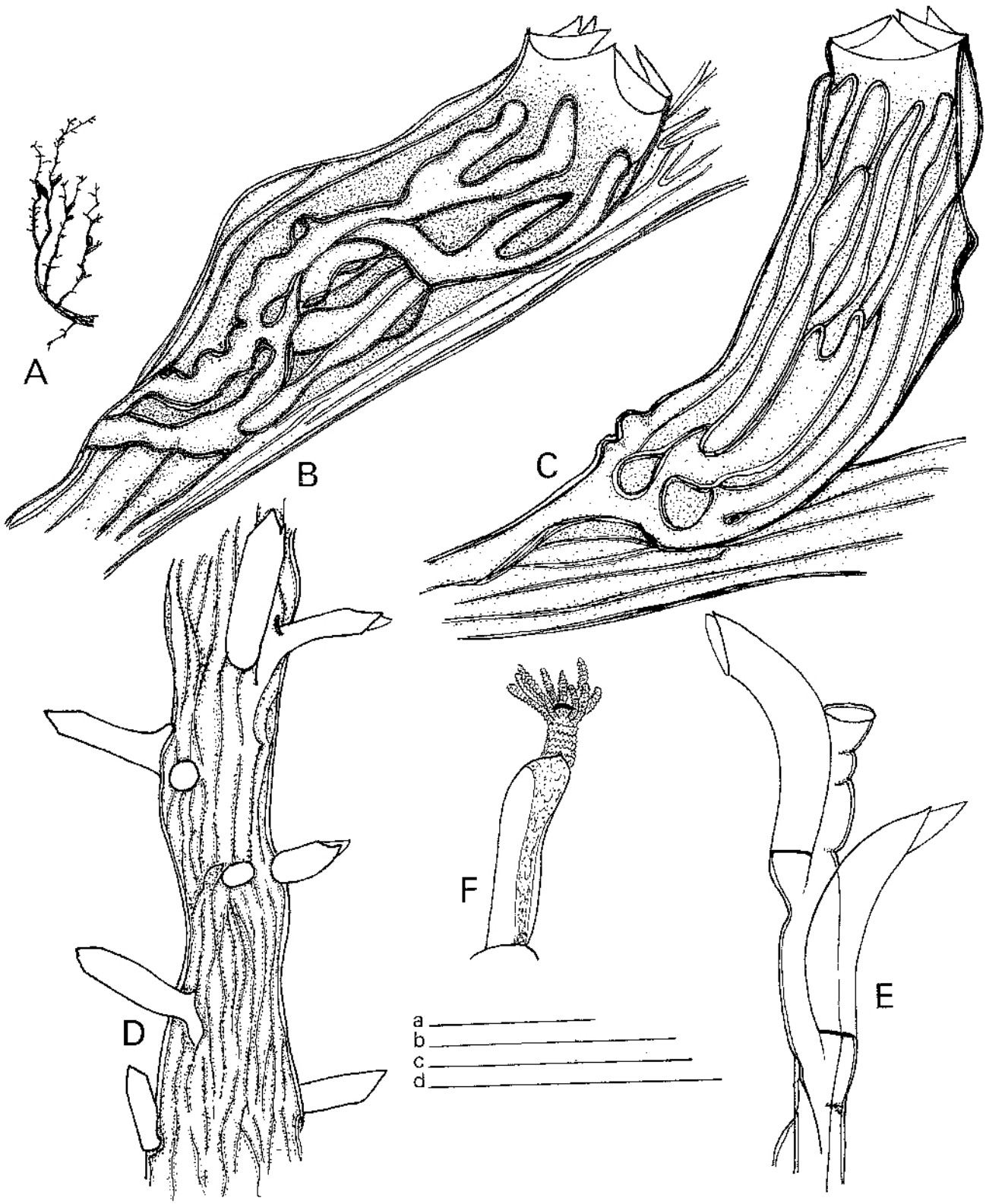

Fig. 2. A–C. *Stegolaria irregularis* Totton, 1930. **A**, colony, habitus. **B, C**, gonotheca, lateral view (NZOI Stn F150, slide 2852). D–F. *Stegolaria operculata* Nutting, 1905. **D**, part of stem. **E**, distal part of branch. **F**, hydrotheca and partly expanded hydranth (BS 438, slide 2975). Scales: a, 1.4 mm (D); b, 1.5 mm (E, F); c, 35 mm (A); d, 1 mm (B, C). J.E.W.

The gonotheca of *Stegolaria irregularis* has not previously been described. The material from NZOI Stn F150 is fertile, though the gonothecae are empty. These are large, cocoon-shaped, 2.0–2.4 mm long and 0.6–0.7 mm wide, adnate to the branch or standing out partially free of the branch. Perisarc thick and ornamented with fascicular tubes running up from the branch, these ending in blunt apices just behind the margin. Margin circular, slightly upturned with 4 low cusps and an operculum of many membranous segments separating to allow escape of the reproductive products. All gonothecae observed were empty.

RECORDS FROM NEW ZEALAND: Well distributed in deeper water around New Zealand in an area limited by 29°–53° S, 166° E–178° W, depth 145–812 m. Gonothecae were observed in February.

REMARKS: A slide in NMNZ contains a fragment of the paratype of this species: NMNZ Co. 207, portion of paratype, *Stegolaria irregularis* Totton, Stn 96, *Terra Nova*, B.M. (N.H.) '?type'. [*Terra Nova* Stn 96, 7 miles E. of North Cape, 128 m, 03.Aug.1911]. This is an unstained stem fragment with a side branch.

Stegolaria operculata (Nutting, 1905) (Fig. 2D–F)

?Cryptolaria operculata Nutting 1905: 947–948, pl. 3, fig. 4, pl. 4, figs 12–14; Ritchie, 1910a: 9–10.
Stegolaria operculata: Stechow 1913a: 137; 1913b: 29; Rees & Thursfield 1965: 88; Edwards 1973: 594; Gravier-Bonnet 1979: 14, fig. 3B-F; Hirohito 1995, (English text): 94, text-fig. 26d, e, pl. 5, fig. C.

MATERIAL EXAMINED:
NMNZ: BS 438, 100 mm high colony, irregularly branched, no gonothecae; NMNZ Co. 457; 3 RMNH-Coel. slides 2975.

TYPE LOCALITY: Between Molokai and Maui, Hawaiian Islands, 252 m.

RECORDS FROM NEW ZEALAND: The present locality, Nugent Island, 29°13′ S, 177°50′ W, northeast of Raoul Island, Kermadec Group, is outside New Zealand coastal waters on the Kermadec Ridge where the species was obtained at about 165 m depth.

REMARKS AND DISTRIBUTION: This material conforms to Nutting's (1905) description. Though no gonothecae have been observed in the present material its allocation to the genus *Stegolaria* Stechow, 1913a, seems beyond dispute. For a discussion of its relationship to *Stegolaria geniculata* (Allman, 1888) we refer to Vervoort (1985) and Ramil and Vervoort (1992a). Though the species was recently synonymised with *S. geniculata* by Ramil and Vervoort (1992) it is kept separate from the latter by Hirohito (1995). More and better preserved, fertile material is necessary to finally clarify the relationship between the two species. The present material is unfit for a detailed account.

Family **TIAROPSIDIDAE** Boero, Bouillon & Danovaro, 1987
Tiaropsidium Torrey, 1909

TYPE SPECIES: *Tiaropsidium kelseyi* Torrey, 1909.

Tiaropsidium japonicum Kramp, 1932a

Tiaropsidium japonicum Kramp 1932a: 370, text-figs 1, 24, 36, pl. 10, figs 1–2; 1961: 158; Bouillon & Barnett 1999: 97, fig. 98.

DESCRIPTION: Umbrella 18–34 mm wide, watch-glass-shaped, mesoglea thin, velum narrow. Stomach small, flattened, with short and broad slightly folded lips. Gonads linear, along full length of radial canals. Tentacles 8, hollow, each with abaxial and adaxial muscular furrows, bulbs large and swollen: nematocysts evenly distributed. Six or 7 small, pointed rudimentary tentacles each between 2 large tentacles. Lithocysts 16, each with dark brown basal ocellus; number of concretions unknown (Kramp 1961; Bouillon & Barnett 1999).

TYPE LOCALITY: Misaki, Japan.

REMARKS: Polyp phase of this species unknown, but described for two allied species: *Tiaropsidium mediterraneum* (Metschnikoff, 1886) (as *Camella vilaevelebiti* Hadzi, 1916) and *T. roseum* (Maas, 1905) (see below).

RECORDS FROM NEW ZEALAND: *Galathea* Stn 629, Hikurangi Trough, 41°46′ S, 175°48′ E, 1700 m.

DISTRIBUTION: Japanese and New Zealand waters.

Tiaropsidium roseum (Maas, 1905)

Tiaropsis roseum Maas 1905: 30, pl. 7, figs 45–47.
Tiaropsidium roseum: Kramp 1961: 159; Boero *et al.* 1987: 293–301, figs 1–5; Bouillon 1999: 430, fig. 3.123; Bouillon & Barnett 1999: 97, fig. 99.