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**Taxonomic revision of the genus *Sertularella* (Cnidaria: Hydrozoa)
from southern South America and the subantarctic, with descriptions of five new species**

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Abstract: The hydroids belonging to the genus *Sertularella* Gray, 1848 from southern South America and the subantarctic are revised, based on both literature data and the reexamination of type specimens and additional material dealt with in earlier accounts. Thirty-two species are recognized as valid, of which five are new to science, namely *S. juanfernandezensis*, *S. oblonga*, *S. recta*, *S. robustissima*, and *S. subantarctica*. Modern redescriptions of *S. implexa* (Allman, 1888) and *S. novarae* Marktanner-Turneretscher, 1890 are provided. Additionally, it is demonstrated that *S. argentinica* El Beshbeeshy, 2011 and *S. jorgensis* El Beshbeeshy, 2011 are junior synonyms of *S. clausa* (Allman, 1888) and *S. valdiviae* Stechow, 1923, respectively. *Sertularella paessleri* Hartlaub, 1901 is assigned to the synonymy of *S. allmani* Hartlaub, 1901, *S. lagena* Allman, 1876 to that of *S. contorta* Kirchenpauer, 1884, *S. picta* (Meyen, 1834), *S. protecta* Hartlaub, 1901 and *S. margaritacea* Allman, 1885 to that of *S. gaudichaudi* (Lamouroux, 1824), *Sertularella uruguayensis* Mañé Garzón & Milstein, 1973 to that of *S. mediterranea* Hartlaub, 1901, and *S. striata* Stechow, 1923 to that of *S. patagonica* (d'Orbigny, 1842). Lectotypes are designated for *S. allmani*, *S. antarctica* Hartlaub, 1901, and *S. implexa*. A checklist of all species records from the study area, together with new identifications, is provided as an appendix.

Keywords: Chile - Argentina - Uruguay - subantarctic.

INTRODUCTION

During the last decade, a rich hydroid material was collected from Chile in the frame of a series of expeditions carried out by the staff of the Huinay Scientific Field Station (HSFS) and the Instituto de Ciencias Marinas y Limnológicas (Universidad Austral de Chile, Valdivia), from Taltal, in the north, to the Strait of Magellan, in the south. Several papers, among which Galea (2007), Galea *et al.* (2007a, b; 2009), Galea & Schories (2012a) and Galea *et al.* (2014), resulted from the study of these collections, updating and clarifying earlier accounts by Philippi (1866), Ridley (1881), Jäderholm (1904), Hartlaub (1905) and Leloup (1974).

One of the most speciose genera present in these collections, *Sertularella* Gray, 1848, is – according to the literature – represented by 24 nominal species in Chile. Some of them have a much wider geographical distribution, and are equally found along the Argentine

Shelf (El Beshbeeshy, 2011), while some others extend well to the subantarctic. To verify the accuracy of earlier identifications provided for the Chilean members of the genus, it became necessary to reexamine the materials corresponding to all species created by El Beshbeeshy.

Moreover, since a rather restricted number of studies, some outdated according to the requirements of modern taxonomy, have been published (Allman, 1876, 1879, 1888; Blanco, 1963, 1967, 1968, 1974, 1976, 1982, 1984; Hartlaub, 1901, 1905; Jäderholm, 1903, 1905, 1910; Kirchenpauer, 1884; Ritchie, 1907; Stechow, 1923a, 1925; Vanhöffen, 1910), it became imperative to clarify the status of the various records of hydroids assignable to the genus *Sertularella*.

Among them, many nominal taxa belong to a group characterized by the unilateral arrangement of both hydrothecae and side branches along the stem, namely: *S. allmani* Hartlaub, 1901, *S. antarctica* Hartlaub,

1901, *S. contorta* Kirchenpauer, 1884, *S. gaudichaudi* (Lamouroux, 1824), *S. paessleri* Hartlaub, 1901, *S. picta* (Meyen, 1834), and *S. protecta* Hartlaub, 1901. As noted by El Beshbeeshy (2011), their taxonomic status, as well as their relationships, were often misunderstood, thus spreading confusion within the relevant literature.

To provide a comprehensive account on the taxonomy and species composition, all literature records from a large geographical area encompassing the coasts of Chile, Argentina, and Uruguay, as well as the subantarctic, are being reviewed herein. Literature records from the latter area include the Scotia Arc, the Falkland Is., Marion and Prince Edward Is., the French Southern and Antarctic Lands, and Macquarie I.

The gonothecae of many genera of thecate hydroids are important anatomical structures allowing reliable species identifications. There is a considerable uniformity in their morphology within the genus *Sertularella* in general, and among the species from the study area in particular (*cf.* literature cited above). Indeed, nearly all nominal species (exclusive of both *S. argentinica* El Beshbeeshy, 2011 and *S. valdiviae* Stechow, 1923b) have broadly ovoid, transversely ribbed gonothecae, provided distally with (generally) 4 spines. During this study, it became obvious that their structural homogeneity does not offer sufficient grounds for species separation, and thus their morphology is not always taken into consideration herein.

The colony structure, the habit of the stem, and the hydrothecal shape, however, represent the most reliable characters, and thus are used here to distinguish between species.

MATERIAL AND METHODS

Sampling was done by scuba diving by three of us (VH, GF and DS). The material was collected during various “Huinay Fiordos” (HF) expeditions carried out by the HSFS staff, as well as by DS and his research team.

The collected specimens were fixed in 4% formalin in seawater. Observations were done on preserved material using the methods described in Galea (2007). Most samples were deposited in collections of the *Muséum d’Histoire Naturelle* of Geneva, Switzerland, whose catalogue numbers are indicated by MHNG-INVE-. Parts of the collected materials are also housed in the private collection of the senior author, and their corresponding registration numbers are indicated by HRG-.

Additional samples examined in the frame of this study were obtained from various European museums, and their registrations are indicated by numbers after the codes NHML (Natural History Museum, London, United Kingdom), NMSZ (National Museums Scotland, Edinburgh, United Kingdom), SMNH (*Naturhistoriska Riksmuseet*, Stockholm, Sweden), ZMB Cni (*Naturkundemuseum Berlin*, Germany), ZMH C (*Zoologisches Institut und zoologisches Museum der*

Universität Hamburg, Germany), and ZSM (*Zoologische Staatssammlung München*, Germany).

Comprehensive synonymies are generally given for the species records belonging exclusively to the study area; in only rare instances, significant records from outside this perimeter are provided. To facilitate comparisons between the species dealt with herein, all colony fragments and all hydrothecae are drawn to the same scale, respectively. The gonothecae are illustrated either for the new taxa described herein or some poorly-known species, while relevant bibliographical sources, including both descriptions and illustrations of them, are indicated for the remaining species, whenever these anatomical structures are known.

TAXONOMY AND RESULTS

Order Leptothecata Cornelius, 1992 Family Sertularellidae Maronna *et al.*, 2016 Genus *Sertularella* Gray, 1848

Sertularella allmani Hartlaub, 1901

Figs 1A, B, 2; Table 1

- Sertularella Allmani* Hartlaub, 1901: 81, pl. 5 figs 12, 13; pl. 6 figs 1, 8 (replacement name for *Sertularia secunda* Allman, 1888). – (?) Jäderholm, 1903: 283.
non *Sertularella Allmani*. – Jäderholm, 1905: 32, pl. 12 fig. 11 (= *Sertularella subantarctica* Galea, sp. nov.).
Sertularella allmani. – Hartlaub, 1905: 649, fig. O⁴. – Bedot, 1916: 199; 1918: 234. – Billard, 1924: 61. – El Beshbeeshy, 2011: 121, fig. 37F.
non *Sertularella allmani*. – Naumov & Stepanjants, 1962: 86 [= *Sertularella gaudichaudi* (Lamouroux, 1824)].
Sertularia secunda Allman, 1888: pl. 25 figs 2, 2a, 2b (replacement name for *Sertularia unilateralis* Allman, 1888: 53). – Vervoort, 1972: 108, fig. 33 (reexamination of holotype).
non *Sertularella secunda* Kirchenpauer, 1884: 50, pl. 15 figs 7, 7a [= *Symplectoscyphus secundus* (Kirchenpauer, 1884)].
Sertularia unilateralis Allman, 1888: 53 {non *Sertularia unilateralis* Lamouroux, 1824: 615, pl. 90 figs 1-3 [= *Symplectoscyphus unilateralis* (Lamouroux, 1824)]; non *Sertularia unilateralis* Allman, 1885: 139, pl. 13 figs 5-7 [= *Amphisbetia bispinosa* (Gray, 1843)]}.
(?) *Sertularella paessleri* Hartlaub, 1901: 80, pl. 6 figs 3, 19. – Hartlaub, 1905: 654, fig. S⁴.
Sertularella mediterranea asymmetrica Millard, 1958: 191, fig. 7B. – Millard, 1964: 45. – Millard, 1975: 295, fig. 96A [non *Sertularella mediterranea* Hartlaub, 1901].
Sertularella antarctica. – Blanco, 1963: 170, figs 5, 6. – Stepanjants, 1979: 84, pl. 15 fig. 3. – Blanco, 1994: 198. – Galea *et al.*, 2009: 7, figs 2J-N, 3A-B [non *Sertularella antarctica* Hartlaub, 1901].

Material examined: ZMH C04177; Chile, Región de Magallanes y de la Antártica Chilena, Isla Navarino, west of Puerto Pantalón del Oeste, *ca.* 12 m, coll. Michaelsen no. 180; 31.12.1892; several fertile

fragments (only part of the whole sample examined herein), up to 3.8 cm high, largest with accessory tubes on stem. There is obviously a crossing-out in the ZMH catalogue for this material: although it bears the official no. 180, it was indicated as no. 189 by Hartlaub (1901), as both share the same collection data. However, no. 189 corresponds to another specimen,

ZMH C04178, assignable to *S. picta* (Meyen, 1834). As indicated by Hartlaub, the material is well-preserved and fertile. Since the 2nd specimen (from Port Stanley, Falkland Is., coll. Paessler, 12.04.1893) on which *S. allmani* was equally based upon was destroyed during WWII (H. Roggenbuck, pers. comm.), the specimen ZMH C04177 is designated here as the lectotype of

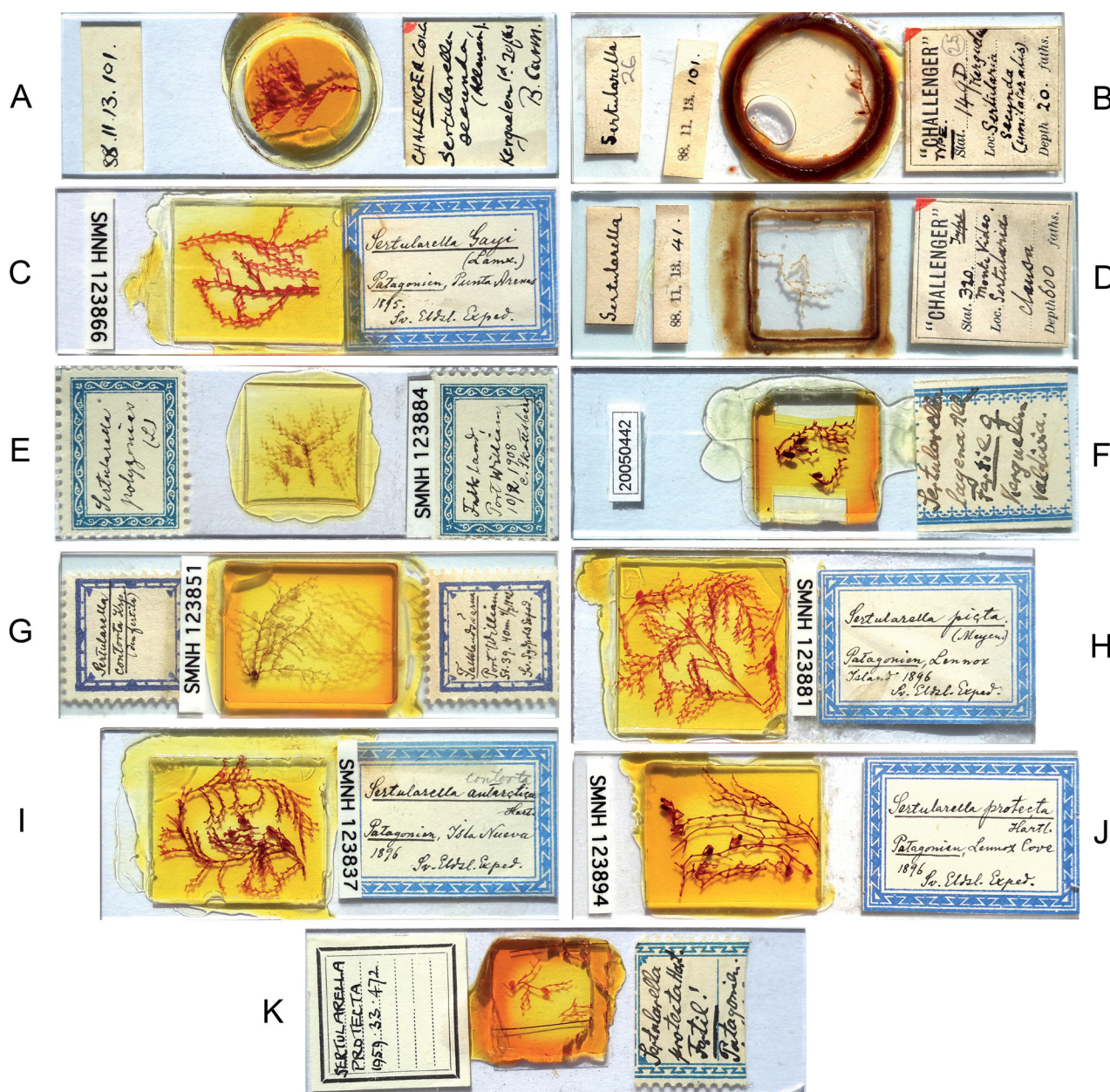


Fig. 1. (A, B) *Sertularella allmani* Hartlaub, 1901. Two holotype slides of *Sertularia secunda* Allman, 1888 (= *Sertularia unilateralis* Allman, 1888). (C) *Sertularella blanconae* El Beshbeeshy, 2011, material identified as *S. gayi* (Lamouroux, 1821) by Jäderholm (1903). (D) *Sertularella clausa* (Allman, 1888), holotype slide. (E, F) *Sertularella contorta* Kirchenpauer, 1884 identified as *S. polyzonias* (Linnaeus, 1758) by Jäderholm (1910) (E) and *S. lagena* Allman, 1876 by Stechow (1925) (F), respectively. (G) Slide material studied by Jäderholm (1905), containing *S. contorta* (colony on the left-hand side) and *S. subantarctica* Galea, sp. nov. (colony on right-hand side), the latter identified by him as *S. allmani*. (H-K) *Sertularella gaudichaudi* (Lamouroux, 1824). Slide materials identified as *S. picta* (Meyen, 1834) (H), *S. antarctica* Hartlaub, 1901 (I) and *S. protecta* Hartlaub, 1901 (J) by Jäderholm (1903); as *S. protecta* by Stechow, according to Rees & Thursfield (1965) (K).

S. allmani. – NHML 1888.11.13.101; French Southern and Antarctic Lands, Kerguelen Is., ca. 36 m, coll. *Challenger*; holotype of *Sertularia secunda* Allman, 1888 (= *Sertularia unilateralis* Allman, 1888), three male colony fragments (3.0, 1.5 and 1 cm high) in ethanol, as well as two slides; one slide (Fig. 1B), labeled “type” contains a 1.1 cm high, fertile colony fragment, and bears the mention “Challenger Stat 149D, Kerguelen, Depth 20 faths, *Sertularia secunda* (*unilateralis*)”; the second slide (Fig. 1A) is a 1.7 cm high, fertile, branched colony fragment and bears the label “Challenger Coll., *Sertularella secunda* (Allman), Kerguelen (d. 20 fms), B. carm.”. – MHNG-INVE-62835; Chile, Región de los Lagos, south of Isla Yencouma (south Chiloé), -42.40958° -74.08353°, 8 m, coll. HSFS, HF6, lot A521; 24.02.2008; several stems up to 1.6 cm high bearing male gonothecae. – HRG-0637; Chile, Región de Magallanes y de la Antártica Chilena, Islotes Gemelos, -54.91942° -67.36308°, 13 m, coll. HSFS, HF9, lot C132; 15.12.2010; several stems up to 5 cm high, richly bearing either male or female gonothecae, the latter with acrocysts. – HRG-0314; Chile, Región de los Ríos, Corral, La Amistad

(San Carlos), -39.85744° -73.44024°, 5-10 m, coll. D. Schories, pooled lots 02 and 06; 26.05.2011; colony on seaweed, composed of many stems up to 4.3 cm high, bearing male gonothecae. – HRG-0634; Chile, Región de los Ríos, north of Corral, Chaihuin, -39.95730° -73.60245°, 6-12 m, coll. D. Schories; 27.10.2011; profuse colonies with up to 5 cm high stems, bearing either male or female gonothecae, the latter with acrocysts. – HRG-0644; Chile, Región de los Ríos, north of Corral, Chaihuin, -39.95730° -73.60245°, 6-12 m, coll. D. Schories; 27.10.2011; male colony on seaweed, composed of numerous stems up to 5 cm high. – HRG-0636; Chile, Región de los Ríos, Niebla, Bonifacio, -39.69002° -73.37940°, 10-15 m, coll. D. Schories; 09.10.2012; numerous colonies on seaweed, with up to 3.5 cm high stems, bearing either male or female gonothecae, the latter with acrocysts.

Description: Creeping, branching, anastomosing stolons giving rise to erect, bushy, irregularly-pinnate colonies, up to 6 cm high. Stems either mono- or lightly fascicled basally; in the first case, with 2-5 twists above origin from stolon. Both stems and branches divided into regularly-short, almost collinear internodes by

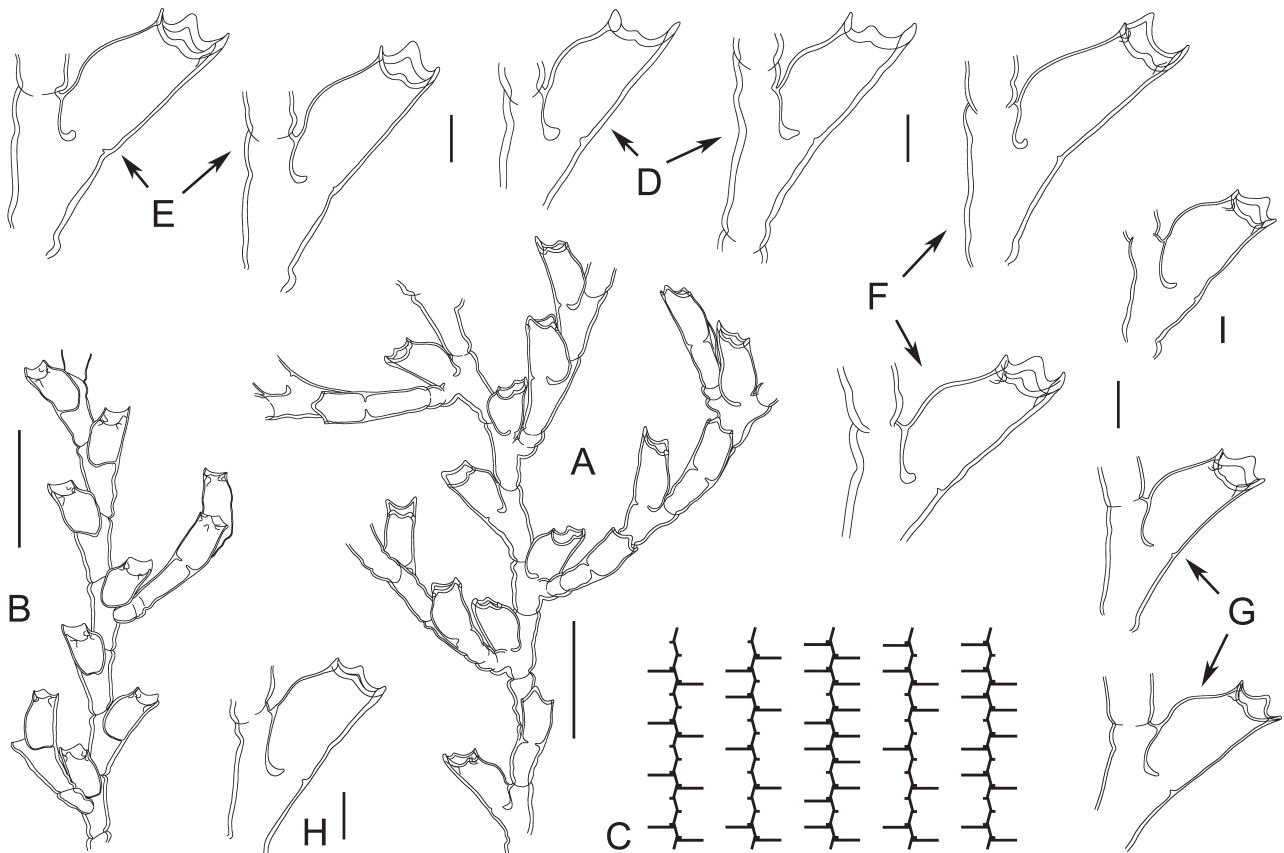


Fig. 2. *Sertularella allmani* Hartlaub, 1901. Colony fragments from lectotype (A) and material MHNG-INVE-62835 (B). Mode of branching (C). Hydrothecae from the lectotype of *S. allmani* (D), the holotype of *Sertularia secunda* Allman, 1888 (= *Sertularia unilateralis* Allman, 1888) (E, alcohol-preserved material; F, 2nd slide), and materials HRG-0314 (G), HRG-0637 (H) and HRG-0644 (I). Scale bars: 200 µm (D-I), 1 mm (A, B).

means of deep, slightly oblique constrictions of the perisarc; the latter typically dark-brown at nodes, and almost transparent elsewhere; each internode with slight bulges at each end, and distally bearing a hydrotheca, or a hydrotheca and a lateral apophysis arising immediately from below its base. Hydrothecae, apophyses and side branches shifted on to one side of the colony at an acute angle, giving it two obvious, frontal and dorsal sides, respectively. Branching profuse, with a general, characteristic pattern: a couple of two consecutive, alternate side branches is separated from the next couple of branches by 1-2 (occasionally 0) internodes devoid of apophyses; occasionally, only one branch of a “pair” occurs (Fig. 2C); there are up to 3rd order branches. Hydrothecae biserial, alternate, flask-shaped, moderately-long, adnate for about 1/3rd of their length, distinctly swollen adaxially, narrowing below aperture; abaxial wall nearly straight, free adaxial wall sigmoid, convex for most of its length, becoming concave a short distance below the aperture; rim thickened, provided with four, unequal cusps (abaxial one conspicuously produced, adaxial one the shortest, and the laterals asymmetrical and of intermediate length, the “anterior” one comparatively shorter than its “posterior” counterpart); cusps separated by deep, rounded embayments; 3 internal, submarginal cusps (2 latero-adaxial, 1 abaxial), not always present; operculum composed of 4 triangular flaps forming a conical roof. Gonothecae borne on both stems and side branches, arising from below the hydrothecal bases; broadly ovoid, with 6-8 transverse ridges, not always distinct; distally a short neck provided with generally 4 (occasionally 2-5) blunt projections of perisarc

surrounding a central, rounded aperture; acrocysts in female. Perisarc of colonies either thin or thick.

Dimensions: See Table 1.

Remarks: When Allman (1888) realized that his *Sertularia unilateralis* (main text, p. 53) was a homonym (of *Sertularia unilateralis* Lamouroux, 1824 and *Sertularia unilateralis* Allman, 1885), he introduced the replacement name *Sertularia secunda* (legend of pl. 25, figs 2, 2a, 2b). However, Hartlaub (1901) correctly placed Allman’s species in the genus *Sertularella* Gray, 1848 and noted that, there, it becomes a junior synonym of *Sertularella secunda* Kirchenpauer, 1884 (the latter is now assigned to the genus *Symplectoscyphus* Marktanner-Turneretscher, 1890). He therefore introduced a second replacement name, viz. *S. allmani*.

Calder (2015, p. 239, note 39), influenced by the opinion originally expressed by Vervoort (1972) and subsequently followed by Galea *et al.* (2009), decided to reject as invalid the binomen *Sertularia unilateralis* Allman, 1888 (a species of *Sertularella* Gray, 1843), its replacement name *Sertularia secunda* Allman, 1888 and, in turn, its replacement name *Sertularella allmani* Hartlaub, 1901, in the belief that all were synonyms of the frequently reported *Sertularella antarctica* Hartlaub, 1901 and its senior objective synonym *Sertularella unilateralis* Allman, 1876 (Calder, pers. comm.). However, in light of the present study, *S. allmani* is considered as a valid species, distinct from *S. antarctica* (see also remarks under the latter). Consequently, Calder’s (2015) suggestion, according to which a “case could be made (ICZN Art. 59.3.) for retention of

Table 1. Measurements of *Sertularella allmani* Hartlaub, 1901, in μm .

	El Beshbeeshy (2011), lectotype of <i>S. allmani</i> , ZMH C 04177	Galea <i>et al.</i> (2009), as <i>S. antarctica</i>	Present study (trophosome), Vervoort (1972, gonosome), type of <i>Sertularia secunda</i>	Millard (1958), as <i>S. mediterranea</i> v. <i>asymmetrica</i>
Internode				
- length	450-550	340-640	590-700	310-420
- diameter at node	127-150	125-205	170-180	90-130
Hydrotheca				
- free adaxial length	320-417	335-390	560-660	240-400
- adnate adaxial length	162-232	135-245	220-245	110-170
- abaxial length	504-603	390-540	720-745	330-540
- maximum width	278-330	275-360	350-390	220-290
- diameter at aperture	266-301	205-295	270-310	140-210
Gonotheca				
- total length	-	1805-2205	2200-2400	1080-1290 (♀)
- maximum width	-	995-1120	880-1100	750-890 (♀)

Sertularella secunda Allman, 1888 [sic!] as the valid name of the species”, resurfaces, but it appears today to not carry enough weight according to the requirements of the Code. Indeed, Art. 59.3. stipulates that *Sertularia secunda* Allman, 1888, as a junior secondary homonym of *Sertularella secunda* Kirchenpauer, 1884, and replaced before 1961, be permanently invalid unless the substitute name, *Sertularella allmani* Hartlaub, 1901, is not in use and the relevant taxa are no longer considered congeneric (*Sertularia secunda* Allman, 1888 belongs actually to *Sertularella* Gray, 1843, and *Sertularella secunda* Kirchenpauer, 1884 to *Symplectoscyphus* Marktanner-Turneretscher, 1890), in which case the junior homonym is not to be rejected on grounds of that replacement. In light of the synonymy given above, it appears that the binomen *S. allmani* was used more often than *S. secunda*. Consequently, Hartlaub’s (1901) *S. allmani* is retained as the valid name of the species.

The typical shape of the colonies of *S. allmani* is illustrated by Galea *et al.* (2014, pl. 3D, as *S. antarctica*), while several gonothecae are depicted by Galea *et al.* (2009, fig. 3B, as *S. antarctica*). The branching pattern in this species is irregularly pinnate. In some parts of very profuse colonies, nearly all internodes give rise to alternate side branches, although in more sparingly branched ones, there is a tendency to form groups of two consecutive, alternate side branches separated by 1-2 stem internodes devoid of apophyses. Occasionally, though not rarely, more irregular side branches, separated by a varied number of internodes with no apophyses, may arise successively on the same side of the stem.

In all specimens from Chile, the stems are monosiphonic in habit, and give rise to side branches of up to 3rd order. Polysiphonic stems were reported only in rare instances [Hartlaub 1901, as both *S. allmani* and *S. paessleri* (see below for the taxonomic status of the latter)]. The perisarc of the colonies (including the hydrothecae) may be either thin (as in the Chilean material) or thick (Hartlaub, 1901; Blanco, 1963, as *S. antarctica*). The hydrothecal margin is always thickened, and the abaxial marginal cusp is generally distinctly produced, though its length may vary among various colonies, or even within the same stem. The gonothecae of both sexes are either distinctly transversely ringed (*e.g.* HRG-0637, HRG-0644), or only wrinkled to nearly smooth (*e.g.* HRG-0634, HRG-0636). Material of *Sertularella paessleri* Hartlaub, 1901 is no longer extant in collections of ZMH (H. Roggenbuck, pers. comm.). However, Hartlaub emphasized the large size and the smooth appearance of the gonothecae in the obviously young colony available. Otherwise, the characters of the trophosome alone (branching almost regularly pinnate, with consecutive, alternate “pairs” of side branches separated by 2 internodes devoid of apophyses; invariably short internodes; short, adaxially-swollen hydrothecae shifted on to one side, and adnate for 1/3rd their length; abaxial cusp produced; rim thickened) agree well with the present concept of

S. allmani, including the presence of fascicled stems, as those observed in the lectotype, ZMH C04177.

The variety *asymmetrica*, created by Millard (1958) for a hydroid assigned to *S. mediterranea* Hartlaub, 1901, is likely conspecific with the present species. Although all her specimens were represented by small, unbranched stems, their microscopic structure displays all the distinctive characters of *S. allmani*, notably: short internodes, thick-walled hydrothecae conspicuously shifted on to one side of the stem, a produced abaxial cusp, the noteworthy asymmetry of the laterals, as well as the presence of 3 internal, submarginal cusps.

Distribution: Chile – Región de los Ríos [around Corral (Galea & Schories, 2012a, as *S. antarctica*)]; Región de los Lagos [south of Isla Grande de Chiloé (Galea *et al.*, 2009, as *S. antarctica*)]; Región de Magallanes y de la Antártica Chilena [west of Puerto Pantalón del Weste, Isla Navarino (Hartlaub, 1901; 1905); Islote Gemellos (present study); Magellan Strait (? Jäderholm, 1903)]. Argentina – Provincia de Santa Cruz [Punta Peñas, San Julián (Blanco, 1963; 1994, both as *S. antarctica*)]. Falkland Is. – Port Stanley (Hartlaub, 1901; 1905); Port Williams (Hartlaub, 1901; 1905, both as *S. paessleri*). French Southern and Antarctic Lands, Kerguelen Is. – off Accessible Bay [Allman 1888, as *Sertularia secunda* (= *Sertularia unilateralis*)]. South Africa – Millard (1958; 1964; 1975, all as *S. mediterranea* var. *asymmetrica*).

Sertularella antarctica Hartlaub, 1901

Fig. 3A-G; Table 2

- Sertularella antarctica* Hartlaub, 1901: 82, pl. 6 figs 27, 28 (replacement name for *Sertularella unilateralis* Allman, 1876: 114). – (?) *p.p.* Jäderholm, 1903: 283. – Hartlaub, 1905: 650, fig. P⁴, Q⁴. – Bedot, 1916: 200; 1918: 235. – Billard, 1924: 61. – (?) Vervoort, 1972: 106, fig. 32. – El Beshbeeshy, 2011: 119, fig. 37D.
- non *Sertularella antarctica*. – *p.p.* Jäderholm, 1903: 283 [= *Sertularella gaudichaudi* (Lamouroux, 1824)]. – Jäderholm, 1905: 32, pl. 13 fig. 1 (= *Sertularella subantarctica* Galea, sp. nov.). – Blanco, 1963: 170, figs 5-6 (= *Sertularella allmani* Hartlaub, 1901).
- Sertularella unilateralis* Allman, 1876: 114. – Allman, 1879: 282, pl. 18 figs 10, 11. – Studer, 1879: 120. – Kirchenpauer, 1884: 40.
- non *Sertularia unilateralis* Lamouroux, 1824: 615, pl. 90 figs 1-3 [= *Symplectoscyphus unilateralis* (Lamouroux, 1824)].
- Sertularella allmani*. – (?) Nutting, 1904: 84, pl. 18 figs 3-6 [non *Sertularella allmani* Hartlaub, 1901].
- Sertularella gigantea*. – Billard, 1906: 12, fig. 4 [non *Sertularella gigantea* Mereschkowsky, 1878].
- Sertularella ? lagena*. – Galea & Schories, 2012a: 41, fig. 4K-L [non *Sertularella lagena* Allman, 1876].
- Sertularella sanmatiasensis*. – (?) Peña Cantero, 2006: 939, fig. 3L. – (?) Peña Cantero & Gili, 2006: 767. – (?) Peña Cantero, 2008: 459, fig. 2C. – (?) Peña Cantero &

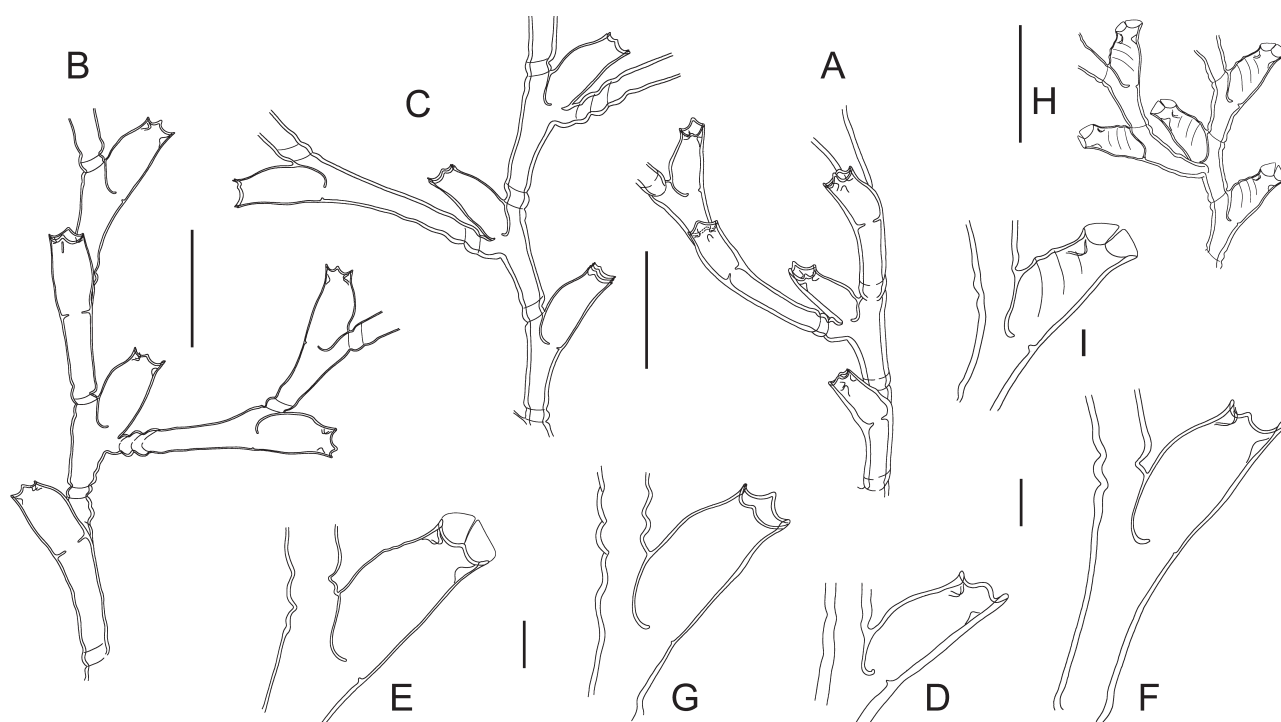


Fig. 3. (A-G) *Sertularella antarctica* Hartlaub, 1901. Colony fragments from lectotype (A), HRG-0290 (B) and HRG-0524 (C). Hydrothecae from lectotype (D), HRG-0290 (E), HRG-0524 (F) and HRG-0534 (G). (H, I) *Sertularella asymmetra* Galea & Schories, 2014. Portion of colony (H) and hydrotheca (I). Scale bars: 200 μ m (D-G, I), 1 mm (A-C, H).

Vervoort, 2009: 87, fig. 2B. – Peña Cantero, 2012: 858, fig. 4A; 2013: 130 [non *Sertularella sanmatiasensis* El Beshbeeshy, 2011].

Material examined: ZMH C04161; Chilean-Argentinean border, Dungeness Point, beach, coll. Michaelsen no. 104; 15.10.1892; a few fragments (only a part of the whole sample examined herein), up to 2.2 cm high. According to Hartlaub (1901), this appears to be the sole material on which he based his species upon. As no holotype was designated by him, it is here regarded as the lectotype of *S. antarctica*. – ZMH C11879; FRV *Walther Herwig*, Argentine Shelf, no additional data; several sterile colony fragments, up to 5.2 cm high, with almost only the perisarc left, identified as *S. antarctica* Hartlaub, 1901. – MHNG-INVE-79773; Antarctica, King George I., Ras Tu, -62.22139° -58.88694° , 15–20 m, coll. D. Schories, lot Ant. 12/2011; 21.02.2010; fully fertile (female) colony with stems up to 6.5 cm high. – MHNG-INVE-79776; Antarctica, King George I., Ras Tu, -62.22139° -58.88694° , 15–20 m, coll. D. Schories, lot Ant. 03/2011; 21.02.2010; numerous stems and fragments up to 5.5 cm high, some bearing female gonothecae. – HRG-0534; Antarctica, King George I., Ras Tu, -62.22139° -58.88694° , 10–40 m, coll. D. Schories, lot Ant. 08/2010; 12.02.2010; numerous stems and fragments, up to 4 cm high, one bearing a female gonotheca. – HRG-0290; Antarctica, Low I.,

-63.43009° -62.2038° , 82 m, coll. *Bentart 2006*, leg. A.L. Peña Cantero; 02.2006; numerous fertile stems, up to 9.5 cm high, sex could not be ascertained [part of the material from Stn. Low 44 studied by Peña Cantero (2013)]. – HRG-0362; Chile, Región de Magallanes y de la Antártica Chilena, Punta Arenas, Faro San Isidro, -53.78174° -70.97391° , 40 m, coll. D. Schories, lot #25; 04.01.2011; three minute sterile stems [material assigned to *Sertularella ? lagena* Allman, 1876 by Galea & Schories (2012a)].

Description: Inspected colonies up to 9.5 cm high, arising from creeping, branching stolon. Stems monosiphonic, provided basally with 3–5 annuli above origin from stolon, then divided into uniform, moderately-long internodes by deep, oblique constrictions of perisarc slanting in alternate directions. A hydrotheca, or a hydrotheca and a short, lateral apophysis arising from below its base, confined to the distal end of each internode; proximally a couple of spiral twists (occasionally only one, or two incomplete), and distally a bulge. Hydrothecae, apophyses, and side branches shifted on to one side of the stem, at a wide angle, not giving the colony a markedly fronto-dorsal aspect. Branching pattern irregularly pinnate, with side branches originating every 0–18 stem hydrothecae, either alternately or many on the same side; up to 4th order branching; structure similar to that of stem; 1st internode with 2 (rarely 3) spiral twists basally, length

generally greater (occasionally shorter, or equal) than that of subsequent internodes. Hydrothecae long, flask-shaped, adnate for 1/3rd of their length to the corresponding internode, swollen adaxially at varied degrees; abaxial wall almost straight; free adaxial wall sigmoid, convex for most of its length, becoming concave immediately below aperture; aperture surrounded by 4 unequally-developed, triangular cusps: abaxial one produced, though at varied degrees, adaxial the shortest, and the laterals asymmetrical; rim thickened, renovations occasional; 3 intrathecal, submarginal cusps (2 latero-adaxial, 1 abaxial), not always discernible; a 4-flapped operculum. Gonothecae borne on both stems and side branches, male similar to female; elongated-ovoid, walls transversely-wrinkled, especially on distal half, aperture mounted on short neck region and surrounded by generally 4 blunt cusps (up to 6 possible).

Dimensions: See Table 2.

Remarks: Hartlaub (1901) introduced the replacement name *Sertularella antarctica* for *Sertularella unilateralis* Allman, 1876 in order to avoid the secondary homonymy with *Sertularia unilateralis* Lamouroux, 1824, the latter considered by him as belonging to the group of 3-cusped *Sertularella* species (presently accepted as *Symplectoscyphus* Marktanner-Turneretscher, 1890).

Calder (2015, p. 239, note 39) expressed the view that Hartlaub's (1901) binomen "has been used only sparingly [...], and nomenclatural stability is not greatly threatened by adopting its senior synonym (*Sertularella unilateralis* Allman, 1876a) for the species". However, in light of the present study, his opinion changed (Calder, pers. comm.) taking into account that secondary homonymy no longer exists in the case of *S. unilateralis*, and the substitute name *S. antarctica* has come into rather frequent use for the species (ICZN Art. 59.3.).

Type material of *S. unilateralis* is likely no longer

extant in NHML (A. Cabrinovic, pers. comm.), and a comparison with the lectotype of *S. antarctica* is therefore impossible, leaving some doubts as to the conspecificity between these two nominal species. Indeed, the colony silhouette illustrated by Allman (1879, pl. 18 fig. 10) does not differ much from that of his *Sertularia secunda* (= *Sertularia unilateralis*) (Allman, 1888, pl. 25 figs 2, 2a) (= *S. allmani* Hartlaub, 1901, see previous species). El Beshbeeshy (2011) was right in stating that *S. allmani* and *S. antarctica* are two distinct, well-defined species. A contrary opinion was expressed earlier by Vervoort (1972), who founded his conclusion based exclusively on Hartlaub's (1901) accounts (p. 81 and 82, respectively), but not on the reexamination of the corresponding materials studied by the German author. This erroneous opinion was subsequently followed by Galea *et al.* (2009, as *S. antarctica*, p. 7 figs 2J-N, 3A-B) and Galea & Schories (2012a, as *S. antarctica*, p. 22, footnote 2, pl. 3D). However, the reexamination of the lectotypes of both *S. allmani* and *S. antarctica* for the purpose of the present study, leaves no doubts about the correctness of El Beshbeeshy's statement.

The typical shape of a colony of this species is illustrated in Galea & Schories (2012b, pl. 1R), while its gonothecae appear in the insert of the same plate, as well as in fig. 2S of the same paper.

The development of the perisarc in various colonies ranges from rather thin (*e.g.* HRG-0290, HRG-0405, HRG-0524, and HRG-0534) to exceedingly hypertrophied (*e.g.* ZMH C04161, ZMH C11879). The adaxial side of the hydrotheca is swollen at varied degrees but, generally, approaches an almost tubular shape; in some colonies, the hydrothecae are distinctly swollen, resembling those of *S. allmani* but, in this case, the colony shape is diagnostic. The hydrothecal rim is conspicuously thickened, though less so in younger thecae; renovations were observed in only several instances (Billard, 1906, as *S. gigantea*; specimen HRG-0524). The abaxial, marginal cusp is always produced, though at varied extents. On the other

Table 2. Measurements of *Sertularella antarctica* Hartlaub, 1901, in μm .

	El Beshbeeshy (2011)	Galea & Schories (2012b), as <i>S. gaudi-chaudi</i>	Billard (1906), as <i>S. gigantea</i>	Vervoort (1972)
Internode				
- length	498-846	730-1335	610-960	875-1210
- diameter at node	156-220	-	175-210	230-255
Hydrotheca				
- free adaxial length	324-346	470-570	525-610	460-485
- adnate adaxial length	145-232	320-375	260-315	270-285
- abaxial length	510-580	705-770	700-790	645-675
- maximum width	249-301	325-350	-	350-380
- diameter at aperture	179-255	255-295	ca. 260	245-270

hand, the submarginal, intrathecal projections of perisarc may be either absent or only lightly indicated (e.g. HRG-0534), present only on adaxial side (e.g. HRG-0405), or fully displayed (3 cusps, e.g. HRG-0290, ZMH C04161, ZMHC11879).

Type material of *Sertularella lagena* Allman, 1876, a poorly-described nominal species, obviously based on a young specimen, could not be located in collections of NHML (A. Cabrinovic, pers. comm.). However, the illustration provided by Allman (1879) places it closest to the present species, an opinion already expressed by Hartlaub (1901, p. 83, fig. 53; 1905, p. 647, figs M⁴-N⁴). The scarce material studied earlier by Galea & Schories (2012a), and provisionally assigned to *S. lagena*, was reexamined. It belongs to a very young colony whose stems do not exceed 5 internodes. Their hydrothecae are not obviously shifted unilaterally, and no intrathecal, submarginal cusps are present, although a careful inspection shows that the rims of some hydrothecae are slightly, but characteristically thickened. This, added to the typical shape and size of its internodes, suggests strong affinities with *S. antarctica*.

Through the courtesy of A.L. Peña Cantero, one of us (HRG) was able to examine a specimen from Low I., Antarctica (HRG-0290) identified by him as *S. sanmatiasensis* El Beshbeeshy, 2011 (Peña Cantero, 2013). In light of the present observations, there is no doubt that this material belongs to the present species. Consequently, it is assumed that at least some earlier records of El Beshbeeshy's species in the various papers (co)authored by Peña Cantero also belong to *S. antarctica*. However, since there are no formal descriptions of the materials involved and, occasionally, no illustrations of them, uncertainties subsist as to their real taxonomic statuses. In only rare instances (e.g. Peña Cantero, 2012), the morphology of both internodes (length, presence of proximal twists) and hydrothecae (thickened margin) leaves little doubt about the identity of the materials involved.

Distribution: Chile – Región de Magallanes y de la Antártica Chilena [(?) Isla Lennox, (?) Lennox Cove, and (?) Borgin Bay (Jäderholm, 1903); (?) Magellan Strait (Nutting, 1904, as *S. allmani*; Vervoort, 1972); south of Peninsula Brunswick (Galea & Schories, 2012a, as *S. ? lagena*)]. Chilean-Argentinean border – Dungeness Point (Hartlaub, 1901; 1905; El Beshbeeshy, 2011). Argentina – Provincia de Tierra del Fuego, Antártida e Islas del Atlántico Sur [(?) off the NE coast of Islas de los Estados (Vervoort, 1972)]. French Southern and Antarctic Lands, Kerguelen Is. – Swains Bay (Allman, 1876; 1879, both as *S. unilateralis*). Antarctica – Wandel I. (Billard, 1906, as *S. gigantea*), Bellingshausen Sea (Peña Cantero, 2012, as *S. sanmatiasensis*), Low I. (Peña Cantero, 2013, as *S. sanmatiasensis*), King George I. (Galea & Schories, 2012b, as *S. gaudichaudi*).

Sertularella asymmetra Galea & Schories, 2014

Fig. 3H, I

Sertularella asymmetra Galea & Schories, 2014 in Galea *et al.*, 2014: 31, figs 6A-B, 7A.

Material examined: MHNG-INVE-86230; Chile, Región de los Ríos, Corral, Chaihuin/Huiro, -39.95000° -73.61667°, 10 m, coll. D. Schories, lot #05; 27.10.2011; a 4 cm high colony with female gonothecae (holotype). – MHNG-INVE-86231; Chile, Región de los Ríos, Corral, Chaihuin/Huiro, -39.95000° -73.61667°, 10 m, coll. D. Schories, lot #26; 03.10.2011; a 2.5 cm high colony with male gonothecae.

Description: Colonies arising from creeping, branching, anastomosing hydrorhiza. Stems erect, up to 4 cm high, monosiphonic, spirally-twisted above origin from stolon, then divided into short, slightly geniculate internodes by deep, oblique constrictions of the perisarc. Side branches arise irregularly from below the bases of stem hydrothecae, either laterally, or slightly displaced towards the front or the rear side of the colony; structure similar to that of stem. Hydrothecae biseriate, alternate, fusiform, adnate for about 1/3rd their adaxial side to the corresponding internode; free adaxial wall swollen proximally, and provided with 2-3 weak, transverse ridges; abaxial wall with smooth perisarc, slightly concave proximally, becoming convex below the aperture; the latter facing upwards, and composed of four triangular cusps separated by shallow embayments, abaxial cusp produced; a 4-flapped operculum; three internal, submarginal cusps: 2 latero-adaxial and 1 abaxial. Gonothecae arising from below the hydrothecal bases; elongated-ovoid, walls more or less transversely ridged; male similar to female, though slenderer and longer; aperture surrounded by 3-4 perisarc projections in male and 5 in female; the latter producing 12-18 oocytes.

Dimensions: Internodes 560-730 µm long and 140-230 µm wide at nodes. Hydrothecal free adaxial length 285-355 µm, adnate adaxial length 230-280 µm, abaxial length 535-590 µm, maximum width 250-285 µm, diameter at aperture 230-240 µm. Length of the female gonotheca ca. 1695 µm, and of the male ca. 1890 µm; maximum width of the female gonotheca ca. 795 µm, and of the male ca. 710 µm.

Remarks: The gonothecae of this species are illustrated by Galea *et al.* (2014, fig. 7A).

Distribution: Chile – Región de los Ríos [Corral (Galea *et al.*, 2014)].

Sertularella blanconae El Beshbeeshy, 2011

Figs 1C, 4A, C-H; Table 3

Sertularella blanconae El Beshbeeshy, 2011: 125, fig. 39. – Galea & Schories, 2012a: 37, fig. 3P-S. – Galea *et al.*, 2014: 32, pl. 3A, figs 6C, 7B.

Sertularella geodiae. – Blanco, 1976: 39, pl. 3 figs 7-8. – (?) Millard, 1977: 23, fig. 6E-F. – Blanco, 1994: 199 [non *Sertularella geodiae* Totton, 1930].

Sertularella conica. – Blanco, 1982: 154, figs 2-5. – Blanco, 1994: 198 [non *Sertularella conica* Allman, 1877].

Sertularella Gayi. – *p.p.* Jäderholm, 1903: 281 [non *Sertularella gayi* (Lamouroux, 1821)].

(?) *Sertularella gayi gayi*. – Vervoort, 1972: 116, fig. 36A, B [non *Sertularella gayi* (Lamouroux, 1821)].

(?) *Sertularella gayi* var. *gayi*. – Stepanjants, 1979: 87, pl. 16 fig. 4A, B [non *Sertularella gayi* (Lamouroux, 1821)].

Material examined: MHNG-INVE-86243; Chile, Región de Aysén, Isla Teresa, -44.95713° -73.79447°, 21.6 m, coll. HSFS, HF11, lot C234; 27.11.2011; a profuse, sterile colony with stems up to 16 cm high. – MHNG-INVE-86244; Chile, Región de Aysén, Isla Level, -44.47348° -74.20472°, 25 m, coll. HSFS, HF11, lot C128; 24.11.2011; a ca. 7 cm high, fragmentary

colony with male gonothecae. – HRG-0392; Chile, Región de Magallanes y de Antártica Chilena, Punta Arenas, Faro San Isidro, -53.78174° -70.97391°, 40 m, coll. D. Schories, lot #27; 04.01.2011; three sterile colony fragments 1.2-1.7 cm high. – HRG-0696; Chile, Región de Magallanes y de Antártica Chilena, Isla Santibañez, -54.91725° -68.36317°, 29 m, coll. HSFS, HF9, lot C247; 16.12.2010; very fragmented colony with lightly fascicled stems, some bearing spent gonothecae. – HRG-0694; Chile, Región de Aysén, southern exist of Canal Williams, -45.60103° -74.47819°, 8.9 m, coll. HSFS, HF11, lot C009; 19.11.2011; a profuse, ca. 8 cm high, sterile colony composed of several polysiphonic stems. – HRG-1168; Chile, Región de los Lagos, southern Chiloé, Isla Yencouma, -43.419316° -74.081766°, 10 m, coll. HSFS, HF22, lot #65; 18.01.2015; two profuse, ca. 7 cm high,

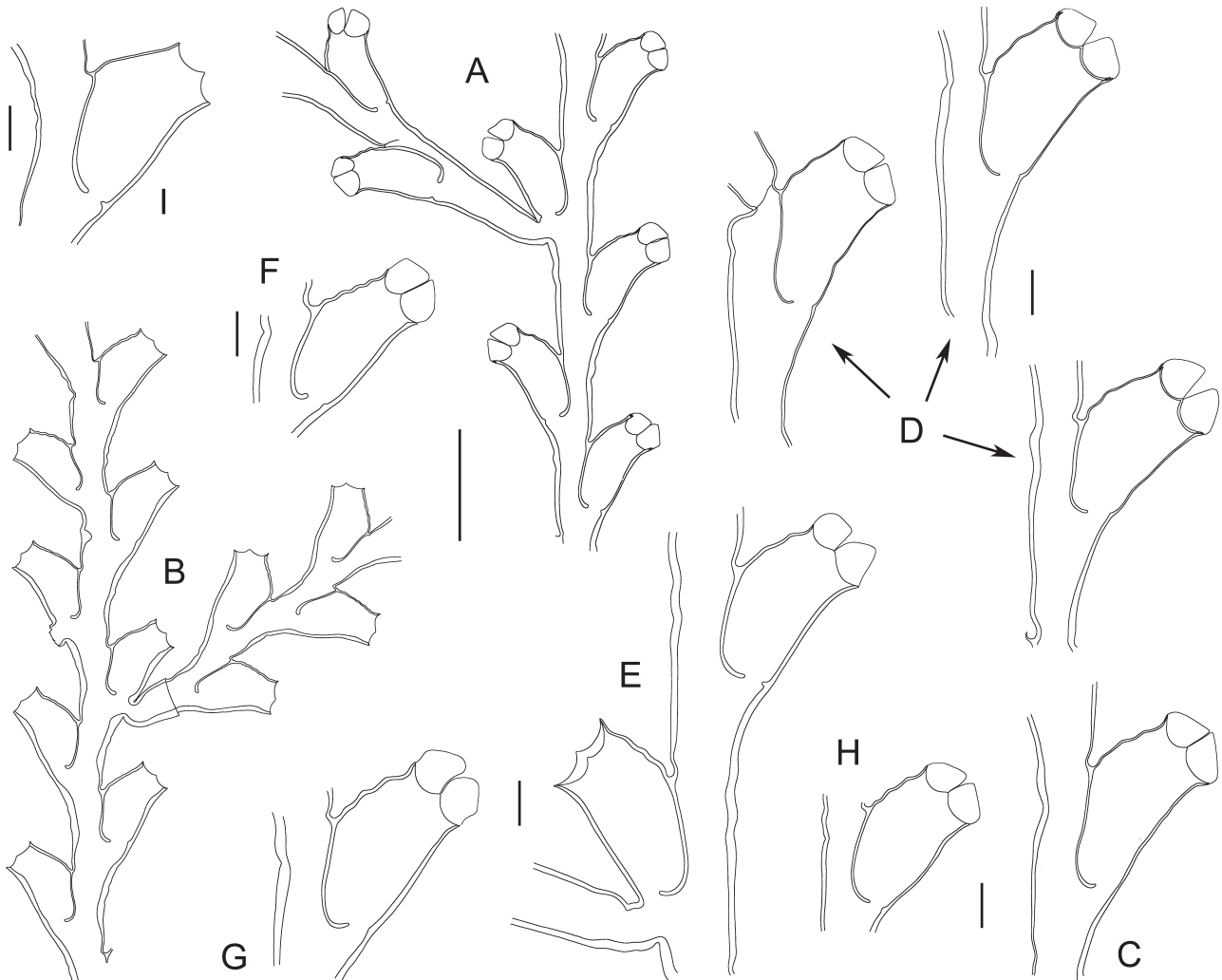


Fig. 4. *Sertularella blanconae* El Beshbeeshy, 2011. Portion of colony from MHNG-INVE-86243 (A), and comparison with sample HRG-0553 of *Sertularella gayi* (Lamouroux, 1821) (B). Hydrothecae from HRG-0696 (C), SMNH 123866 (D), Blanco (1976, as *S. geodiae*) (E), Blanco (1982, as *S. conica*) (F-H), and comparison with hydrotheca of *S. gayi* from sample HRG-1006 (I). Scale bars: 200 µm (C-I), 1 mm (A, B).

infertile colonies with polysiphonic stems. – SMNH 123866; Chile, Punta Arenas, coll. Swedish Tierra del Fuego Expedition 1895-1896; 05.12.1895; microslide (Fig. 1C) containing two sterile colony fragments, 2.0 and 2.3 cm high [material identified by Jäderholm (1903) as *S. gayi* (Lamouroux, 1821)].

Comparison material: HRG-1006; France, Roscoff, Trou aux Singes, 48.7961° -3.9708°, 72 m, leg. P. Schuchert; 08.09.2014; a 4.5 cm high, fertile colony of *Sertularella gayi* (Lamouroux, 1821). – HRG-0553; France, Brittany, depth unrecorded, coll. F. Ziemski; (day and month unavailable) 2011; a few infertile stems and fragments, up to 3.7 cm high, of *S. gayi*.

Description: Large, fan-shaped colonies, up to 16 cm high arising from broad, rhizoid stolon firmly attached to substrate; stems giving rise to irregularly-ramified side branches, up to the 3rd order; both stems and branches highly fascicled for most of their length; monosiphonic parts with regularly-pinnate structure. Both stems and branches divided into short, almost collinear internodes by means of weak, oblique constrictions of the perisarc. Each internode with a hydrotheca, or a hydrotheca and a short apophysis immediately below its base; apophyses alternate, arising generally every three hydrothecae. Hydrothecae biserial, alternate, flask-shaped, adnate for about half their length; free adaxial wall slightly swollen and provided with 3-4 undulations, more prominent proximally, weaker distally, prolonged as inconspicuous transverse ridges at surface, not reaching the abaxial wall; the latter slightly concave to almost straight for most of its length, becoming convex below the aperture, surface smooth; aperture mounted on short, constricted neck region, expanding at rim; the latter with 4 pointed,

equal, triangular cusps separated by moderately-deep, rounded embayments; margin occasionally renovated; 4 triangular opercular flaps with concentric striae; no intrathecal, submarginal cusps. Gonothecae (only male known) elongated-ovoid, lateral walls with up to 8 transverse ridges, of which 5-6 distalmost are complete and prominent, while the remaining ones become obsolete towards the base; aperture borne on the summit of a short neck region, and is flanked by 4 blunt-ended projections of perisarc.

Dimensions: See Table 3.

Remarks: The typical shape of a well-developed colony is illustrated in Galea *et al.* (2014, pl. 3A), and a male gonotheca in fig. 7B of the same paper. This species has been previously confused with *S. gayi* (Lamouroux, 1821) by a number of authors (see synonymy). Their morphological differences are obvious by comparing Fig. 3A, C-H and Fig. 3B, I.

Distribution: Chile – Región de los Lagos [southern Chiloé (present study)]; Región de Aysén [Isla Level, Isla Teresa (Galea *et al.*, 2014); Canal Williams (present study)]; Región de Magallanes y de la Antártica Chilena [south of Peninsula Brunswick (Galea & Schories, 2012a); Isla Dawson and Punta Arenas (Jäderholm, 1903, as *S. gayi*); Isla Santibañez (present study)]. Tierra del Fuego, no exact locality (? Stepanjants, 1979, as *S. gayi* var. *gayi*). Argentina – Provincia del Chubut [(?) off Península Valdés (Vervoort, 1972, as *S. gayi* *gayi*), off Cabo Dos Bahías (Blanco, 1982; 1994, both as *S. conica*); Provincia de Santa Cruz [Puerto Deseado (Vervoort, 1972, as *S. gayi* *gayi*); Provincia de Tierra del Fuego, Antártida e Islas del Atlántico Sur [off the eastern entrance of the Magellan Strait (Blanco, 1976; 1994, both as *S. geodiae*); around Peninsula Mitre

Table 3. Measurements of *Sertularella blanconae* El Beshbeeshy, 2011, in μm .

	El Beshbeeshy (2011)	Galea & Schories (2012a); present study	Blanco (1982), as <i>S. conica</i>	Millard (1977), as <i>S. geodiae</i>	Blanco (1976), as <i>S. geodiae</i>	Vervoort (1972), as <i>S. gayi gayi</i>
Internode						
- length	603-881	795-1095	720-1206	1010-1520	640-1288	1095-1175
- diameter at node	255-278	210-245	198-288	200-320	-	175-215
Hydrotheca						
- free adaxial length	371-464	410-495	324-612	460-600	368-386	405-420
- adnate adaxial length	417-533	440-475	360-620	490-610	386-478	495-500
- abaxial length	580-742	680-715	540-720	660-770	570-644	580-635
- maximum width	-	395-430	360-486	-	350-486	430-445
- diameter at aperture	301-464	335-370	288-360	350-400	294-368	325-350
Gonotheca						
- total length	-	1790-2300 (♂)	-	-	-	-
- maximum width	-	710-935 (♂)	-	-	-	-

(Blanco, 1982; 1994, both as *S. conica*); numerous scattered records from the Argentine Shelf between ca. 40°-54° S (El Beshbeeshy, 2011). Falkland Is. [(?) Stepanjants (1979, as *S. gayi* var. *gayi*); off the N coast (Blanco, 1982; 1994, both as *S. conica*); off the SE coast (El Beshbeeshy, 2011)]. (?) French Southern and Antarctic Lands – Crozet Shelf (Millard, 1977, as *S. geodiae*).

***Sertularella clausa* (Allman, 1888)**

Figs 1D, 5; Table 4

Sertularia clausa Allman, 1888: 54, pl. 25 figs 3, 3a. – Bedot, 1916: 219.

Sertularella clausa. – Nutting, 1904: 93, pl. 21 figs 3-4 (re-examination of the type). – Bedot, 1918: 236. – Milstein, 1976: 84, figs 24, 35.

non *Sertularella clausa*. – Fraser, 1938: 141, pl. 20 fig. 10; 1948: 241.

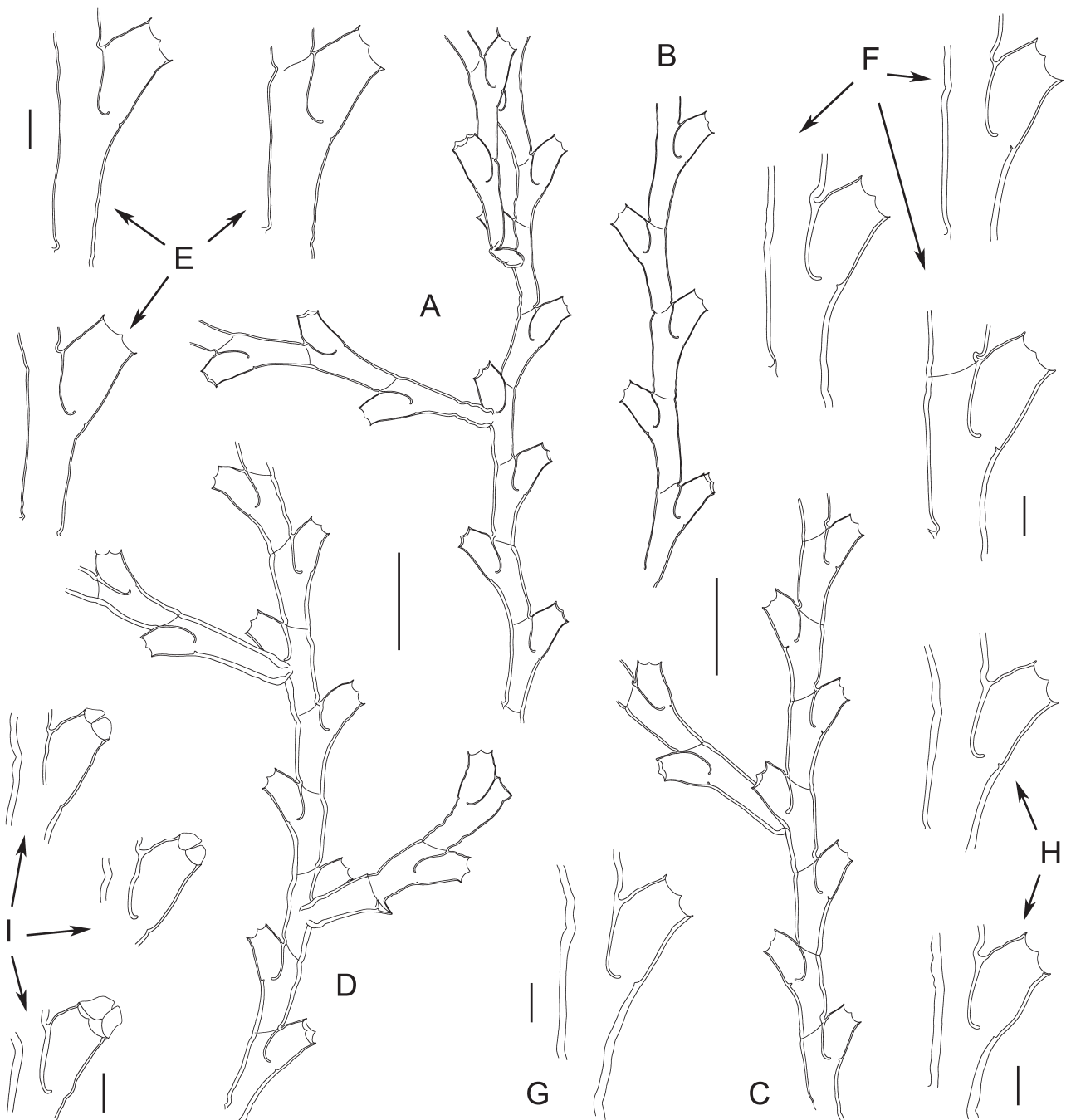


Fig. 5. *Sertularella clausa* (Allman, 1888). Colony fragments from holotype (A, B), and specimens ZMH C11882 (C) and C12145 (D) assigned to *S. argentinica* El Beshbeeshy, 2011. Hydrothecae from holotype (E), ZMH C11882 (F), ZMH C12145 (G, H), Blanco (1982, as *S. gayi gayi*) (I). Scale bars: 200 µm (E-I), 1 mm (A-D).

Sertularella argentinica El Beshbeeshy, 2011: 121, fig. 38 (**syn. nov.**). – Soto Àngel & Peña Cantero, 2015: 993, fig. 7A-B.

non *Sertularella argentinica*. – Galea, 2007: 59, fig. 14A-C. – Galea *et al.*, 2007c: 312, fig. 31 (= *Sertularella robustissima* Galea, Häussermann & Försterra, sp. nov.).

Sertularella gayi gayi. – Blanco, 1982: 157, figs 6-9 [non *Sertularella gayi* (Lamouroux, 1821)].

Material examined: NHML 1888.11.13.41; Uruguay, off Montevideo, *ca.* 1097 m; colony composed of *ca.* 15 sterile stems, up to 1.2 cm high, as well as a slide (now dried out, Fig. 1D) containing a *ca.* 1.5 cm high, branched colony fragment, labeled “Challenger Stat. 320, *Sertularia clausa*, type, Monte Video, Depth 600 faths”. – ZMH C11882; FRV *Walther Herwig*, Argentine Shelf, no additional data; several colony fragments, up to 2 cm high, at least one gonotheca, identified as *Sertularella argentinica* El Beshbeeshy, 2011. – ZMH C12145; FRV *Walther Herwig* 31, Stn. 676, Argentine Shelf, off Provincia del Chubut, -43.80500° -59.53333°, 570 m; 22.06.1976; fragmentary, fertile colony with monosiphonic stems, on axis of dead antipatharian [material studied by El Beshbeeshy (2011), as *S. argentinica*].

Description: Large, up to *ca.* 17 cm high, bushy, irregularly and much branched colonies with either mono- or reportedly polysiphonic stems. Monosiphonic parts divided into short, almost collinear, rather thick internodes, by means of oblique constrictions of the perisarc slanting in alternate directions, not always clearly demarcated; distally, a hydrotheca to each internode. Side branches originating not laterally, but in either front or rear side of the stem, from below the hydrothecal bases; 1st internode slightly longer than

subsequent ones; remainder of branches with similar structure as the stem; tips of branches commonly forming anastomoses with neighboring counterparts, resulting in much tangled, three-dimensional structure. Hydrothecae short, tronconical, adnate for slightly more than half their length to the corresponding internode; abaxial wall nearly straight to imperceptibly concave for most of its length, becoming convex below aperture; free adaxial wall slightly convex to nearly straight, surface smooth to wavy; rim with 4 short, triangular cusps separated by shallow embayments; renovations occasional; a 4-flapped operculum. Gonothecae borne on side branches, arising from below the hydrothecal bases; male similar to female; long, slender, tubular to spindle-shaped, tapering abruptly above origin, slightly constricted apically; lateral walls undulated; aperture distal, large, surrounded by 4 triangular cusps, and provided with a 4-flapped operculum.

Dimensions: See Table 4.

Remarks: Upon the comparison of the holotype of *S. clausa* with the Argentinean material assigned by El Beshbeeshy (2011) to his supposedly undescribed species, *S. argentinica*, it appears that both are indistinguishable morphologically (compare Figs 5A, B and 5C, D, as well as their respective measurements in Table 4). The former is an obviously young, sterile colony, with monosiphonic, unbranched or sparingly-branched stems, not surpassing 1.2 cm in height. Their mode of branching, with side branches arising in either the front or rear side of the stems, is peculiar and distinctive. Additionally, the frequent occurrence of terminal stolonization characterizes this species [present study; Blanco (1982, as *S. gayi gayi*)].

Table 4. Measurements of *Sertularella clausa* (Allman, 1888), in μm .

	Present study, holotype NHM 1888.11.13.41	El Beshbeeshy (2011), as <i>S. argentinica</i>	Soto Àngel & Peña Cantero (2015), as <i>S. argentinica</i>	Blanco (1982), as <i>S. gayi gayi</i>
Internode				
- length (in general)	710-1040	556-951	-	702-900
- length of 1st internode	1000-1190	-	-	-
- diameter at node	195-280	324-371	-	<i>ca.</i> 270
Hydrotheca				
- free adaxial length	255-305	232-301	255-280	220-270
- adnate adaxial length	330-365	301-395	290-330	330-460
- abaxial length	425-475	394-440	400-450	430-480
- maximum width	280-310	-	280-310	300-330
- diameter at aperture	215-260	208-255	220-240	220-260
Gonotheca				
- total length	-	1276-1858	-	-
- maximum width	-	324-417	-	-

Distribution: Uruguay – off Montevideo (Allman, 1888). Argentina – scattered records from the Argentine Shelf, between 40°–53°S (El Beshbeeshy, 2011, as *S. argentinica*); Provincia de Tierra del Fuego, Antártida e Islas del Atlántico Sur [ca. 80 km off the northeastern coast of Isla de los Estados (Blanco, 1982, as *S. gayi gayi*)]. Burdwood Bank – Soto Ángel & Peña Cantero (2015, as *S. argentinica*). Falkland Is. – off the SE coast (El Beshbeeshy, 2011, as *S. argentinica*).

Sertularella contorta Kirchenpauer, 1884

Figs 1E–G, 6, 7A–H; Table 5

Sertularella contorta Kirchenpauer, 1884: 39, pl. 15 figs 2, 2a. – *p.p.* Hartlaub, 1901: 83, pl. 4 fig. 26, pl. 6 figs 14–16 (reexamination of the cotype). – Nutting, 1904: 85, pl. 18 figs 7–9. – Hartlaub, 1905: 647. – Jäderholm, 1905: 31, pl. 12 figs 9–10. – Ritchie, 1907: 76. – Bedot, 1916: 202; 1918: 236. – Billard, 1924: 61. – *p.p.* Rees & Thursfield, 1965: 133.

(?) *Sertularella lagena* Allman, 1876: 114. – Allman, 1879: 283, text-fig. – Studer, 1879: 120. – Kirchenpauer, 1884: 40. – Bedot, 1912: 355; 1916: 207; 1918: 240. – Stechow, 1925: 475, fig. 34.

non *Sertularella* ? *lagena*. – Galea & Schories, 2012a: 41, fig. 4K–L (= *Sertularella antarctica* Hartlaub, 1901).

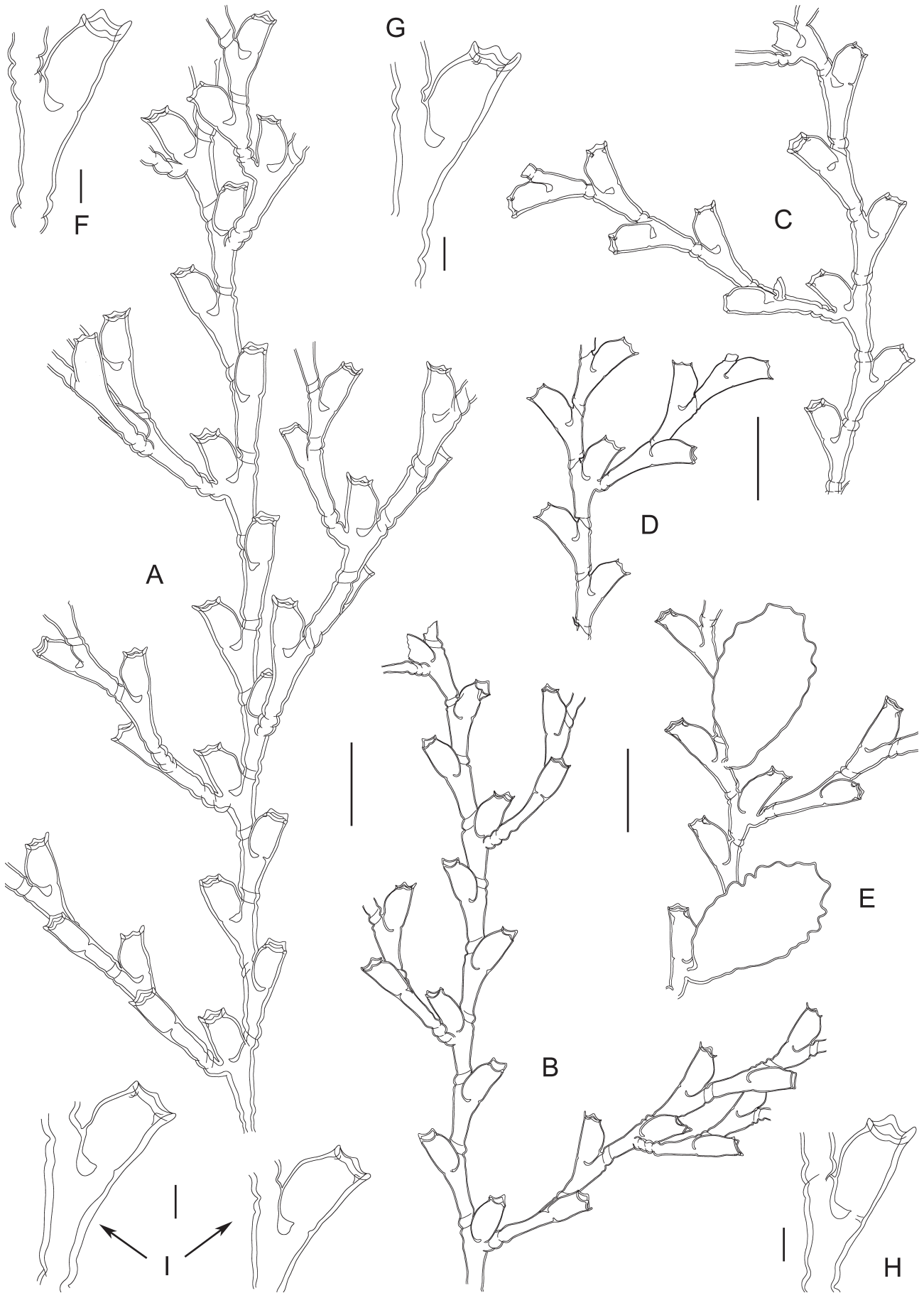
Sertularella polyzonias. – *p.p.* Jäderholm, 1910: 4. – *p.p.* Vanhöffen, 1910: 322 [non *Sertularella polyzonias* (Linnaeus, 1758)].

Material examined: NMSZ 1921.143.1351.C; Falkland Is., Cape Pembroke, coll. Scottish National Antarctic (*Scotia*) Expedition 1902–1904, shore; 01.1903–01.1904; a profuse, fertile (female) colony with numerous stems, up to 4.5 cm high, on pneumatocyst of *Macrocystis pyrifera* [material studied by Ritchie (1907), and listed by Rees & Thursfield (1965, p. 133)]. – NMSZ 1921.143.1351.D; Falkland Is., Cape Pembroke, coll. Scottish National Antarctic (*Scotia*) Expedition 1902–1904, shore; 01.1903–01.1904; a fertile (female) colony composed of several stems, up to 6 cm high, on *Macrocystis pyrifera* [material studied by Ritchie (1907), and listed by Rees & Thursfield (1965, p. 133)]. – SMNH 123884; Falkland Is., Port William, 5 m, Swedish Magellanic Expedition 1907–1909, coll. C. Skottsberg; 10.02.1908; microslide (Fig. 1E) containing several fragments (up to 1.3 cm high) of a fertile colony, assigned by Jäderholm (1910) to *Sertularella polyzonias* (Linnaeus, 1758). – SMNH 123851; Falkland Is., Port William, 40 m, coll. Swedish South Polar Expedition 1901–1903, Stn. 39; 04.07.1902; microslide (Fig. 1G) containing 2 species: 1) on the left-hand side, a ca. 2 cm high, fertile colony assigned to the present species by Jäderholm (1905), re-illustrated

herein in Fig. 6C, I; 2) on the right-hand side, two sterile colonies fragments, 1.3 and 1.5 cm high, assignable to *S. subantarctica* sp. nov. (see below), but identified by Jäderholm (1905) as *S. allmani* Hartlaub, 1901, and illustrated by him in his pl. 12 fig. 11, re-illustrated herein in Fig. 16K, O). – ZMB Cni945; French Southern and Antarctic Lands, Kerguelen Is., Observatory Bay, coll. Deutsche Südpolar (*Gauss*) Expedition 1901–1903; 15.02.1902; a sterile, fragmentary colony, 2.5 cm high [material studied by Vanhöffen (1910), as *S. polyzonias*]. – ZMN Cni620; French Southern and Antarctic Lands, Kerguelen Is., Port Gazelle, coll. Deutsche Tiefsee (*Valdivia*) Expedition 1898–1899; 28.12.1898; a fully fertile (male) colony, 2.5 cm high. – ZSM 20050442; French Southern and Antarctic Lands, Kerguelen Is., coll. Deutsche Tiefsee (*Valdivia*) Expedition 1898–1899, Stn. 160; 28.12.1898; microslide (Fig. 1F) containing two fertile (female) colony fragments, 9 and 13 mm high [material identified by Stechow (1925) as *S. lagena* Allman, 1876].

Description: Colonies erect, bushy, up to 6 cm high in inspected material (but up to 8 cm in the type), arising from dense mat of branching, intertwined stolonial fibers. Stems and basal parts of side branches either monosiphonic or fascicled in older colonies; divided into regular, slightly geniculate, rather short internodes by means of oblique constrictions of the perisarc; each internode with a couple of proximal twists, a distal swelling, and a hydrotheca, or a hydrotheca and a short, lateral apophysis below its base, confined to its distal part; branching pattern more or less regular, with generally every two consecutive apophysis-bearing internodes separated by a couple of internodes not supporting side branches; occasionally, only one apophysis-bearing internode is given off, instead of two consecutive ones, or successive apophysis-bearing internodes or couples of them are separated by 1 or 3 (instead of 2) internodes devoid of apophyses (Fig. 7A). Branching pattern of side branches similar to that of stem, though more irregular, with much spaced successive branchlets; proximal most internode generally slightly longer than subsequent ones, and provided with 2–3 spiral twists basally; branching up to at least 6th order. Basalmost side branches generally longer, hence more developed, than uppermost ones. Branches and hydrothecae shifted on to one side of the stem and forming an angle of less than 90°. Hydrothecae flask-shaped, distinctly swollen adaxially, adnate for about 1/3rd or less to corresponding internode; abaxial wall slightly concave to nearly straight for most of its length; free adaxial wall sigmoid, convex in middle; hydrotheca expanding below rim on

Fig. 6. *Sertularella contorta* Kirchenpauer, 1884 (part). Colony fragments from NMSZ 1921.143.1351.C (A), NMSZ 1921.143.1351.D (B), SMNH 123851 (C), SMNH 123884 (D) and ZSM 20050442 (E). Hydrothecae from NMSZ 1921.143.1351.C (F–H) and SMNH 123851 (I). Scale bars: 200 µm (F–I), 1 mm (A–E). ▶



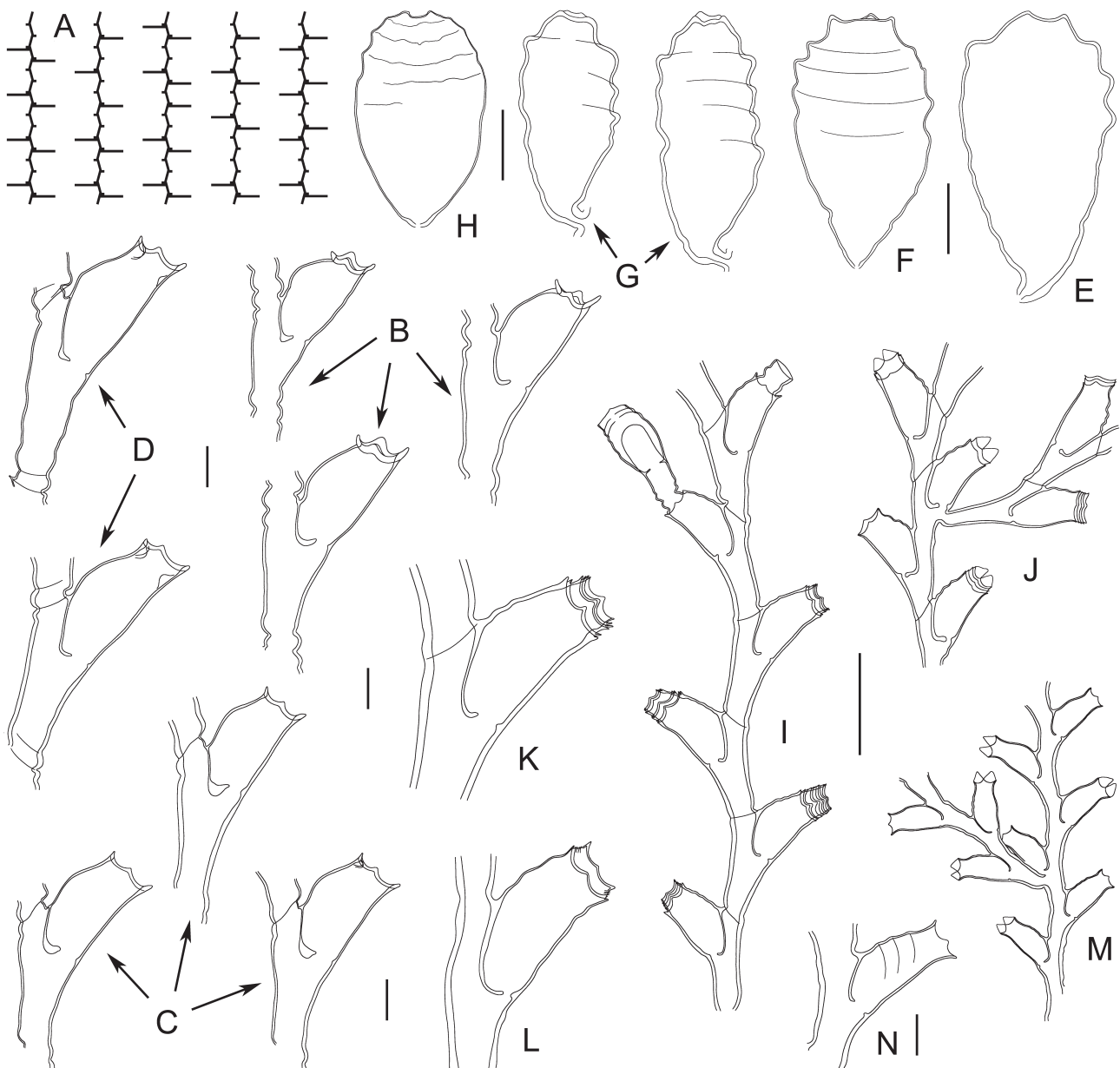


Fig. 7. (A-H) *Sertularella contorta* Kirchenpauer, 1884 (continued). Mode of branching (A). Hydrothecae from NMSZ 1921.143.1351.D (B), SMNH 123884 (C) and ZSM 20050442 (D). Gonothecae from NMSZ 1921.143.1351.C (E), NMSZ 1921.143.1351.D (F), SMNH 123851 (G) and SMNH 123884 (H). (I-L) *Sertularella cruzensis* El Beshbeeshy, 2011. Colony fragments from holotype (I) and Vervoort (1972, as *S. conica*) (J). Hydrothecae from the same sources (K and L, respectively). (M, N) *Sertularella curta* Galea & Schories, 2014. Portion of stem with basal part of a side branch from MHNG-INVE-86236 (M), and hydrotheca from HRG-0721 (N). Scale bars: 200 μ m (B-D, K, L, N), 500 μ m (E-H), 1 mm (I, J, M).

both ab- and adaxial sides; rim thickened, provided with 4 triangular cusps, of which the abaxial one is distinctly produced, and the laterals asymmetrical; three internal, submarginal cusps (2 latero-adaxial and 1 abaxial) of varied development, sometimes absent. Gonothecae arising from below the hydrothecal bases; male similar to female; broadly ovoid, tapering below, transversely wrinkled, distally with 4 short spines. The perisarc of the colony may be either thin or thick.

Dimensions: See Table 5.

Remarks: Although quite succinct, the description of *Sertularella contorta* given by Kirchenpauer (1884) does not allow an indisputable identification to be made in the absence of a reexamination of the type material (N.B.: this material could not be found in ZMB, where Kirchenpauer's "herbarium" was recently located; C. Lüter, pers. comm.). Some statements provided in the original account proved inaccurate, as for example the lack of unilateral arrangement of the hydrothecae, which was subsequently disputed by

Table 5. Measurements of *Sertularella contorta* Kirchenpauer, 1884, in μm .

	SMNH 123851, in Jäderholm (1905)	SMNH 123884, as <i>S. polyzonias</i> in Jäderholm (1910)	ZSM 20050442, as <i>S. lagena</i> in Stechow (1925)	NMSZ 1921.143.1351.C in Rees & Thursfield (1965)	NMSZ 1921.143.1351.D in Rees & Thursfield (1965)
Internode					
- length (in general)	725-955	615-895	550-945	675-1080	575-945
- length of 1st internode	800-1325	-	1310-1485	980-1350	860-1225
- diameter at node	140-230	145-190	140-185	140-230	140-210
Hydrotheca					
- free adaxial length	340-465	415-465	470-500	475-535	405-440
- adnate adaxial length	255-280	165-195	235-315	280-305	235-245
- abaxial length	415-500	490-520	635-730	535-635	525-585
- maximum width	325-385	290-300	335-365	365-420	285-315
- diameter at aperture	255-320	220-300	235-280	310-355	225-260
Gonotheca					
- total length	1655-1780 (♂ ?)	1520-1645	2035-2110 (♀)	1865-2050 (♀)	1695-1865 (♀)
- maximum width	735-920 (♂ ?)	780-980	1105-1200 (♀)	1055-1105 (♀)	905-1020 (♀)

Hartlaub (1901). The latter author reexamined the (then extant) cotype material, and provided more accurate details on its morphology, allowing a somehow easier identification of this species. The materials NMSZ 1921.143.1351.C&D assigned to *S. contorta* by Rees & Thursfield (1965), and reexamined here, agree with the available data on this species.

Sertularella contorta comes close to *S. gaudichaudi* (Lamouroux, 1824) through the shape (but not the size) of its internodes, and both the shape and size of its hydrothecae. Indeed, the length of the internodes in the later varies considerably (from short to exceedingly long), while it is uniformly short in the present species (this feature results also from Kirchenpauer's pl. 15 fig. 2). In addition, the mode of branching of *S. contorta* recalls that met with in *S. allmani* (with stem internodes devoid of lateral apophyses intercalating among those bearing these structures), while *S. gaudichaudi* exhibits a much denser branching pattern (with almost every stem internode bearing an apophysis supporting a branch). However, these differences should, perhaps, not be regarded as purely species-specific, especially given that a quite limited number of samples corresponding to both nominal species have been examined in the frame of the present study. Future collecting and molecular analyses are expected to clarify their relationships.

The Chilean material collected by Philippi and assigned by Hartlaub (1901) to the present species, although quite similar morphologically, should be better assigned to *S. gaudichaudi* (Lamouroux, 1824) owing to the presence of long stem internodes among the otherwise short ones (see remarks under the latter species).

Distribution: Falkland Is. (Kirchenpauer, 1884; Jäderholm, 1905; Ritchie, 1907; Jäderholm, 1910, as *S. polyzonias*). Le Maire Strait (Kirchenpauer, 1884). French Southern and Antarctic Lands – Kerguelen Is. (Allman, 1876; 1879, both as *S. lagena*; Vanhöffen, 1910, as *S. polyzonias*; Stechow, 1925, as *S. lagena*; present study).

Sertularella cruzensis El Beshbeeshy, 2011

Fig. 7I-L; Table 6

Sertularella cruzensis El Beshbeeshy, 2011: 128, fig. 40.

Sertularella grandensis El Beshbeeshy, 2011: 20 [new name for Nutting's (1904, p. 79) record of *Sertularella conica* Allman, 1877; *nomen nudum*].

Sertularella conica. – p.p. Nutting, 1904: 79. – Vervoort, 1972: 123, fig. 38 [non *Sertularella conica* Allman, 1877].

Material examined: ZMH C11556; FRV *Walther Herwig*, Stn. 384, -39.93333° -57.18333°, 95 m; 19.07.1966; a 1.3 cm high sterile stem or branch fragment, with only the perisarc left (holotype).

Description: Colonies up to 3 cm high, composed of short, monosiphonic, sparingly-branched stems. Both stems and branches divided into rather short internodes delimited by oblique constrictions of perisarc slanting in alternate directions; a hydrotheca to the distal end of each internode; perisarc thick throughout the colony. Side branches, if present, arising laterally from below the bases of stem hydrothecae, and not branched further; 1st internode usually longer than subsequent ones. Hydrothecae biserial, alternate, strictly coplanar; large,

cylindrical, adnate for less than half their length to their corresponding internodes; slightly swollen basally, especially on adaxial side; abaxial wall almost straight for most of its length, slightly curving outwards below aperture; free adaxial wall wavy, with 3-5 undulations of the perisarc; aperture facing outwards, rim with 4 small, equally-developed, triangular cusps separated by shallow, semicircular embayments; margin usually renovated many times; a 4-flapped operculum, also renovated. Gonothecae unknown.

Dimensions: See Table 6.

Remarks: The description given above is based on the reexamination of the holotype, combined with the account of Vervoort (1972, as *S. conica*). The material from Albatross Stn. 2771 assigned to *S. conica* by Nutting (1904) was reexamined by Vervoort, and it is here included in the synonymy of the present species.

Distribution: Chile – Región de Magallanes y de la Antártica Chilena [Magellan Strait (Vervoort, 1972, as *S. conica*)]. Argentina – Provincia de Buenos Aires [off Bahía Blanca (Vervoort, 1972, as *S. conica*; El Beshbeeshy, 2011)]; Provincia de Santa Cruz [records from both off the eponymous city (Nutting, 1904, as *S. conica*) and the province's coast (Vervoort, 1972, as *S. conica*)]; Provincia de Tierra del Fuego, Antártida e Islas del Atlántico Sur [off the southern coast of the Península Mitre (Vervoort, 1972, as *S. conica*)]. Falkland Is. – off the northwest coast (Vervoort, 1972, as *S. conica*).

Sertularella curta Galea & Schories, 2014

Fig. 7M, N

Sertularella curta Galea & Schories, 2014 in Galea *et al.*, 2014: 34, figs 6D-E, 7C.

Sertularella geniculata. – Leloup, 1974: 28, fig. 23 [non *Sertularella geniculata* Hincks, 1874 = *Sertularella tenella* (Alder, 1857)].

Material examined: MHNG-INVE-86236; Chile, Región de Antofagasta, Taltal, -25.38333° -70.51667°, 12-20 m, coll. D. Schories, lot #24; 24.04.2012; a 1.8 cm high, male colony (holotype). – MHNG-INVE-86237; Chile, Región de Antofagasta, Taltal, -25.38333° -70.51667°, 12-20 m, coll. D. Schories, lot #25; 22.04.2012; a 1.6 cm high, male colony (paratype).

Description: Colonies arising from creeping, branching stolon. Stems erect, up to 1.8 cm high, monosiphonic; basal part very short and ahydrothecate, either smooth or with up to 4 annuli; remainder of stem slightly geniculate, divided into short internodes by means of inconspicuous constrictions of the perisarc; a hydrotheca to the distal end of each internode. Side branches, when present (up to 3 per stem), short and arising irregularly from below a stem hydrotheca, either in front or the rear side of the colony; occasionally, the branches arise from within the stem hydrothecae; up to 2nd order branching observed. Hydrothecae biserial, alternate, fusiform, adnate for about 2/3rd their length to the corresponding internode; free adaxial wall with about 3 transverse ridges prolonged abaxially; abaxial wall slightly concave, aperture expanding below rim, and perpendicular to long axis of the theca; margin with 4 equally-developed, triangular cusps separated by rounded, moderately-deep embayments; a 4-flapped operculum; 3 internal, submarginal cusps (2 latero-adaxial, 1 abaxial), not always noticeable. Gonothecae (only male known) originating from below the hydrothecal bases; ovoid-fusiform, walls with 6-7 transverse ridges, aperture surrounded by 4 perisarc projections.

Dimensions: Internodes 340-490 µm long and 170-210 µm wide at nodes. Hydrothecal free adaxial length 345-380 µm, adnate adaxial length 230-270 µm, abaxial length 485-515 µm, maximum width 250-270 µm, diameter at aperture 210-230 µm. Male gonotheca 1440-1660 µm long and 575-620 µm wide.

Table 6. Measurements of *Sertularella cruzensis* El Beshbeeshy, 2011, in µm.

	El Beshbeeshy, 2011	Vervoort (1972), as <i>S. conica</i> , Vema 16-39	Vervoort (1972), as <i>S. conica</i> , Vema 17-30
Internode			
- length	870-1067	ca. 1230	610-675
- diameter at node	208-272	ca. 200	190-255
Hydrotheca			
- free adaxial length	417-556	460-540	460-500
- adnate adaxial length	417-452	420-435	420-430
- abaxial length	603-788	ca 730	580-650
- maximum width	-	335-405	400-410
- diameter at aperture	295-382	285-325	300-405

Remarks: The gonotheca of this species is illustrated by Galea *et al.* (2014, fig. 7C).

Distribution: Chile – Región de Antofagasta [Bahía de Tocopilla (Leloup, 1974, as *S. geniculata*), Taltal (Galea *et al.*, 2014)].

***Sertularella curvitheca* Galea & Schories, 2012a**

Fig. 8A, B; Table 7

Sertularella curvitheca Galea & Schories, 2012a: 38, pl. 3E, fig. 4A-E.

Sertularella gayi. – Galea, 2007: 62. – Galea *et al.*, 2007b: 161. – Galea *et al.*, 2007c: 312 [non *Sertularella gayi* (Lamouroux, 1821)].

Sertularella polyzonias. – Leloup, 1974: 32, fig. 26. – Galea, 2007: 64, fig. 15A-D. – Galea *et al.*, 2007b: 161. – Galea *et al.*, 2007c: 312 [non *Sertularella polyzonias* (Linnaeus, 1758)].

Material examined: MHNG-INVE-79665; Chile, Región de los Lagos, Caleta la Arena, Caleta Yerbos Buenas, -41.67263° -72.65650°, 20 m, coll. D. Schories, lot #05; 25.04.2007; colony composed of several profusely-branched, polysiphonic stems, up to 10 cm high, some bearing male gonothecae (holotype). – HRG-1178; Chile, Región de Aysén, Isla Waller, -46.7648° -75.2312°, 20 m, coll. HSFS, HF24, lot #128; 20.04.2015; three colonies with polysiphonic stems, 4.5, 5.8, and 7.0 cm high, the latter bearing a male gonotheca.

Description: Colonies erect, up to 10 cm high, arising from creeping, branching stolon. Stems either mono- or polysiphonic. Basal part of monosiphonic stems of varied length, not constricted above origin from stolon, ahydrothecate, with smooth perisarc; remainder of stem composed of a succession of moderately-

long, slightly geniculate internodes delimited by rather indistinct, oblique nodes sloping in alternate directions. A hydrotheca, or a hydrotheca and a short, lateral apophysis immediately below its base, confined to the distal end of each internode. Branching pattern alternate and coplanar, with generally 3 hydrothecae between successive side branches, but possibly 1 to 9; up to 3rd order branching observed; branches with similar structure as the stem, though 1st internode comparatively longer than subsequent ones. Hydrothecae tubular, distinctly curved outwards, adnate for about half their length to the corresponding internode; abaxial wall straight for 3/4th its length, conspicuously curved outwards below rim; free adaxial wall slightly convex, perisarc smooth to wavy, in the latter case provided with 2-3 indistinct undulations, more conspicuous proximally; hydrothecal aperture expanding just below rim; the latter provided with 4 acute cusps separated by moderately-deep, semi-circular embayments; operculum composed of 4 triangular flaps, with concentric, closely-set striae. Gonothecae arising from below the hydrothecal bases; male and female similar, though of slightly different size; broadly ovoid, with 6-7 transverse ribs, the 3-4 distalmost well-marked, becoming obsolete towards base; aperture mounted on short, terminal collar, truncate distally and provided with 4 blunt perisarc projections; female with acrocysts.

Dimensions: See Table 7.

Remarks: The typical shape of the colonies of this species is illustrated in Galea & Schories (2012a, pl. 3E, fig. 4A), and its gonothecae in both Galea (2007, fig. 15B, D) and Galea & Schories (2012a, fig. 4E).

Distribution: Chile – Región de los Lagos [Fjord Comau (Galea, 2007, as both *S. gayi* and *S. polyzonias*),

Table 7. Measurements of *Sertularella curvitheca* Galea & Schories, 2012a, in μm .

	Galea & Schories (2012a)	Galea (2007), as <i>S. polyzonias</i>
Internode		
- length (in general)	880-1320	1095-1305
- length of 1st internode	460-1930	-
- diameter at node	-	267-296
Hydrotheca		
- free adaxial length	410-450	412-577
- adnate adaxial length	375-495	467-522
- abaxial length	610-655	604-687
- maximum width	340-395	379-412
- diameter at aperture	290-325	330-357
Gonotheca		
- total length	2105-2520 (♀); 2215-2750 (♂)	1971-2183
- maximum width	810-915 (♀); 795-990 (♂)	732-901



Fig. 8. (A, B) *Sertularella curvitheca* Galea & Schories, 2012a. Portion of colony from MHNG-INVE-79665 (A), and hydrotheca from HRG-1178 (B). (C-I) *Sertularella fuegonensis* El Beshbeeshy, 2011. Colony portions from ZMH C11884 (C), HRG-0009 (D) and Vervoort (1972, as *S. picta*) (E). Hydrothecae from ZMH C11884 (F, G), HRG-0009 (H) and Vervoort (1972, as *S. picta*) (I). (J): *Sertularella gaudichaudi* (Lamouroux, 1824) (part), colony fragment from ZMH C04172. Scale bars: 200 μ m (B, F-I), 1 mm (A, C-E, J).

Gulf of Ancud (Leloup, 1974, as *S. polyzonias*), Seno de Reloncaví (Galea & Schories, 2012a); Región de Aysén [Canal Puyuhuapi (Galea *et al.*, 2009, as *S. cf. gayi*); Isla Waller (present study)]; Región de Magallanes y de la Antártica Chilena [Canal Adalberto and Isla Camello (Galea, 2007, as *S. gayi*), Canal Fallos (Galea, 2007, as *S. polyzonias*)].

Sertularella fuegonensis El Beshbeeshy, 2011

Fig. 8C-I; Table 8

Sertularella fuegonensis El Beshbeeshy, 2011: 131, fig. 41. – (?) Vervoort & Watson, 2003: 161, fig. 37A-B. – Galea, 2007: 60, fig. 14D-F. – Galea *et al.*, 2007c: 312, fig. 4A. *Sertularella picta*. – Vervoort, 1972: 114, fig. 35A-B [non *Sertularella picta* (Meyen, 1834)]. non *Sertularella picta*. – Vervoort, 1972: 113, figs 34, 35C [= *Sertularella implexa* (Allman, 1888)].

Material examined: ZMH C11884; FRV *Walther Herwig*, Stn. 280, Argentine Shelf, off Provincia de Santa Cruz, -51.50000° -68.50000°; 11.02.1971; a few infertile stems, up to 2 cm high, with remains of coenosarc. – MHNG-INVE-53441; Chile, Región de Magallanes y de la Antártica Chilena, Canal Vicuña, -52.16222° -73.27617°, 15-25 m, coll. HSFS, HF3, lot #142; 06.03.2006; several sterile colony fragments, up to 6 cm high. – MHNG-INVE-53447; Chile, Región de Magallanes y de la Antártica Chilena, Canal Vicuña, -52.16222° -73.27617°, 15 m, coll. HSFS, HF3, lot #143; 06.03.2006; a colony, *ca.* 6 cm high, and smaller fragments, all sterile.

Description: Colonies much branched, with no definite main stems, arising from rhizoid stolon. Both stems and branches divided into moderately-long, geniculate internodes by means of weak, oblique constrictions of the perisarc, sloping in alternate directions; each internode with a distally-placed hydrotheca, or a hydrotheca and a lateral apophysis immediately below its basis; apophyses given off irregularly every

1-10 hydrothecae; side branches, up to the 3rd order, generally alternate and coplanar. Hydrothecae biserial, alternate, either coplanar or imperceptibly shifted on to one side of the stem; flask-shaped, adnate for 2/5th their adaxial length, constricted below aperture; free adaxial wall slightly sigmoid, surface either smooth or with 2-5 shallow wrinkles; 4 triangular, marginal cusps of unequal development (abaxial one the longest, adaxial one the shortest, and the two laterals of intermediate length), separated by rather deep, rounded embayments; occasionally 3 internal, submarginal cusps (2 latero-adaxial, 1 abaxial); renovations of the margin occur; 4 triangular opercular flaps. Gonothecae unknown.

Dimensions: See Table 8.

Remarks: The colony structure is illustrated by Galea (2007, fig. 14D). The free adaxial wall may be either smooth (Chilean material) or wrinkled (El Beshbeeshy, 2011), though colonies with hydrothecae exhibiting both situations may occur (*e.g.* Vervoort, 1972, fig. 35A, as *S. picta*). Intrathecal cusps occur variably among the hydrothecae of the same colony, with the abaxial one generally more conspicuous than the two latero-adaxial ones.

Distribution: Chile – Región de Magallanes y de la Antártica Chilena – Canal *Vicuña* (Galea, 2007). Argentina – scattered records from the Argentine Shelf between 41°-53° S (El Beshbeeshy, 2011); Provincia de Tierra del Fuego, Antártida e Islas del Atlántico Sur [off the northern coast of the tip of Península Mitre (Vervoort, 1972, as *S. picta*)]. (?) New Zealand (Vervoort & Watson, 2003).

Sertularella gaudichaudi (Lamouroux, 1824)

Figs 1H-K, 8J, 9, 10; Tables 9, 10

Sertularia gaudichaudi Lamouroux, 1824: 615, pl. 90 figs 4, 5. – Van Praët, 1979: 901, fig. 47 (reexamination of schizoholotypes).

Table 8. Measurements of *Sertularella fuegonensis* El Beshbeeshy, 2011, in μm .

	El Beshbeeshy (2011)	Galea (2007)	Vervoort (1972), as <i>S. picta</i> (Vema 14-14)	Vervoort & Watson (2003)
Internode				
- length	452-556	449-646	475-540	820-1065
- diameter at node	145-185	208-230	<i>ca.</i> 175	130-165
Hydrotheca				
- free adaxial length	382-429	421-478	390-425	395-425
- adnate adaxial length	226-243	225-309	230-245	280-330
- abaxial length	417-493	506-601	420-485	510-575
- maximum width	-	309-348	310-325	295-330
- diameter at aperture	185-220	240-263	190-215	195-230

Sertularella gaudichaudi. – Bedot, 1905: 105. – Billard, 1909: 317, fig. 4A (reexamination of the holotype). – Bedot, 1910: 360; 1912: 354; 1916: 204; 1918: 238. – Billard, 1924: 61 (reexamination of the holotype). – Van Praët, 1979: 901, fig. 47. – Ramil *et al.*, 1992: 518, fig. 15 (reexamination of schizoholotypes).

non *Sertularella gaudichaudi*. – Cornelius, 1979: 282, fig. 20 [= *S. ellisii* (Deshayes & Milne-Edwards, 1836), *S. fusiformis* (Hincks, 1861), and *S. mediterranea* Hartlaub, 1901]. – García Corrales *et al.*, 1980: 30, fig. 10 [= *S. ellisii* (Deshayes & Milne-Edwards, 1836)]. – Gili *et al.*, 1989: 101, fig. 26B, C (= *S. cf. mediterranea* Hartlaub, 1901).

Sertularella gaudichaudii. – Kirchenpauer, 1884: 38 (incorrect subsequent spelling).

Sertularia picta Meyen, 1834: 201, pl. 34 figs 1-3 (**syn. nov.**). – Hartlaub, 1901: 77, pl. 5 fig. 14, pl. 6 figs 17, 18 & 20 (reexamination of the cotype). – Jäderholm, 1903: 282. – Nutting, 1904: 90, pl. 20 figs 5-7. – Bedot, 1905: 105; 1910: 361. – Hartlaub, 1905: 645, fig. L⁴. – Billard, 1922: 106, fig. 2B. – Stechow, 1923a: 187, fig. B¹ (reexamination of cotype). – Naumov & Stepanjants, 1962: 88. – Blanco, 1963: 175, figs 3-4. – (?) Millard 1971: 405, fig. 6A; 1977: 25, fig. 6A-D. – Blanco, 1994: 199. – Branch & Williams, 1993: 12, text-fig. – El Beshbeeshy, 2011: 138, fig. 44.

non *Sertularia picta*. – Blanco, 1967: 112, pl. 3 figs 1-7 (= *Sertularella mediterranea* Hartlaub, 1901). – Millard, 1971: 405, fig. 6B (= *S. subantarctica* Galea, sp. nov.). – Vervoort, 1972: 113, figs 34, 35C [= *Sertularella implexa* (Allman, 1888)]. – Vervoort, 1972: 114, fig. 35A, B (= *Sertularella fuegonensis* El Beshbeeshy, 2011).

Sertularella protecta p.p. Hartlaub, 1901: 79, pl. 6 figs 21-26 (**syn. nov.**). – Hartlaub, 1905: 652, fig. R⁴. – Billard, 1924: 62. – *p.p.* Jäderholm, 1903: 282. – Rees & Thursfield, 1965: 135.

(?) *Sertularella margaritacea* Allman, 1885: 133, pl. 7 figs 3, 4. – Nutting, 1904: 95, pl. 22 fig. 1. – Hartlaub, 1905: 657, fig. V⁴. – Bedot, 1916: 208; 1918: 240. – Billard, 1924: 60.

Sertularella allmani. – Naumov & Stepanjants, 1962: 86 (non *Sertularella allmani* Hartlaub, 1901).

Sertularella antarctica p.p. Jäderholm, 1903: 283 (non *Sertularella antarctica* Hartlaub, 1901).

Sertularella contorta p.p. Hartlaub, 1901: 83 (non *Sertularella contorta* Kirchenpauer, 1884).

Sertularella polyzonias p.p. Vanhöffen, 1910: 322 [non *Sertularella polyzonias* (Linnaeus, 1758)].

Material examined: ZMH C04172; Chile, Región de Magallanes y de la Antártica Chilena, Isla Lennox, coll. Michaelsen no. 181; 22.12.1892; fertile colony (stranded on beach) with multiple fascicled stems, up to ca. 7.5 cm high [material examined by Hartlaub (1901, p. 79) and assigned by him to *S. picta* (Meyen, 1834)]. – ZMH C04173; Chile, Región de Magallanes y de la Antártica Chilena, Lennox Cove, coll.

Michaelsen no. 182; 24.12.1892; fertile colony with multiple monosiphonic stems, up to 4 cm high, on kelp (type of *S. protecta* Hartlaub, 1901). – SMNH 123894; Chile, Región de Magallanes y de la Antártica Chilena, Lennox Cove, coll. Swedish Tierra del Fuego Expedition 1895-1896; 05.02.1896; microslide (Fig. 1J) containing 2 badly preserved, fertile colony fragments, both ca. 2.5 cm high [material identified by Jäderholm (1903) as *S. protecta* Hartlaub, 1901]. – SMNH 123881; Chile, Región de Magallanes y de la Antártica Chilena, Isla Lennox, 18-45 m, coll. Swedish Tierra del Fuego Expedition 1895-1896; 07.02.1896; microslide (Fig. 1H) containing 3 colony fragments 1.7-2.0 cm high, two of which bear gonothecae [material identified by Jäderholm (1903) as *S. picta* (Meyen, 1834)]; with small, epizootic colony of *Halecium annuliforme* Galea & Schories, 2012a, bearing an incipient gonophore of unassignable sex. – SMNH 123837; Chile, Región de Magallanes y de la Antártica Chilena, Isla Nueva, coll. Swedish Tierra del Fuego Expedition 1895-1896; 07.02.1896; microslide (Fig. 1I) containing a ca. 6 cm high, fertile colony fragment [material identified by Jäderholm (1903) as *S. antarctica* Hartlaub, 1901; a second identification, *contorta*, was subsequently added to the label]. – NMSZ 1959.33.472; Patagonia; microslide (Fig. 1K) comprising 2 colony fragments, 0.5 and 1.0 cm high, the largest bearing 2 gonothecae [material belonging to Ritchie's collection, identified by Stechow as *S. protecta* Hartlaub, 1901, and listed by Rees & Thursfield (1965, p. 135)]. – ZMB Cni1122; Chile, coll. Philippi, no additional data; a very fragmented, badly preserved fertile colony composed of numerous pieces up to 1.6 cm high, with fascicled portions of stem [material studied by Hartlaub (1901) and assigned by him to *S. contorta* Kirchenpauer, 1884]. – ZMB Cni946; French Southern and Antarctic Lands, Kerguelen Is., Royal Sound, coll. Deutsche Südpolar (*Gauss*) Expedition 1901-1903; 01.01.1902; a fully fertile (male) colony, 3 cm high [material studied by Vanhöffen (1910), as *S. polyzonias*].

Description: Slender, straggling, repeatedly branched, tangled colonies, up to 21 cm high, with mono- or polysiphonic stems and branches; these divided by oblique nodes into internodes of highly variable length, from short to exceedingly long and slender; each internode with a couple of spiral twists proximally, a hydrotheca distally, and a short, lateral apophysis below its base; apophyses alternate, supporting side branches with the same structure as the stem, though internodes generally shorter; first internode with 2-4 spiral twists basally. Side branches and hydrothecae shifted on to one side (“anterior”) of the colony, the two rows

Fig. 9. *Sertularella gaudichaudi* (Lamouroux, 1824) (continued). Colony fragments from proximal and distal parts of ZMH C04173 (A and B, respectively) and SMNH 123881 (C and D, respectively), and portion from ZMB Cni1122 (E). Hydrothecae from schizoholotype (F, after Ramil *et al.*, 1992), ZMH C04172 (G), ZMH C04173 (H), SMNH 123881 (I) and ZMB Cni1122 (J). Gonotheca from SMNH 123881 (K). Scale bars: 200 µm (F-J), 500 µm (K), 1 mm (A-E). ▶



forming a moderately wide angle. Hydrothecae short, flask-shaped, distinctly swollen adaxially; abaxial wall straight or nearly so; free adaxial wall convex for most of its length, becoming concave below aperture; margin with 4 short, triangular, unequally-developed cusps: abaxial one generally produced, occasionally less so; adaxial one the shortest; lateral ones asymmetrical, the “anterior” one comparatively shorter than “dorsal” one; rim generally thickened; internal, submarginal cusps of varied development: from absent, to 2 latero-adaxial, to a complete set of 3 (one abaxial and 2 latero-adaxial); a variously developed perisarc plug at the end of the adnate adaxial wall, forming an incomplete foramen for the passage of the hydranth. Gonothecae borne on both stems and branches; broadly ovoid, with 3-4 transverse ridges in distal half, smooth in the lower half; aperture on short collar surrounded by generally 4 blunt spines (occasionally 3-5).

Dimensions: See Table 9.

Remarks: The holotype colony of *Sertularia gaudichaudi*, stored in Caen, France, and reexamined earlier by Billard (1909; 1922), was lost during WWII (Redier, 1967). However, two schizoholotype slides (MNHN H.L. 615 & 616) were prepared by Billard from that colony (Van Praët, 1979), and were reexamined subsequently by Ramil *et al.* (1992). Unfortunately, those slides could not be located for the purpose of the present study (A. Andouche, *Muséum national d'Histoire naturelle*, Paris, pers. comm.). The cotype of *Sertularia picta* was reexamined by Hartlaub (1901) and Stechow (1920; 1923a), who provided additional information and more accurate illustrations.

The synonymy between these two nominal species was suspected by Meyen (1834), Kirchenpauer (1884), Hartlaub (1901; 1905), Bedot (1910), Billard (1909; 1910), and Galea & Schories (2012b). In contrast, Stechow (1920) and Billard (1922) provided arguments in favor of their specific separation, but their reliability could be contested in light of the new data available in the subsequent literature, and through the present observations. Stechow, who compared the redescription of *S. gaudichaudi* given by Billard (1909) with the cotype of *S. picta*, emphasized the following differences: 1) Lamouroux' species does not have hydrothecae with thickened rims, a statement invalidated later on by Billard (1922), who showed that this character is inconstant, an opinion equally shared by us; 2) the abaxial cusp is conspicuously produced in *S. picta*, although it is now recognized that its shape varies within the same colony (present study); 3) the gonothecae of *S. picta* have only wavy walls, while those of *S. gaudichaudi* are clearly transversely ringed, an argument not only contradicted by several observations (Blanco 1963; present study, material ZMH C04172), but also recognized as dependent on their state of maturation.

Billard (1922), for his part, emphasized the following distinguishing characters exhibited by *S. picta*: 1) the conspicuously hypertrophied abaxial hydrothecal cusp described by Stechow (1920), which is now recognized as a variable character; 2) the comparatively thickened hydrothecal rim, although the distalmost, youngest hydrothecae have evidently unthickened rims; 3) the more conspicuous internal, submarginal cusps, though it was demonstrated that this is an inconstant character (Blanco 1963); 4) the broad perisarc plug at the base of the hydrotheca, although obvious differences are seen in

Table 9. Measurements of *Sertularella gaudichaudi* (Lamouroux, 1824), in μm .

	Present study, SMNH 123881, as <i>S. picta</i> in Jäderholm (1903)	Blanco (1963), as <i>S.</i> <i>picta</i>	Millard (1977), as <i>S.</i> <i>picta</i>	El Beshbeeshy (2011), as <i>S. picta</i>
Internode				
- length	550-3990	1000-2500	770-1340	310-1617
- diameter at node	125-280	-	120-180	116-191
Hydrotheca				
- total length	-	684-741	-	-
- free adaxial length	390-405	-	400-510	301-475
- adnate adaxial length	220-235	-	240-350	162-232
- abaxial length	500-550	-	550-700	464-603
- maximum width	280-310	323-380	-	-
- diameter at aperture	200-235	228-281	200-260	185-266
Gonotheca				
- total length	1840-1900 (♀)	2200-2300	1500-2150	1856-2308
- maximum width	955-1030 (♀)	1050-1200	1300-1520	904-1032

the hydrothecae from various, or even the same, colonies (present study).

It appears, therefore, that none of the arguments provided by Stechow and Billard are reliable specific characters. In addition, a comparison of the available data (Table 10) and illustrations (Fig. 10) from various sources based on the examination of the types of both nominal species demonstrate, with little doubt, that they are coterminous, with Lamouroux's species having priority.

A typical, fully formed colony of *S. gaudichaudi* is illustrated by both Lamouroux (1824) and Billard (1922), while the gonotheca is depicted in a number of papers, e.g. Billard (1909), Stechow (1923a, as *S. picta*), Ramil *et al.* (1992), and El Beshbeeshy (2011, as *S. picta*). The habit of the stem varies in this species, and could be either monosiphonic (Blanco, 1963; El Beshbeeshy, 2011; specimen ZMH C04173 examined here) or polysiphonic (material ZMH C04172 examined here).

Type material of *S. protecta* [not designated by Hartlaub (1901), but indicated on the label of sample ZMH C04173] is characterized by: 1) the occurrence of long (up to 2 mm) internodes among the otherwise most numerous, much shorter stem internodes; 2) the profuse

branching, with almost every stem internode giving rise to a side branch, the latter alternate in position; 3) short and conspicuously adaxially-swollen hydrothecae. The perisarc of this material is comparatively hypertrophied with respect to that of sample ZMH C04172 assigned to *S. picta* by Hartlaub himself, giving the colony a more "peculiar", rigid appearance. The higher occurrence of short vs. long internodes does not justify the placement of this species close to *S. allmani* as suggested by Hartlaub, because long internodes have never been observed in the latter. On the contrary, their presence is a typical feature of *S. gaudichaudi*, and their length may reach as much as 4 mm (e.g. SMNH 123881 and 123894).

Two other specimens, one from Elizabeth I. (Magellan Strait) and the other from South Georgia were also assigned to *S. protecta* by Hartlaub. The former is possibly no longer extant in ZMH (H. Roggenbuck, pers. comm.) and, for the latter, there is no certainty whether it is the same specimen as ZMH C04384, now recognized as a distinct species, *S. subantarctica* Galea, sp. nov.

The Chilean material collected by Philippi and assigned by Hartlaub (1901, p. 83) to *S. contorta* Kirchenpauer, 1884 was reexamined, and should be better assigned

Table 10. Comparison of the available data on type materials of *S. gaudichaudi* (Lamouroux, 1824) and *S. picta* (Meyen, 1834). "B^a" stands for Billard (1909), "B^b" for Billard (1922), "B^c." for Billard (1924), "H" for Hartlaub (1901), "L" for Lamouroux (1824), "M" for Meyen (1834), and "R" for Ramil *et al.* (1992).

	<i>Sertularella gaudichaudi</i> (Lamouroux, 1824)	<i>Sertularella picta</i> (Meyen, 1834)
Origin of the specimens	Vicinity of the Falkland Islands (L)	Eastern coast of Tierra del Fuego and the Falkland Islands (M).
Colony structure	Shrub-like, 1.5 to 2 inches high, with numerous alternate branches (L). Holotype 6.5 cm high, as high as broad, flabelliform, profusely and irregularly ramified (B ^b)	"6 to 8 inches, and over" (M). Growth very ample, reminiscent of <i>Obelia longissima</i> (H).
Habit of the stem	Lightly fascicled (B ^b)	Lightly fascicled (H).
Color	Greenish yellow to bluish green; hydranths pale blue (L)	"of a beautiful yellow, sometimes pale red" (M)
Internodes	Long, with the hydrothecae "very remote from each other" (L). Proximally with 1-2 annuli, not always distinct (B ^a).	Typically very long, geniculate, strikingly resembling those of <i>S. gaudichaudi</i> (H).
Branches	With several annuli at origin from stem (B ^a). Branchlets pinnately arranged, originating from below bases of successive hydrothecae, occasionally every 2-4 hydrothecae (B ^b).	Each stem internode provides an origin for a side branch (H). Branches "strongly annulated" basally (<i>i.e.</i> several annuli) (H).
Hydrothecae	Not in the same plane (B ^a , B ^b), angle varying between 90-180° (B ^b); adnate for 1/3rd, swollen adaxially, aperture on a constricted neck region, rim thickened though not always so (B ^b); abcauline cusp produced; 3 internal, submarginal cusps (2 latero-adaxial, 1 abaxial) (B ^a , B ^b), not always present (B ^c).	Not in the same plane (H). Adnate for 1/3rd, swollen adaxially, rim thickened (H). Perisarc thickened (M).
Gonothecae	Profuse, nearly globular, walls transversely annulated in upper half (L, B ^a , B ^b); aperture surrounded by 3-4 blunt cusps, indistinct in young thecae (B ^a , B ^b)	Wall annulated, with 4 apical projections (M), the latter not always obvious (H).



Fig. 10. Comparison of the type materials of *Sertularella gaudichaudi* (Lamouroux, 1824) (A-E) and *S. picta* (Meyen, 1834) (F-K) illustrated by various authors, as follows: Lamouroux (1924) (A, C), Meyen (1834) (F, H, I), Hartlaub (1901) (G, K), Billard (1909) (D), Billard (1922) (E) and Stechow (1923) (J).

to the present species. Indeed, quite long internodes (Fig. 9E) co-occur with otherwise uniformly short internodes in some stem fragments.

Billard (1924) reexamined the type of *Sertularella margaritacea* Allman, 1885 and noted the presence of a thickened hydrothecal rim, of a conspicuous abaxial cusp, as well as the apparent lack of internal, submarginal projections of the perisarc. In addition, the branching pattern illustrated in the original account (Allman, 1885, pl. 7 fig. 3) fits those provided by both Lamouroux (1824) and Billard (1922) for *S. gaudichaudi*. Although not evident from his pl. 7 fig. 4, Allman also stated that the hydrothecae of his species were “distant” and this is, indeed, noticeable on the lower part of the stem and a

couple of side branches, suggesting that both short and long internodes occur within the same colony, which is a character typically exhibited by *S. gaudichaudi*.

Distribution: Chile – Región de Magallanes y de la Antártica Chilena [Isla Navarino (Hartlaub, 1901; 1905, both as *S. picta*); Isla Lennox (Hartlaub, 1901; 1905, as both *S. picta* and *S. protecta*; Jäderholm, 1903, as *S. picta*); Lennox Cove (Hartlaub, 1901; Jäderholm, 1903; both as *S. protecta*); Cape Horn (Billard, 1922, as *S. picta*); Isla Nueva (Jäderholm, 1903, as *S. antarctica*); Magellan Strait (Allman, 1885, as *S. margaritacea*)]. Patagonia – no exact locality (Rees & Thursfield, 1965, as *S. protecta*). Argentina – scattered records from the Argentine Shelf between *ca.*

47° S and the east of Península Mitre (El Beshbeeshy, 2011); Provincia del Chubut [Puerto Madryn (Blanco, 1963, as *S. picta*); Provincia de Tierra del Fuego, Antártida e Islas del Atlántico Sur [Isla de los Estados (Blanco, 1994, as *S. picta*); eastern coast of Tierra del Fuego (Meyen, 1834, as *S. picta*)]. Between Tierra del Fuego and the Falkland Is. (Naumov & Stepanjants, 1962, as *S. allmani*). Falkland Is. (Lamouroux, 1824; Meyen, 1834, as *S. picta*) and off their eastern coast (El Beshbeeshy, 2011). French Southern and Antarctic Lands – Kerguelen Is. (Vanhöffen, 1910, as *S. polyzonias*; Naumov & Stepanjants, 1962, as *S. picta*; Millard, 1977, as *S. picta*); Crozet Shelf (Millard, 1977, as *S. picta*). (?) South African Subantarctic Islands: Marion I. (Millard, 1971; Branch & Williams, 1993; both as *S. picta*), Prince Edward I. (Branch & Williams, 1993, as *S. picta*).

Sertularella geodia Totton, 1930

Fig. 11A; Table 11

Sertularella geodia Totton, 1930: 196, text-fig. 43, pl. 3 figs 7-8.

non *Sertularella geodia*. – Vervoort, 1972: 120, fig. 37 (= ? *S. hermanosensis* El Beshbeeshy, 2011). – Blanco, 1976: 39, pl. 3 figs 7-8; 1994: 199 (= *Sertularella blanconae* El Beshbeeshy, 2011).

(?) *Sertularella geodia*. – ? Naumov & Stepanjants, 1962: 86, fig. 10 (incorrect subsequent spelling).

Description: Colonies up to 15 cm high, arising from large rooting masses; irregularly pinnate; stems and branches fascicled and well defined, divided into rather short, slightly geniculate internodes by means of oblique constrictions of the perisarc slanting in alternate directions; a hydrotheca to the distal end

of each internode. Side branches given off laterally from below the bases of stem hydrothecae; structure similar to that of stem. Hydrothecae biserial, alternate, coplanar; large, flask-shaped, adnate for 3/5th their adaxial length, swollen adaxially; a typical notch at junction between proximal part of free adaxial wall with corresponding internode; abaxial wall slightly sigmoid (imperceptibly concave for most of its length, becoming suddenly convex below aperture); free adaxial wall with slight “shoulder” proximally, perisarc undulated; margin with 4 short, sharp, triangular cusps separated by very shallow, semicircular embayments; occasionally 3 submarginal, intrathecal projections of perisarc, 2 latero-adaxial, and one abaxial; a 4-flapped operculum. Gonothecae borne on both stem and side branches, arising from below the hydrothecal bases; elongated-ovoid, wall transversely-wrinkled, aperture surrounded by 3-4 apical cusps.

Dimensions: See Table 11.

Remarks: The description given above combines the original account with that provided by Vervoort & Watson (2003). As stated by these authors, *S. geodia* differs from *S. gayi* (Lamouroux, 1821) through its much larger hydrothecae, the occasional presence of submarginal cusps, and the apical part of its gonotheca. The typical shape of a colony fragment is illustrated by Totton (1930, pl. 3 fig. 8).

Distribution: (?) Chile – Región de Magallanes y de la Antártica Chilena [eastern coast of Tierra del Fuego (Naumov & Stepanjants, 1962, as *S. geodia*). New Zealand and New Caledonia (Vervoort & Watson, 2003).

Table 11. Measurements of *Sertularella geodia* Totton, 1930, in µm.

	Totton (1930)	Naumov & Stepanjants (1962), as <i>S. geodia</i>	Vervoort & Watson (2003)
Internode			
- length	1220-1390	750-950	-
- diameter at node	310-390	-	-
Hydrotheca			
- free adaxial length	470-550	350-500	540-575
- adnate adaxial length	680-760	550-650	705-770
- abaxial length	600-740	-	740-785
- maximum width	-	-	555-605
- diameter at aperture	380-400	330-450	375-425
Gonotheca			
- total length	2000-2040	-	-
- maximum width	890-1030	-	-

***Sertularella hermanosensis* El Beshbeeshy, 2011**

Figs 11B-G, 12A; Table 12

Sertularella hermanosensis El Beshbeeshy, 2011: 133, fig. 42.
Sertularella geodiae. – *p.p.* Vervoort, 1972: 120, fig. 37. [non
Sertularella geodiae Totton, 1930]

Material examined: ZMH C11885; FRV *Walther Herwig*, Argentine Shelf, no additional data; four sterile colony fragments 7.0-1.4 cm high, each bearing several hydrothecae, with only the perisarc left. – NHML 1888.11.13.42; between Cabo Virgenes, Argentina, and the Falkland Is., *Challenger* Stn. 314, *ca.* 128 m; 3 infertile colony fragments (6, 12 and 18 mm high) among the holotype of *Sertularella implexa* (Allman, 1888) (for more details, see under this species), and a microslide (Fig. 12A).

Description: Colonies composed of erect, monosiphonic, unbranched or sparingly-branched stems arising from stolonal fibers firmly adhering to substrate. Both stems and side branches divided into moderately long (though varied in length), imperceptibly geniculate to collinear internodes, by means of faint, oblique constrictions of the perisarc slanting in alternate directions. A hydrotheca to the distal end of each internode. Side branches generally arising from below the bases of every 3 stem hydrothecae by means of short, lateral apophyses. Hydrothecae biserial, alternate, coplanar; flask-shaped, adnate for slightly more than half their length to the corresponding internode, slightly tumid adaxially; abaxial wall straight to slightly concave proximally, suddenly becoming convex below aperture; free adaxial wall wavy to distinctly transversely-ridged, ridges occasionally reaching abaxial wall; aperture with 4 short, equal, triangular cusps, separated by shallow embayments; renovations occasional; a 4-flapped operculum. Gonothecae unknown.

Dimensions: See Table 12.

Remarks: According to El Beshbeeshy (2011), his species has hydrothecae with different forms, and this is also evident from his fig. 42. As not all his material was reinspected for the purpose of the present study, it is assumed that those differences could indicate the presence of a mix of species.

Distribution: Chile – Región de Magallanes y de la Antártica Chilena [Magellan Strait (Vervoort, 1972, as *S. geodiae*)]. Argentina – scattered records from the Patagonian Shelf, between *ca.* 41° S and Península Mitre (El Beshbeeshy, 2011). Elsewhere – between Cabo Virgenes, Argentina, and the Falkland Is.

[present study (material co-occurring with the type of *S. implexa*); El Beshbeeshy, 2011]; off the NE coast of Falkland Is. (El Beshbeeshy, 2011); a large perimeter including the Strait of Magellan, the Falkland Is., the Burdwood Bank, Isla de los Estados, and Cape Horn (Vervoort, 1972, as *S. geodiae*).

***Sertularella implexa* (Allman, 1888)**

Figs 12B, 13A-D; Table 13

Sertularia implexa p.p. Allman, 1888: 54, pl. 26 figs 1, 1a. – Hartlaub, 1901: 90. – Bedot, 1916: 223.

non *Sertularella implexa*. – Galea & Schories, 2012a: 40, pl. 3 fig. 4F-J (= *Sertularella recta* Galea & Schories, sp. nov.)

Sertularella picta. – Vervoort, 1972: 113, figs 34, 35C [non *Sertularella picta* (Meyen, 1834)].

non *Sertularella picta*. – Vervoort, 1972: 114, fig. 35A-B [= *Sertularella fuegonensis* El Beshbeeshy, 2011].

Material examined: NHML 1888.11.13.42; a vial containing numerous sterile colony fragments in alcohol (designated here as the lectotype of *S. implexa*), as well as two slides. One slide (Fig. 12A), marked as “type”, bears the label “Challenger Stat. 314, Falklands, Depth 70 faths, *Sertularia implexa*”, and contains a 1.1 cm high colony fragment bearing 3 side branches. This material clearly does not belong to Allman’s species; in addition, its hydrothecae were quite distorted upon squashing between slide and coverslip. The other slide (Fig. 12B), labeled “Challenger Coll., *Sertularia implexa*, bet. Cape Virgins & Falkland Is., 24” is a 1.6 cm high colony fragment bearing 5 side branches, and is in agreement with both the bulk of the alcohol-preserved material and Allman’s pl. 26 fig. 1A. This second slide is selected here as the paralectotype of *S. implexa*. Among the alcohol-preserved material, three colony fragments (6, 12 and 18 mm high) could be identified as *Sertularella hermanosensis* El Beshbeeshy, 2011, and are possibly conspecific with the material mounted in the “type” slide; they were transferred to a separate vial.

Description: Colonies growing in loosely entangled tufts, up to *ca.* 7.5 cm high; profusely and irregularly branched in all directions, with no definite main stems. Stems and side branches strictly monosiphonic, divided into long, slender internodes by means of oblique nodes; first internode with a proximal twist, and comparatively longer than subsequent ones; a hydrotheca, or a hydrotheca and a short apophysis arising laterally from below its base, confined to the distal part of each internode; hydrothecae in two alternate rows; rows

Fig. 11. (A) *Sertularella geodiae* Totton, 1930. Hydrothecae (modified after Totton 1930). (B-G) *Sertularella hermanosensis* El Beshbeeshy, 2011. Portions of colonies from ZMH C11885 (B), from material mixed with the holotype of *S. implexa* (Allman, 1888) (C), and after Vervoort (1972, as *S. geodiae*) (D). Hydrothecae from the same sources (E-G, respectively). Scale bars: 200 µm (A, E-G), 1 mm (B-D). ▶

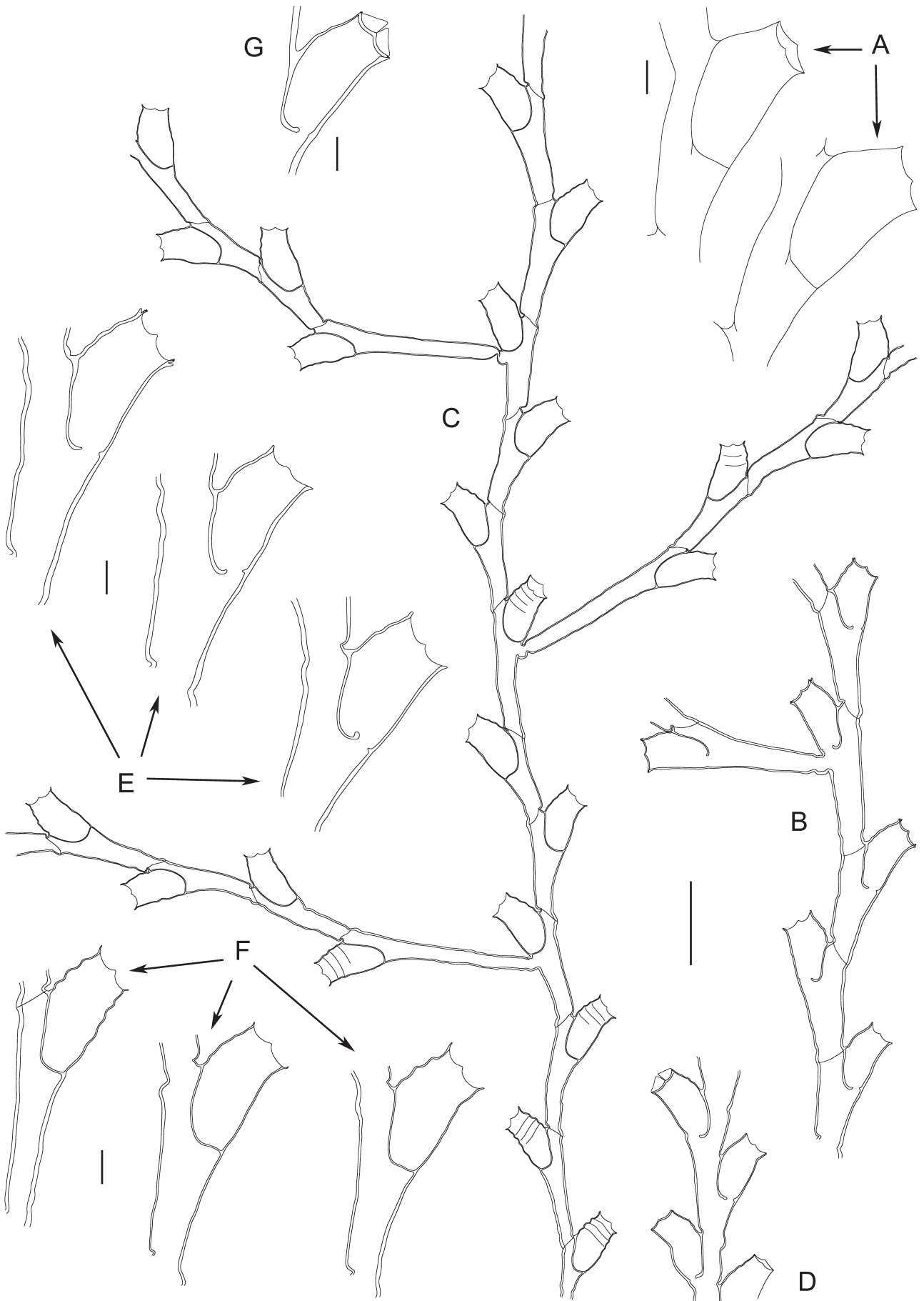


Table 12. Measurements of *Sertularella hermanosensis* El Beshbeeshy, 2011, in μm .

	El Beshbeeshy (2011)	Present study, in the cotype of <i>S. implexa</i>	Vervoort (1972), as <i>S. geodiae</i>
Internode			
- length	974-1229	1020-1385	1010-1350
- diameter at node	278-336	215-315	280-285
Hydrotheca			
- free adaxial length	394-487	385-450	405-485
- adnate adaxial length	498-556	440-475	515-540
- abaxial length	649-719	635-720	650-715
- maximum width	-	350-420	445-470
- diameter at aperture	348-365	320-370	350-365

Table 13. Measurements of *Sertularella implexa* (Allman, 1888), in μm .

	Present study, holotype NHM 1888.11.13.42	Vervoort (1972), as <i>S. picta</i> (Vema 18-16)
Internode		
- length (in general)	690-1155	580-675
- length of 1st internode	1655-2010	-
- diameter at node	160-180	110-135
Hydrotheca		
- free adaxial length	360-440	325-365
- adnate adaxial length	255-290	240-270
- abaxial length	560-595	515-565
- maximum width	275-310	270-310
- diameter at aperture	195-235	175-190
Gonotheca		
- total length	-	1485-1825
- maximum width	-	up to 810

coplanar or slightly shifted on to one side of the colony. Side branches originating every 1-14 hydrothecae; up to 3rd order branching observed. Hydrothecae long, adnate for 2/5th their length to the corresponding internode; swollen adaxially; perisarc either smooth or with 1-2 faint wrinkles forming shallow ridges not extending completely abaxially; abaxial wall nearly straight; abaxial cusp produced, remaining cusps triangular with rounded tips, separated by deep embayments; no intrathecal, submarginal projections of the perisarc. Gonothecae arising from below the hydrothecae; broadly ovoid, tapering below, distal half provided with ca. 6 transverse ridges; aperture on top, surrounded by 4 small cusps.

Dimensions: See Table 13.

Remarks: The typical silhouette of a colony is accurately depicted by Allman (1888) in his pl. 26 fig. 1. Part of Vervoort's (1972) material assigned to *S. picta* (Meyen, 1834), notably that from Vema 18-16 (described in detail), shows the following features: 1) the colony is bushy, composed of "irregularly intertwining, fine [...] repeatedly branched, side-branches"; 2) both the stems and branches are monosiphonic throughout; 3) the internodes are moderately long; 4) the hydrothecae are "arranged in two planes, that make a very obtuse angle"; 5) their free adaxial wall is "about 1.5-2 times the length of the fused part, [...] distinctly undulated, though the mode of development of the undulations is variable". Taken together, these represent distinctive features of *S. implexa*. Vervoort's material was fertile, and his

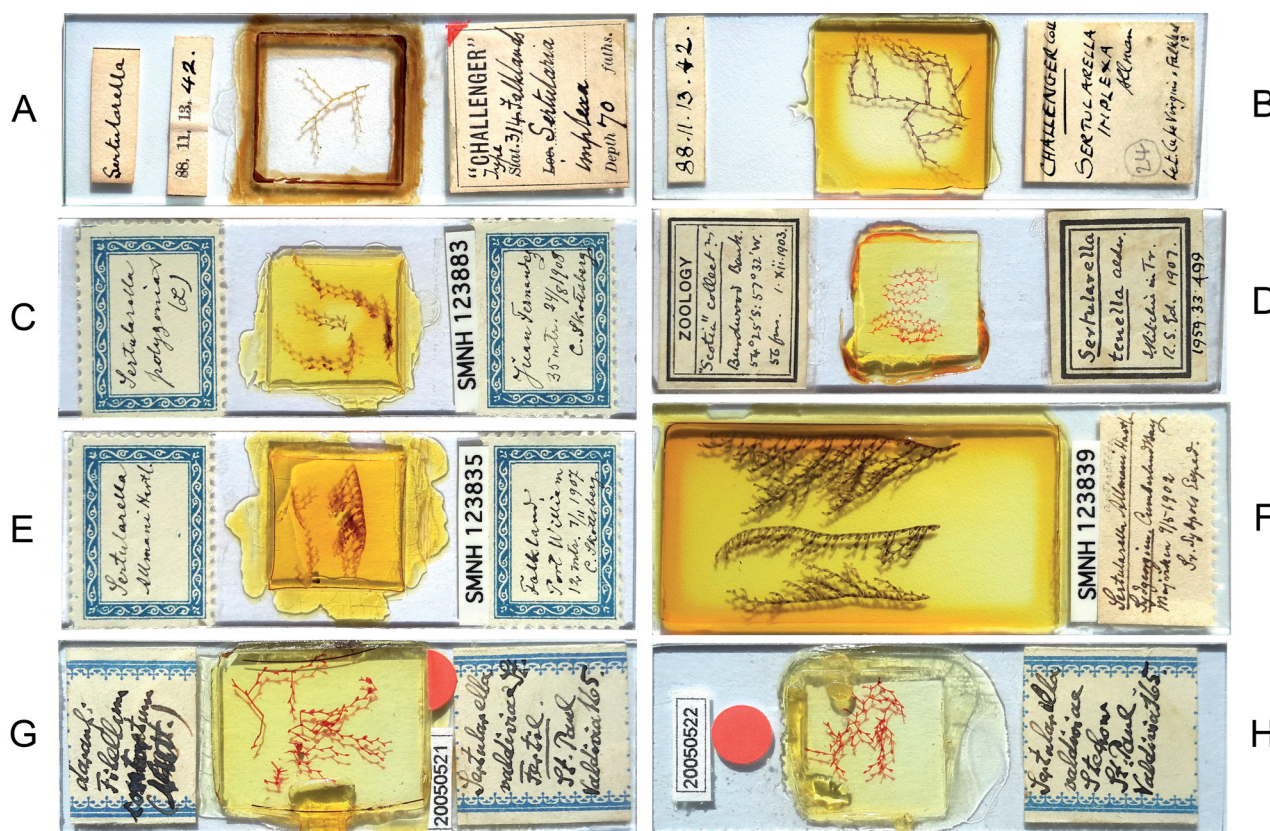


Fig. 12. (A) *Sertularella* (?) *hermanosensis* El Beshbeeshy, 2011. Likely a fragment of this species mounted on slide, as part of the type material of *S. implexa* (Allman, 1888). (B) *Sertularella implexa* (Allman, 1888), fragment from type colony mounted on slide. (C) *Sertularella juanfernandezensis* Galea, sp. nov., identified as *S. polyzonias* (Linnaeus, 1758) by Jäderholm (1910). (D) *Sertularella robusta* Coughtrey, 1876, identified as *S. tenella* (Alder, 1857) by Ritchie (1907). (E, F) *Sertularella subantarctica* Galea, sp. nov. Materials identified as *S. allmani* Hartlaub, 1901 by Jäderholm (1910, 1905) (E, F, respectively). (G, H) *Sertularella valdiviae* Stechov, 1923a, two slides prepared from type colony.

account represents the first description of the gonotheca of this species.

Distribution: Chile – Región de Magallanes y Antártica Chilena [off Isla Nueva (Vervoort, 1972, as *S. picta*)]. Argentina – Provincia de Santa Cruz [off Deseado (Vervoort, 1972, as *S. picta*)]; Provincia de Tierra del Fuego, Antártida e Islas del Atlántico Sur [off Isla de los Estados (Vervoort, 1972, as *S. picta*)]. Between Cabo Virgenes and the Falkland Is. (Allman, 1888).

***Sertularella juanfernandezensis* Galea, sp. nov.**

Figs 12C, 13E, F, H, I; Table 14

Sertularella polyzonias. – p.p. Jäderholm, 1910: 4. – p.p. Hartlaub, 1905: 655 [non *Sertularella polyzonias* (Linnaeus, 1758)].

Holotype material: SMNH 123883; Chile, Juan Fernández archipelago, 35 m, Swedish Magellanic Expedition 1907-1909, coll. C. Skottsberg; 24.08.1908;

microslide (Fig. 12C) with three colony fragments 7-20 mm long, the largest bearing 4 gonothecae, the smallest unbranched, and the remaining two provided with two side branches each [material identified by Jäderholm (1910) as *S. polyzonias* (Linnaeus, 1758)].

Paratype material: ZMB Cni4421; Chile, Juan Fernández archipelago; coll. Plate, det. Hartlaub (1905, as *S. polyzonias*); a 3.8 cm high colony represented by a single, ramified, sterile stem.

Comparison material: HRG-0550; France, Brittany, depth unrecorded, coll. F. Ziemski; (day and month unavailable) 2011; numerous sterile, unbranched or sparingly-branched stems and fragments, up to 4.5 cm high, of *S. polyzonias*.

Diagnosis: Erect, coplanar colonies with monosiphonic, irregularly pinnate stems; internodes moderately-long, slightly geniculate; hydrothecae flask-shaped, decidedly facing outwards, adnate for half their length, free adaxial wall convex; gonothecae broadly ovoid,



transversely wrinkled, aperture mounted on constricted neck region, surrounded by 4 blunt spines.

Etymology: Named after its (presently known) area of occurrence.

Description: Colonies erect (though flaccid when out of liquid), up to 3.8 cm high, arising from creeping, branching stolon. Stems monosiphonic, unbranched; basal part of varied length (*ca.* 1.5 cm long in paratype) and ahydrothecate; above, divided into moderately-long, slightly geniculate internodes by means of oblique constrictions of the perisarc slanting in alternate directions; one hydrotheca confined to the distal end of each internode; side branches arising generally singly (occasionally in pairs) immediately below the base of a hydrotheca, either laterally or slightly shifted on to the front of stem, giving the colony a globally planar appearance; there are no distinct apophyses supporting the branches; 1-4 hydrothecae between successive side branches; branches not strictly alternate, several successive ones may be given off on same side of the stem; up to 2nd order branches observed; first internode comparatively longer than subsequent ones; remainder with structure similar to that of stem. Hydrothecae biseriata, alternate, flask-shaped, smooth-walled, adnate for half their length to the corresponding internode, with distinct outward bend; free adaxial wall convex for most of its length, slightly upturned distally; abaxial

wall concave for 3/4th its length, and distinctly convex below aperture; rim tilted away from stem/branches, and provided with 4 pointed, triangular cusps separated by moderately-deep embayments; a four-flapped operculum; three conspicuous internal, submarginal, lamellar projections of the perisarc, one abaxial and two latero-adaxial, the latter could be absent in distalmost, hence youngest, hydrothecae. Gonothecae arising laterally from the internodes, a short distance below the hydrothecal bases; broadly ovoid, transversely wrinkled (up to 6 distinct ridges in upper 2/3rd), tapering below into short, indistinct pedicel, distally bearing a constricted neck region on the top of which is found the aperture surrounded by 4 short, blunt spines; sex could not be ascertained, although a single, ovoid, central mass is carried on by the blastostyle.

Dimensions: See Table 14.

Remarks: This species has been incorrectly assigned to *Sertularella polyzonias* (Linnaeus, 1758) by both Hartlaub (1905) and Jäderholm (1910). Its morphological differences with the Linnean species are easily noted by comparing Fig. 13E, F and 13G, and Fig. 13H, I and 13J, respectively.

The hydrothecae of *S. juanfernandezensis* are very similar to those of a number of congeners, notably: 1) *S. arbuscula* (Lamouroux, 1816), but this species possesses very short internodes (Millard, 1957), and

Table 14. Measurements of *Sertularella juanfernandezensis* Galea, sp. nov., in μm .

	Present study, SMNH 123883	Present study, ZMB Cni4421
Internode		
- length (in general)	735-980	885-1165
- length of 1 st internode	1410-1570	1290-1765
- diameter at node	155-205	210-290
Hydrotheca		
- free adaxial length	375-450	360-420
- adnate adaxial length	355-400	400-450
- abaxial length	520-585	540-575
- maximum width	330-345	315-410
- diameter at aperture	225-255	220-260
Gonotheca		
- total length	1325-1350	-
- maximum width	860-885	-

Fig. 13. (A-D) *Sertularella implexa* (Allman, 1888). Colony fragments from holotype material (A) and Vervoort (1972, as *S. picta*) (B). Hydrothecae from the same sources (C and D, respectively). (E, F, H, I) *Sertularella juanfernandezensis* Galea, sp. nov. Portions of colonies from SMNH 123883 (E) and ZMB Cni4421 (F), and comparison with *S. polyzonias* (Linnaeus, 1758) HRG-0550 (G). Hydrothecae from the same sources (H, I and J, respectively). (L, M) *Sertularella leiocarpa* (Allman, 1888). Portion of colony (L) and hydrotheca (M) from HRG-1056. Scale bars: 200 μm (C, D, H-J, M), 500 μm (K), 1 mm (A, B, E-G, L).



its gonothecae are fusiform and, most often, smooth-walled (Millard 1975); 2) *S. crassiuscula* Bale, 1924, but this species has comparatively smaller hydrothecae, its internodes are very short, and its gonothecae are large and devoid of the distinctly constricted neck region met with in the present species (Bale, 1924; Ralph, 1961); 3) *S. falsa* Millard, 1957, but this species has relatively short internodes, there are 4 submarginal, intrathecal projections of the perisarc alternating with the hydrothecal cusps, and its gonothecae are spindle-shaped (Millard, 1957).

Distribution: Only known from Chile – Juan Fernandez archipelago (Hartlaub, 1905; Jäderholm, 1910).

Sertularella kerguelensis Allman, 1876

Sertularella kerguelensis Allman, 1876: 113. – Studer, 1879: 120. – Kirchenpauer, 1884: 40.

Description: Stem monosiphonic, up to 2.5 cm high, profusely and irregularly branched. Internodes with shallow annulations basally, each bearing a hydrotheca distally; the latter somewhat tumid below, tapering distally, aperture slightly incurved adaxially. Gonothecae arising from below the hydrothecal bases, ovoid, transversely-ringed in upper half and becoming smooth towards the base; distally a short, tubular neck bearing apically an aperture surrounded by 4 perisarc projections.

Remarks: This species, succinctly described and not illustrated in the original account, is unrecognizable among its congeners recorded subsequently from Kerguelen, especially given that its type material could not be located in collections of NHML (A. Cabrinovic, pers. comm.). According to Allman (1876), it is

“nearly allied to *S. polyzonias*”, with which it has been synonymized later on (Allman, 1879). However, there are no relevant records of the Linnean species from the study area, as earlier assignments to it proved erroneous (see Appendix I).

Since the binomen *S. kerguelensis* has apparently not been used since 1899, it should be considered as a *nomen dubium*.

Distribution: French Southern and Antarctic Lands, Kerguelen Is. – Swains Bay (Allman, 1876).

Sertularella leiocarpa (Allman, 1888)

Fig. 13L, M; Table 15

Sertularia leiocarpa Allman, 1888: 52, pl. 25 figs 1, 1a.

Sertularella leiocarpa. – Stechow, 1925: 477, fig. 35. – Galea, 2015: 9, fig. 3P.

Material examined: HRG-1056; Tristan da Cunha group of islands, E of Inaccessible I., -37.32000° 12.60000°, 160 m, coll. British Antarctic Survey, Stn. 80, lot DB12-0340; 24.05.2013; a *ca.* 5 cm high, sterile stem bearing a single side branch.

Description: Colonies up to *ca.* 7.5 cm high, arising from thin hydrorhizal fibers. Stems mono- or lightly polysiphonic basally, moderately stiff, giving rise to roughly alternate, coplanar side branches; stems and branches divided into moderately long, slender, geniculate internodes by means of indistinct oblique nodes; a hydrotheca confined to the distal end of each internode; side branches given off irregularly, directly (no apophyses present) and laterally from below a stem hydrotheca; up to 2nd order branches. Hydrothecae long, tubular, adnate for *ca.* 1/3rd their length to the corresponding internode, then curving gently outwards;

Table 15. Measurements of *Sertularella leiocarpa* (Allman, 1888), in μm .

	Stechow (1925)	Vervoort (1966), schizoholotype	Vervoort (1966), <i>Galathea</i> material	Gili <i>et al.</i> (1989)
Internode				
- length	-	1160-1880	1215-1350	800-1320
- diameter at node	300-470	240-260	150-300	150-180
Hydrotheca				
- free adaxial length	880-1040	800-860	675-900	480-600
- adnate adaxial length	560-620	400-560	410-450	-
- abaxial length	960-1200	1040-1120	745-850	660-720
- maximum width	480-500	480-500	310-500	-
- diameter at aperture	260-270	340-420	220-250	210-240
Gonotheca				
- total length	-	<i>ca.</i> 3260	-	1500-1650
- maximum width	-	<i>ca.</i> 1460	-	-

abaxial wall almost straight, free adaxial wall slightly convex proximally, then nearly straight for most of its length; aperture facing outwards, provided with 4 small, triangular cusps separated by very shallow embayments; usually without intrathecal, submarginal cusps, but occasionally 2-4 present, one below each embayment; a 4-flapped operculum. Gonothecae arising from the stem internodes at level of hydrothecal bases, on opposite side to hydrotheca; spindle-shaped, walls entirely smooth, apically 3-4 short spines.

Dimensions: See Table 15.

Remarks: The colony shape and the gonotheca are illustrated by both Allman (1888) and Millard (1975). Although generally absent, internal, submarginal hydrothecal cusps may occasionally occur (Vervoort, 1966; Gili *et al.*, 1989).

Distribution: Tristan da Cunha group of islands, Namibia, New Caledonia, New Zealand, as well as scattered records from the south and southeast Indian Ocean (Galea, 2015).

Sertularella mediterranea Hartlaub, 1901

Fig. 14A-E; Table 16

Sertularella mediterranea Hartlaub, 1901: 86, pl. 5 figs 10-11, 15-16. – Genzano, 1990: 47, figs 13-15. – Blanco, 1994: 199. – Genzano & Zamponi, 2003: 308.

Sertularella uruguayensis Mañé Garzón & Milstein, 1973: 21, fig. 1 (**syn. nov.**). – Milstein, 1976: 85, figs 25, 28, 29, 36.

Sertularella picta. – Blanco, 1967: 112, pl. 3 figs 1-7 [non *Sertularella picta* (Meyen, 1834)].

Material examined: HRG-0001; France, La Ciotat, 43.174850° 5.611921°, 0.5 m, coll. H.R. Galea; 16.03.2003; male colony composed of numerous stems, up to 4 cm high.

Description: Stems erect, up to 1.5 cm high, monosiphonic, sparingly and irregularly branched. Internodes rather short, delimited by deep, oblique constrictions of the perisarc, basally with a more or less marked bulge; first internodes of side branches comparatively longer than subsequent ones, with 2-3 basal twists; distally a hydrotheca to each internode. Hydrothecae flask-shaped, adnate for less than half their length, swollen basally (notably on adaxial side), constricted below aperture; rim with 4 cusps, abaxial one conspicuously produced, adaxial one the shortest, and recurved outwards; rim not thickened; 3 internal, submarginal projections of perisarc (2 latero-adaxial, 1 abaxial). Gonothecae arising from below the hydrothecal bases, broadly ovoid, walls with 6-9 transverse ridges, aperture surrounded by 4 (rarely 5) pointed cusps.

Dimensions: See Table 16.

Remarks: The description given above is based on Argentinean material, and combines both Blanco's (1967, as *S. picta*) and Genzano's (1990) accounts. Blanco (1994) regarded her earlier record as conspecific with the present species, although El Beshbeeshy (2011) still believed that it belonged to Meyen's hydroid. The occurrence of *S. mediterranea* Hartlaub, 1901 in Argentina is plausible, as additional remote records are, for instance, from South Africa (Millard, 1975). There are no objective reasons to separate specifically *S. uruguayensis* Mañé Garzón & Milstein, 1973 from the

Table 16. Measurements of *Sertularella mediterranea* Hartlaub, 1901, in μm .

	Blanco (1967), as <i>S. picta</i>	Genzano (1990)	Mañé Garzón & Milstein (1973), as <i>S. uruguayensis</i>	Ramil <i>et al.</i> (1992)
Internode				
- length	330-680	505-632	450-640	504-561
- diameter at node	-	142-173	-	160-230
Hydrotheca				
- free adaxial side	280-310	316-348	280-400	375-432
- adnate adaxial side	230-270	221-237	170-270	317-360
- abaxial wall	480-530	474-584	450-650	590-662
- maximum width	220-280	189-253	270-300	-
- diameter at aperture	150-200	159-189	200-240	260-288
Gonothecae				
- total length	ca. 1250	790-835	?	1390-1780
- maximum width	ca. 480	-	?	680-870

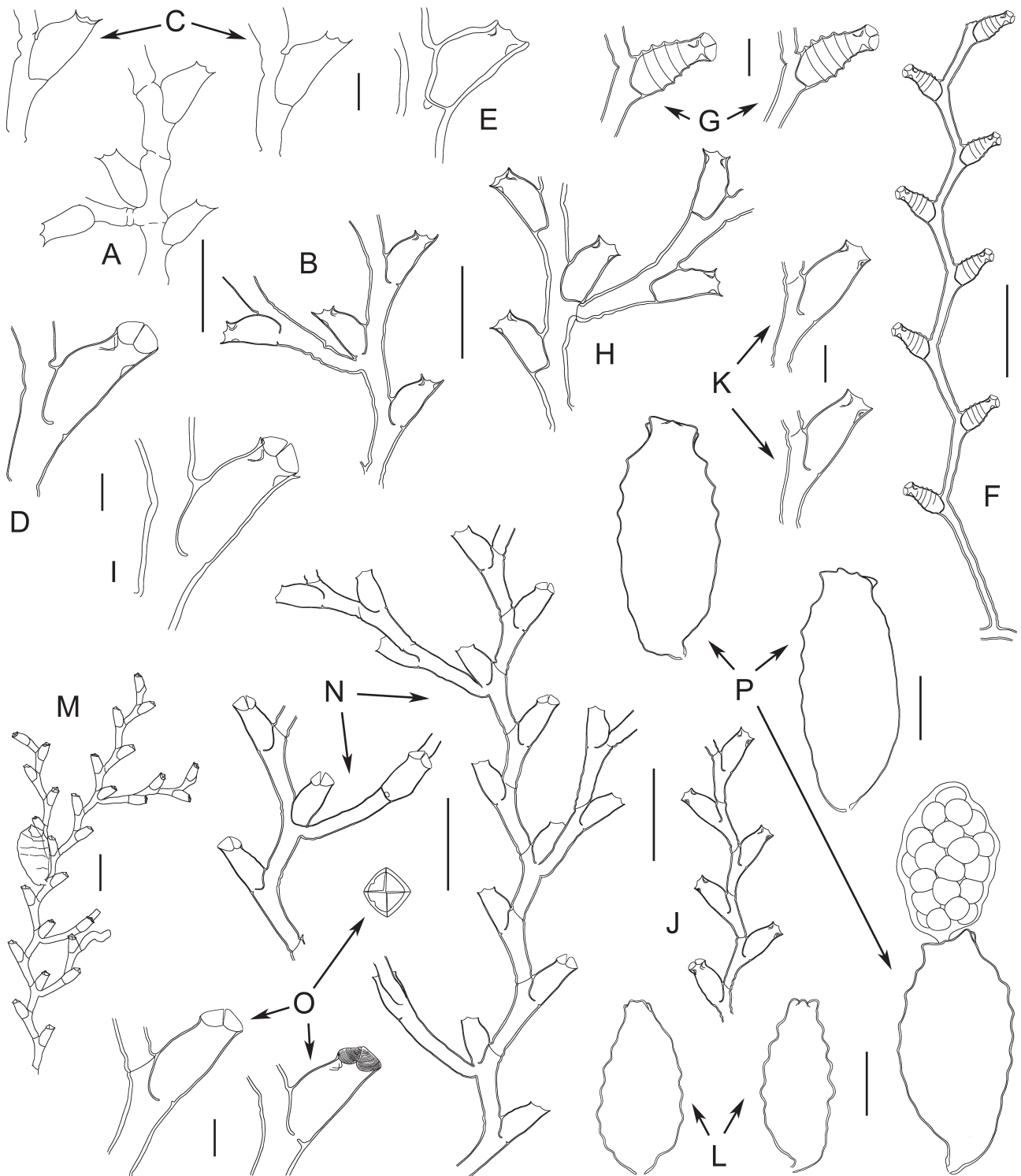


Fig. 14. (A-E) *Sertularella mediterranea* Hartlaub, 1901. Colony fragments after Genzano (1990) (A) and Mediterranean material HRG-0001 (B). Hydrothecae after Blanco [1967, as *S. picta* (Meyen, 1834)] (C), HRG-0001 (D), and Mañé Garzón & Milstein (1973, as *S. ruguayensis*) (E). (F, G) *Sertularella microtheca* Leloup, 1974. Portion of erect stem (F) and hydrothecae (G) from HRG-1095. (H, I) *Sertularella mixta* Galea & Schories, 2012a. Portion of colony from MHNG-INVE-79667 (H) and hydrotheca from HRG-0395 (I). (J-L) *Sertularella novarae* Marktanner-Turneretscher, 1890. Stem fragment (J), hydrothecae (K), and gonothecae (L) from sample ZMB Cni944. (M-P) *Sertularella oblonga* Galea, Häussermann & Försterra, sp. nov. Portions of colony (M, N), hydrothecae (O) and female gonothecae (P). Scale bars: 200 μ m (C-E, G, I, K, O), 500 μ m (L, P), 1 mm (A, B, F, H, J, M, N).

Argentinean hydroid. Both form colonies composed of short, erect, sparingly branched stems, their internodes are short, and each bears a flask-shaped hydrotheca, conspicuously swollen adaxially, and provided with a produced abaxial, marginal cusp, as well as with 3 internal, submarginal perisarc projections [Mañé Garzón & Milstein (1973); Genzano (1990)]. In addition, the measurements given by these authors for their respective materials are comparable (see Table 16 herein), and both originate from localities close to one another.

Distribution: Uruguay – Cabo Polonio (Mañé Garzón & Milstein, 1973, as *S. uruguayensis*). Argentina – Provincia de Buenos Aires [Mar del Plata (Blanco, 1967, as *S. picta*; Genzano 1990)]. Elsewhere – widely distributed in the Mediterranean and the eastern Atlantic, from Spitzbergen to South Africa (Ramil *et al.*, 1992).

Sertularella microtheca Leloup, 1974

Fig. 14F, G; Table 17

Sertularella microtheca Leloup, 1974: 30, fig. 24.

Sertularella robusta. – *p.p.* Vervoort, 1972: 129, fig. 40B (non figs 40A, 41A = *S. robusta* Coughtrey, 1876). – *p.p.* El Beshbeeshy, 2011: 144, fig. 46E-H (non fig. 46A-D = *S. robusta*) [non *Sertularella robusta* Coughtrey, 1876].

Material examined: HRG-1095; Chile, Región de Aysén, southeastern point of Canal Ultima Esperanza, -45.97608° -74.01133°, 23 m, coll. HSFs, HF21, lot #216; 10.04.2014; small colony composed of several sterile stems, up to 1 cm high.

Description: Stolonal hydrothecae or short (up to 1 cm high), erect, unbranched or sparingly-branched stems,

arising from creeping, branching, filiform hydrorhiza. Stems and, when present, side branches divided into up to 10 exceedingly long, slender, geniculate internodes by means of indistinct, oblique constrictions of the perisarc; the latter relatively thick throughout the colony; side branches borne on short stem apophyses arising from below a hydrothecal base, apophyses displaced towards one side of the stem, not laterally and, consequently, not in the same plane; 1st internode of a side branch comparatively longer than subsequent ones; remainder of branch with same structure as the stem; no further branching observed. A hydrotheca confined to the distal end of each internode; fusiform, adnate for *ca.* 1/4th its length, transversely-ridged (generally 4, occasionally 5 ridges present), distally a short, smooth neck region; aperture with 4 pointed, triangular cusps separated by rather deep, semicircular embayments; 3 large, lamellar, submarginal, internal projections of perisarc (2 latero-adaxial, 1 abaxial); a 4-flapped operculum. Gonotheca stolonal, barrel-shaped, transversely ridged (with *ca.* 6 ridges), distally a neck region bearing apically an aperture surrounded by 4 spines.

Dimensions: See Table 17.

Remarks: The present material is composed of erect stems only, while Leloup (1974) reported the co-occurrence of stolonal hydrothecae within colonies otherwise comprising erect stems.

This species shows striking resemblances to *S. robusta* Coughtrey, 1876, a species with which it has been synonymized earlier (*e.g.* El Beshbeeshy, 2011; Galea, 2007). When colonies of both are examined side by side, obvious differences arise, such as: proportionally

Table 17. Measurements of *Sertularella microtheca* Leloup, 1974, in μm . *The length of the hydrothecae given by Leloup (1974) is regarded as nearly the same as the length of their abaxial wall. •The size (810 μm) indicated by Vervoort (1972) for both the diameter of the basal part of the stems and the abaxial wall of the hydrotheca is obviously erroneous.

	Leloup (1974)	Present study	Vervoort (1972), as <i>S. robusta</i> (Vema 18-18)
Internode			
- length	-	675-920	<i>ca.</i> 1740
- diameter at node	-	85-115	(?)•
Hydrotheca			
- free adaxial length	-	350-385	<i>ca.</i> 270
- adnate adaxial length	-	150-180	<i>ca.</i> 215
- abaxial length	350-450*	415-425	(?)•
- maximum width	180-200	220-245	<i>ca.</i> 230
- diameter at aperture	100-140	145-155	<i>ca.</i> 110
Gonotheca			
- total length	< 280	-	-
- maximum width	< 220	-	-

longer and much slender internodes, as well as smaller and much slender hydrothecae in *S. microtheca*.

Distribution: Chile – Región de los Lagos [Canal Calbuco (Leloup, 1974)]; Región de Aysén [Canal Ultima Esperanza (present study)]. Argentina – Provincia de Santa Cruz [off Deseado (*p.p.* Vervoort, 1972, as *S. robusta*)].

Sertularella mixta Galea & Schories, 2012a

Fig. 14H, I; Table 18

Sertularella mixta Galea & Schories, 2012a: 42, fig. 5A-G.

Sertularella sanmatiasensis. – Galea *et al.*, 2009: 12, fig. 3C-E [non *Sertularella sanmatiasensis* El Beshbeeshy, 2011].

Sertularella ellisii f. *lagenoides*. – Leloup, 1974: 28, fig. 22 [non *Sertularella ellisii* (Milne-Edwards, 1836); non *S. lagenoides* Stechow, 1919].

Sertularella peregrina. – Leloup, 1974: 31, fig. 25 [non *Sertularella peregrina* Bale, 1926].

Material examined: MHNG-INVE-79667; Chile, Región de Coquimbo, Punta Choros, Bajo Tiburon, -29.2551° -71.5265°, 17 m, coll. D. Schories, lot DS206; 01.11.2009; colony composed of numerous fertile and sterile stems (holotype). – HRG-0642; Chile, Región de los Ríos, north of Corral, Chaihuin, -39.95730° -73.60245°, 6-12 m, coll. D. Schories; 08.10.2012; four male stems 2.3-3.4 cm high. – HRG-0646; Chile, Región de los Ríos, north of Corral, Chaihuin, -39.95730° -73.60245°, 6-12 m, coll. D. Schories; 16.11.2011; female colony composed of numerous stems up to 2.5 cm high. – HRG-0332; Chile, Región de los Lagos, southern Chiloé, Punta Inio, -43.39300° -74.11769°, 15.6 m, coll. HSFS, HF6, lot A128; 22.02.2008; two female stems, 1.5 and 2.2 cm high.

Description: Colonies arising from creeping, branching, anastomosing hydrorhiza. Stems short, up to 2.8 cm high, monosiphonic, unbranched or sparingly-branched in one plane; basal part of varied length, though generally short, with a few twists above origin from stolon; remainder of stem composed of numerous short, almost collinear, hydrothecate internodes; the latter delimited by oblique nodes sloping in alternate directions. Side branches, when present, borne on short stem apophyses arising from below the bases of stem hydrothecae; occasionally, branches given off from within the hydrothecae; the latter tubular, slightly swollen basally, especially on adaxial side; adnate for about half their length to the corresponding internode; abaxial wall straight to slightly concave basally; aperture mounted on short neck region, expanding at rim; abcauline cusp slightly longer than the three others, though all relatively short, and separated by shallow, rounded embayments; three internal, submarginal perisarc projections (2 latero-adaxial, 1 abaxial). Gonothecae arising from below the hydrothecal bases;

ovoid, with several transverse ridges in upper half, much attenuated to absent in lower half; aperture mounted on short, quadrangular neck region, carrying four blunt projections of perisarc.

Dimensions: See Table 18.

Remarks: The gonothecae of this species are illustrated by both Galea *et al.* (2009, fig. 3E, as *S. sanmatiasensis*) and Galea & Schories (2012a, fig. 5F).

Distribution: Chile – Región de Coquimbo [Península de Coquimbo (Leloup, 1974, as *S. ellisii* f. *lagenoides*); vicinity of Punta de Choros (Galea & Schories, 2012a)]; Región de Bio-Bio [Bahía de Lota, Golfo de Arauco (Leloup, 1974, as *S. ellisii* f. *lagenoides*)]; Región de los Ríos [vicinity of Corral (present study)]; Región de los Lagos [south of Isla Grande de Chiloé (Galea *et al.*, 2009, as *S. sanmatiasensis*)]; Región de Aysén [Guaitecas Archipelago (Leloup, 1974, as *S. peregrina*)].

Sertularella novarae Marktanner-Turneretscher, 1890

Fig. 14J-L; Table 19

Sertularella novarae Marktanner-Turneretscher, 1890: 226, pl. 4 figs 3, 3A, 3B. – Bedot, 1916: 208.

Sertularella polyzonias. – *p.p.* Vanhöffen, 1910: 322, fig. 39 [non *S. polyzonias* (Linnaeus, 1758)].

Material examined: ZMB Cni944; French Southern and Antarctic Lands, St. Paul I., coll. Deutsche Südpolar (*Gauss*) Expedition 1901-1903, stranded on beach; 26.03.1903; six stems and fragments, 0.5-1.4 cm high, of which four bear one gonotheca each [material studied by Vanhöffen (1910), as *S. polyzonias*].

Description: Upright, up to 2.5 cm high, monosiphonic, sparingly-branched stems arising from filamentous hydrorhiza; divided by faintly-indicated, oblique nodes into moderately-long, geniculate internodes with 1-2 basal twists and a hydrotheca distally; terminal stolonization occurs. Side branches arising irregularly from below the bases of stem hydrothecae, as well as from within their lumina; up to 2nd order branching, giving the colonies a somewhat bushy appearance. Hydrothecae biseriata, alternate, long, about 1/3rd adnate, tumid proximally, tapering distally, with 4 triangular marginal cusps separated by shallow embayments; 5 internal, submarginal cusps (2 latero-adaxial, 2 latero-abaxial, and 1 abaxial). Gonothecae arising from below the hydrothecal bases; elongated-ovoid, transversely wrinkled, tapering abruptly below into indistinct pedicel, aperture surrounded by 3-4 blunt, apical projections.

Dimensions: See Table 19.

Remarks: As noted by Vanhöffen (1910), there is no doubt that his material from St. Paul belongs to the present species. Indeed, both the measurements of the

Table 18. Measurements of *Sertularella mixta* Galea & Schories, 2012a, in μm .

	Galea <i>et al.</i> (2009), as <i>S. sanmatiasensis</i>	Galea & Schories (2012a)
Internode		
- length	540-790	745-1170
- diameter at node	210-280	240-320
Hydrotheca		
- free adaxial length	380-445	400-450
- adnate adaxial length	305-415	400-455
- abaxial length	630-690	670-725
- maximum width	315-380	330-355
- diameter at aperture	250-290	305-330
Gonotheca		
- total length	1770-1820 (♀)	1730-2105
- maximum width	840-930 (♀)	775-865

Table 19. Measurements of *Sertularella novarae* Marktanner-Turneretscher, 1890, in μm .

	Marktanner-Turneretscher (1890)	Vanhöffen (1910), as <i>S. polyzonias</i> (Linnaeus, 1758)	Present study, ZMB Cni944
Internode			
- length	920-1200	-	455-735
- diameter at node	-	-	110-140
Hydrotheca			
- total length	440-500	480-520	480-520
- free adaxial length	-	-	330-350
- adnate adaxial length	-	-	210-235
- abaxial length	-	-	455-485
- maximum width	210-260	240-260	230-255
- width at aperture	<i>ca.</i> 150	-	185-205
Gonotheca			
- total length	1500-1700	1500-1700	1350-1715
- maximum width	600-900	780-880	590-770

hydrothecae and the illustration provided by him are in agreement with the original account on this species. However, his specimens from Kerguelen, also assigned to it, were reexamined and proved to belong to both *S. contorta* Kirchenpauer, 1884 and *S. gaudichaudi* (Lamouroux, 1824) (see under these species).

Curiously, Vanhöffen overlooked the rather obvious specific differences between a number of closely-related subantarctic species [*viz.* *S. allmani* Hartlaub, 1901, *S. antarctica* Hartlaub, 1901, *S. contorta* Kirchenpauer, 1884, *S. novarae*, *S. paessleri* Hartlaub, 1901, *S. picta* (Meyen, 1834), and *S. protecta* Hartlaub, 1901], and

assigned them all to the synonymy of *S. polyzonias* (Linnaeus, 1758), a species not known to occur in the study area (see Appendix I).

As underlined by him, the present species is a true *Sertularella*, in possessing 4 hydrothecal cusps, not 3, as erroneously stated by Marktanner-Turneretscher (1890). A typical colony of this species is accurately illustrated by Vanhöffen (1910, p. 325, fig. 39).

Distribution: French Southern and Subantarctic Lands – St. Paul (Marktanner-Turneretscher, 1890; Vanhöffen, 1910, as *S. polyzonias*).

***Sertularella oblonga* Galea, Häussermann & Försterra, sp. nov.**

Fig. 14M-P

Holotype material: MHNG-INVE-97916; Chile, Región de Magallanes y de la Antártica Chilena, Isla Desolación, Cabo Pilar, -52.71578° -74.68245°, 10 m, coll. HSFS, HF26, lot #221; 21.09.2015; female colony composed of multiple, highly ramified stems, up to 2.8 cm high.

Diagnosis: Colonies with indistinct stems, divided subdichotomously several times. Internodes moderately-long, slender, geniculate. Hydrothecae adnate for 2/5th, almost tubular, tapering towards aperture, indistinctly swollen adaxially, abaxial cusp produced, two latero-adaxial, internal, submarginal cusps. Gonotheca elongated-ovoid, transversely wrinkled, aperture distal, surrounded by 4 pointed cusps.

Etymology: From the Latin *oblongus*, -a, -um, meaning elongated, making reference to the distinctive shape of its hydrothecae.

Description: Colony bushy, composed of a bunch of stems, up to 2.8 cm high, arising from creeping stolon. Basal part of stems of varied length, provided with a number of twists above origin from stolon; remainder divided into regular internodes by means of oblique nodes sloping in alternate directions. Internodes relatively short, decidedly geniculate, with smooth, rather thin perisarc, each bearing distally a hydrotheca. Branching subdichotomous, starting among the proximal most internodes, thus making the main stems indistinct; side branches originate from below the bases of stem hydrothecae, either laterally or decidedly shifted to one side of the stem; 1-6 hydrothecae between successive side branches; occasionally, aberrant side branches are given off from within some basal stem hydrothecae; up to 5th or 6th order branching observed; tips of branchlets from various planes often form tendrils, creating anastomoses with neighboring branches; structure of branches identical to that of stem, except for the first internode that may be longer than the subsequent ones. Hydrothecae biseriata, alternately directed left and right, coplanar or nearly so; adnate for about 2/5th their length to the corresponding internode; flask shaped, slightly swollen basally, more conspicuously on adaxial side; free adcauline wall slightly sigmoid, abcauline wall nearly straight; hydrothecal margin with four unequally developed cusps: abaxial one the longest, adaxial one the shortest and conspicuously flaring, and the two laterals of intermediate length; rim not thickened; two latero-adaxial, internal, submarginal cusps; operculum composed of four triangular flaps with concentric striae. Gonothecae (only female known) arising laterally from below the hydrothecal bases; broadly ovoid, surface provided with 5-7 more or less developed wrinkles;

aperture mounted on short distal collar, and surrounded by six rather short spines; embryo development in acrocysts.

Dimensions: Ordinary internodes 515-930 µm long, first internodes of side branches 715-1200 µm long; all 170-210 µm wide at nodes. Hydrothecal free adaxial length 320-345 µm, adnate adaxial length 220-230 µm, abaxial length 545-595 µm, maximum width 275-295 µm, diameter at aperture 230-270 µm. Female gonotheca 1690-1925 µm long and 790-910 µm wide.

Remarks: The mode of branching, giving rise to three-dimensional, bushy colonies is distinctive. Its hydrothecae recall those of *S. ellisii* (Deshayes & Milne-Edwards, 1836) and *S. mediterranea* Hartlaub, 1901, but the branching pattern is different in these species with otherwise much larger hydrothecae (Ramil *et al.*, 1992).

Distribution: Only known from Chile – Región de Magallanes y de Antártica Chilena [Isla Desolación (present study)].

***Sertularella patagonica* (d'Orbigny, 1842)**

Fig. 15A-E; Table 20

Sertularia patagonica d'Orbigny, 1842: pl. 11 figs 3-5; 1847: 25. – Hartlaub, 1905: 643, figs H⁴, J⁴. – Nutting, 1904: 81, pl. 16 fig. 3.

Sertularella striata Stechow, 1923b: 10 (**syn. nov.**). – Stechow, 1925: 470, fig. 30. – Millard, 1964: 47, fig. 15. – (?) Blanco, 1974: 44, figs 2-8. – Millard, 1975: 304, fig. 97E-F. – Genzano, 1990: 45, figs 11-12. – Blanco, 1994: 201. – Genzano & Zamponi, 2003: 308.

non *Sertularella striata*. – Gili *et al.*, 1989: 104, fig. 29A.

Sertularella mogotesensis El Beshbeeshy, 2011: 20 [new name for both Blanco's (1967, p. 115) record of *Sertularella atlantica* Stechow, 1920 and her 1974 record (p. 44) of *Sertularella striata* Stechow, 1923b; *nomen nudum*].

Sertularella atlantica. – Blanco, 1967: 115, pl. 3 figs 8-12, pl. 4 figs 1-4 [non *Sertularella atlantica* Stechow, 1920: 21, fig. 2A].

Description: Colonies composed of either stolonial hydrothecae or short (up to 11 mm high), erect shoots arising from sinuous, smooth-walled stolon. Cauli thick, monosiphonic, usually unbranched, occasionally sparingly branched (1-3 short, roughly alternate side branches), smooth or with a reduced number (up to 3-4) of basal wrinkles; divided into internodes of varied length, though generally short, by means of rather indistinct, oblique nodes slanting in alternate directions. Proximal end of internodes provided with a couple of spiral twists, distally a hydrotheca. Side branches, when present, arising laterally from below the base of a stem hydrotheca. The latter close to one another, fusiform, free from the corresponding internodes for more than half their adaxial length; walls with 6-8 transverse ridges encircling their whole surface; aperture provided

with 4 short, triangular cusps separated by shallow embayments; no submarginal, intrathecal cusps; a 4-flapped operculum. Perisarc thick throughout the colonies. Gonothecae arising from below the hydrothecal bases, broadly ovoid, walls provided with *ca.* 10 transverse ridges on nearly the whole surface, apically 3-4 minute spines surrounding the aperture, female with acrocysts.

Dimensions: See Table 20.

Remarks: One of the original illustrations by d'Orbigny (1842, pl. 11 fig. 5) can be misleading when attempting to compare this species with contemporary records from the study area, as the hydrothecae are figured with a decidedly scaly appearance. However, a similar illustration was provided by Hincks (1868) for *S. rugosa* (Linnaeus, 1758), while recent and more accurate drawings (*e.g.* Cornelius, 1995; Schuchert, 2001) show a quite common condition of the hydrothecae, typical of a species with transversely ringed walls.

Type material of *S. patagonica* is likely lost, as no mention of it was made by Van Praët (1979) in his catalogue of the type specimens housed in the *Muséum national d'Histoire naturelle* of Paris, France.

The typically short internodes, twisted basally, and the transversely annulated hydrothecae emphasized by d'Orbigny (1847) are characters also noted in Blanco's (1967, as *S. atlantica* Stechow, 1920) account, and it is therefore assumed that both hydroids are conspecific. The latter nominal species, however, originates from the northern hemisphere, and is probably a synonym of *S. tenella* (Alder, 1857) (Picard, 1956; Cornelius, 1995).

In a subsequent paper, Blanco (1974) considered her earlier record as conspecific with her newly-obtained material assignable to *S. striata* Stechow, 1923b. Finally, Blanco (1994) recognized *S. striata* as a synonym of *S. patagonica* but, curiously, kept the former as the valid binomen.

According to the accounts of both Stechow (1925) and Millard (1964), *S. striata* exhibits the same morphological characters as *S. patagonica*, and their respective measurements are highly concordant (see Table 20 herein). For this reason, both nominal species are considered here as coterminous, with d'Orbigny's hydroid name having priority.

The Namibian and South African records by Gili *et al.* (1989) most probably do not belong here, owing to the large size of the hydrothecae in their material.

The morphological similarity between *S. patagonica* and *S. rugosa* Linnaeus, 1758 invoked by both Kirchenpauer (1884) and Hartlaub (1901) is only superficial, and resides in particular in the ringed condition of the hydrothecal wall. However, the hydrothecal aperture is conspicuously tilted downwards in the latter species (Cornelius, 1995; Schuchert, 2001), thus differing from the illustrations provided by both d'Orbigny (1842) and Blanco (1967). In addition, both species are certainly distinct on the account of their very remote areas of occurrence.

Distribution: Argentina – Provincia de Buenos Aires [off Mar del Plata (Blanco, 1967, as *S. atlantica*; Genzano, 1990, as *S. striata*)]; Provincia de Río Negro [Ensenada de Ros (d'Orbigny, 1847); Barranca final (Blanco, 1974; 1994, both as *S. striata*)]. Elsewhere – South Africa (Stechow, 1923b; 1925; Millard, 1964; 1975).

Table 20. Measurements of *Sertularella patagonica* (d'Orbigny, 1842), in μm .

	Millard (1964), as <i>S. striata</i> (Stechow's type)	Millard (1964), as <i>S. striata</i> (own material)	Blanco (1967), as <i>S. atlantica</i>	(?) Blanco (1974), as <i>S. striata</i>	Genzano (1990), as <i>S. striata</i>
Internode					
- length	450-770	300-760	240-900	460-720	320-400
- diameter at node	100-150	100-160	-	100-170	86-94
Hydrotheca					
- free adaxial length	250-340	180-310	280-330	280-360	190-220
- adnate adaxial length	210-260	200-260	200-280	230-280	110-140
- abaxial length	410-470	360-480	400-500	500-540	320-380
- maximum width	230-300	230-300	200-290	270-330	205-237
- diameter at aperture	170-230	150-210	180-220	230-250	140-170
Gonotheca					
- total length	-	1350-1790	-	1710-1840	1300-1600
- maximum width	-	860-950	-	720-830	600-720



Fig. 15. (A-E) *Sertularella patagonica* (d'Orbigny, 1842). Portion of fertile colony after Genzano (1990, as *S. striata* Stechow, 1923b) (A), Blanco (1967, as *S. atlantica* Stechow, 1920) (B), Blanco (1974, as *S. striata*) (C, D), and Millard (1964, as *S. striata*) (E). (F, G) *Sertularella pauciramosa* Galea & Schories, 2014. Portion of colony from MHNG-INVE-86235 (F) and hydrotheca from HRG-0717 (G). (H) *Sertularella quadrispinosa* Watson, 2003, redrawn after original. (I-M) *Sertularella recta* Galea & Schories, sp. nov. Portions of colonies from MHNG-INVE-79627 (I) and ZMH C11895 (J). Hydrothecae from the same sources (K and L, respectively). Portion of fertile colony with gonotheca from MHNG-INVE-79627 (M). N-R *Sertularella robusta* Coughtrey, 1876. Colony fragments from HRG-0356 (N), Blanco [1963, as *S. tenella* (Alder, 1857)] (O) and NMSZ 1959.33.499 (P). Hydrothecae from former and latter sources (Q and R, respectively). Scale bars: 200 μ m (G, H, K, L, Q, R), 500 μ m (M), 1 mm (A-F, I, J, N-P).

***Sertularella pauciramosa* Galea & Schories, 2014**

Fig. 15F, G

Sertularella pauciramosa Galea & Schories, 2014 in Galea *et al.*, 2014: 35, pl. 3B, figs 6F & H, 7D.

Material examined: MHNG-INVE-86235; Chile, Región de Antofagasta, Taltal, -25.38333° -70.46667°, 22 m, coll. D. Schories, lot #17; 23.04.2012; a 6 cm high, male colony (holotype). – MHNG-INVE-86234; Chile, Región de Antofagasta, Taltal, Punta Morada, -25.36667° -70.45000°, 15 m, coll. D. Schories, lot #13; 20.04.2015; a 4 cm high, female colony (paratype).

Description: Colonies arising from creeping, branching, anastomosing stolon. Stems erect, up to 6 cm high, monosiphonic, slightly geniculate to almost straight; a varied number of annuli immediately above origin from stolon, followed by short, smooth, ahydrothecate part; remainder of caulus divided into short internodes by slightly marked to indistinct, oblique constrictions of the perisarc, slanting in alternate directions. Side branches, when present, arising irregularly from below the bases of stem hydrothecae, generally laterally (giving the colony a coplanar appearance), or occasionally slightly in front or the rear side of the stem; base of branch delimited from stem by a rather distinct node (no apophysis present); 1st internode generally longer than subsequent ones. A hydrotheca confined to the distal end of each internode; biseriate, alternate, flask-shaped, slightly curving outwards; adnate for 2/5th their length; free adaxial wall smooth to wavy (in which case provided with 2-3 weak undulations); abaxial wall varied in shape, from slightly concave to straight, to rarely convex; aperture perpendicular to long axis of the theca, constricted below rim; 4 pointed, triangular cusps separated by shallow embayments; operculum 4-flapped. Gonothecae given off from below the bases of stem hydrothecae; ovoid, walls undulated to occasionally rather smooth; male and female similar in shape, though the former longer and slender; aperture mounted on short neck region provided with 3-4 distal projections of perisarc; female with *ca.* 20 oocytes.

Dimensions: Internodes 815-1140 µm long and 195-230 µm wide at nodes. Hydrothecal free adaxial length 390-425 µm, adnate adaxial length 315-380 µm, abaxial length 635-690 µm, maximum width 335-365 µm, diameter at aperture 220-275 µm. Length of the female gonotheca 1490-1710 µm, and of the male 1710-1965 µm; maximum width of the female gonotheca 660-805 µm, and of the male 660-730 µm.

Remarks: The typical shape of a colony of this species is illustrated in Galea *et al.* (2014, pl. 3B).

Distribution: Chile – Región de Antofagasta [around Taltal (Galea *et al.*, 2014)].

***Sertularella quadrispinosa* (Watson, 2003)**

Fig. 15H

Calamphora quadrispinosa Watson, 2003: 168, fig. 18.

Description: Colonies comprising both stolonial hydrothecae and short, unbranched or sparingly-branched, erect stems arising from creeping, branching, tubular hydrorhiza. Stolonial hydrothecae pedicellate, barrel-shaped, slightly asymmetrical in lateral view, narrowing a little below aperture, walls smooth to weakly undulated, especially on lower third; base pierced by central, circular hydropore with short, upturned collar; hydrothecal margin quadrate, distinctly everted, provided with 4 broad, sharply-pointed cusps separated by low, semicircular embayments; a 4-flapped operculum; hydranths with *ca.* 16 filiform tentacles. Gonothecae stolonial, arising in the vicinity of a hydrotheca; pedicellate, barrel-shaped, walls provided with 6-9 transverse flanges, deepest in distal third, shallower proximally; aperture apical, surrounded by 4 prominent, equidistant, more or less inwardly-curved spines.

Dimensions: Length of the hydrothecal pedicel 64-224 µm. Total length of hydrotheca 1100-1280 µm, maximum width 506-561 µm, diameter at aperture 440-480 µm. Length of the gonothecal pedicel 120-176 µm. Maximum width of gonotheca 520-640 µm.

Remarks: The present species is included in the genus *Sertularella* because its colonies, besides the commonest stolonial hydrothecae, comprise short, unbranched or sparingly-branched, erect stems. Indeed, Choong *et al.* (2012) stated that “colony form may be an insufficient criterion for assigning species of pedicellate *Sertularella* with individual hydrothecae rising from their hydrorhizae to a separate genus *Calamphora*”. The gonotheca of *S. quadrispinosa* is illustrated by Watson (2003).

Distribution: Only known from Macquarie I., Australia (Watson, 2003).

***Sertularella recta* Galea & Schories, sp. nov.**

Fig. 15I-M; Table 21

Sertularella ? *implexa*. – Galea & Schories, 2012a: 40, pl. 3 fig. 4F-J [non *Sertularella implexa* (Allman, 1888)].

Sertularella polyzonias. – Allman, 1888: 55, pl. 26, figs 3, 3A. – El Beshbeeshy, 2011: 141, fig. 45 [non *Sertularella polyzonias* (Linnaeus, 1758)].

Holotype material: MHNG-INVE-79627; Chile, Región de Magallanes y de la Antártica Chilena, Punta Arenas, Faro San Isidro, -53.78174° -70.97391°, 40 m, coll. D. Schories, lot #11; 05.01.2011; colony composed of several fertile stems, up to 5.5 cm high.

Additional material: ZMH C11895; Argentine Shelf, no additional data; several branched and unbranched

colony fragments, up to 1.5 cm high, one of which bears 3 female gonothecae. – ZMH C11888; FRV *Walther Herwig*, Stn. 327, -51.18333°, -56.95000°, 225 m; 29 Jun. 1966; two small, sterile colony fragments likely not belonging to the present species, although considered as conspecific by El Beshbeeshy (2011).

Diagnosis: Irregularly-pinnate colonies, with monosiphonic stems branched several times; internodes moderately long, slightly geniculate; hydrothecae flask-shaped, adnate for 1/3rd their length, swollen adaxially, abaxial cusps slightly produced, rim not thickened, internal cusps absent; gonothecae broadly ovoid, transversely wrinkled, aperture surrounded by 3-4 spines.

Etymology: From the Latin *rectus*, -a, -um (*rego*), meaning straight, with reference to the macroscopic appearance of both stems and branches.

Description: Hydrorhiza missing, but stems above origin from stolon comprising a monosiphonic, ahydrothecate basal part of varied length, with several proximal wrinkles; remainder of stems divided into moderately-long, slightly geniculate internodes by means of oblique constrictions of the perisarc slanting in alternate directions; nodes brownish in older parts of the colony, becoming transparent in younger ones. Branching pattern irregular, with side branches arising every 1-8 stem hydrothecae, immediately below their bases, through short, lateral apophyses; branching repeated several times, introducing a slight torsion in lower-order branches so as to accommodate the newly-formed ones, giving the colony a somewhat three-dimensional appearance, though it is rather compressed antero-posteriorly. Stems and branches

of similar structure, except for the first internodes of the latter, which are comparatively longer than the subsequent ones, and provided with a couple of basal wrinkles. Hydrothecae placed distally on internodes, biseriata, alternate, adnate for about 1/3rd their adaxial length; free adaxial wall conspicuously swollen basally, decidedly convex, becoming concave towards aperture; abaxial wall straight or nearly so basally, becoming convex distally, where it forms a neck region, widening towards aperture; the latter tilted outwards and upwards, provided with 4 pointed, triangular cusps separated by deep, rounded embayments; no submarginal, intrathecal cusps. Gonothecae borne on stems and side branches, arising from below bases of hydrothecae; broadly ovoid, walls transversely wrinkled, wrinkles more obvious distally, becoming obsolete proximally; aperture surrounded by 3-4 pointed perisarc projections.

Dimensions: See Table 21.

Remarks: The material from the Falkland Is. assigned by Allman (1888) to *S. polyzonias* (Linnaeus, 1758) shows striking resemblances to the present species, and is thought to be conspecific (N.B.: Allman's specimen could not be examined, as it is apparently no longer extant in the collection of NHML; A. Cabrinovic, pers. comm.).

In addition, the reexamination of El Beshbeeshy's (2011) sample ZMH C11895, assigned to the Linnean taxon, revealed that it belongs to the new species described herein. Among the material described by El Beshbeeshy, some colonies are reportedly said to reach as much as 19 cm high, their stems remaining always monosiphonic.

The typical shape of the colonies is illustrated in Galea

Table 21. Measurements of *Sertularella recta* Galea & Schories, sp. nov., in μm .

	Galea & Schories (2012a), as <i>S. implexa</i> (S03)	Galea & Schories (2012a), as <i>S. implexa</i> (S11)	El Beshbeeshy (2011), as <i>S. polyzonias</i>
Internode			
- length (in general)	710-920	770-1245	603-1044
- length of 1st internode	565-1160	950-1410	-
- diameter at node	170-225	180-305	162-255
Hydrotheca			
- free adaxial length	420-510	430-460	394-452
- adnate adaxial length	240-295	240-300	301-330
- abaxial length	595-690	585-660	626-672
- maximum width	295-345	320-345	280-320
- diameter at aperture	255-280	265-275	228-255
Gonotheca			
- total length	2170-2690	-	-
- maximum width	755-920	-	-

& Schories (2012a, pl. 3F, as *S. ? implexa*), and a gonotheca in fig. 4J of the same paper.

Distribution: Chile – Región de Magallanes y de la Antártica Chilena [south of Peninsula Brunswick (Galea & Schories, 2012a, as *S. ? implexa*)]. Argentina – scattered records from the Patagonian Shelf, between 43°-53°S (El Beshbeeshy, 2011, as *S. polyzonias*). Falkland Is. (Allman, 1888; El Beshbeeshy, 2011; both as *S. polyzonias*).

Sertularella robusta Coughtrey, 1876

Figs 12D, 15N-R; Table 22

Sertularella robusta Coughtrey, 1876: 27, pl. 3 fig. 6. – Leloup, 1960: 234, fig. 7. – Blanco, 1968: 215, pl. 4 figs 4-7. – *p.p.* Vervoort, 1972: 129, figs 40A, 41A. – Leloup, 1974: 33, fig. 27. – Blanco, 1976: 42, pl. 4 figs 1-3; 1994: 200. – Galea, 2007: 66, fig. 15E-I. – Galea *et al.*, 2009: 2, 4. – *p.p.* El Beshbeeshy, 2011: 144, fig. 46A-D. non *Sertularella robusta*. – *p.p.* Vervoort, 1972: 129, fig. 40B (= *Sertularella microtheca* Leloup, 1974). – *p.p.* El Beshbeeshy, 2011: 144, fig. 46E-H (= *S. microtheca*). – Soto Ángel & Peña Cantero, 2015: 996, fig. 7G [= (?) *Sertularella tenella* (Alder, 1856)].
Sertularella tenella. – Jäderholm, 1905: 31, pl. 12 fig. 8. – Ritchie, 1907: 78. – *p.p.* Rees & Thursfield, 1965: 138. – Blanco, 1963: 173, figs 7-8 [non *Sertularella tenella* (Alder, 1856)].
Sertularella stepanyantae El Beshbeeshy, 2011: 20 [new name for Vervoort's (1972, p. 129) record of *S. robusta* Coughtrey, 1876; *nomen nudum*].

Material examined: HRG-0626; Chile, Región de los Lagos, southern Chiloé, west of Punta Inio, -43.39300° -74.11769°, 26 m, coll. HSFS, HF6, lot A565; 22.02.2008; male colony composed of both stolonial and erect stems, up to 5 mm high, epizoic on *Symplectoscyphus milneanus* (d'Orbigny, 1842). – HRG-0356; Chile, Región de Magallanes y de Antártica Chilena, Punta Arenas, Faro San Isidro, -53.78174° -70.97391°, 10 m, coll. D. Schories, lot PTA002; 25.02.2010; colony composed of numerous sterile stems, up to 15 mm high. – HRG-0797; Chile, Región de los Ríos, north of Corral, Chaihuin, -39.95730° -73.60245°, 6-12 m, coll. D. Schories; 06.03.2012; sterile stolonial colony epizoic on *Halecium* sp. – HRG-0788; Chile, Región de Aysén, west of Canal Messier, -47.86020° -74.76023°, 5.3 m, coll. HSFS, HF13, lot C176; 16.03.2012; small colony composed of both stolonial hydrothecae and up to 4 mm high erect stems, bearing single male gonotheca. – HRG-1099; Chile, Región de los Lagos, Roca Gloria, -45.662433° -73.849266°, 20 m, coll. HSFS, HF21, lot #99; 05.04.2014; rich, fully fertile (male) colony composed mainly of stolonial hydrothecae and, occasionally, of short, erect stems (2-4 hydrothecate internodes), epizoic on *Symplectoscyphus filiformis* (Allman, 1888). – HRG-1173; Chile, Región de los Lagos, southern Chiloé, Isla

Yencouma, -43.4193° -74.0818°, 10 m, coll. HSFS, HF22, lot #65; 18.01.2015; a male colony composed of mostly stolonial hydrothecae, and a few, up to 3 mm high, erect stems. – NMSZ 1959.33.499; Burdwood Bank, -54.41667° -57.53333°, ca. 102 m, coll. Scottish National Antarctic (*Scotia*) Expedition 1902-1904; 01.12.1903; microslide (Fig. 12D) comprising 4 sterile stem fragments, 6-8 mm high, one of them branched once [material studied by Ritchie (1907, as *S. tenella*), and listed by Rees & Thursfield (1965, p. 138)].

Description: Stolonial hydrothecae or short, erect, unbranched or sparingly-branched stems arising from creeping, branching, filiform hydrotheca. A varied number of annuli at the stem bases, immediately above origin from stolon. Stems and side branches, when present, exclusively monosiphonic, divided into moderately-long, geniculate internodes by means of oblique nodes slanting in alternate directions. A hydrotheca, or a hydrotheca and a lateral apophysis immediately below its basis, confined to the distal end of each internode; basally, a twist. Branches arise irregularly (every 1-7 stem hydrothecae) and in the same plane as the stem; up to 2nd order branching observed; structure similar to stem, though 1st internode comparatively longer than subsequent ones. Hydrothecae biserial, alternate, coplanar; flask-shaped, swollen basally, adnate for 2/5th their adaxial length; surface provided by 4-6 transverse ridges; rim with 4 small, triangular, equally-developed cusps separated by deep, rounded embayments; 3 distinctive, plate-shaped, internal projections of perisarc below the hydrothecal aperture (2 latero-adaxial, 1 abaxial); operculum composed of 4 triangular flaps forming a pyramidal roof. Gonothecae arising from below the hydrothecal bases; broadly ovoid, surface with 6-7 transverse ribs, aperture apical, surrounded by 4 pointed cusps; external acrocysts in female.

Dimensions: See Table 22.

Remarks: The typical shape of a stolonial colony is illustrated in Galea (2007, fig. 15E), and of an erect stem in Galea (2007, fig. 15F). The gonothecae are illustrated in Galea (2007, fig. 15G, I).

Distribution: Chile – Región de los Ríos [north of Corral (present study)]; Región de los Lagos [around Isla Grande de Chiloé (Leloup, 1974; Galea *et al.*, 2009); Golfo de Ancud (Leloup, 1974); Roca Gloria (present study)]; Región de Aysén [Guaitecas Archipelago (Leloup, 1974; Galea, 2007); Canal Puyuhapi (Galea *et al.*, 2009); Canal Messier (present study)]; Región de Magallanes y de la Antártica Chilena [Canals Castillo, Copihue, Pasaje, and Pitt Chico, as well as Angostura Inglesa and Isla Camello (Galea, 2007); around Punta Arenas (present study); Magellan Strait (*p.p.* Vervoort, 1972)]. Patagonia – no localities given (Leloup, 1960). Argentina – Provincia de Río

Table 22. Measurements of *Sertularella robusta* Coughtrey, 1876, in μm .

	Blanco (1963), as <i>S. tenella</i>	Blanco (1968)	Blanco (1976)	Vervoort (1972) (Vema 17-48)	Galea (2007), S144	Galea (2007), S23
Internode						
- length	582-658	360-865	515-773	460-890	309-727	227-554
- diameter at node	-	-	-	95-135	-	-
Hydrotheca						
- total length	451-488	-	-	540-555	-	-
- free adaxial side	-	331-350	347-368	350-365	305-327	282-364
- adnate adaxial side	-	166-202	179-210	ca. 245	136-159	145-168
- abaxial wall	-	405-423	399-430	460-530	414-436	377-427
- maximum width	225-250	239-350	210-263	245-255	241-259	204-250
- diameter at aperture	169-180	166-184	137-189	150-165	164-191	132-159
Gonotheca						
- total length	-	-	-	-	1328-1583	-
- maximum width	-	-	-	-	655-726	-

Negro [Golfo de San Matías (Blanco, 1994)]; Provincia de Santa Cruz [Puerto Deseado, Bahía Uruguay (Blanco, 1963, as *S. tenella*)]; Provincia de Tierra del Fuego, Antártida e Islas del Atlántico Sur [Argentinean waters off the northern coast of Isla Nueva, Tierra del Fuego (Blanco, 1968); off the eastern entrance of the Magellan Strait (Blanco, 1976); south of Sloggett Bay, Beagle Canal (Jäderholm, 1905, as *S. tenella*; *p.p.* Vervoort, 1972); around Península Mitre (*p.p.* Vervoort, 1972)]; numerous scattered records from the Patagonian Shelf, between 40°-54° S (*p.p.* El Beshbeeshy, 2011). Between Tierra del Fuego and the Falkland Is. (*p.p.* Vervoort, 1972). Burdwood Bank (Ritchie, 1907, as *S. tenella*).

***Sertularella robustissima* Galea, Häussermann & Försterra, sp. nov.**

Fig. 16A-D

Sertularella argentinica. – Galea, 2007: 59, fig. 14A-C. – Galea *et al.*, 2007c: 312, fig. 3I [non *Sertularella argentinica* El Beshbeeshy, 2011 = *Sertularella clausa* (Allman, 1888)].

Holotype material: MHNG-INVE-53268; Chile, Región de Aysén, Guaitecas Archipelago, NW of

Melinka, -43.88333° -73.71667°, 10-15 m, coll. HSFS, HF1; 08.03.2005; a 8 cm high, sterile colony.

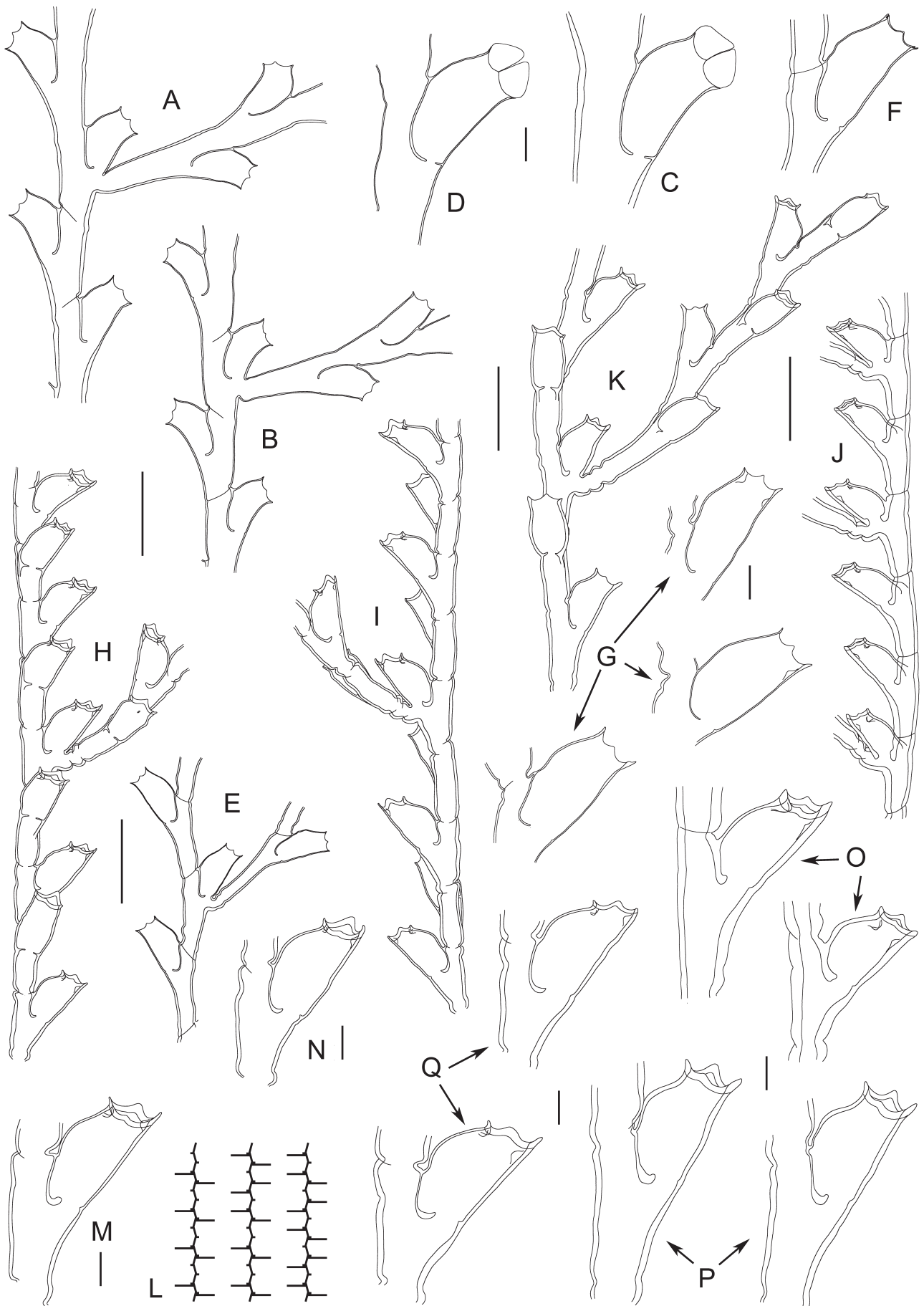
Additional material: HRG-0611; Chile, Región de Magallanes y de la Antártica Chilena, Canal Copihue, -50.33979° -75.37834°, 16 m, coll. HSFS, HF16, lot #084; 16.04.2013; a 8 cm high, sterile colony.

Diagnosis: Colonies bonsai-like, with strongly fascicled stems and dark brown perisarc; internodes slightly demarcated, short, almost collinear; hydrothecae short, tubular, curved outwards, marginal cusps separated by large, shallow embayments.

Etymology: A superlative of the Latin *rōbustus*, -a, -um, with reference to the sturdiness of the stems of this species.

Description: Colonies bonsai-like, up to 8 cm high, arising from well-developed, rhizoid mass of stolonial fibers firmly attached to substrate; composed of single, thick, strongly fascicled stem, unbranched in lower half, and forming numerous, irregularly-directed side branches in upper half; main branches polysiphonic proximally, giving rise to bundles of 2-4 basally parallel, distally diverging, monosiphonic branchlets, up to 3 cm long, each branched again up

Fig. 16. (A-D) *Sertularella robustissima* Galea, Häussermann & Försterra, sp. nov. Colony fragments from MHNG-INVE-53268 (A) and HRG-0006 (B), and hydrothecae from the same sources (C and D, respectively). (E-G) *Sertularella sanmatiasensis* El Beshbeeshy, 2011. Portion of colony from ZMH C11560 (E), and hydrothecae from the same source (F) and Blanco [1984, as *S. polyzonias* (Linnaeus, 1758)] (G). (H-Q) *Sertularella subantarctica* Galea, sp. nov. (part). Portions of stems from ZMH C04206 (H, I, the same seen from both sides), SMNH 123835 (J) and SMNH 123851 (K). Mode of branching (L). Hydrothecae from ZMH C04206 (M, N), SMNH 123835 (O) and SMNH 123851 (P), and ZMH C04384 (Q). Scale bars: 200 μm (C, D, F, G, M-Q), 1 mm (A, B, E, H-K). ▶



to 2 times; branching almost regular, alternate, every 3 consecutive hydrothecae (rarely 2). Both stem and branches delimited into rather short, almost collinear internodes by means of oblique nodes slanting in alternate directions; a hydrotheca, or a hydrotheca and a lateral apophysis below its base, confined to the distal end of each internode. Hydrothecae rather short, tubular, distinctly curved outwards, adnate to the corresponding internode for slightly more than half their length; free adaxial wall smooth to slightly undulated; aperture with 4 small, triangular cusps separated by very shallow embayments; operculum composed of 4 triangular flaps with concentric striae; 1-2 closely-set renovations of the margin. Gonothecae unknown.

Dimensions: Internodes 310-493 μm long and 310-352 μm wide at nodes. Hydrothecal free adaxial length 337-393 μm , adnate adaxial length 356-477 μm , abaxial length 477-573 μm , maximum width 399-444 μm , diameter at aperture 337-376 μm .

Remarks: The colony structure is illustrated in both Galea (2007, fig. 14A) and Galea *et al.* (2007c, fig. 3I).

Distribution: Chile – Región de Aysén [Guaitecas Archipelago (Galea, 2007, as *S. argentinica*)]; Región de Magallanes y de la Antártica Chilena [Canal Copihue (present study)].

Sertularella sanmatiasensis El Beshbeeshy, 2011

Fig. 16E-G; Table 23

Sertularella sanmatiasensis El Beshbeeshy, 2011: 148, fig. 47.

– Soto Àngel & Peña Cantero, 2015: 996, fig. 7H-I.

non *Sertularella sanmatiasensis*. – (?) Peña Cantero, 2006: 939, fig. 3L. – (?) Peña Cantero & Gili, 2006: 767. – (?) Peña Cantero, 2008: 459, fig. 2C. – (?) Peña Cantero & Vervoort, 2009: 87, fig. 2B. – Peña Cantero, 2012: 858, fig. 4A; 2013: 130 (possibly all = *Sertularella antarctica* Hartlaub, 1901).

Sertularella polyzonias. – Blanco, 1984: 37, pls 31-36; 1994: 200 [non *Sertularella polyzonias* (Linnaeus, 1758)].

Material examined: ZMH C11560; FRV *Walther Herwig*, Stn. 283, Argentine Shelf, -42.21667° -58.1000°, 500 m; 21.06.1966; numerous colony fragments up to 2.3 cm high, all sterile, with only the perisarc left (holotype).

Description: Colonies composed of upright, monosiphonic, unbranched or sparingly-branched stems, up to 5 cm high; a few basal annuli above origin from stolon; divided by oblique nodes into internodes of varied length, longer basally, gradually decreasing distally; a hydrotheca, or a hydrotheca and a short, lateral apophysis below its base, confined to the distal end of each internode. Branching pattern with a tendency to alternate; first internode with a number of spiral twists proximally, and comparatively longer than subsequent ones. Hydrothecae biserial, alternate, coplanar to occasionally slightly shifted on

to one side of the colony; large, flask-shaped, adnate for about 1/3rd their adaxial length; a characteristic notch at origin of free adaxial wall, then hydrotheca conspicuously swollen on same side, till below the aperture, where it is constricted; perisarc either smooth or with up to 3 undulations; abaxial wall straight to slightly concave; 4 marginal, blunt-ended triangular cusps of equal development separated by shallow, semicircular embayments; 3 intrathecal, submarginal cusps (2 latero-adaxial, 1 abaxial), variably present; rim not thickened, margin occasionally renovated up to 3 times. Gonothecae arising from below the hydrothecae; broadly ovoid, tapering below, walls undulated to nearly smooth; aperture distal, surrounded by 4 pointed cusps in male, less developed or absent in female; acrocysts in the latter.

Dimensions: See Table 23.

Remarks: The gonothecae of this species, absent in the material studied by El Beshbeeshy (2011), were documented earlier by Blanco (1984, as *S. polyzonias*). The intrathecal, submarginal cusps occur very inconsistently: sometimes only the abaxial one is present, sometimes only the pair of latero-adaxial, and occasionally the complete set of three occurs.

It was stated under *S. antarctica* that it is likely that some records assigned to *S. sanmatiasensis* in various papers (co)authored by Peña Cantero belong in fact to Hartlaub's (1901) species. For instance, it is certain that the materials dealt with in Peña Cantero (2012, 2013) belong to the latter.

Distribution: Argentina – between Provincia de Río Negro and Provincia del Chubut [off Golfo San Matías (El Beshbeeshy, 2011)]. Scotia Arc – South Sandwich Is. (Soto Àngel & Peña Cantero, 2015). Antarctica – Isla Baja (Blanco, 1984, as *S. polyzonias*), Palmer Archipelago (Blanco, 1994, as *S. polyzonias*).

Sertularella subantarctica Galea, sp. nov.

Figs 1G, 12E, F, 16H-Q, 17A-B; Table 24

Sertularella protecta p.p. Hartlaub, 1901: 79.

Sertularia (*Sertularella*) *polyzonias*. – Pfeffer, 1889: 54 [non *Sertularella polyzonias* (Linnaeus, 1758)].

Sertularella Allmani. – Jäderholm, 1905: 32, pl. 12 fig. 11; 1910: 5 [non *Sertularella allmani* Hartlaub, 1901].

Sertularella antarctica. – Jäderholm, 1905: 32, pl. 13 fig. 1 [non *Sertularella antarctica* Hartlaub, 1901].

Sertularella sp. – El Beshbeeshy, 2011: 121, fig. 37E.

(?) *Sertularella picta*. – p.p. Millard, 1971: 405, fig. 6B [non *S. picta* (Meyen, 1834)].

non *Sertularella picta*. – Millard, 1971: 405, fig. 6A [= (?) *Sertularella gaudichaudi* (Lamouroux, 1824)].

Holotype material: SMNH 123839; South Georgia, Cumberland Bay, coll. Swedish South Polar Expedition 1901-1903; 09.05.1902; microslide (Fig. 12F) comprising three sterile colony fragments, 2.6, 3.0

Table 23. Measurements of *Sertularella sanmatiasensis* El Beshbeeshy, 2011, in μm .

	El Beshbeeshy (2011)	Blanco (1984), as <i>S. polyzonias</i>
Internode		
- length	690-864	710-1470
- diameter at node	139-208	-
Hydrotheca		
- free adaxial length	365-452	470-600
- adnate adaxial length	249-334	250-330
- abaxial length	527-642	610-780
- maximum width	-	350-390
- diameter at aperture	203-261	250-310
Gonotheca		
- total length		1980-2160 (♂); 2030-2250 (♀)
- maximum width		820-900 (♂); 1190-1260 (♀)

and 3.5 cm high [material incorrectly assigned to *S. antarctica* Hartlaub, 1901 by Jäderholm (1905); illustrated by him in his pl. 13 fig. 1, re-illustrated herein in Fig. 17A; note that the identification written down on the label of the slide is “*Sertularella Allmani* Hartl”].

Paratype material: ZMH C04206; South Georgia, German International Polar Year Expedition 1882-1883, coll. K. von den Steinen; (day and month unavailable) 1883; a colony composed of numerous sterile stems, up to 3.2 cm high, on stem of tubulariid hydroid and unidentified substrate, labeled *S. protecta* Hartlaub, 1901, and suspected by El Beshbeeshy (2011) to belong to an undescribed species.

Additional material: SMNH 123851; Falkland Is., Port William, coll. Swedish South Polar Expedition 1901-1903, Stn. 39, 40 m; 04.07.1902; microslide (Fig. 1G) containing 2 species: 1) on the right-hand side, two sterile colony fragments, 1.3 and 1.5 cm high, assignable to *S. subantarctica* Galea sp. nov., but identified by Jäderholm (1905) as *S. allmani* Hartlaub, 1901, and illustrated by him in his pl. 12 fig. 11, re-illustrated herein in Fig. 16K, P; 2) on the left-hand side, a ca. 2 cm high, fertile colony of *S. contorta* Kirchenpauer, 1884, illustrated by Jäderholm (1905, pl. 12 figs 9-10), and re-illustrated herein in Fig. 6C, I. – SMNH 123835; Falkland Is., Port William, 12 m, Swedish Magellanic Expedition 1907-1909, coll. C. Skottsberg; 07.11.1907; microslide (Fig. 12E) containing 3 colony fragments, 0.5-1.5 cm, the largest bearing two female gonothecae [material assigned by Jäderholm (1910) to *S. allmani* Hartlaub, 1901]. – ZMH C04384; South Georgia, German International Polar Year Expedition 1882-1883, coll. K. von den Steinen; (day and month unavailable) 1883; two sterile

fragments 1.7 and 3.8 cm high (most probably branches) on seaweed, labeled *S. protecta* Hartlaub, 1901 (it cannot be excluded that this material is part of ZMH C04206). – ZMH C04211; South Georgia, German International Polar Year Expedition 1882-1883, coll. A. Zschau, no additional data; likely 1883; about 3 short (up to 7 mm high), sterile stems (material labeled *S. protecta* Hartlaub, 1901).

Diagnosis: Stems monosiphonic, densely and pinnately branched; internodes uniformly short and thick; both hydrothecae and side branches shifted on to one side of the stem at a very acute angle, not exceeding 90°; hydrothecae big, though short (with respect to their width) and swollen adaxially, abaxial cusp produced, rim thickened, 3 internal, submarginal projections of perisarc, not always present.

Etymology: Named after its area of distribution.

Description: Undamaged colonies most probably exceeding 4 cm high; arising from tortuous, creeping, branching stolon; stems monosiphonic in all material inspected, with 1-5 basal twists; densely and pinnately branched; both stems and branches divided into uniformly short, thick internodes, by means of deep, oblique nodes slanting in alternate directions; a hydrotheca, or a hydrotheca and a short apophysis immediately below its base, confined to the distal end of each internode; a bulge at each end of the internodes; both hydrothecae and apophyses conspicuously shifted on to one side of the colony, giving it an anterior and a posterior side; angle between the two rows of branches acute, not exceeding 90°. Branching pattern (Fig. 16L) distinctive: branches occur in “pairs” composed of two successive internodes bearing lateral apophyses in opposite directions; each pair of branches is separated

from the next one through one (upper part of the stem) or two (lower part of the stem) hydrothecate internodes devoid of apophyses. Branches with similar structure as the stems, except for the 1st internode that is imperceptibly longer than subsequent ones, and provided basally with a couple of distinct twists. Hydrothecae large, flask-shaped, adnate for about 2/5th their adaxial side to the corresponding internode, conspicuously swollen adaxially; abaxial wall slightly concave in middle, to nearly straight throughout; free adaxial wall distinctly sigmoid: convex for most of its length, becoming suddenly concave below aperture; the latter quadrate, surrounded by 4 prominent, triangular cusps; abaxial one conspicuously produced, adaxial one the shortest, lateral ones unequally developed (“anterior” one shorter than “posterior” one); rim thickened, without renovations; 3 internal, submarginal projections of the perisarc (2 latero-adaxial, 1 abaxial), inconstantly present; a 4-flapped operculum. Perisarc thick throughout the colony. Gonothecae borne on side branches, given off from below the base of a hydrotheca; urn-shaped, transversely wrinkled, tapering below, distally provided with a short, neck region, bearing apically the aperture surrounded by 4 short, though strong spines.

Dimensions: See Table 24.

Remarks: The internal, submarginal cusps are variably present either among the hydrothecae of various stems, or among those of the same stem. For example, in sample SMNH 123839, the abaxial cusp is nearly always present, while the 2 latero-adaxial occur less frequently; conversely, in sample SMNH 123851, the cusps seem to be constantly absent.

Distribution: South Georgia – Pfeffer (1889, as *S. polyzonias*); *p.p.* Hartlaub (1901, as *S. protecta*); Jäderholm (1905, as *S. antarctica* in text, and *S. allmani* on the label of slide material); El Beshbeeshy (2011, as *S. sp. nov.*). Falkland Is. – Port William (Jäderholm, 1905, *p.p.* 1910, both as *S. allmani*). (?) South African Subantarctic Islands – Marion I. (Millard, 1971, as *S. picta*).

Sertularella tenella (Alder, 1856)

Fig. 17C-H; Table 25

Sertularia tenella Alder, 1856: 357, pl. 13 figs 3-6. – Galea & Schories, 2012a: 45, fig. 5H-J.

non *Sertularella tenella*. – Jäderholm, 1905: 31, pl. 12 fig. 8. – Ritchie, 1907: 78. – *p.p.* Rees & Thursfield, 1965: 138. – Blanco, 1963: 173, figs 7-8 [all = *Sertularella robusta* Coughtrey, 1876].

Sertularella jorgensis. – Galea, 2007: 63, fig. 14G, H. – Galea *et al.*, 2007b: 312, fig. 4B [non *Sertularella jorgensis* El Beshbeeshy, 2011 = *Sertularella valdiviae* Stechow, 1923b].

(?) *Sertularella robusta*. – Soto Àngel & Peña Cantero, 2015: 996, fig. 7G [non *Sertularella robusta* Coughtrey, 1876].

Material examined: MHNG-INVE-53215; Chile, Région de Magallanes y de la Antártica Chilena, Canal Farquhar, -48.48853° -74.20714°, 32 m, coll. HSFS, HF2, lot #45; 29.03.2005; a colony composed of both stolonal hydrothecae and erect stems up to 1.2 cm high, formerly identified as *S. jorgensis* (see Galea, 2007). – HRG-0361; Chile, Región de los Lagos, Caleta La Arena, Caleta Yerbas Buenas, -41.67263° -72.65650°, 20 m, coll. D. Schories, lot DS095; 08.03.2009; two

Table 24. Measurements of *Sertularella subantarctica* Galea, sp. nov., in μm .

	ZMH C04206, as <i>Sertularella</i> sp. nov. in El Beshbeeshy (2011)	SMNH 123851, as <i>S. allmani</i> in Jäderholm (1905)	SMNH 123839, as <i>S. antarctica</i> in Jäderholm (1905)	SMNH 123835, as <i>S. allmani</i> in Jäderholm (1910)
Internode				
- length (in general)	710-845	835-1165	820-1055	515-955
- 1 st internode, length	785-1240	1300-1535	1105-1350	980-1140
- diameter at node	230-315	225-315	215-320	190-230
Hydrotheca				
- free adaxial length	490-520	525-575	525-610	455-550
- adnate adaxial length	300-320	290-330	280-290	240-280
- abaxial length	640-755	660-740	750-830	510-730
- maximum width	380-440	390-430	365-410	355-390
- diameter at aperture	325-360	320-365	290-335	260-310
Gonotheca				
- total length	-	-	-	1595-1680 (♀)
- maximum width	-	-	-	995-1080 (♀)

sterile stems, 4 and 7 mm high. – HRG-0359; Chile, Región de los Lagos, Caleta La Arena, Caleta Yervas Buenas, -41.67263° -72.65650° , 20 m, coll. D. Schories, lot S15; 26.04.2011; several sterile stems, 4–11 mm high, on worm tube. – HRG-1244; France, Brittany, N of Pointe Penmarc'h, off Gaouac'h rock, 23 m, coll. F-X. Decaris; 14.05.2016; a sterile colony, 2.5 cm high.

Description: Short (up to 1.2 cm high), erect, mono-

siphonic, unbranched stems or stolonal hydrothecae arising from creeping hydrorhiza; divided into relatively long, slender, geniculate internodes by means of oblique constrictions of the perisarc slanting in alternate directions; a hydrotheca distally to each internode. Hydrothecae biserial, alternate, coplanar, tronconic, adnate for 1/3rd to their corresponding internodes; abcauline wall straight to slightly concave, with smooth to slightly wrinkled perisarc; free adcauline wall with

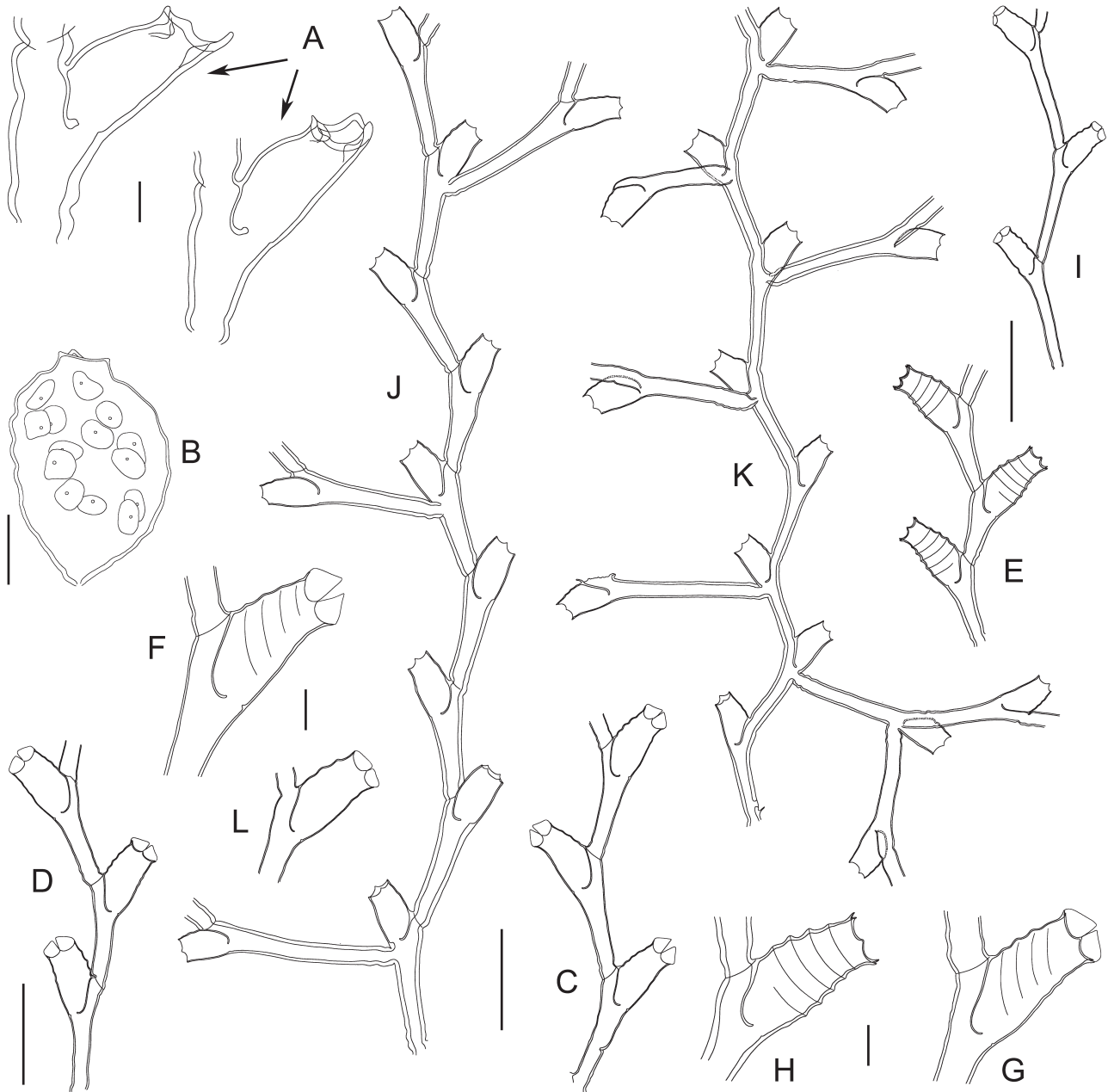


Fig. 17. (A–B) *Sertularella subantarctica* Galea, sp. nov. (continued), hydrothecae from SMNH 123839 (A), and female gonotheca from SMNH 123835 (B). (C–H) *Sertularella tenella* (Alder, 1857). Portions of stems from the Chilean materials HRG-0359 (C) and HRG-0361 (D), and comparison with the European specimen HRG-1244 (E). Hydrothecae from the same sources (F, G and H, respectively). (I–L) *Sertularella valdiviae* Stechow, 1923b (part). Portions of colonies from ZMH C11886 (I), ANT XIX/5 ID.91 (J), and ZSM 20050522 (K). Hydrotheca from ZMH C11886 (L). Scale bars: 200 μ m (A, F–H, L), 500 μ m (B), 1 mm (C–E, I–K).

3-4 undulations, not always reaching abcauline side; rim somewhat everted, provided with 4 pointed triangular cusps separated by moderately-deep, semicircular embayments; closing apparatus composed of 4 opercular flaps with concentric striations; no internal, submarginal cusps. Gonothecae absent in all material from the study area.

Dimensions: See Table 25.

Remarks: The typical silhouette of a stem is shown in Galea (2007, fig. 14G). The hydrothecae in this material are less wrinkled than those of European specimens (compare Fig. 17F, G and H).

The material assigned earlier to *S. jorgensis* El Beshbeeshy, 2011 by Galea (2007) (now recognized as a junior synonym of *S. valdiviae* Stechow, 1923b, see below) differs from that nominal species mainly through the morphology of its hydrothecae (compare Fig. 17F, G and Fig. 18A-C).

The rather thick internodes and the hydrothecae devoid of submarginal, intrathecal cusps in the material identified as *S. robusta* Coughtrey, 1876 by Soto Ángel & Peña Cantero (2015) equally point towards the present species.

Distribution: Chile – Región de los Lagos [Seno de Reloncaví (Galea & Schories, 2012a)]; Región de Magallanes y de la Antártica Chilena [Canal Farquhar (Galea, 2007; Galea *et al.*, 2007b; both as *S. jorgensis*)]. Scotia Arc – Burdwood Bank, South Sandwich Is. (Soto Ángel & Peña Cantero, 2015, as *S. robusta*).

***Sertularella valdiviae* Stechow, 1923b**

Figs 12G, H, 17I-L, 18A-D; Table 26

Sertularella valdiviae Stechow, 1923b: 11. – Stechow, 1925: 471, fig. 31. – Ruthensteiner *et al.*, 2008: 23.

Sertularella jorgensis El Beshbeeshy, 2011: 136, fig. 43 (**syn. nov.**). – Soto Ángel & Peña Cantero, 2015: 994, fig. 7E-F.

non *Sertularella jorgensis*. – Galea, 2007: 63, fig. 14G, H. – Galea *et al.*, 2007c: 312, fig. 4B [= *Sertularella tenella* (Alder, 1856)].

Sertularella gayi parva. – Blanco, 1968: 217, pl. 4 figs 8-11; 1994: 199 [non *Sertularella gayi* (Lamouroux, 1821) var. *parva* Billard, 1925].

Material examined: ZSM 20050521; French Southern and Antarctic Lands, 7 km west off St. Paul, -38.66667° -77.64333°, 672 m, coll. Deutsche Tiefsee (*Valdivia*) Expedition 1898-1899, Stn. 165; 03.01.1899; microslide (Fig. 12G) comprising five colony fragments of *Sertularella valdiviae* Stechow, 1923, 3-23 mm high, one of which is fertile and bears 8 empty gonothecae. – ZSM 20050522; French Southern and Antarctic Lands, 7 km west off St. Paul, -38.66667° -77.64333°, 672 m; 03.01.1899; coll. Deutsche Tiefsee (*Valdivia*) Expedition 1898-1899, Stn. 165, microslide (Fig.

12H) comprising three colony fragments (one of which bearing a gonotheca) of *S. valdiviae*, 6-14 mm high. – ZMH C11886; FRV *Walther Herwig*, Stn. 257, Argentine Shelf, -53.93333° -63.85000°, depth not recorded; 06.02.1971; several sterile, erect stems of *Sertularella jorgensis* El Beshbeeshy, 2011, up to 5 mm high, showing terminal stolonization, as well as a number of stolonal hydrothecae on the same hydrorhiza, both with remains of coenosarc only. – ANT XIX/5 ID.91; RV *Polarstern*, cruise ANT XIX/5, Stn. 253, Elephant I., -61.40050° -55.41200°, 276-282 m; 25.04.2012; sterile colony composed of several stems up to 3.5 cm high [material studied by Soto Ángel & Peña Cantero (2015), as *S. jorgensis*].

Description: Monosiphonic, slender, irregularly and sparingly-branched stems, up to 4 cm high, arising from creeping, filiform hydrorhiza; prisarc smooth or with 2-3 basal twists above origin from stolon. Stems and branches divided into long, geniculate internodes; nodes oblique, not always clearly demarcated; a hydrotheca confined to the distal end of each internode. Branches arising from below a stem hydrotheca, not always strictly laterally, but shifted on to the anterior or posterior sides of the stem, giving the colony a three-dimensional appearance; up to 4th order branching observed; branches with similar structure as that of stem; 1st internode comparatively longer than subsequent ones, and provided with 1-2 basal twists. Hydrothecae biserial, alternate, distant from one another, occasionally not strictly coplanar; rather long, tronconical to almost tubular, adnate for a varied length, from 1/2 to 2/5th fused with the corresponding internode; abaxial wall slightly concave to straight, free adaxial wall with 2-4 wrinkles extending towards abaxial wall; 4 small, triangular marginal cusps separated by shallow embayments; a 4-flapped operculum; rim occasionally renovated; hydranths with 14-18 tentacles. Gonothecae given off from below the bases of cladial hydrothecae, elongated-ovoid, significantly tapering below, distally rounded, devoid of a neck region and perisarc projections, walls with 4-6 transverse wrinkles.

Dimensions: See Table 26.

Remarks: By comparing parts of El Beshbeeshy's (2011) and Soto Ángel & Peña Cantero's (2015) materials assigned to *S. jorgensis* to the type of *S. valdiviae* Stechow, 1923b, it appears that there are no morphological differences between them (compare Fig. 17I, J and K, respectively). Both nominal species prove coterminous, with *S. valdiviae* having priority over El Beshbeeshy's species. The gonothecae, not already known in *S. jorgensis*, are only present in the St. Paul material.

Distribution: Argentina – Provincia de Tierra del Fuego, Antártida e Islas del Atlántico Sur [off the

Table 25. Measurements of *Sertularella tenella* (Alder, 1856), in μm .

	Galea (2007), as <i>S. jorgensis</i>	Galea & Schories (2012a)	Naumov (1969)	Calder (1970)	Present study, HRG-1244
Internode					
- length	517-1197	785-2500	-	1000-2100	730-850 (< 1630)
- diameter at node	132-155	130-180	-	116-143	125-170
Hydrotheca					
- free adaxial length	391-460	385-425	420-480	476-608	585-645
- adnate adaxial length	270-345	285-385	140-230	306-348	310-320
- abaxial length	546-632	560-640	500-540	657-791	650-710
- maximum width	316-362	300-360	-		365-390
- diameter at aperture	289-312	260-300	230-270	253-306	280-300
Gonotheca					
- total length	-	-	< 2000	-	-
- maximum width	-	-	< 1000	-	-

Table 26. Measurements of *Sertularella valdiviae* Stechow, 1923b, in μm .

	Stechow (1925)	Present study, ZSM 20050521 and ZSM 20050522	El Beshbeeshy (2011), as <i>S. jorgensis</i>	Blanco (1968), as <i>S. gayi parva</i>	Soto Àngel & Peña Cantero (2015), as <i>S. jorgensis</i>
Internode					
- length (in general)	ca. 1000	725-1840	696-1189	828-1730	-
- length of 1st internode	-	920-2015	-	1214-2024	-
- diameter (at node)	130-170	110-165	110-133	-	
Hydrotheca					
- free adaxial length	ca. 320	330-360	295-353	331-460	290-340
- adnate adaxial length	250-260	280-300	203-237	257-350	220-260
- abaxial length	380-450	400-450	434-469	441-497	490-550
- maximum width	ca. 255	280-290	-	-	290-300
- diameter at aperture	ca. 185	205-230	203-214	221-239	200-210
Gonotheca					
- total length	ca. 950	800-1105	-	-	-
- maximum width	400-480	470-680	-	-	-

southeastern coast of Isla de los Estados (Blanco, 1968; 1994, both as *S. gayi parva*); scattered records from the Argentine Shelf, ranging between 42°-46° S (El Beshbeeshy, 2011, as *S. jorgensis*). Between Peninsula Mitre and the Falkland Is. (El Beshbeeshy, 2011, as *S. jorgensis*). Scotia Arc – South Sandwich Is., Elephant I. (Soto Àngel & Peña Cantero, 2015, as *S. jorgensis*). French Southern and Antarctic Lands – St. Paul (Stechow, 1923b, 1925).

Sertularella vervoorti El Beshbeeshy, 2011

Fig. 18E; Table 27

Sertularella vervoorti El Beshbeeshy, 2011: 151, fig. 48. – Watson & Vervoort, 2001: 167, fig. 9. – Soto Àngel & Peña Cantero, 2015: 996, fig. 7J-K.

Sertularella cylindriotheca. – Vervoort, 1972: 126, fig. 39A. – Stepanjants, 1979: 90, pl. 14 fig. 5A [non *Sertularella cylindriotheca* (Allman, 1888) = *Sertularelloides cylindriotheca* (Allman, 1888)].

Material examined: ZMH C11552; FRV *Walther Herwig*, Stn. 327, Argentine Shelf, off Provincia de

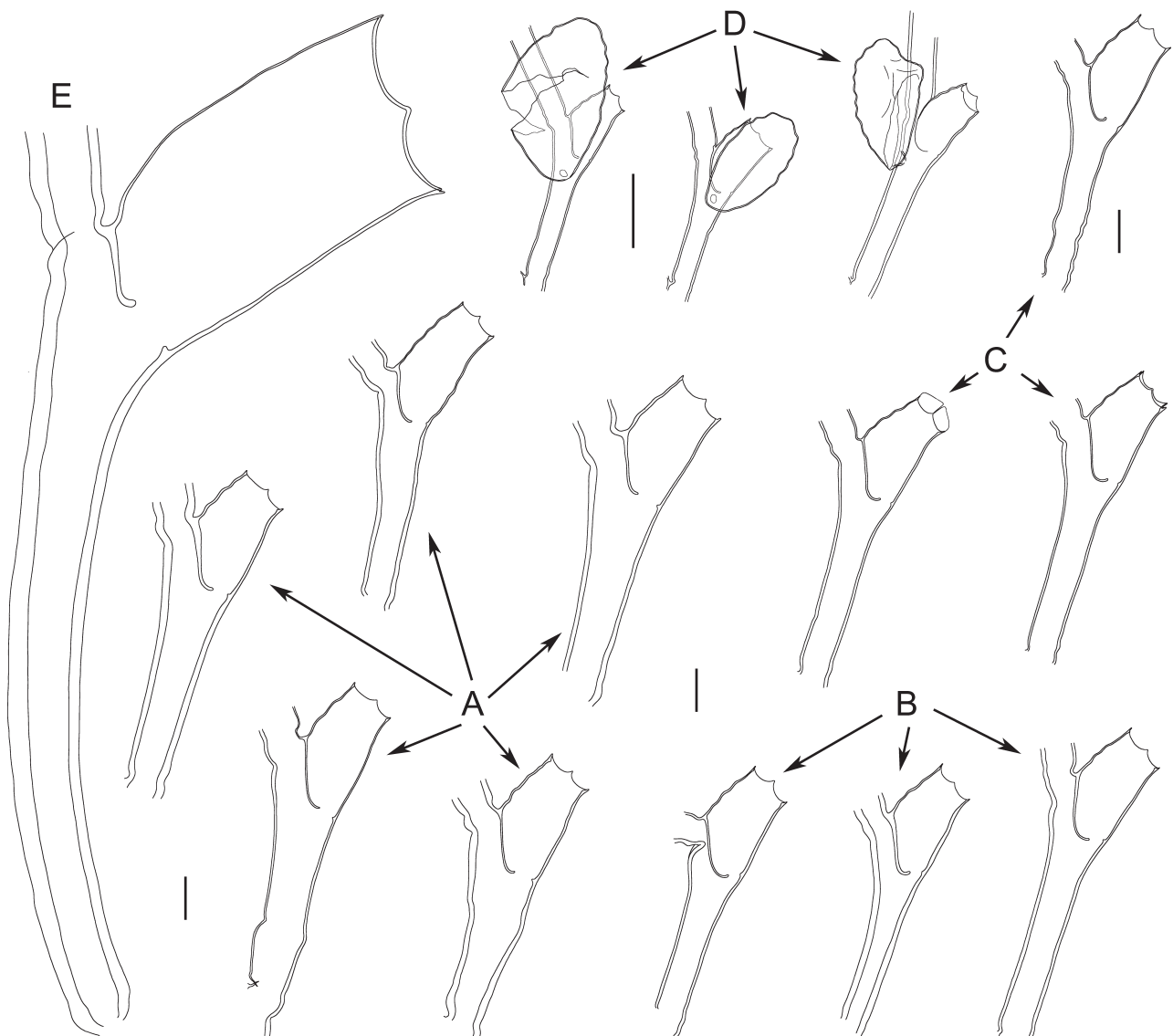


Fig. 18. (A-D) *Sertularella valdiviae* Stechow, 1923b (continued). Hydrothecae from ANT XIX/5 ID.91 (A), ZSM 20050522 (B) and ZSM 20050521 (C). Gonothecae from the latter source (D). (E) *Sertularella vervoorti* El Beshbeeshy, 2011, internode with hydrotheca. Scale bars: 200 μ m (A-C, E), 500 μ m (D).

Santa Cruz, -51.18333° -56.95000° , 225 m; 29.06.1966; sterile, fragmentary colony (fragments 0.5-1.5 cm long) [material studied by El Beshbeeshy (2011)].

Description: Erect, though flaccid, up to 3.5 cm high colonies arising from creeping stolon. No definite main stem, the original stem branching several times subdichotomously; whole colony monosiphonic in habit. Both stems and branches divided into long, curved, slender internodes through distinct, oblique nodes; a hydrotheca, or a hydrotheca and one or two lateral, indistinct apophysis(es) immediately below its base; lower order branches arising not laterally, but almost perpendicular (in front or rear side) from their higher order counterparts. Hydrothecae strongly shifted

to one side of the colony; very large, tubular, adnate to the corresponding internode for only a short part of their adaxial length, then curving outwards; abaxial wall almost straight for most of its length, slightly expanded below aperture; free adaxial wall gently curving basally, then straight; perisarc thin and smooth throughout; margin with 4 small, pointed cusps separated by shallow, semicircular embayments; renovations occasional; a 4-flapped operculum; hydranths with 18-20 filiform tentacles. Gonothecae arising from below the hydrothecal bases; elongated-ovoid, tapering basally, walls transversely-wrinkled; aperture distal, large, 4-cusped, and provided with a 4-flapped operculum.

Dimensions: See Table 27.

Table 27. Measurements of *Sertularella vervoorti* El Beshbeeshy, 2011, in μm .

	El Beshbeeshy (2011)	Watson & Vervoort (2001)
Internode		
- length	2425-5145	2925-3500
- diameter at node	278-394	330-350
Hydrotheca		
- free adaxial length	1554-1855	2375-2625
- adnate adaxial length	-	-
- abaxial length	1345-1624	2050-2475
- maximum width	-	-
- diameter at aperture	626-858	800-1000
Gonotheca		
- total length	-	1990-2250
- maximum width	-	800-1100

Remarks: The gonothecae of this species were described by Watson & Vervoort (2001), and subsequently found by Soto Àngel & Peña Cantero (2015).

Distribution: Argentina – Provincia de Buenos Aires [scattered records from offshore waters (El Beshbeeshy, 2011)]; Provincia de Tierra del Fuego, Antártida e Islas del Atlántico Sur [off the NE coast of Isla de los Estados (Vervoort, 1972, as *S. cylindricheca*)]. Falkland Is. – off the NE coast (El Beshbeeshy, 2011). Scotia Arc – Burdwood Bank, South Georgia (Soto Àngel & Peña Cantero, 2015). Tasmanian seamounts (Watson & Vervoort, 2001).

CONCLUSIONS

The hydroids assignable to the genus *Sertularella* Gray, 1848 from southern South America and the subantarctic are reviewed. Firstly, a comparison with the taxa originally described by El Beshbeeshy (2011) from the Argentine Shelf was undertaken to verify the accuracy of earlier identifications of Chilean specimens dealt with in a series of recent papers (Galea, 2007; Galea *et al.*, 2007b, 2009, 2014; Galea & Schories, 2012a).

Second, whenever extant, the materials (including the types) mentioned in earlier studies (notably Allman, 1888; Hartlaub, 1901; Jäderholm, 1903, 1905, 1910; Ritchie, 1907; Stechow, 1925; Vanhöffen, 1910) were equally reexamined, in order to: 1) provide modern redescriptions of a few nominal species for which only the original accounts were available to date; 2) reassess the taxonomic status of a number of poorly-known and, hence, “problematic” taxa; 3) verify the accuracy of various literature records, and provide a modern

interpretation of the specific identity of the species involved.

Accordingly, several nominal species described or mentioned in various older accounts were never, or only rarely, dealt with in subsequent papers, *e.g.* *S. kerguelensis* Allman, 1876, *S. lagena* Allman, 1876, *S. unilateralis* Allman, 1876, *S. clausa* (Allman, 1888), *S. implexa* (Allman, 1888), *S. polyzonias* Linnaeus, 1758 [*sensu* Allman (1888)], *S. valdiviae* Stechow, 1923a. Of these, only *S. clausa* and *S. implexa* have been located in the collection of NHML, and *S. valdiviae* in that of ZSM, and all three were reexamined within the present study. A comparison with the species created by El Beshbeeshy (2011) allowed to conclude that his *S. argentinica* and *S. jorgensis* are junior synonyms of *S. clausa* and *S. valdiviae*, respectively. In addition, *S. implexa* is redescribed based on its type material.

One of the most mandatory aspects dealt with relied on the clarification of the taxonomic status of a species group characterized by the unilateral arrangement of their branches along the stems, and of their hydrothecae along both the stems and branches. This group comprises *S. allmani* Hartlaub, 1901, *S. antarctica* Hartlaub, 1901, *S. contorta* Kirchenpauer, 1884, *S. gaudichaudi* (Lamouroux, 1824), *S. paessleri* Hartlaub, 1901, *S. picta* (Meyen, 1834), and *S. protecta* Hartlaub, 1901. Of these, the co-type of *S. contorta* could not be found in ZMB, where Kirchenpauer’s “herbarium” was recently located (C. Lüter, pers. comm.), the schizoholotype slides of *S. gaudichaudi* could not be found in the *Muséum national d’Histoire naturelle*, Paris (A. Andouche, pers. comm.), and *S. paessleri* proved absent from ZMH, where Hartlaub’s material is housed (H. Roggenbuck, pers. comm.).

Based on the data available from the literature, it became

Table 28. Main distinguishing features of *Sertularella* species with “unilateral” hydrothecae and branches.

	<i>Sertularella allmani</i> Hartlaub, 1901	<i>Sertularella antarctica</i> Hartlaub, 1901	<i>Sertularella contorta</i> Kirchenpauer, 1884	<i>Sertularella gaudichaudi</i> (Lamouroux, 1824)	<i>Sertularella subantarctica</i> Galea, sp. nov.
Habit of stem	Mono- or polysiphonic	Monosiphonic	Mono- or polysiphonic	Mono- or polysiphonic	Monosiphonic
Branching pattern	Colonies feather- to fan-shaped, densely pinnate; two consecutive internodes, each giving rise to an alternate side branch, are separated by 1-2 internodes without apophyses from the following “pair” of branch-bearing internodes	Colonies of irregular shape, sparingly and irregularly branched, with roughly alternate side branches originating every 1-18 internodes	Colonies fan- to bush-shaped, densely branched; two consecutive internodes, each giving rise to an alternate side branch, are separated by generally 2 (though 1-3 possibly present) internodes without apophyses from the following “pair” of branch-bearing internodes	Colonies of straggling appearance, fan-shaped, although densely branched, with almost every single stem internode giving rise to an alternate side branch	Colonies feather-shaped, quite densely pinnate; two consecutive internodes, each giving rise to an alternate side branch, are separated by 1-2 internodes without apophyses from the following “pair” of branch-bearing internodes
Unilateral arrangement	Hydrothecae, stem apophyses and side branches forming an acute angle, giving the colony two distinct sides (anterior and posterior)	Hydrothecae, stem apophyses and side branches forming a wide angle, not giving the colony a pronounced antero-posterior aspect	Hydrothecae, stem apophyses and side branches forming an acute angle, giving the colony two distinct sides (anterior and posterior)	Hydrothecae, stem apophyses and side branches forming a moderately wide angle, giving the colony two distinct sides (anterior and posterior)	Hydrothecae, stem apophyses and side branches forming a very acute angle, giving the colony two distinct sides (anterior and posterior)
Internodes	Of uniform length, 340-640 µm, with a bulge at each end	Of uniform length, 730-1335 µm, with two spiral twist proximally and a distal bulge	Of uniform length, 675-1080 µm, with two spiral twists proximally and a distal bulge	Of highly varied length, 550-3990 µm, with two spiral twists proximally and a distal bulge	Of uniform length, 820-1055 µm, with a bulge at each end
Hydrotheca	“Small”, short, and conspicuously swollen adaxially	“Small”, long, and moderately swollen adaxially to nearly tubular	“Small”, short, and conspicuously swollen adaxially	“Small”, short, and conspicuously swollen adaxially	“Large”, short, and conspicuously swollen adaxially
- free adaxial wall	335-390	470-570	475-535	415-505	525-610
- adnate adaxial wall	135-245	320-375	280-305	235-250	280-290
- abaxial wall	390-540	705-770	535-635	575-620	750-830
- maximum width	275-360	325-350	365-420	290-345	365-410
- diameter at aperture	205-295	255-295	310-355	225-265	290-335
Ratio depth/width	1.45-1.82 (1.67±0.12, n=10)	1.98-2.39 (2.16±0.13, n=10)	1.54-1.77 (1.68±0.08, n=10)	1.51-1.96 (1.83±0.12, n=10)	1.58-2.00 (1.81±0.14, n=10)
Reference(s)	Galea <i>et al.</i> (2009), as <i>S. antarctica</i> Hartlaub, 1901; present study	Galea & Schories (2012b), as <i>S. gaudichaudi</i> (Lamouroux, 1824); present study	Present study	Present study	Present study

possible to establish, with little doubts, that *S. picta* is a junior synonym of *S. gaudichaudi* (see remarks under the latter species, as well as Table 10). In addition, upon the reexamination of the type of *S. protecta*, it is concluded that this, too, should be assigned to the synonymy of Lamouroux's species. Additionally, based on the original description, *S. paessleri* is recognized as a probable synonym of *S. allmani* (see remarks under this species). Consequently, among the species with unilateral arrangement of their hydrothecae and side branches described previously, only four are recognized here as valid, namely *S. allmani*, *S. antarctica*, *S. contorta*, and *S. gaudichaudi*. To these, a fifth species, *S. subantarctica* Galea sp. nov., described herein, should be added. Although of an apparently very similar morphology (notably at microscopic level), these hydroids could be primarily separated specifically through the distinctive appearances of their colonies, followed by the morphology of their internodes and, finally, the size and shape of their hydrothecae. These features are compared thoroughly in Table 28.

Lastly, Table 29 summarizes a list of 37 nominal species created based on material originating from the study area, and equally provides an updated taxonomic status for all of them. Of these, 27 species are considered as valid, 9 are invalid, and one (*S. kerguelensis*) should be regarded as a *nomen dubium*, given its unreliable original description and the loss of its type material.

In addition, all the remaining records of *Sertularella* species (exclusive of the types dealt with in Table 29) are listed, together with their current taxonomic status, in Appendix I. Among the 30 nominal species to which the hydroids were assigned by various authors, it appears that numerous records are based on misidentifications. It is worth underlining that hydroids assignable to *S. conica* Allman, 1877, *S. cylindritheca* Allman, 1888, *S. ellisii* (Milne-Edwards, 1836), *S. gayi* (Lamouroux, 1821), *S. minuscula* (Billard, 1924), *S. peregrina* Bale, 1926, and *S. polyzonias* do not occur in the study area.

Table 29. Nominal species of *Sertularella* described from the study area, and their present taxonomic status.

Basionym and type locality (-ies)	Present taxonomic status and remarks
<i>Sertularella allmani</i> Hartlaub, 1901	
1) Chile, Isla Navarino, W of Puerto Pantalón del Oeste, -54.9000° -67.9333° (lectotype); 2) Falkland Is., Port Stanley, ca. -51.69° -57.85°	Hartlaub (1901): replacement name for <i>Sertularia (unilateralis) secunda</i> Allman, 1888. Present study: valid species; Hartlaub's and Allman's hydroids proved conspecific upon comparison of their holotypes. Billard (1924): junior synonym of <i>S. gaudichaudi</i> (Lamouroux, 1824).
<i>Sertularella antarctica</i> Hartlaub, 1901	
Chilean-Argentinean border, Punta Dúngenness, ca. -52.39° -68.43°	Hartlaub (1901): replacement name for <i>Sertularella unilateralis</i> Allman, 1876. Billard (1924): junior synonym of <i>S. gaudichaudi</i> (Lamouroux, 1824).
<i>Sertularella argentinica</i> El Beshbeeshy, 2011	
Argentina, off Chubut, -43.87833° -59.58000°	Present study: <i>S. clausa</i> (Allman, 1888).
<i>Sertularella asymmetra</i> Galea & Schories, 2014	
Chile, Corral, -39.95000° -73.61667°	Present study: valid species.
<i>Sertularella blanconae</i> El Beshbeeshy, 2011	
Falkland Is., off the E coast, -52.03333° -55.33333°	Present study: valid species.
<i>Sertularella clausa</i> (Allman, 1888)	
Uruguay, off Montevideo, ca. -34.95° -56.15°	Present study: valid species.
<i>Sertularella contorta</i> Kirchenpauer (1884)	
1) Lemaire Strait, ca. -54.80° -64.92°; 2) Falkland Is., ca. -51.75° -59.35°	Present study: valid species. Cotype reexamined by Hartlaub (1901); could not be located in ZMB. Hartlaub: (?) <i>S. lagena</i> Allman, 1876; (?) <i>S. antarctica</i> Hartlaub, 1901. Billard (1924): <i>S. gaudichaudi</i> (Lamouroux, 1824).
<i>Sertularella cruzensis</i> El Beshbeeshy, 2011	
Argentina, off the Province of Buenos Aires, -39.93333° -57.18333°	Present study: valid species.
<i>Sertularella curta</i> Galea & Schories, 2014	
Chile, Taltal, -25.38333° -70.51667°	Present study: valid species.

Basionym and type locality (-ies)	Present taxonomic status and remarks
<i>Sertularella curvitheca</i> Galea & Schories, 2012 Chile, Caleta La Arena, -41.67263° -72.65650°	Present study: valid species.
<i>Sertularella fuegonensis</i> El Beshbeeshy, 2011 Argentina, off the eastern coast of Tierra del Fuego, -53.45500° -65.60500°	Present study: valid species.
<i>Sertularella hermanosensis</i> El Beshbeeshy, 2011 Argentina, off the eastern coast of Tierra del Fuego, -53.9333° -63.85000°	Present study: valid species.
<i>Sertularella implexa</i> (Allman, 1888) Between Cabo Virgenes (Argentina) and the Falkland Is., ca. -53.500° -62.800°	Present study: valid species; “holotype” composed of <i>S. implexa</i> (bulk of the material) + <i>S. hermanosensis</i> El Beshbeeshy, 2011 (3 colony fragments). Hartlaub (1901, 1905), El Beshbeeshy (2011): <i>S. polyzonias</i> (Linnaeus, 1758).
<i>Sertularella jorgensis</i> El Beshbeeshy, 2011 Argentina, off the Province of Chubut, -45.28166° -60.93833°	Present study: <i>S. valdiviae</i> Stechow, 1923b.
<i>Sertularella juanfernandezensis</i> Galea, sp. nov. Chile, Juan Fernández archipelago, between ca. -33.64° -78.85° and ca. -33.77° -80.79°	Present study: valid species.
<i>Sertularella kerguelensis</i> Allman, 1876 French Southern and Antarctic Lands, Kerguelen Is., Swains Bay, ca. -49.58° 69.73°	Present study: unidentifiable from original description; not illustrated; type no longer extant in NHM; <i>nomen dubium</i> . Allman (1879): <i>S. polyzonias</i> (Linnaeus, 1758).
<i>Sertularella lagena</i> Allman, 1876 French Southern and Antarctic Lands, Kerguelen Is., Observatory Bay, Royal Sound, ca. -49.41° 69.90°	Present study: most probably a junior synonym of <i>S. contorta</i> Kirchenpauer, 1884. Type no longer extant in NHM. Galea & Schories (2012a): <i>S. ? lagena</i> Allman, 1876. Hartlaub (1901): (?) <i>S. contorta</i> .
<i>Sertularella margaritacea</i> Allman, 1885 Chile, Magellan Strait	Billard (1924): reexamination of a part of the type; likely coterminous with <i>S. gaudichaudi</i> (Lamouroux, 1824).
<i>Sertularella microtheca</i> Leloup, 1974 Chile, Canal Calbuco, -41.813889° -73.16111°	Present study: valid species. El Beshbeeshy (2011), Galea (2007): <i>S. robusta</i> Coughtrey, 1876.
<i>Sertularella mixta</i> Galea & Schories, 2012a Chile, Punta de Choros, -29.2551° -71.5265°	Present study: valid species.
<i>Sertularella novarae</i> Marktanner-Turneretscher, 1890 French Southern and Antarctic Lands, St. Paul, ca. -38.43° 77.31°	Present study: valid species.
<i>Sertularella oblonga</i> Galea, Häussermann & Försterra, sp. nov. Chile, Isla Desolación, -52.71578° -74.68245°	Present study: valid species.
<i>Sertularella paessleri</i> Hartlaub, 1901 Falkland Is., Port William, ca. -51.40° -57.46°	Present study: <i>S. allmani</i> Hartlaub, 1901. Type no longer extant in ZMH. Hartlaub (1901): trophosome indistinguishable from that of <i>S. allmani</i> , but “typically” smooth-walled gonothecae (young condition of the material).
<i>Sertularella patagonica</i> (d’Orbigny, 1842) Argentina, Río Negro, Ensenada de Ros, ca. -41.02° -62.79°	Present study: valid species. Kirchenpauer (1884), Hartlaub (1901): (?) <i>S. rugosa</i> Linnaeus, 1758.
<i>Sertularella pauciramosa</i> Galea & Schories, 2014 Chile, Taltal, -25.38333° -70.46667°	Present study: valid species.

Basionym and type locality (-ies)	Present taxonomic status and remarks
<i>Sertularella recta</i> Galea & Schories, sp. nov.	
Chile, Punta Arenas, -53.78184° -70.97391°	Present study: valid species.
<i>Sertularella picta</i> (Meyen, 1834)	
1) Eastern coast of Tierra del Fuego; 2) Falkland Is., ca. -51.75° -59.35°	Present study: <i>S. gaudichaudi</i> (Lamouroux, 1824).
<i>Sertularella protecta</i> Hartlaub, 1901	
1) Chile, Isla Lennox, ca. -55.28° -66.94° (holotype); 2) Elizabeth I., Magellan Strait; 3) South Georgia, ca. -54.43° -36.58°	Present study: <i>S. gaudichaudi</i> (Lamouroux, 1824) (holotype ZMH C04173 reexamined). Material from Elizabeth Is. possibly no longer extant. Material from South Georgia not confidently related to the specimen ZMH C04384 = <i>S. subantarctica</i> Galea, sp. nov.
<i>Sertularella robustissima</i> Galea, Häussermann & Försterra, sp. nov.	
Chile, Guaitecas Archipelago, -43.88333° -7371667°	Present study: valid species.
<i>Sertularella quadrispinosa</i> (Watson, 2003)	
Australia, Macquarie I., ca. -53.93000° 159.09166°	Present study: valid species.
<i>Sertularella sanmatiasensis</i> El Beshbeeshy, 2011	
Argentina, off the Province of Río Negro, -42.21666° -58.10000°	Present study: valid species.
<i>Sertularella subantarctica</i> Galea, sp. nov.	
South Georgia, Cumberland Bay, ca. -54.22° -36.46°	Present study: valid species.
<i>Sertularella unilateralis</i> Allman, 1876	
French Southern and Antarctic Lands, Kerguelen Is., Swains Bay, ca. -49.63° 69.71°	Hartlaub (1901): secondary homonym of <i>Sertularia unilateralis</i> Lamouroux, 1824 when this is placed in the genus <i>Sertularella</i> ; renamed <i>S. antarctica</i> Hartlaub, 1901.
<i>Sertularella secunda</i> (Allman, 1888) = <i>Sertularella unilateralis</i> (Allman, 1888)	
French Southern and Antarctic Lands, Kerguelen Is., off Accessible Bay, ca. -49.13° 70.18°	Hartlaub (1901): secondary homonym of both <i>Sertularia unilateralis</i> Lamouroux, 1824 (when this is placed in <i>Sertularella</i>) and <i>Sertularella secunda</i> Kirchenpauer, 1884; renamed <i>S. allmani</i> Hartlaub, 1901.
<i>Sertularella uruguayensis</i> Mañé Garzón & Milstein, 1973	
Uruguay, Cabo Polonio, ca. -34.40° -53.78°	Present study: <i>S. mediterranea</i> Hartlaub, 1901.
<i>Sertularella valdiviae</i> Stechow, 1923b	
French Southern and Antarctic Lands, off St. Paul, ca. -38.66667° -77.64333°	Present study: valid species.
<i>Sertularella vervoorti</i> El Beshbeeshy, 2011	
Argentina, off the Province of Río Negro, -41.38333° -57.30000°	Present study: valid species.

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Appendix I. Additional species records from the study area, and their present taxonomic status.

Original assignment, geographical origin(s), and reference(s)	Present taxonomic status, with remarks
<i>Sertularella allmani</i> Hartlaub, 1901	
Chile: Isla Martha, Magellan Strait (Jäderholm, 1903)	Present study: unidentifiable (no description, no illustration, and species confusion in many of Jäderholm's accounts; material could not be located in SMNH).
Chile: Magellan Strait (Nutting 1904, Albatross Stn. 2776)	Present study: likely <i>S. antarctica</i> Hartlaub, 1901 (moderately-long internodes, hydrothecae elongate).
1) Chile: Isla Navarino; 2) Falkland Is.: Port Stanley (Hartlaub, 1905)	Present study: <i>S. allmani</i> Hartlaub, 1901 (material ZMH C04177, from Isla Navarino, reexamined; specimen from Falkland likely destroyed during WWII).
Falkland Is.: Port William (Jäderholm, 1905)	Present study: <i>S. subantarctica</i> Galea, sp. nov. (material SMNH 123851 reexamined).
Falkland Is.: Port William (Jäderholm, 1910)	Present study: <i>S. subantarctica</i> Galea, sp. nov. (material SMNH 123835 reexamined).
Between Tierra del Fuego and the Falkland Is. (Naumov & Strepanjants, 1962)	Present study, Stepanjants (1979, p. 84, footnote): <i>S. gaudichaudi</i> (Lamouroux, 1824) (long internodes).
<i>Sertularella antarctica</i> Hartlaub, 1901	
Chile: 1) Isla Nueva; 2) Isla Lennox; 3) Lennox Cove; 4) Borgin Bay (Jäderholm, 1903)	Present study: <i>p.p. S. gaudichaudi</i> (Lamouroux, 1824) (material SMNH 123837, from Isla Nueva, reexamined; additional material could not be located in SMNH).
Chilean-Argentinean border, Punta Dúngeness (Hartlaub, 1905)	Present study: <i>S. antarctica</i> Hartlaub, 1901 (material ZMH C04161 reexamined).
South Georgia (Jäderholm, 1905)	Present study: <i>S. subantarctica</i> Galea, sp. nov. (material SMNH 123839 reexamined).
Argentina: Punta Peñas, San Julián (Blanco, 1963)	Present study, El Beshbeeshy (2011): <i>S. allmani</i> Hartlaub, 1901 (internodes short and with only a proximal bulge, hydrothecae conspicuously swollen adaxially). Blanco (1994): <i>S. antarctica</i> Hartlaub, 1901.
1) Argentina: off NE coast of Isla de los Estados; 2) Chile: Magellan Strait (Vervoort, 1972)	Present study: likely <i>S. antarctica</i> Hartlaub, 1901 (colonies irregularly branched, long internodes, relatively slender hydrothecae), despite similarities with the type of <i>Sertularia (unilateralis) secunda</i> Allman, 1888 reported by Vervoort (1972).
Chile: S of Chiloé I. (Galea <i>et al.</i> , 2009)	Present study: <i>S. allmani</i> Hartlaub, 1901 (colonies densely pinnate; regularly short internodes with a bulge at each end; short, adaxially swollen hydrothecae).
Argentina: off Punta Dúngeness (El Beshbeeshy, 2011)	Present study: <i>S. antarctica</i> Hartlaub, 1901.
<i>Sertularella argentinica</i> El Beshbeeshy, 2011	
Chile: Guaitecas Archipelago (Galea, 2007)	Present study: <i>S. robustissima</i> Galea, Häussermann & Försterra, sp. nov. Soto Ángel & Peña Cantero (2015): doubtful record.
Burdwood Bank (Soto Ángel & Peña Cantero, 2015)	Present study: <i>S. clausa</i> (Allman, 1888).

Original assignment, geographical origin(s), and reference(s)	Present taxonomic status, with remarks
<i>Sertularella atlantica</i> Stechow, 1920	
Argentina: Off Mar del Plata (Blanco, 1967)	Present study: <i>S. patagonica</i> (d'Orbigny, 1842) (short, geniculate stems, hydrothecae fusiform and conspicuously ringed throughout). Blanco (1994): <i>S. striata</i> Stechow, 1923b (curiously, this binomen is retained, although it was recognized as coterminous with d'Orbigny's species). El Beshbeeshy (2011): introduced <i>S. mogotesensis</i> = <i>nomen nudum</i> .
<i>Sertularella blanconae</i> El Beshbeeshy, 2011	
Chile: Punta Arenas (Galea & Schories, 2012a)	Present study, Galea <i>et al.</i> (2014): <i>S. blanconae</i> El Beshbeeshy, 2011.
Chile: 1) Isla Level; 2) Isla Teresa (Galea <i>et al.</i> , 2014)	Present study: <i>S. blanconae</i> El Beshbeeshy, 2011.
<i>Sertularella conica</i> Allman, 1877	
Argentina: off the Province of Santa Cruz, Albatross Stn. 2771 (Nutting, 1904)	Present study: <i>S. cruzensis</i> El Beshbeeshy, 2011. El Beshbeeshy (2011): introduced <i>S. grandensis</i> = <i>nomen nudum</i> . Vervoort (1972): <i>S. conica</i> Allman, 1877.
1) Argentina: from off Bahía Blanca to the S coast of Península Mitre; 2) Chile: Magellan Strait; 3) off NW Falkland Is. (Vervoort, 1972)	Present study, El Beshbeeshy (2011): <i>S. cruzensis</i> El Beshbeeshy, 2011.
1) Argentina: off Península Mitre and off Cabo dos Bahías; 2) off NE coast of Falkland Is. (Blanco, 1982)	Present study: <i>S. blanconae</i> El Beshbeeshy, 2011 (young, sparingly-branched colonies with monosiphonic stems; both shape and size of the hydrothecae distinctive).
Argentina: Mar del Plata (Genzano & Zamponi, 2003)	Present study: unidentifiable (neither description, nor illustration).
<i>Sertularella contorta</i> Kirchenpauer, 1884	
Argentina: Lemaire Strait (Nutting, 1904)	Present study: likely <i>S. contorta</i> Kirchenpauer, 1884.
Chile (<i>p.p.</i> Hartlaub, 1901)	Present study: <i>S. gaudichaudi</i> (Lamouroux, 1824) [Philippi's material studied by Hartlaub (1901)].
Falkland Is.: Port William (Jäderholm, 1905)	Present study: <i>S. contorta</i> Kirchenpauer, 1884 (material SMNH 123851 reexamined).
Falkland Is.: 1) Port Stanley; 2) Cape Pembroke (Ritchie, 1907; Rees & Thursfield, 1965)	Present study: <i>S. contorta</i> Kirchenpauer, 1884 (materials NMSZ 1921.143.1351C & D, from Cape Pembroke, reexamined; material from Port Stanley not examined here).
<i>Sertularella cylindritheca</i> (Allman, 1888)	
Between Tierra del Fuego and the Falkland Is. (Vervoort, 1972)	Present study, El Beshbeeshy (2011): <i>S. vervoorti</i> El Beshbeeshy, 2011.
<i>Sertularella ellisii</i> (Milne-Edwards, 1836) f. <i>lagenoides</i> Stechow, 1919	
Chile: 1) Golfo de Arauco, Bahía de Lota; 2) Península de Coquimbo (Leloup, 1974)	Present study: <i>S. mixta</i> Galea & Schories, 2012a (hydrothecal walls smooth, marginal cusps of equal development, 3 internal cusps).
<i>Sertularella fuegonensis</i> El Beshbeeshy, 2011	
Chile: Canal Vicuña (Galea, 2007)	Present study: <i>S. fuegonensis</i> El Beshbeeshy, 2011.
<i>Sertularella gayi gayi</i> (Lamouroux, 1821)	
Chile: 1) Puerto Harris, Isla Dawson; 2) Punta Arenas (Jäderholm, 1903)	Present study: <i>p.p. S. blanconae</i> El Beshbeeshy, 2011 (material SMNH 123866, from Punta Arenas, reexamined; material from Puerto Harris could not be located in SMNH).
Between Tierra del Fuego and the Falkland Is. (Naumov & Strepanjants, 1962)	Present study: unidentifiable (no description, no illustration).
Argentina: 1) off Península Valdés, Chubut; 2) off Puerto Deseado, Santa Cruz (Vervoort 1972)	Present study: possibly <i>S. blanconae</i> El Beshbeeshy, 2011 (fascicled stems, large hydrothecae, adnate for slightly less 1/2nd their length, free adaxial wall wrinkled).
1) Tierra del Fuego; 2) Falkland Is. (Stepanjants, 1979)	Present study: possibly <i>S. blanconae</i> El Beshbeeshy, 2011.
Argentina: ca. 80 km off the northeastern coast of Isla de los Estados (Blanco, 1982)	Present study: <i>S. clausa</i> (Allman, 1888) (colony structure not thoroughly described, but hydrothecae distinctive in both shape and size).

Original assignment, geographical origin(s), and reference(s)	Present taxonomic status, with remarks
Chile: 1) Fjord Comau; 2) Canal Adalberto; 3) Isla Camello (Galea, 2007)	Galea & Schories (2012a): <i>S. curvitheca</i> Galea & Schories, 2012a.
<i>Sertularella gayi parva</i> Billard, 1925	
Argentina: off the SE coast of Isla de los Estados (Blanco 1968)	Present study: <i>S. valdiviae</i> Stechow, 1923b (exceedingly long, slender and geniculate stem internodes, hydrothecae tronconical, free adaxial wall wrinkled). El Beshbeeshy (2011): <i>S. jorgensis</i> El Beshbeeshy, 2011.
<i>Sertularella geniculata</i> Hincks, 1874	
Chile: Bahía de Tocopilla (Leloup, 1974)	Galea <i>et al.</i> (2014): <i>S. curta</i> Galea & Schories, 2014.
<i>Sertularella geodiae</i> Totton, 1930	
Eastern coast of Tierra del Fuego (Naumov & Stepanjants, 1962)	Present study: likely <i>S. geodiae</i> Totton, 1930 (stems fascicled, branching in one plane, shape of hydrothecae fitting original description).
A perimeter ranging from the Magellan Strait, to the Falkland Is., to Burdwood Bank, Isla de los Estados, and Cape Horn (Vervoort, 1972)	Present study: possibly a mix of <i>S. blanconae</i> El Beshbeeshy, 2011 (polysiphonic stems, very short internodes, hydrothecal shape) and <i>S. hermanosensis</i> El Beshbeeshy, 2011 (hydrothecal shape). El Beshbeeshy (2011): <i>S. hermanosensis</i> .
Off the eastern entrance of the Magellan Strait (Blanco, 1976)	Present study, El Beshbeeshy (2011): <i>S. blanconae</i> El Beshbeeshy, 2011 (stems fascicled, regularly and alternately ramified, hydrothecae curved outwards, adaxial wall wrinkled).
Crozet Shelf (Millard, 1977)	Present study: likely <i>S. blanconae</i> El Beshbeeshy, 2011 (fascicled cauli, regular branching pattern, hydrothecae adnate for <i>ca.</i> 1/2nd their length, free adaxial wall undulated).
<i>Sertularella implexa</i> (Allman, 1888)	
Chile: Punta Arenas (Galea & Schories, 2012a)	Present study: <i>S. recta</i> Galea & Schories, sp. nov.
<i>Sertularella jorgensis</i> El Beshbeeshy, 2011	
Chile: Canal Farquhar (Galea 2007)	Present study: <i>S. tenella</i> (Alder, 1856).
1) South Sandwich Is.; 2) Elephant I. (Soto Ángel & Peña Cantero, 2015)	Present study: <i>S. valdiviae</i> Stechow, 1923b.
<i>Sertularella lagena</i> Allman, 1876	
French Southern and Antarctic Lands: Kerguelen Is. (Stechow, 1925)	Present study: <i>S. contorta</i> Kirchenpauer, 1884.
Chile: Punta Arenas (Galea & Schories, 2012a)	Present study: <i>S. antarctica</i> Hartlaub, 1901.
<i>Sertularella leiocarpa</i> (Allman, 1888)	
French Southern and Antarctic Lands: St. Paul (Stechow, 1925)	Present study: <i>S. leiocarpa</i> (Allman, 1888).
<i>Sertularella mediterranea</i> Hartlaub, 1901	
Argentina: Mar del Plata (Genzano, 1990)	Present study: <i>S. mediterranea</i> Hartlaub, 1901 (habit of colony and microscopic structure as in European material, though of smaller proportions). El Beshbeeshy (2011): <i>S. picta</i> (Meyen, 1834).
<i>Sertularella minuscula</i> (Billard, 1924)	
French Southern and Antarctic Lands: Kerguelen Is. (Redier, 1971)	Present study: unidentifiable, though hydrothecae in Redier's so called <i>S. minuscula</i> recall those of <i>S. valdiviae</i> Stechow, 1923b (material could not be located).
<i>Sertularella paessleri</i> Hartlaub, 1901	
Falkland Is.: Port Williams	Present study: likely <i>S. allmani</i> Hartlaub, 1901 (material could not be located in collections of ZMH).
<i>Sertularella peregrina</i> Bale, 1926	
Chile: Puerto Melinka, Guaitecas Archipelago (Leloup, 1974)	Present study: <i>S. mixta</i> Galea & Schories, 2012a (internodes short, hydrothecae fusiform, smooth, marginal cusps of equal development, 3 internal cusps, gonothecae similar).
<i>Sertularella picta</i> (Meyen, 1834)	
Chile: Isla Lennox (Jäderholm, 1903)	Present study: <i>S. gaudichaudi</i> (Lamouroux, 1824) (material SMNH 123881 reexamined).
Chile: 1) Isla Navarino; 2) Isla Lennox (Hartlaub 1905)	Present study: <i>S. gaudichaudi</i> (Lamouroux, 1824) (material ZMH C04172, from Isla Lennox, reexamined).

Original assignment, geographical origin(s), and reference(s)	Present taxonomic status, with remarks
Chile: Patagonia (Naumov & Stepanjants, 1962)	Present study: likely <i>S. gaudichaudi</i> (Lamouroux, 1824) (profuse branching, long internodes, short hydrothecae, adnate for 1/3rd their length).
Argentina: Puerto Madryn (Blanco, 1963)	Present study: <i>S. gaudichaudi</i> (Lamouroux, 1824) (exceedingly long internodes, hydrothecae short and swollen adaxially).
Argentina: Mar del Plata (Blanco, 1967)	Present study, Blanco (1994): <i>Sertularella mediterranea</i> Hartlaub, 1901 (short, sparingly-ramified stems, hydrothecae with unthickened rim, and no internal, submarginal cusps). El Beshbeeshy (2011): <i>S. picta</i> (Meyen, 1834).
South African Subantarctic Islands: Marion I. (Millard, 1971)	Present study: 1) MAR1014A is likely <i>S. gaudichaudi</i> (Lamouroux, 1824) (internodes moderately long, a proximal “annulation” on each internode, 3-4 twists on proximal end of 1st internodes of the side branches); 2) MAR1113 is possibly <i>S. subantarctica</i> Galea, sp. nov.
1) Argentina: off the N coast of the tip of Peninsula Mitre (Vema 14-14), off Isla de los Estados, off Deseado (Santa Cruz); 2) Chile: off Isla Nueva (Vervoort, 1972)	Present study, El Beshbeeshy (2011): <i>S. fuegonensis</i> El Beshbeeshy, 2011 (Vema 14-14). Present study: <i>S. implexa</i> (Allman, 1888) (remaining samples) (slender cauli, repeatedly branched side-branches, internodes moderately-long, hydrothecae occasionally shifted on to one side of the colony, adnate for 1/3rd, free adaxial wall with 1-3 short, transverse ridges).
French Southern and Antarctic Lands: Kerguelen and Crozet shelves (Millard, 1977)	Present study: <i>S. gaudichaudi</i> (Lamouroux, 1824) (slender and straggling stems, fascicled basally, internodes very variable in length, hydrothecae +/- shifted on one side).
1) Argentina: Patagonian Shelf to east of Peninsula Mitre; 2) eastern coast of the Falkland Is. (El Beshbeeshy, 2011)	Present study: <i>S. gaudichaudi</i> (Lamouroux, 1824).
<i>Sertularella polyzonias</i> (Linnaeus, 1758)	
Chile: Canal Trinidad (Ridley, 1881)	Present study: unidentifiable (no real description, no illustration). Hartlaub (1905): <i>S. polyzonias</i> (Linnaeus, 1758).
Falkland Is.: Port William (Allman, 1888)	Present study: likely <i>S. recta</i> Galea & Schories, sp. nov. (material no longer extant in NHM).
South Georgia (Pfeffer, 1889)	Present study: possibly <i>S. subantarctica</i> Galea, sp. nov. Hartlaub (1901): <i>S. protecta</i> Hartlaub, 1901.
1) South Georgia; 2) Falkland Is. (Jäderholm, 1905)	Present study: unidentifiable (neither description, nor illustration, material could not be located in SMNH).
1) Chile: Juan Fernandez Archipelago; 2) Falkland Is.: Port William (Jäderholm, 1910)	Present study: <i>p.p. Sertularella contorta</i> Kirchenpauer, 1884 (material SMNH 123884, from Port William, reexamined); <i>pp. Sertularella juanfernandezensis</i> Galea sp. nov. (material SMNH 123883, from Juan Fernandez, reexamined).
French Southern and Antarctic Lands: 1) St. Paul; 2) Kerguelen Is. (Vanhöffen, 1910)	Present study: <i>S. novarae</i> Marktanner-Turneretscher, 1890 (St. Paul, material ZMB Cni944 reexamined); <i>S. contorta</i> Kirchenpauer, 1884 (material ZMB Cni945 reexamined) and <i>S. gaudichaudi</i> (Lamouroux, 1824) (material ZMB Cni946 reexamined), both from Kerguelen Is.
French Southern and Antarctic Lands: Kerguelen Is. (Naumov & Stepanjants, 1962)	Present study: unidentifiable (neither description, nor illustration).
French Southern and Antarctic Lands: Kerguelen Is. (Redier, 1971)	Present study: unidentifiable (material could not be located).
Chile: Golfo de Ancud (Leloup, 1974)	Galea & Schories (2012a): <i>S. curvitheca</i> Galea & Schories, 2012a. Present study: material from Chiloé (M43) possibly not belonging here (shows affinities with <i>S. hermanosensis</i> El Beshbeeshy, 2011, though not reported from Chile yet).
Antarctica: Low I. (Blanco, 1984)	Present study: <i>S. sanmatiasensis</i> El Beshbeeshy, 2011.
Chile: 1) Fjord Comau; 2) Canal Fallos (Galea, 2007)	Galea & Schories (2012a): <i>S. curvitheca</i> Galea & Schories, 2012a.
1) Argentina: Patagonian shelf; 2) off the NE coast of Falkland Is. (El Beshbeeshy, 2011)	Present study: <i>S. recta</i> Galea & Schories, sp. nov.
<i>Sertularella protecta</i> Hartlaub, 1901	
Chile: 1) Lennox Cove; 2) Isla Lennox (Jäderholm, 1903)	Present study: <i>p.p. S. gaudichaudi</i> (Lamouroux, 1824) (material SMNH 123894, from Lennox Cove reexamined: exceedingly long –up to 4 mm– internodes, coexisting with short internodes; hydrothecae distinctive; material from Isla Lennox could not be located in SMNH).

Original assignment, geographical origin(s), and reference(s)	Present taxonomic status, with remarks
Patagonia (Rees & Thursfield, 1965)	Present study: <i>S. gaudichaudi</i> (Lamouroux, 1824) (material NMSZ 1959.33.472 reexamined: presence of long stem internodes).
<i>Sertularella robusta</i> Coughtrey, 1876	
Patagonia (Leloup, 1960)	Present study: <i>S. robusta</i> Coughtrey, 1876.
Between Península Mitre, Argentina, and Isla Nueva, Chile (Blanco, 1968)	Present study, Blanco (1994): <i>S. robusta</i> Coughtrey, 1876.
1) Argentina: off Deseado, Santa Cruz (Vema 18-18), around Peninsula Mitre, and Slogget Bay (Vema 17-48); 2) Chile: Magellan Strait; 3) between Tierra del Fuego and the Falkland Is. (Vervoort, 1972)	Present study: <i>S. microtheca</i> Leloup, 1974 (Vema 18-18) and <i>S. robusta</i> Coughtrey, 1876 (Vema 17-48). El Beshbeeshy (2011): introduced <i>S. stepanyantae</i> = <i>nomen nudum</i> .
Chile: 1) Golfo de Ancud; 2) around Chiloé I. (Leloup, 1974)	Present study: <i>S. robusta</i> Coughtrey, 1876.
Off the eastern entrance of Magellan Strait (Blanco, 1976)	Present study, Blanco (1994): <i>S. robusta</i> Coughtrey, 1876.
Chile: from the Guaitecas Archipelago to the southern fjords region (Galea, 2007)	Present study: <i>S. robusta</i> Coughtrey, 1876.
Argentine Shelf (El Beshbeeshy, 2011)	Present study: <i>S. microtheca</i> Leloup, 1974 (El Beshbeeshy's fig. 46E-H) and <i>S. robusta</i> Coughtrey, 1876 (El Beshbeeshy's fig. 46A-D).
1) Burdwood Bank; 2) South Sandwich Is. (Soto Àngel & Peña Cantero, 2015)	Present study: (?) <i>S. tenella</i> (Alder, 1856) (thick internodes with respect to the hydrothecal size, lack of intrathecal cusps).
<i>Sertularella sanmatiasensis</i> El Beshbeeshy, 2011	
Chile: S of Chiloé I. (Galea <i>et al.</i> , 2009)	Galea & Schories (2012a): <i>S. mixta</i> Galea & Schories, 2012a.
South Sandwich Is. (Soto Àngel & Peña Cantero, 2015)	Present study: <i>S. sanmatiasensis</i> El Beshbeeshy, 2011 (hydrothecal shape distinctive).
<i>Sertularella striata</i> Stechow, 1923b	
Argentina: Barranca Final, Gulf of San Matías (Blanco, 1974)	Present study: uncertain identity. Blanco (1994): <i>S. striata</i> Stechow, 1923b. El Beshbeeshy (2011): introduced <i>S. mogotesensis</i> = <i>nomen nudum</i> .
Argentina: Mar del Plata (Genzano, 1990)	Present study: <i>S. patagonica</i> (d'Orbigny, 1842).
<i>Sertularella tenella</i> (Alder, 1856)	
Argentina: Slogget Bay, Canal Beagle (Jäderholm, 1905)	Present study: <i>S. robusta</i> Coughtrey, 1876 (long, geniculate internodes, small and transversely-ribbed hydrothecae, submarginal cusps).
Argentina: Puerto Deseado, Bahía Uruguay (Blanco, 1963)	Present study: <i>S. robusta</i> Coughtrey, 1876 (long, geniculate internodes, hydrothecae small and transversely-ribbed, intrathecal cusps).
Off Burdwood Bank (Ritchie 1907, Rees & Thursfield, 1965)	Present study <i>S. robusta</i> Coughtrey, 1876 (material NMSZ1959.33.499 reexamined).
Chile: Caleta La Arena (Galea & Schories, 2012a)	Present study: <i>S. tenella</i> (Alder, 1856).
<i>Sertularella uruguayensis</i> Mañé Garzón & Milstein, 1973	
Uruguay: Cape Polonio (Milstein, 1976)	Present study: <i>S. mediterranea</i> Hartlaub, 1901.
<i>Sertularella vervoorti</i> El Beshbeeshy, 2011	
1) Burdwood Bank; 2) South Georgia (Soto Àngel & Peña Cantero, 2015)	Present study: <i>S. vervoorti</i> El Beshbeeshy, 2011 (hydrothecal shape and size distinctive).