

**REMARKS ON THE OPERCULAR PALEAE OF SABELLARIA BELLA GRUBE,
1870 AND SABELLARIA BELLIS HANSEN, 1882 (SABELLARIIDAE;
POLYCHAETA) FROM THE SOUTHEAST COAST OF BRAZIL**

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ABSTRACT

An extended description of the opercular paleae of **Sabellaria bella** Grube and **S. bellis** Hansen, two poorly known sabellariid species, is given. Comments are made upon the similarities of **S. bella** and **S. bellis** with related species. Both are currently only known from the southeast coast of Brazil.

Key Words: **Sabellaria bella**, **S. bellis**, Sabellariidae, taxonomy, SE Brazil.

RESUMO

Observações sobre as páleas operculares de Sabellaria bella Grube, 1870 e Sabellaria bellis Hansen, 1882 (Sabellariidae; Polychaeta) da costa sudeste do Brasil. Uma descrição detalhada das páleas operculares de **Sabellaria bella** Grube e **S. bellis** Hansen, duas espécies pouco conhecidas da família Sabellariidae, é fornecida. São discutidas as semelhanças com espécies próximas. Ambas as espécies são conhecidas atualmente apenas da costa sudeste do Brasil.

Palavras-chave: **Sabellaria bella**, **S. bellis**, Sabellariidae, taxonomia, SE Brasil.

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INTRODUCTION

Four species of **Sabellaria** are presently known from the Brazilian coast: **Sabellaria bella** Grube, 1870, **S. bellis** Hansen, 1882, **S. nanella** Chamberlin, 1919, recorded by Rullier & Amoureux (1979) and **S. wilsoni** Lana & Gruet (in press). In spite of having been redescribed by Augener (1934), **S. bella** and **S. bellis** remain poorly known. In this paper, we present additional taxonomic observations on both species based upon material previously studied by Rullier & Amoureux (1979) and collected during the Calypso Expedition to the atlantic coast of South America in 1961/1962. Descriptions are based upon optical and SEM preparations from material deposited in the Museum National d'Histoire Naturelle of Paris (MNHN) and in the collection of the Centro de Biologia Marinha in Pontal do Sul, Brazil (MCBM-BPO).

Sabellaria bella Grube, 1870

(Figs. 1 and 2)

Sabellaria bella Grube, 1870: 69; Augener, 1934: 151, fig. 31a-d

Sabellaria alcocki. — Rullier & Amoureux, 1979: 187 (in part). non **Sabellaria alcocki** Gravier, 1906

Material examined. St. 98, R.V. Calypso, 21°22'S, 40°43'W off Espírito Santo State, SE Brazil, 1.12.1962, 25 m depth, silty sand (1 specimen, MNHN AK 568). Ponta das Conchas, Mel Island, Bay of Paranaguá, SE Brazil, 25°32'18"S, 48°17'24"W, 24.02.1984, intertidal, rock (1 specimen, MCBM-BPO-251).

Description. Opercular paleae are arranged in three rows. Outer or external paleae number about 20 pairs, middle ones number 13 pairs and inner ones about 12 pairs. There are three pairs of dorsal acicular or nuchal setae.

Outer or external paleae are asymmetrical and their width decreases slightly from the base to the first spines (Figs 1A and 2A). 2 to 3 lateral spines are present on each side of a central or median spike. This central spike has five to six

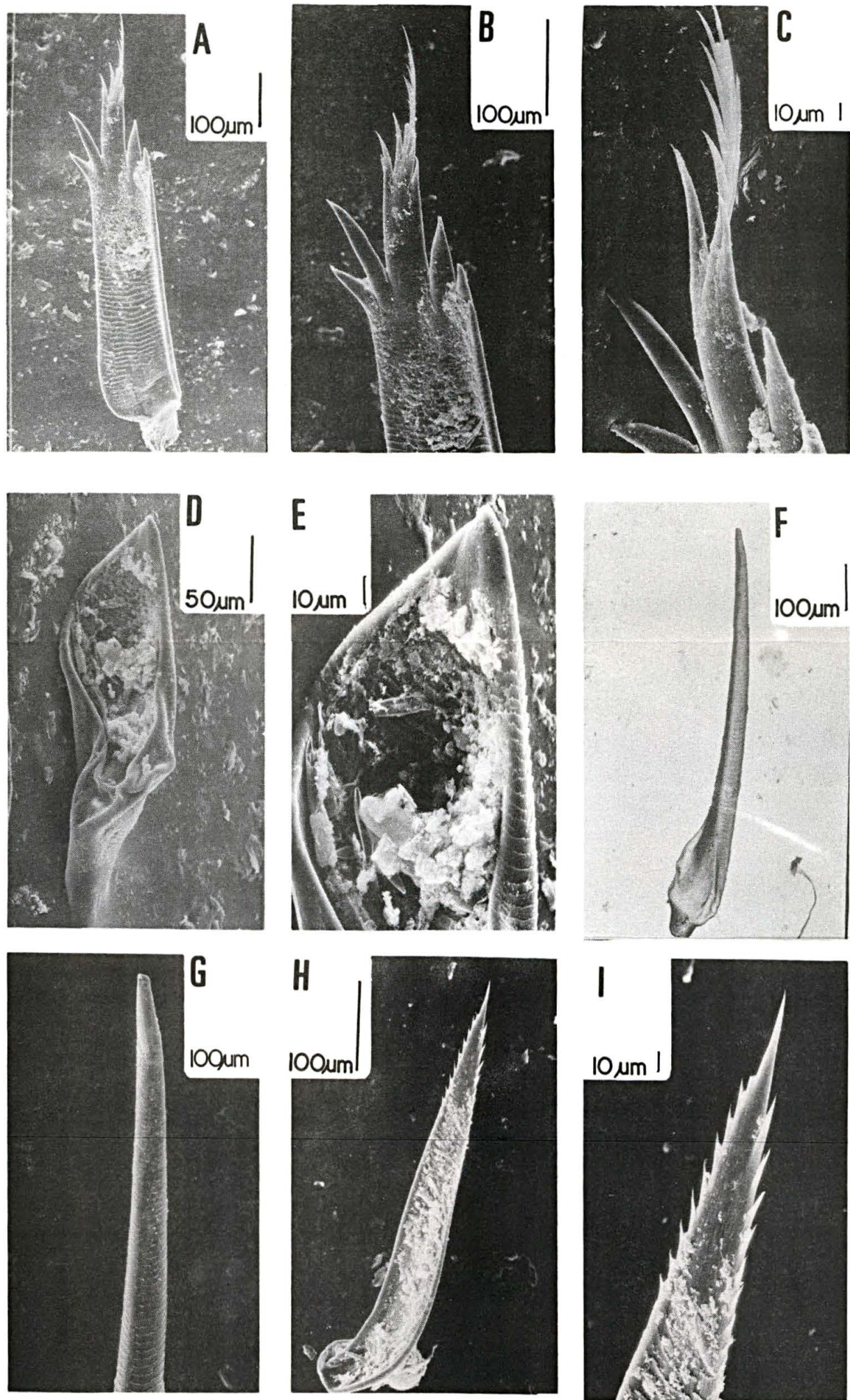


Fig. 1 *Sabellaria bella* Grube (MNHN, AK 568) — A. Outer palea. B. Lateral spines and central spike of outer palea. C. Central spike with broken distal end. D. Short middle palea. E. Detail of short middle palea. F. Long middle palea. G. Tip of long middle palea. H. Inner palea. I. Detail of inner palea.

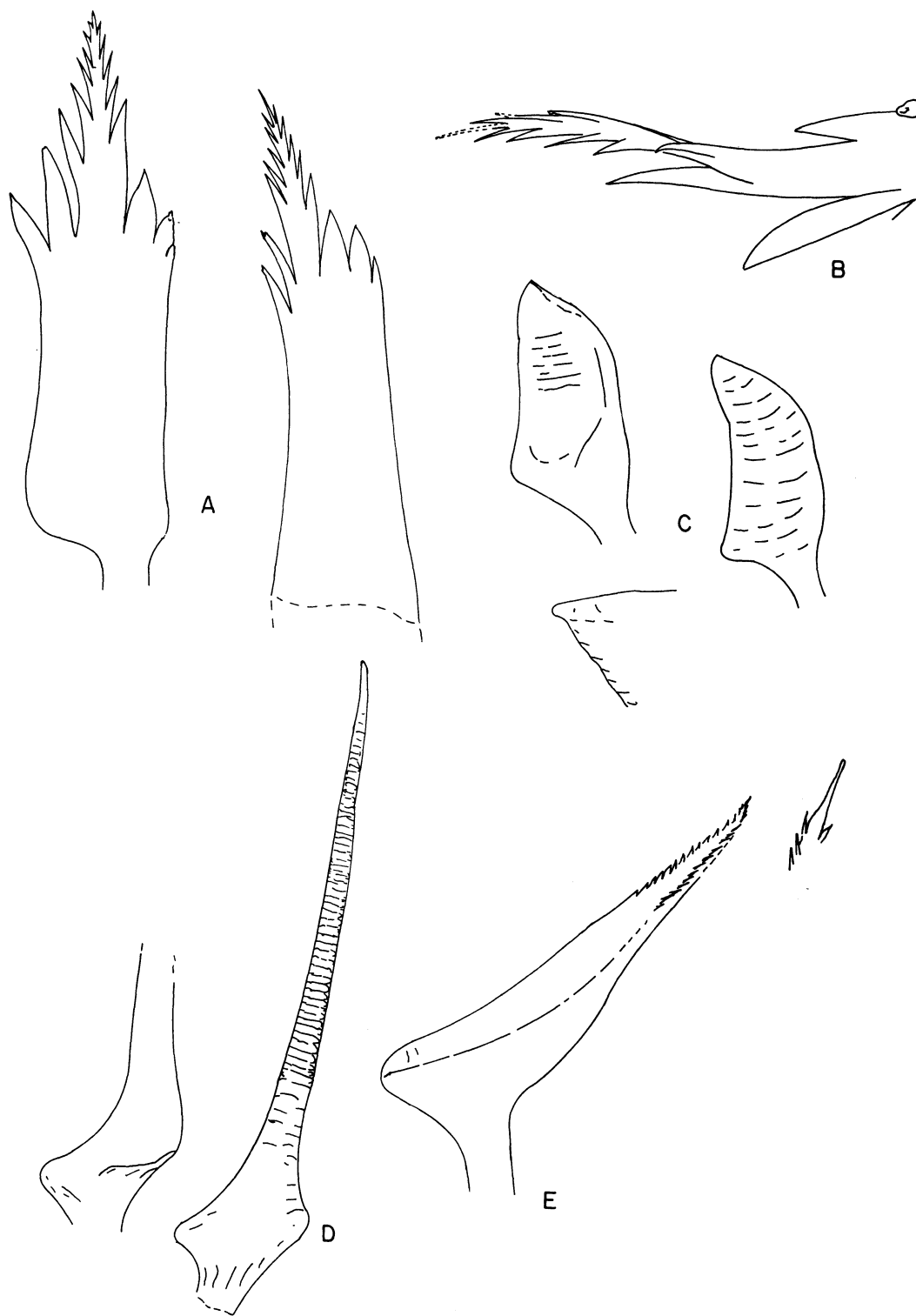


Fig. 2 *Sabellaria bella* Grube (MNHN, AK 568) — A. Outer palea (total length 750 μ m). B. Outer palea with end of central spike broken (from SEM preparation). C. Short middle palea (total length 250 μ m). D. Long middle palea (total length 950 μ m). E. Inner palea (total length 590 μ m).

lateral teeth; it is slightly twisted and stays in a different plane from the limb of the palea (Fig. 1B). The distal end of the central spike is often broken (Figs 1C and 2B).

Middle paleae alternate long and short, but not in a regular way. Short middle paleae are more numerous (two or three to one long middle palea) and about three times shorter than the long middle paleae. Short middle paleae are spoon-shaped (Fig. 1D) with finely crenulate borders, because of the transversely striated structure and a smooth apex (Figs 1E and 2C). Long middle paleae are narrow and nearly straight, with a broader and slightly asymmetrical excavated base (Figs 1F and 2D). The flat surface is strongly crenulated but tapers to a fine and smooth point (Figs 1G and 2D).

Inner paleae are geniculated, basally excavated and serrated along the distal borders, with about 13 or more pairs of small spines (Figs 1H and 2E). The distal median spine is about three to four times longer than the lateral ones (Figs 1I and 2E).

Remarks. *Sabellaria bella* was described from Desterro Island (now Santa Catarina Island) off the southeast coast of Brazil. Grube (1870) provided a rather succinct description, with no drawings. The poorly preserved type-material was later redescribed by Augener (1934), who identified and illustrated the opercular paleae. Augener described provisionally two kinds of inner paleae, probably on account of the distorted arrangement of middle and inner rows. In fact, as Augener himself had suspected and as Hartman (1944, p. 343) later suggested, Augener's figure 31c (1934, p. 152) depicts a long middle palea and not an inner one. Fine serrations are conspicuous along the distal third of inner paleae, as shown in Augener's figure 31d (1934, p. 152) and in the material herein described.

Some additional material from Beaufort, North Carolina (USA) was later reported by Hartman (1944) as *Sabellaria bella*, but both her description and illustrations refer to "distally entire" inner paleae (1944, p. 342 and pl. 33, fig. 55). Another specimen from Peru was also described and figured with smooth inner paleae (1944, pl. 33, fig. 64) and as Hartman stated "differs from the Atlantic form chiefly in that the distal end of the

outer paleae is more closely serrated". We suggest that both the material from Beaufort and Peru can not be referred to **Sabellaria bella** and should be re-examined. Morphological features of the material deposited in MCBM are identical to those described above.

Sabellaria bella is currently only known from the type-locality, from the coast of Paraná State and in shelf waters off Espírito Santo State (SE Brazil).

Sabellaria bellis Hansen, 1882
(Figs 3 and 4)

Sabellaria bellis Hansen, 1882: 19, pl. VI, figs 5-17; Augener, 1934: 149, fig. 30a-e; Hartman, 1944: 339, pl. 30, figs 27-29; Rullier & Amoureux, 1979: 188.

Material examined. St. 149, R. V. Calypso, 27°15'S, 48°29'W, off Santa Catarina State (SE Brazil), 16.12.1961, 18 m depth, sand (1 specimen, MNHN AK 566).

Description. Outer paleae have two well developed lateral teeth (rarely a small additional one) on each side of a basally broad median spike (Figs 3A and 4A). The median spike is slightly bent to one side (strongly bent in some SEM preparations, as shown in Figs 3B and 4B, C), fringed with 5 to 7 spines on each side and ended by a thin median spine; lateral spines of the median spike are not in the same plane (Fig. 3C).

Middle paleae are all of the same length, short and spoon-shaped, with minute crenulations along the lateral margins (Figs 3D and 4D). The blunt distal border is typically provided with a slight indentation (Fig. 3E).

Inner paleae are thin and long, basally excavated and ended by about 6 distal spines (Figs 3F and 4E). The median spine is stouter than the others; progressively smaller spines are present on each side of the paleae along the lateral borders (Figs 3G and 4F). These smaller spines are well seen only on SEM preparations.

Remarks. **Sabellaria bellis** was described by Hansen (1882)

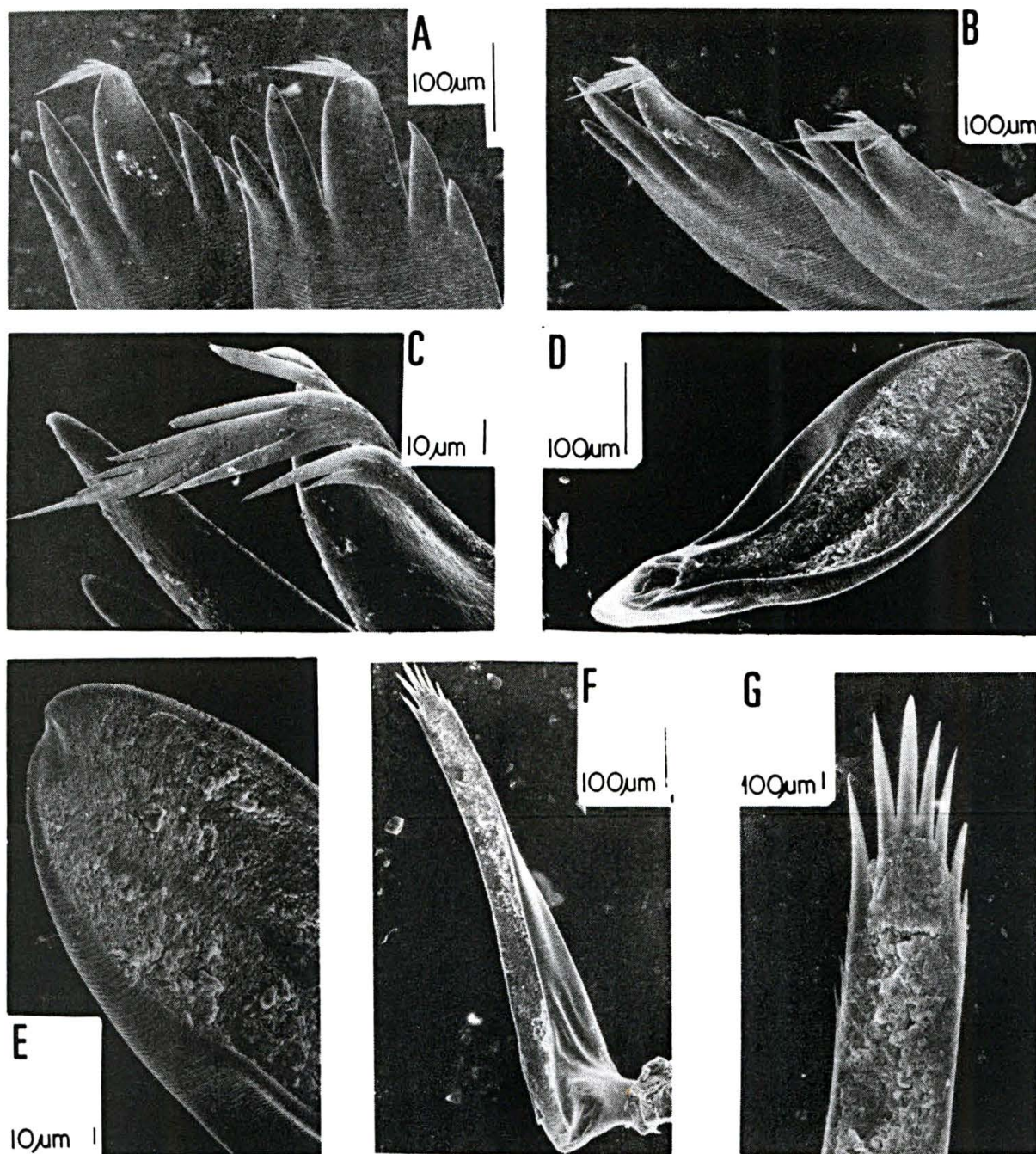


Fig. 3 *Sabellaria bellis* Hansen (MNHN, AK 566) — A. Outer paleae. B. Detail of outer paleae. C. Central spike of outer palea. D. Middle palea. E. Detail of distal border of middle palea. F. Inner palea. G. Detail of inner palea.

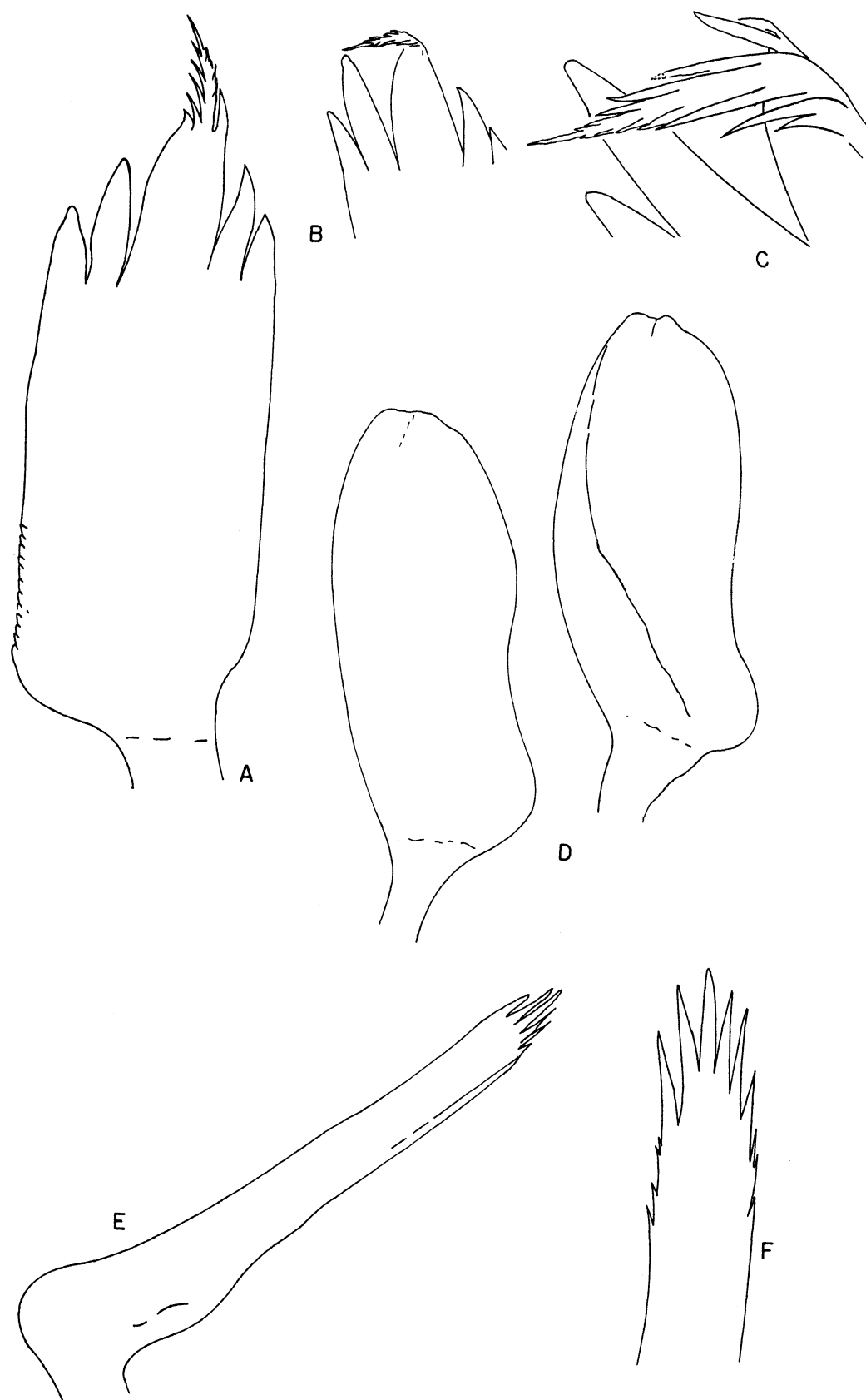


Fig. 4 **Sabellaria bellis** Hansen (MNHN, AK 566) — A. Outer palea (total length 880 to 950 μ m, width 180 to 250 μ m). B and C. Details of central spike from outer palea (SEM preparation, central spike artificially bent). D. Middle paleae (total length 560 to 650 μ m). E. Inner palea (total length 860 to 920 μ m). F. Detail of inner palea (SEM preparation).

from Rio de Janeiro (Brazil). The original description was rather succinct but some drawings were provided. Hansen's illustration of an outer palea (1882, pl. VI, fig. 13) do not agree with the type-lot, as later stated by Augener (1934), who redescribed the species. Both Hansen's and Augener's drawings seem to depict outer paleae broken at the distal end; nevertheless it can be recognized that these paleae have 4 to 5 teeth, including a longer median spike. Augener (1934) also suggested that the median distal spine of the inner paleae could be provided with secondary teeth, though most of the examined paleae were broken. No secondary teeth were seen in the material studied herein, not even in entire paleae.

Hartman (1944, p. 339) stated that the similarities between **Sabellaria pectinata moorei** Monro, 1933, known from Balboa (Pacific coast of Panama) and **S. bellis** "are so striking that it is difficult to separate them". Fauchald (1977, p. 55) later agreed that **Sabellaria moorei** "resembles **S. bellis** Hansen (1882) closely, but material from the original locality of Hansen's species will have to be examined in order to establish the synonymy". In fact, the lateral edges of inner paleae of **S. bellis** are not so closely serrated as in **S. moorei** (Monro, 1933, p. 1064). In addition, **S. bellis** have entire outer paleae with much longer median spikes.

Sabellaria bellis is presently known from Rio de Janeiro and Santa Catarina States (SE Brazil).

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