



## Two new species of *Schizomavella* (Bryozoa, Cheilostomatida)

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**Abstract:** Two new species of the genus *Schizomavella* are described from material deposited in the Muséum National d'Histoire Naturelle, Paris. Moreover the presence of *Schizomavella auriculata* and *Schizomavella teresae* in the Mediterranean is reported.

**Résumé :** Deux espèces nouvelles du genre *Schizomavella* sont décrites d'après un matériel déposé au Muséum National d'Histoire Naturelle, Paris. Par ailleurs nous signalons la présence de *Schizomavella auriculata* et *Schizomavella teresae* en Méditerranée.

**Keywords:** Bryozoa, *Schizomavella*, New Species, Mediterranean.

### Introduction

The genus *Schizomavella* Canu & Bassler, 1917 is one of the most common Bryozoans occurring in the Atlanto-Mediterranean region and Hincks (1880), Canu & Bassler (1925, 1928, 1930) and Gautier (1961), among other authors, have described numerous species and varieties.

Recently, Hayward & Thorpe (1995) and Reverter-Gil & Fernández-Pulpeiro (1995) have re-described some of the most common species of the genus *Schizomavella*, and have also described other new species. For this kind of study it is essential to carry out a comprehensive bibliographical review and to examine both type specimens and other material held in collections, and so we refer to our previous paper on this genus (Reverter-Gil & Fernández-Pulpeiro, *op. cit.*).

During a stay at the Muséum National d'Histoire Naturelle (MNHN), Paris, after the publication of our first

article, we examined two specimens, deposited in the Gautier Collection (Laboratoire de Biologie des Invertébrés Marins et Malacologie, LBIMM) and in the Canu Collection (Laboratoire de Paléontologie, LP). These specimens can be attributed to the genus *Schizomavella* but, due to their particular characteristics, cannot be assigned to any species known from the Atlanto-Mediterranean region or from elsewhere. These specimens, considered as new species, are here described.

### Results

*Schizomavella triangularis* sp. nov.  
(Fig. 1)

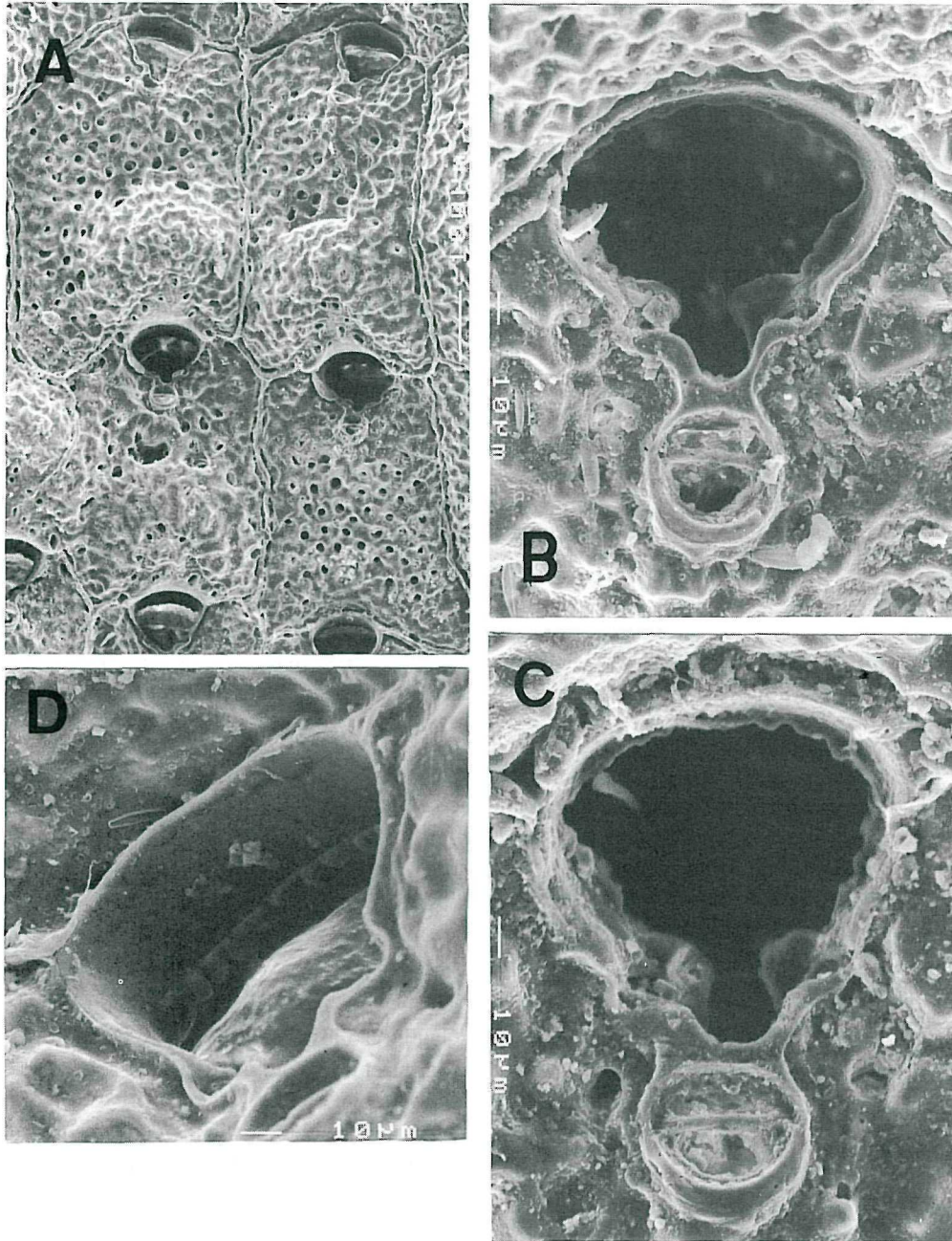
**HOLOTYPE:** MNHN-LP R. 55 364. Canu Collection. One ovicellate colony (material partially gold-coated), on the skeleton of an Anthozoan.

### Diagnosis

*Schizomavella* with a triangular-shaped orifice with its disto-lateral border internally denticulate. Distal border of

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**Figure 1.** *Schizomavella triangularis* sp. nov. (Holotype). A: ovicellate and non ovicellate autozooids. B, C: primary orifice and suboral avicularium. D: primary orifice showing the denticulate distal border.

**Figure 1.** *Schizomavella triangularis* sp. nov. (Holotype). A : autozoïdes ovicellés et non ovicellés. B, C : orifice primaire et aviculaire suboral. D : orifice primaire avec le bord distal denticulé.

the orifice slightly convex; proximal border with distinct lateral corners.

*Etymology:* the specific name *triangularis* refers to the shape of the primary orifice.

#### *Description*

Colony forming a broad spreading sheet, unilaminar to multilaminar. Autozooids rectangular to polygonal, in radiating series, separated by distinct grooves.



Frontal wall granular, slightly convex, perforated by many small pores, with a suboral umbo poorly developed.

Primary orifice triangular-shaped, wider than long, with disto-lateral border internally denticulate; distal border slightly convex; proximal border with distinct lateral corners; sinus occupying about half the width of the proximal border. Condyles distinctive, broader than long, extending beyond the edges of the sinus. Oral spines absent.

Suboral avicularium monomorphic, small, 0.044 mm long by 0.038 mm wide, normal to acute to the frontal plane, immediately proximal to the sinus, its rim continuous with that of the orifice, with elliptical proximally directed mandible, and a slender crossbar.

Ovicell hyperstomial, spherical, partially immersed in the succeeding zooid. Ooecial cover nodular, imperforate. Proximal subtriangular area perforated by few rounded pores.

#### Measurements (in mm)

Laz:  $0.47 \pm 0.05$  (n = 20). laz:  $0.32 \pm 0.04$  (n = 20).

Lo:  $0.08 \pm 0.01$  (n = 20). lo:  $0.11 \pm 0.006$  (n = 20).

Lov:  $0.22 \pm 0.013$  (n = 20). lov:  $0.27 \pm 0.02$  (n = 20).

#### Remarks

From the shape of the orifice and the ovicell, *S. triangularis* can be included in the Group 1 of the genus *Schizomavella*, as defined by Reverter-Gil & Fernández-Pulpeiro (1995).

The shape of the orifice of *S. triangularis*, typically triangular and disto-laterally denticulate, clearly differentiates this species from the other species of the genus.

From the whole colony, zooids, avicularia and ovicells appearances, this species is very similar to *Schizomavella hondti* Reverter-Gil & Fernández-Pulpeiro, 1995 (see Fig. 1 A in the present study and Reverter-Gil & Fernández-Pulpeiro, 1995, Fig. 6 A, C). The two species are, however, distinguished by the shape of the orifice and by the fact that in *S. hondti* the avicularium is separated from the border of the orifice, while in *S. triangularis* its rim is continuous with that of the orifice.

The shape of the orifice recalls the description of *Schizomavella inclusa* (Thornely, 1906). However, a close examination of a specimen of this species (NHM-1987.1.18.39, Hayward Collection) shows that there are clear differences between the shapes of the orifices of the two species, and that the avicularium, which is immediately suboral in *S. triangularis*, is displaced towards the centre of the zooid in *S. inclusa*.

The description of *S. triangularis* is based on a single, large specimen, approximately 4.5 cm<sup>2</sup>, in the Canu Collection (MNHN-LP). It was thus impossible to carry out a study of the possible variations which this species may show (polymorphism of the avicularium, variation of degree

of calcification etc.). We were, however, able to verify that the development of the internal denticulation of the orifice varies in different zooids, being always present in the distal border of the orifice, but frequently lacking in the lateral borders. The shape of the orifice, which is essential to the identification of the species, is so characteristic, that the species would be perfectly recognizable whatever its form of growth.

The specimen examined is attached to the skeleton of an Anthozoan, together with a colony of *Puellina (Cribrilaria) radiata* (Moll, 1803) (ovicellate) and a colony of *Puellina (Cribrilaria)* sp. (ovicellate). The sample, a small box, furthermore includes two shells (one broken), on which are attached two colonies (one ovicellate) of *Schizomavella auriculata* (Hassall, 1842), one ovicellate colony of *Schizomavella teresae* Reverter-Gil & Fernández-Pulpeiro, 1995, two colonies (one ovicellate) of *Chorizopora brongniartii* (Audouin, 1826), one colony of *Microporella ciliata* (Pallas, 1766) and one colony of *Fenestulina malusii* (Audouin, 1826). The sample also includes two labels: one with the indication "Schz. auriculata, Le Croisic à prep.", with the locality crossed out in pencil and "50 Oran" added, the other with the indication "Schizoporella auriculata typica, Oran 50 M".

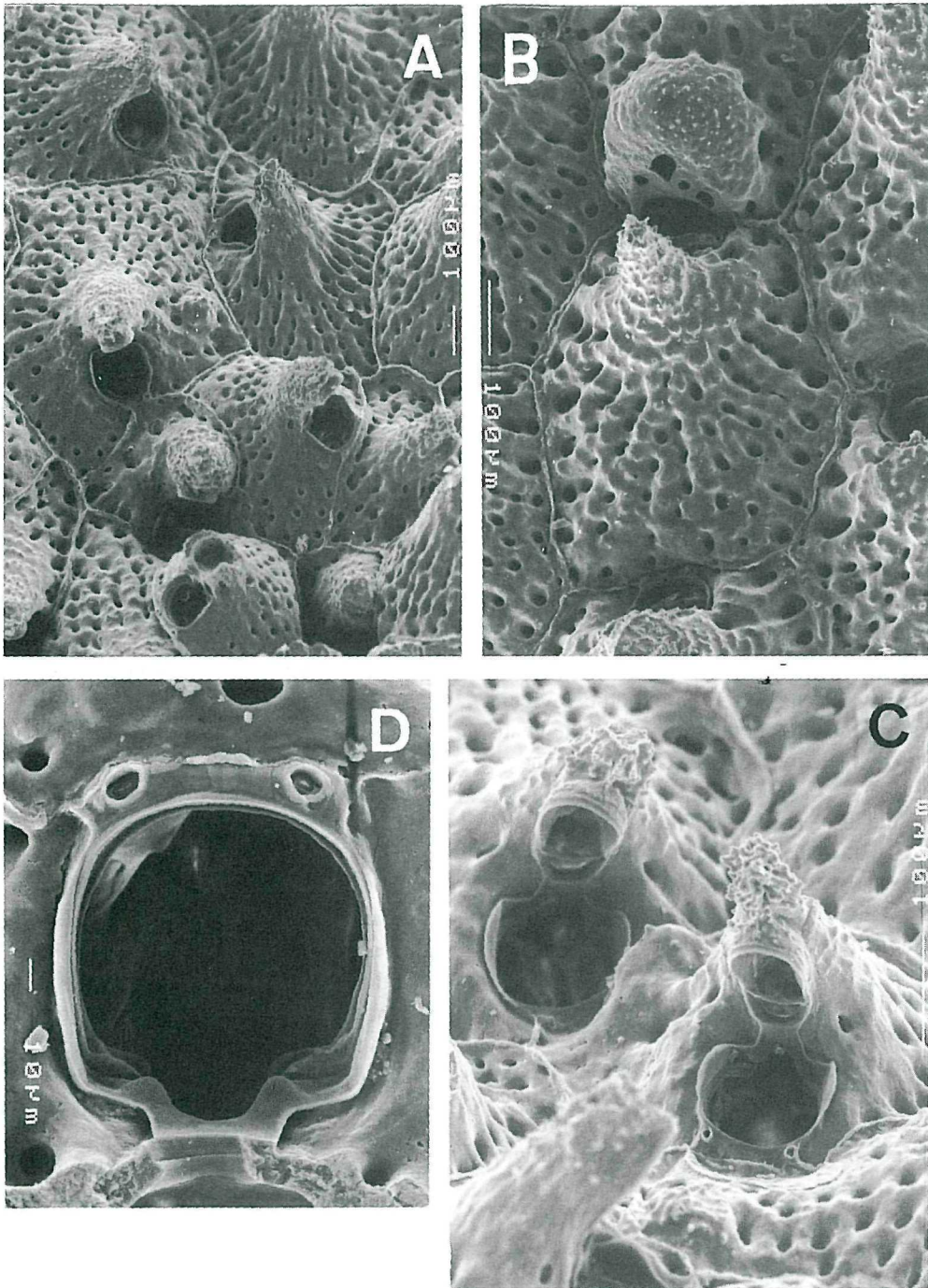
In spite of the doubts which may exist as to the locality of this sample, because of the indications on the two labels included, we believe that all the material comes from Oran (Algeria) and not from Le Croisic (Brittany). First, the label written "Le Croisic" is crossed out and second, the *S. triangularis* colony is accompanied by a colony of *Puellina radiata*, a species which, although it has been cited from the Atlantic (Harmelin & d'Hondt, 1992; Reverter & Fernández, 1996) is typically a Mediterranean species and appears to be absent from Brittany and the Bay of Biscay. It should also be mentioned that we found another sample in the Canu Collection (MNHN-LP) from Oran, identified as "Schizoporella auriculata var. mamillata", which contains a colony of *Schizomavella cuspidata* (Hincks, 1880), and three ovicellate colonies of *S. teresae*. Thus, as well as the existence of *S. triangularis* in Oran, we confirm that both *S. auriculata* and *S. teresae* do exist in the Mediterranean.

*Schizomavella gautieri* sp. nov.

(Fig. 2)

HOLOTYPE: MNHN-LBIMM-BRY-11158. (External label): "Schizomavella auriculata, St. A16, Y. Gautier, mis. Prof. Lac. Dut., 16 juin 1952, entre Oran et Mostaganem (Algerie)". (Internal label): "Schizomavella auriculata !?, St. A16 Algerie 1952, "Prof. Lac. Duth". Gautier Collection. One ovicellate colony (material partially gold-coated).





**Figure 2.** *Schizomavella gautieri* sp. nov. (Holotype). A: autozooids showing the suboral umbo. B: ovicellate autozooid. C: two autozooids showing the suboral umbo and the avicularia, and the basis of two spines. D: primary orifice with bases of two spines.

**Figure 2.** *Schizomavella gautieri* sp. nov. (Holotype). A : autozoïdes montrant l'umbo suboral. B : autozoïde ovicellé. C : deux autozoïdes montrant les umbos suboraux, les aviculaires, et les bases de deux épines. D : orifice primaire avec les bases de deux épines.



### Diagnosis

*Schizomavella* with subquadrate orifice and smooth condyles, stout conical umbo with a distal, large, rectangular avicularium, and smooth ovicell with few big pores.

**Etymology:** This species is dedicated to the bryozoologist Dr. Yves-Victor Gautier, who collected, studied and deposited at the Muséum National d'Histoire Naturelle, Paris, the specimen here described as a new species.

### Description

Colony forming irregular unilaminar to multilaminar sheets. Autozooids polygonal, in radiating series, separated by distinct grooves.

Frontal wall rugose, convex, perforated by many circular pores, deeply immersed in heavily calcified zooids.

Primary orifice wider than long, subquadrate, surrounded by a very conspicuous rim, with a U-shaped sinus occupying more than half the width of proximal border and with rim developed as shoulders on each side. Condyles broader than long, with smooth distal border, reaching the edges of the sinus. Two rudimentary oral spines, often missing.

Avicularium monomorphic, situated immediately proximal to the sinus, the rim continuous with that of the orifice, placed distally on a stout conical umbo finely granular at its apex. Rostrum of the avicularium rectangular to spatulate, 0.16 mm long by 0.068 mm wide, perpendicular or oblique to the frontal plane and directed apically, with a slender crossbar. Foramen nearly coextensive with the rostrum.

Ovicell hyperstomial, globular. Ooecial cover smooth, imperforate, sometimes with a small, finely granular, median umbo. Proximal area perforated by few rounded pores.

### Measurements (in mm)

Laz:  $0.53 \pm 0.05$  (n = 20). laz:  $0.40 \pm 0.06$  (n = 20).

Lo:  $0.09 \pm 0.005$  (n = 20). lo:  $0.11 \pm 0.008$  (n = 20).

Lov:  $0.21 \pm 0.02$  (n = 20). lov:  $0.25 \pm 0.01$  (n =).

### Remarks

From the shape of the orifice and the presence in the ovicell of a proximal porous area, *S. gautieri* can be included in the Group 1 of the genus *Schizomavella*, as defined by Reverter-Gil & Fernández-Pulpeiro (1995).

The appearance of the colony of *S. gautieri* is similar to that of *Schizomavella hastata* (Hincks, 1862) due to the presence in both species of a stout suboral conical umbo. The orifice is, however, clearly different in the two species. Furthermore, in *S. hastata* the rostrum of the avicularium is situated laterally on the umbo and is lanceolate, while in *S. gautieri* it is more or less rectangular and is situated distally, immediately proximal to the sinus, with the rim of the

avicularium continuous with that of the orifice. It is possible that this species has been cited as *S. hastata* owing to their superficial similarities and to the confusion surrounding the specific characteristics of *S. hastata* prior to the recent re-description of this species by Hayward & Thorpe (1995).

The primary orifice of *Schizomavella gautieri* is similar to that of *S. sarniensis* Hayward & Thorpe, 1995, but both species differ by the shape of the condyles, which are large, transversely oval, with finely toothed distal edges and conspicuous disto-lateral corners in *S. sarniensis*, while in *S. gautieri* they are smaller, smooth and lack the conspicuous disto-lateral corners. The general appearance of the colony and the zooids is furthermore totally different in the two species.

As with the previous species, the description of *S. gautieri* is based on a single specimen from Algeria, belonging to the Gautier Collection (MNHN-LBIMM), and labelled "*Schizomavella auriculata* ?!". In spite of a careful re-examination of numerous samples from this collection, we found no other similar colonies and it was thus impossible to carry out a study of the variations which may occur in this species (polymorphism of the avicularium, variation of the degree of calcification etc.).

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### References

- Canu F. & Bassler R.S. 1925. Les Bryozoaires du Maroc et de Mauritanie. *Mémoires de la Société des Sciences naturelles du Maroc*, **10** : 1-79.
- Canu F. & Bassler R.S. 1928. Les Bryozoaires du Maroc et de Mauritanie (2<sup>e</sup> mémoire). *Mémoires de la Société des Sciences naturelles du Maroc*, **18** : 1-85.
- Canu F. & Bassler R.S. 1930. Bryozoaires marins de Tunisie. *Annales de la Station océanographique de Salambô*, **5** : 1-91.
- Gautier Y.-V. 1961. Recherches écologiques sur les Bryozoaires Chilostomes en Méditerranée occidentale. *Travaux de la Station Marine d'Endoume*, **38** (25) : 1-434.
- Harmelin J.G. & d'Hondt J.-L. 1992. Bryozoaires des parages de Gibraltar (campagne océanographique BALGIM, 1984). 1-Chéilostomes. *Bulletin du Muséum national d'Histoire naturelle*, Paris, 4<sup>e</sup> sér., **14** : 23-67.
- Hayward P.J. & Thorpe J.P. 1995. Some British species of *Schizomavella* (Bryozoa: Cheilostomatida). *Journal of Zoology*, London, **235** : 661-676.

- Hincks T. 1880.** *A History of the British marine Polyzoa.* Van Voorst: London. 2 vol, 601 pp.
- Reverter O. & Fernández E. 1996.** Cribrilinidae (Bryozoa, Cheilostomatida) from the Ría de Ferrol (NW Spain). *Journal of Natural History*, **30** : 1247-1260.
- Reverter-Gil O. & Fernández-Pulpeiro E. 1995.** Some species of *Schizomavella* (Bryozoa, Cheilostomatida) from the Atlanto-Mediterranean Region. *Cahiers de Biologie Marine*, **36** : 259-275.
- Thornely L.R. 1906.** Polyzoa. In Corrections and additions. In *Report to the Government of Ceylon on the pearl oyster fisheries of the Gulf of Manaar, by W.A. Herdman, with supplementary reports upon the marine biology of Ceylon, by other naturalists* Part 5 : 449-450. Royal Society, London.