

Some records of Bryozoans from NW Spain

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Abstract: Data on 12 species of Cheilostomatous Bryozoan collected from the NW of the Iberian Peninsula are included. Five of them are cited for the first time from this area; revision of collection samples confirms the presence of six other species, previously cited under different names. One species (*Smittina jordii*) is new to science. The record of *Escharella praealta* extends its geographical and bathymetrical range. Upgrading of *Bugula neritina sessilis* to species level is proposed, placing it in the genus *Dendrobeania*.

Résumé : Nous regroupons dans le présent travail des observations portant sur douze espèces de Bryozoaires Chilostomes, récoltées au nord-ouest de la Péninsule Ibérique, dont cinq sont citées pour la première fois; la révision d'échantillons de collections confirme la présence de six autres espèces, citées précédemment sous des noms différents. Une nouvelle espèce, *Smittina jordii* est décrite. La signalisation d'*Escharella praealta* élargit sa répartition géographique et bathymétrique. Nous proposons d'élever *Bugula neritina sessilis* au niveau spécifique, en la plaçant dans le genre *Dendrobeania*.

Keywords : Bryozoa, New Species, New Records, Spain, NE Atlantic.

Introduction

During a stay at the Muséum National d'Histoire Naturelle, Paris (MNHN), we re-examined numerous samples from the NW of the Iberian Peninsula, collected by the *Travailleur* and *Thalassa* expeditions. We have also studied material held in the Bryozoan Collection of the Departamento de Biología Animal (Universidad de Santiago de Compostela, Spain) (DBA), from the same area and, for comparative

purposes, some material held in the Natural History Museum, London. This study has led to the correction of some of the previous citations from our coasts, as in the case of some species of the genus *Schizoporella*, recently studied by Hayward & Ryland (1995), or the records, also from these coasts, of *Ogiva ogivalis* (Seguenza) and *Escharella microstoma* (Osburn). We have also re-examined the Holotype specimen and two other colonies of *Bugula neritina sessilis* d'Hondt, 1974. First records of another five species, previously unknown from this area, are also included.

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SEM observations were made on uncoated material using a LEO 435 VP Scanning.

Results

Copidozoum exiguum (Barroso, 1920)

(Fig. 1 A)

Callopora exigua Barroso, 1920, p. 355, figs. 1-4.

Copidozoum exiguum (Barroso): Hayward & Ryland, 1978, p. 144, fig. 2A.

Callopora smitti (Kluge): d'Hondt, 1974, p. 36.

Material examined

Muséum National d'Histoire Naturelle, Paris: MNHN-7263 (part): *Schizomavella fischeri* (Jullien, 1882). *Thalassa* Y442, 44°12.4'N, 08°41.0'W, 688 m, 2/9/72. MNHN-7269 (part): *Lichenopora* sp., *Tubulipora* sp., *Lagenipora edwardsi* Calvet, *Crepis longipes* Jullien. *Thalassa* U807, 44°11.0'W 08°40.2'W, 450-500 m, 18/10/68. MNHN-7654 (part): *Schizoporella neptuni*, *Lichenopora hispida*. *Thalassa* Y440, 44°12.2'N, 08°40.2'W, 490 m, 1/9/72.

Remarks

Following Hayward & Ryland (1978, p. 144), *Callopora smitti* Kluge is possibly a junior synonym of *Copidozoum exiguum*. We have re-examined three colonies collected by the *Thalassa* expedition from the NW coast of the Iberian Peninsula, one of them (MNHN-7263, part) cited by d'Hondt (1974, p. 36) as "? *C. smitti*". The specimens coincide fully with the existing descriptions of *C. exiguum*. To conclude whether these species are synonymous, it would be necessary, as Hayward & Ryland (*op. cit.*) have pointed out, to study more material.

Copidozoum exiguum is a rarely cited species, ranging from the Bay of Biscay down to the Western Mediterranean. In the Iberian Peninsula it has been cited from Santander (Barroso, 1920, as *Callopora exigua*), Galicia (d'Hondt, 1974, as *Callopora smitti*), Gulf of Cadiz (Harmelin & d'Hondt, 1992) and Catalonia (Zabala et al., 1993).

Dendrobeatia sessilis (d'Hondt, 1974) comb. nov.

Bugula neritina sessilis d'Hondt, 1974, p. 37, fig. 3.

"*Bugula neritina sessilis*" (d'Hondt): Hayward, 1978, p. 213, fig. 2 f.

Material examined

Muséum National d'Histoire Naturelle, Paris: MNHN-7228: *Thalassa* Y429, 44°11.8'N, 08°40.9'W, 503 m, 1/9/1972. Holotype. MNHN-8544: *Thalassa* Z392, 47°34.9'N, 07°01.3'W, 390 m, 21/10/1973. MNHN-8545: *Thalassa* Z397, 47°33.8'N, 07°12.6'W, 511 m, 22/10/1973.

Diagnosis

Dendrobeatia with zooids arranged in 2-4 series. Bifurcation of type 5. Zooids without spines, but with two distal short conical processes; a conspicuous quadrangular

operculum present. Avicularia absent. Ovicell marked by radiating striae.

Remarks

This species, first described by d'Hondt (1974) as a subspecies of *Bugula neritina* (Linnaeus, 1758) from material recorded from the NW of the Iberian Peninsula, was subsequently rediscovered by Hayward (1978) from the NW of the Bay of Biscay. This author (Hayward *op. cit.* p. 213) states that the affinities of this material with *B. neritina* seem improbable, and relates it to the genus *Dendrobeatia*.

We ourselves have re-examined the holotype of *Bugula neritina sessilis* (MNHN-7228), and also two colonies previously identified by Dr. P.J. Hayward (MNHN-8544, MNHN-8545). The specimens in fact show some similarities to *Bugula neritina*, such as the reddish colour, absence of spines and avicularia, and bifurcation of type 5. There are, however, major differences, already pointed out by d'Hondt (*op. cit.*): shape and size of zooids, structure and position of the ovicell, and bathymetrical distribution. In fact, as stated by Hayward (*op. cit.*), the ovicell closely resembles that of the genus *Dendrobeatia*, being very similar to those of *Dendrobeatia fruticosa* (Packard, 1863) and *Dendrobeatia elongata* (Nordgaard, 1903). It should also be stressed that the specimens examined possess a conspicuous quadrangular operculum, typical of this genus but absent in *Bugula*.

We believe that this species must be placed in the genus *Dendrobeatia*, because of the structure and position of the ovicells, presence of septula and conspicuous operculum, and end walls substantially transverse.

Steraechemella buski Lagaaij, 1952

(Fig. 1 B)

Steraechemella buski Lagaaij, 1952, p. 39; Harmelin & d'Hondt, 1992, p. 38, Pl. 2, E-F; Hayward, 1994, p. 183, fig. 2E.

Mollia ogivalis (Jullien & Calvet): Hayward & Ryland, 1978, p. 145, fig. 2B.

? *Ogiva ogivalis* (Seguenza): Jullien & Calvet, 1903, p. 45, Pl. 6, fig. 1.

Material examined

Departamento de Biología Animal (USC): DBA-173a: 42°48'30"N, 09°23'42"W, 115 m. Numerous colonies on a cetacean bone.

Remarks

Jullien & Calvet (1903) cited *Ogiva ogivalis* (Seguenza) from the *Hirondelle* 1886 station no. 57. Subsequently, Hayward & Ryland (1978) cited, as *Mollia ogivalis*, one colony from Brittany, which in their opinion was very similar to the material cited by Jullien & Calvet (*op. cit.*),

although they were uncertain about the identification of these authors. Harmelin & d'Hondt (1992) cited as *Steraechemella buski*, with certain reservations, some colonies collected at the Gibraltar Straits, pointing out that the material cited by Hayward & Ryland (*op. cit.*) must belong to the same species. Finally, Hayward (1994) cited, as *S. buski*, material from the Faroe Islands, while pointing out that the prior citations by Hayward & Ryland (*op. cit.*) as *M. ogivalis* and by Harmelin & d'Hondt (*op. cit.*) as ? *S. buski* are, in fact, the same species.

Since we have not been able to locate the original material cited by Jullien & Calvet (1903), it is not possible to resolve the doubts about its status. Taking into account the opinions above, as well as records that we ourselves have made of some colonies which unequivocally belong to *S. buski*, from a locality near the original one cited by Jullien & Calvet (*op. cit.*), we consider it to be very possible that the citation by these authors was in fact referring to this species.

It is difficult to establish the geographical distribution of *S. buski*. In the Iberian Peninsula, Álvarez (1992) has cited, as *Steraechemella* sp. cf. *S. ogivalis*, a colony collected at a depth of 38-42 m, off Trafalgar. This author states that his material resembles that cited by Jullien & Calvet (1903) and also the *M. ogivalis* of Hayward & Ryland (1978); however, the biometrical differences did not allow this author to identify his specimens with certainty. In any case, Harmelin & d'Hondt (1992) have recorded *S. buski* from a locality close to that cited by Álvarez (*op. cit.*), and it would be not impossible that his record in fact belongs to this species.

Escharella longicollis (Jullien, 1882)
(Fig. 1 C, D)

Mucronella longicollis Jullien, 1882, p. 516, Pl. 16, figs. 46, 47.

Smittia longicollis: Calvet, 1906, p. 337.

Escharella abyssicola (Norman): d'Hondt, 1973, p. 367.

Escharella microstoma (Osburn): d'Hondt, 1974, p. 43 (part).

Escharella longicollis (Jullien): Harmelin & d'Hondt, 1992, p. 43, Pl. 5, B-D.

Material examined

Muséum National d'Histoire Naturelle, Paris: MNHN-261: *Mucronella longicollis* Jullien, 1882. *Travailleur* D.2, 41°43'00"N, 11°39'40"W, 1068 m, 14/6/1881. MNHN-1676 (Type): *Mucronella longicollis* Jullien. *Travailleur* D.2, 41°43'00"N, 11°39'40"W, 1068 m, 14/6/1881. MNHN-3749 (part, Type): *Lagenipora edwardsi* Jullien, *Mucronella longicollis* Jullien. *Travailleur* D.2, 41°43'00"N, 11°39'40"W, 1068 m, 14/6/1881. MNHN-3750 (Type): *Mucronella longicollis* Jullien 1882. *Travailleur* D.2, 41°43'00"N, 11°39'40"W, 1068 m,

14/6/1881. MNHN-3752 (part, Type): *Lagenipora edwardsi* Jullien 1882. *Mucronella longicollis* Jullien 1882. *Travailleur* D.2, 41°43'00"N, 11°39'40"W, 1068 m, 14/6/1881. MNHN-4096 (Type): (*Smittia*) *Mucronella longicollis* Jullien, 1882. *Travailleur* D.2, 41°43'00"N, 11°39'40"W, 1068 m, 14/6/1881. MNHN-7020: *Escharella microstoma* (Osburn). *Thalassa* X359, 44°07.2'N, 04°41.4'-6'W, 605-630 m, 17/10/1971. MNHN-7023 (part): *Escharella microstoma* (Osburn), *Plagioecia patina* (Lamarck). *Thalassa* X359, 44°07.2'N, 04°41.4'-6'W, 605-630 m, 17/10/1971. MNHN-7024 (part): *Escharella microstoma* (Osburn). *Thalassa* X359, 44°07.2'N, 04°41.4'-6'W, 605-630 m, 17/10/1971. MNHN-7096 (part): *Escharella microstoma* (Osburn). *Thalassa* W422, 44°03.6'-04.1'N, 06°58.7'-59.4'W, 700-850 m, 12/10/1970. MNHN-7101 (part): *Schizomavella fischeri* (Jullien, 1882), *Escharella microstoma* (Osburn, 1953). *Thalassa* W423, 44°03.7'N, 07°07.5'W, 710-1070 m, 12/10/1970. MNHN-7145 (part): *Escharella microstoma* (Osburn, 1953). *Thalassa* W446, 44°12.8'N, 08°40.7'W, 13/10/1970, 620-650 m. MNHN-7199: *Escharella microstoma* (Osburn). *Thalassa* Y410, 40°34.4'N, 09°22.1'W. 360 m. MNHN-7240 (part): *Escharella microstoma* (Osburn, 1953). *Thalassa* Y434, 44°12.0'N, 08°40.8'W, 620 m, 1/9/1972. MNHN-7295: *Escharella microstoma* (Osburn, 1953). *Thalassa* U835, 43°22.8'N, 09°33.3'W, 950-960 m, 22/10/1968. MNHN-7297 (part): *Mucronella peachi* ?, *Lagenipora* (?) sp. *Thalassa* U844, 44°12.1'N, 08°42.1'W, 615-780 m, 23/10/1968. MNHN-7344: *Escharella microstoma* (Osburn, 1953). *Thalassa* U853, 44°13.3'N, 08°36.1'W, 860-1000 m, 24/10/1968. MNHN-7366 (part): *Escharella abyssicola* (Norman), *Palmicellaria skenei* (Ellis & Solander). *Thalassa* Z435, 1050 m, 26/10/1973. MNHN-7612 (part): *Escharella abyssicola* (Norman). *Thalassa* T470, 43°40.0'N, 08°57.2'W, 562-574 m, 7/8/1967. MNHN-7617: *Escharella abyssicola* (Norman). *Thalassa* T503, 44°00.7'N, 07°06.9'W, 490 m, 10/8/1967. MNHN-7618: *Escharella abyssicola* (Norman). *Thalassa* T503, 44°00.7'N, 07°06.9'W, 490 m, 10/8/1967. MNHN-7646: *Escharella microstoma* (Osburn). *Thalassa* Y428, 44°11.8'N, 08°40.6'W, 500 m, 1/9/1972.

Departamento de Biología Animal (USC): DBA-181a, DBA-181b and DBA-182a: 42°56'00"N, 09°43'42"W, 594 m. Some colonies on a fossil Cetacean rib.

Remarks

In his article on the bryozoans from the *Thalassa* expedition, d'Hondt (1973) has cited the species *Escharella abyssicola* (Norman) from several stations near to the Galician coasts. In a subsequent paper on the same expedition this author (d'Hondt, 1974) has cited, also from the Galician area, *Escharella microstoma* (Osburn, 1953), a species originally described from the eastern coast of the Pacific, pointing out that it was rather common at numerous

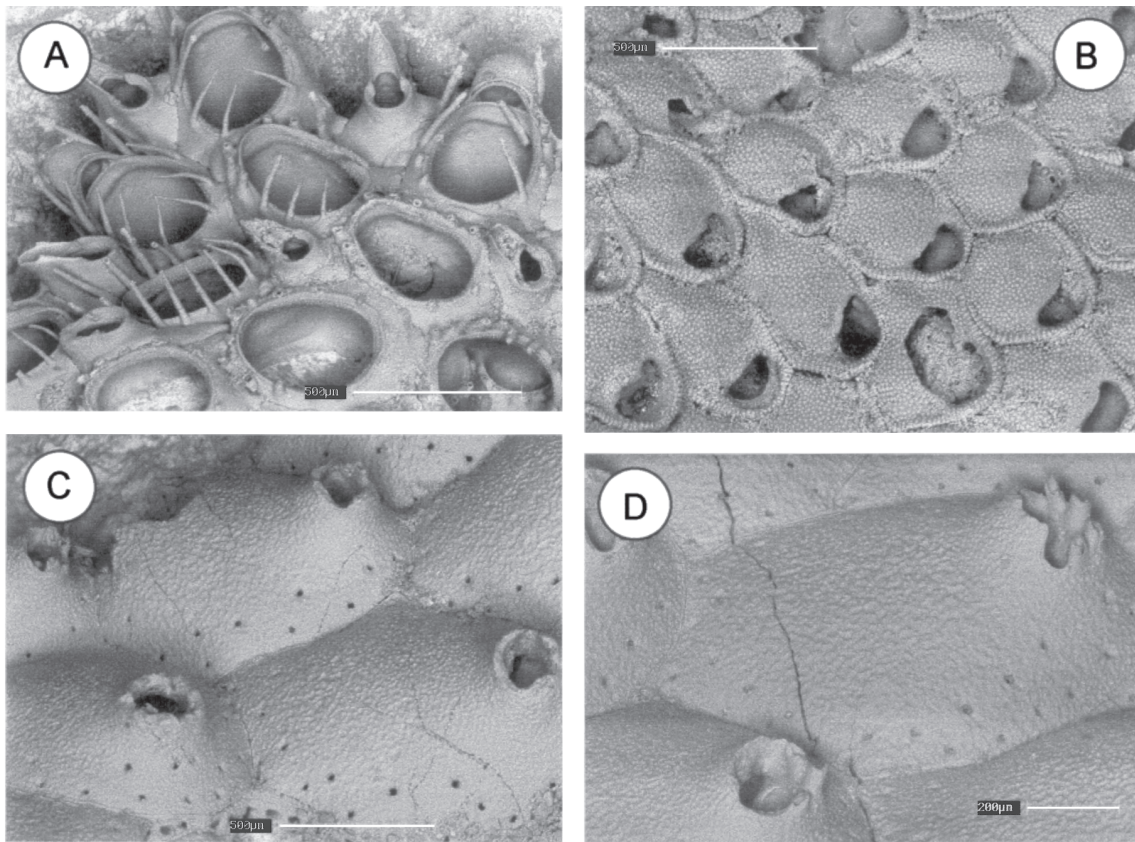


Figure 1. (A) *Copidozoum exiguum*, (MNHN-7263): ovicellate and non ovicellate autozooids, and vicariant avicularia; (B) *Stereochmella buski*, (DBA-173a): part of the colony; (C) *Escharella longicollis* (MNHN-4095, Type): part of the colony; (D) *Escharella longicollis* (MNHN-7101, as *Escharella microstoma*): an autozooid. Scale bars : A, B, C, 0,5 mm ; D, 0,2 mm.

Figure 1. (A) *Copidozoum exiguum*, (MNHN-7263) : autozoïdes ovicellés et non ovicellés, et aviculaires vicariants ; (B) *Stereochmella buski*, (DBA-173a) : partie de la colonie ; (C) *Escharella longicollis* (MNHN-4095, Type) : partie de la colonie ; (D) *Escharella longicollis* (MNHN-7101, comme *Escharella microstoma*) : un autozoïde. Échelles : A, B, C, 0,5 mm ; D, 0,2 mm.

sampling stations; this author also points out that his prior citation of *E. abyssicola* must refer to *E. microstoma*. We have been able to re-examine several samples labelled with these names, and we have noticed their unequivocal resemblance to the type material of *E. longicollis*, except some of the material of “*E. microstoma*”, which in fact corresponds to *Temachia opulenta* Jullien, 1882.

Escharella longicollis has been cited from the NW of the Iberian Peninsula (d’Hondt, 1973, as *Escharella abyssicola*; d’Hondt, 1974, as *Escharella microstoma*, part), from N Portugal (Jullien, 1882, as *Mucronella longicollis*; Calvet, 1906, as *Smittia longicollis*) and from the Gibraltar Straits and Gulf of Cadiz (Harmelin & d’Hondt, 1992).

Escharella praealta (Calvet, 1906)
(Fig. 2 A)

Smittia praealta Calvet, 1906, p. 438, Pl. 28, fig. 6.

Escharella hexaespina Arístegui, 1986, p. 183, figs. 1-3; López de la Cuadra & García Gómez, 1988, p. 32, fig. 7.

Escharella praealta (Calvet): López de la Cuadra & García-Gómez, 1993, p. 462, figs. 1 H-J, 2.

Material examined

Muséum National d’Histoire Naturelle, Paris: MNHN-2700 (part): *Lagenipora edwardsi* Jullien. Travailleur D.1, 43°00’40”N, 11°57’40”W, 2018 m, 10/6/1881.

Description

Colony encrusting, unilaminar, forming an irregular crust.

Autozooids oval, irregularly arranged, separated by deep grooves. Frontal wall very convex, finely granular, with a single row of minute marginal pores; lateral walls practically absent. Numerous small basal pore-chambers present.

Primary orifice sub-quadrangular, wider than long, with a small triangular lyrula in its proximal border. Peristome not well developed, with 6 oral spines, and a suboral triangular umbo.

Ovicell and ancestrula not observed.

Measurements (in mm)

MNHN-2700 (part)

LZ: 0.84 ± 0.07 (10). IZ: 0.55 ± 0.05 (10)

LO: 0.11 (0.10-0.12) (7). IO: 0.14 (0.12-0.16) (7)

Remarks

We have found a colony of *Escharella praealta* in a sample from the Jullien Collection (MNHN-2700), together with some colonies of *Teuchopora edwardsi* (Jullien). *Smittia praealta* Calvet was described for the first time after the publication of Jullien's 1882 paper; however, this author does not cite any species from this station which can be confused with *E. praealta*, and so it is possible that the colony had been overlooked.

Biometrical data of the colony studied are similar to those given by Arístegui (1986) and by López de la Cuadra & García-Gómez (1993), except the length of the zooids, which is clearly greater than that indicated by the latter authors.

Escharella praealta has been cited from the Gibraltar Straits (López de la Cuadra & García Gómez, 1988, as *Escharella hexaespinoza*; 1993), from the Gulf of Cadiz (Calvet, 1906, as *Smittia praealta*) and from the Canary Islands (Arístegui, 1986, as *Escharella hexaespinoza*), at depths of 30-717 m. Our record of *E. praealta* from the Galician coast is thus the northernmost to date, and extends the limit of its bathymetrical distribution, as the colony was collected at a depth of 2018 m.

Smittina jordii sp. nov.

(Figs. 2 B-D, 3 A, B)

HOLOTYPE

Muséum National d'Histoire Naturelle, Paris: MNHN-20207: 42°56'00"N, 09°43'42"W, 594 m. Two colonies on a fossil cetacean rib.

Other material examined:

Departamento de Biología Animal (USC): DBA-181b, part: 42°56'00"N, 09°43'42"W, 594 m. A colony on a fossil cetacean rib.

Diagnosis

Smittina with large zooids, large orbicular orifice surrounded by a thin complete peristome, and with small acute condyles; ancestrula with U-shaped opesia.

Etymology: the specific name *jordii* refers to the ship

"Jordi", that collected the material on which is based the description of the species.

Description

Colony encrusting, unilaminar, forming small whitish crusts. Autozooids large, oval to rhomboid, in radiating series, separated by sutures. Frontal shield convex, granular, uniformly perforated by numerous small round pores, immersed by calcification.

Primary orifice orbicular, wider than long; lyrula small, straight-edged, sometimes with a longitudinal median ridge; condyles small, acutely triangular, distinctively proximally directed. Peristome developed as a thin circular rim surrounding the orifice, less developed mid-proximally but complete; a small suboral avicularium immediately proximal to the peristome, with a semi-elliptical mandible directed proximally. The bases of two oral spines are visible only in one zooid.

Ovicell hyperstomial, irregularly globular, perforated by small round pores.

Ancestrula tatiform, oval, with a circular area bordered by nine short spines, one mid-proximal, two distal and six lateral. Opesia wide U-shaped. Astogeny spiral, with zooids becoming increasingly larger, starting with a distal zooid.

Measurements (in mm)

MNHN - 20207, holotype

LZ: 0.92 ± 0.13 (n=24). IZ: 0.62 ± 0.06 (n=24).

LO: 0.12 ± 0.009 (n=22). IO: 0.17 ± 0.01 (n=20).

LOv: 0.22-0.32 (n=3). IOv: 0.29-0.50 (n=3).

LAv: 0.084 (n=8). IAv: 0.07 (n=8).

LAAnc: 0.24 (n=1). IAAnc: 0.24 (n=1).

LOAnc: 0.13 (n=1). IOAnc: 0.15 (n=1).

Remarks

This species shows similarities to *Smittina crystallina* (Norman, 1867), a little known species from deep water, with regards to the appearance of the frontal shield, orifice, and suboral avicularium. There are however major differences: the autozooids are very large in *S. jordii* (0.92 mm long by 0.62 mm wide), while in *S. crystallina* they are small (0.40-0.50 mm by 0.25-0.30 mm after Hayward & Ryland, 1979, and 0.625 mm by 0.365 mm after Zabala et al., 1993). The primary orifice is also larger and orbicular, while in *S. crystallina* it is more or less semi-circular; the condyles are small, acutely triangular, and distinctively proximally directed, while in *S. crystallina* they are stouter and transversely directed. In *S. jordii* the peristome forms a circular rim around the orifice, less developed mid-proximally but complete, and the oral spines tend to be absent (two when present), while in *S. crystallina* the peristome forms two lateral flaps and the number of

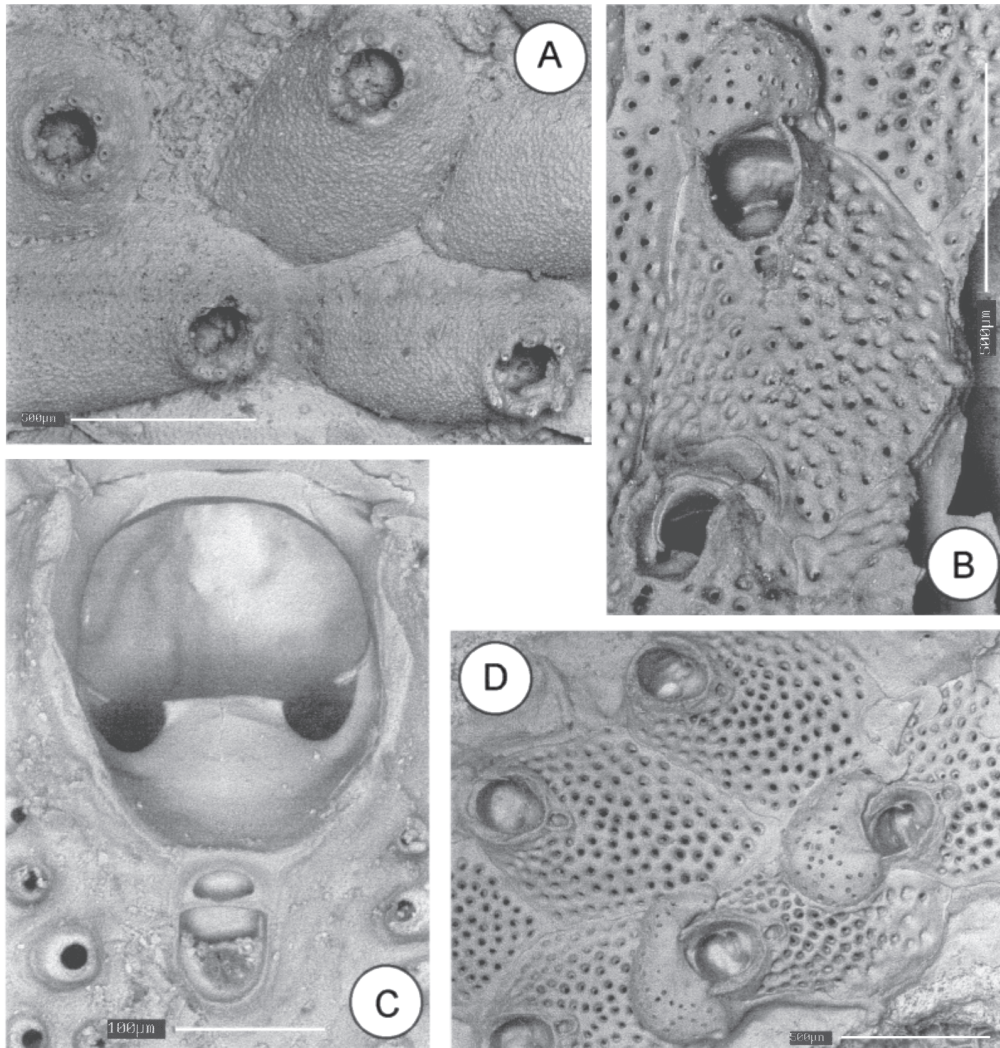


Figure 2. (A) *Escharella praealta*, (MNHN-2700): part of the colony; (B)-(D) *Smittina jordii*, (MNHN-20207, Holotype); (B) an ovicellate zooid; (C) primary orifice; (D) group of zooids, two of them ovicellate. Scale bars: A, B, D, 0.5 mm; C, 0.1 mm.

Figure 2. (A) *Escharella praealta*, (MNHN-2700) : partie de la colonie ; (B)-(D) *Smittina jordii*, (MNHN-20207, Holotype) ; (B) zoïde ovicellé ; (C) orifice primaire ; (D) groupe de zoïdes, dont deux ovicellés. Échelles : A, B, D, 0,5 mm ; C, 0,1 mm.

spines varies from three to five. The ancestrula is larger (area: 0.24 x 0.24 mm), and shows an U-shaped opesia, while in *S. crystallina* it is distinctively pear-shaped. Finally, the astogeny is spiral, with zooids becoming increasingly larger, while in *S. crystallina* it starts with one distal zooid and two disto-lateral zooids.

We believe that the morphological and biometrical differences are enough to consider our material as being a new species, belonging to the genus *Smittina*.

Smittina jordii is known only from some colonies collected from the NW Iberian Peninsula, at a depth of 594 m.

Schizoporella dunkeri (Reuss, 1848)
(Fig. 3 C)

Cellepora dunkeri Reuss, 1848, p. 90, Pl. 10, fig. 27.

Schizoporella unicornis form *longirostris* Hincks, 1886, p. 266, Pl. 10, fig. 2.

Schizoporella longirostris (Hincks): Hayward & Ryland, 1979, p. 173 (part).

Schizoporella dunkeri (Reuss): Hayward & Ryland, 1995, p. 39, Pl. 2, 3.

Material examined

We have re-examined numerous colonies from all along the Galicia coast, previously identified as *Schizoporella*

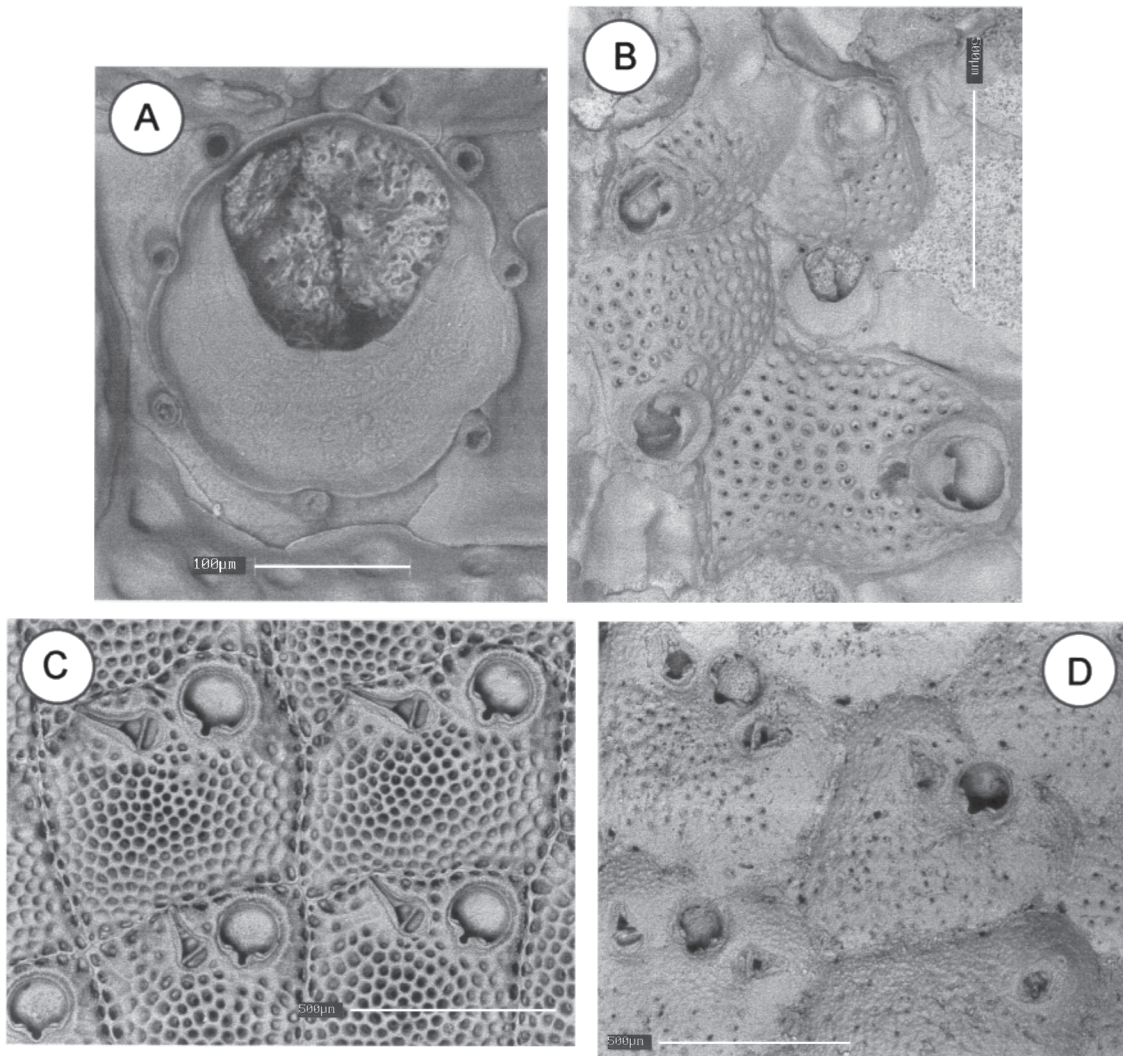


Figure 3. (A)-(B) *Smittina jordii*, (MNHN-20207, Holotype); (A) ancestrula; (B) astogeny; (C) *Schizoporella dunkeri*, (DBA-84c): part of the colony; (D) *Schizoporella patula*, (MNHN-2344): some zooids. Scale bars : A, 0.1 mm; B, C, D, 0.5 mm.

Figure 3. (A)-(B) *Smittina jordii*, (MNHN-20207, Holotype) ; (A) ancestrula ; (B) astogénie ; (C) *Schizoporella dunkeri*, (DBA-84c) : partie de la colonie ; (D) *Schizoporella patula*, (MNHN-2344) : quelques zoïdes. Échelles : A, 0,1 mm ; B, C, D, 0,5 mm.

longirostris, held in the Collections of the Departamento de Biología Animal (Universidad de Santiago de Compostela).

Remarks

Recently, Hayward & Ryland (1995) have demonstrated that *Schizoporella longirostris* (Hincks) is in fact a junior synonym of *Schizoporella dunkeri* (Reuss), and that different species have been cited under these names, three of them new to science.

This species seems to be common all along the Iberian coasts, but it will be necessary to re-examine the original material. *S. dunkeri* has been cited all along the NW coast of the Iberian Peninsula, always as *S. longirostris* (Fernández

Pulpeiro et al., 1990; Barcia Leal, et al., 1993, part).

Schizoporella patula Hayward & Ryland, 1995
(Fig. 3 D)

Schizoporella dunkeri (Reuss): Ryland, 1968, p. 538, fig. 2.
Schizoporella patula Hayward & Ryland 1995, p. 42, Pl. 4.

Material examined

Muséum National d'Histoire Naturelle, Paris: MNHN-2344 (part): *Schizoporella unicornis*. Travailleur D.41, 44°02'15"N, 09°27'30"W, 1094 m, 16/8/1881.

Natural History Museum, London: NHM-1911.10.1.1058A: *Schizoporella patula*. The Minch, Scotland. Norman Coll. Holotype.

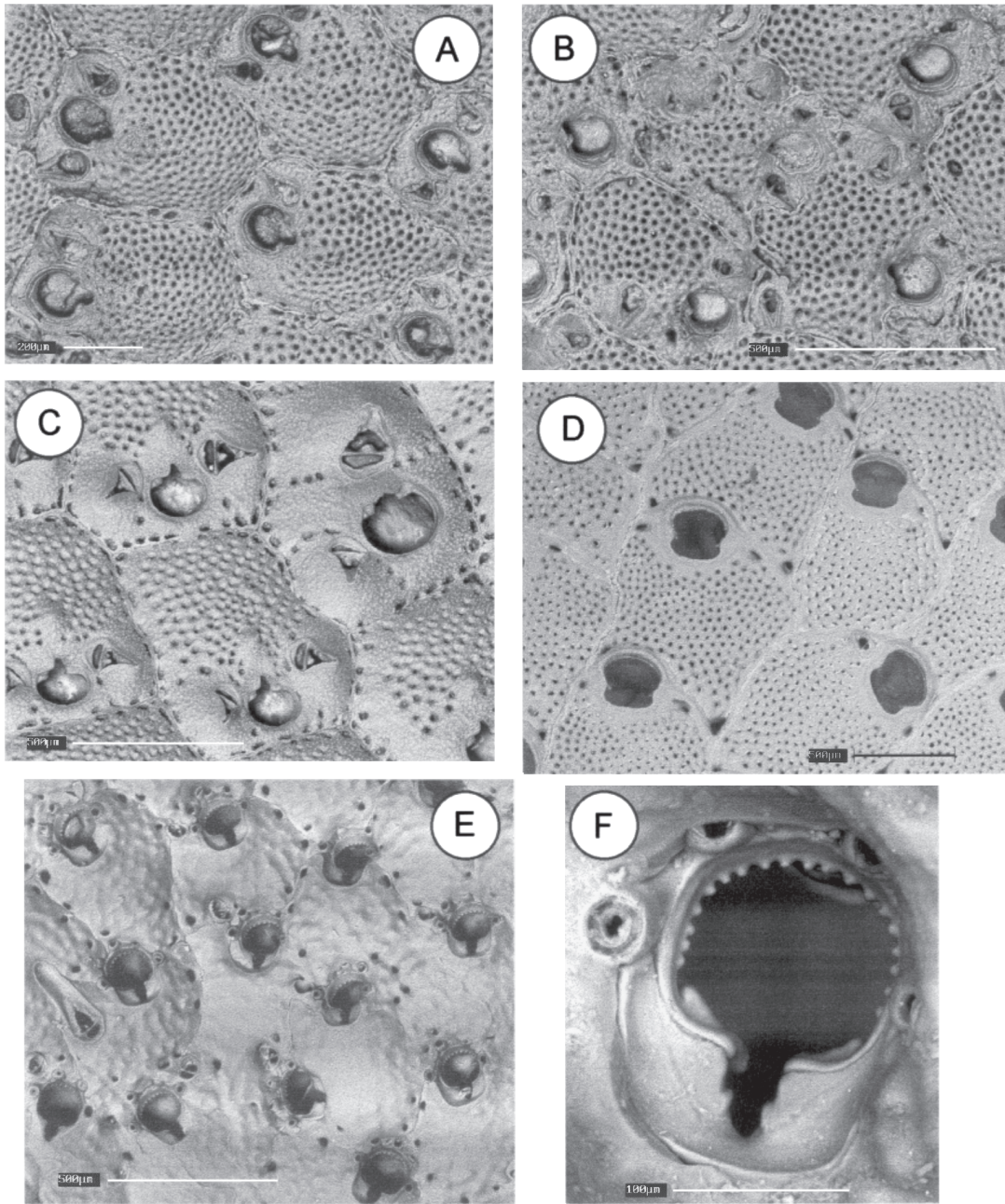


Figure 4. (A)-(B) *Schizoporella hesperia*, (DBA-166a); (A) group of zooids; (B) zooids showing supernumerary avicularia; (C) *Schizoporella cornualis*, (DBA-156a): some of zooids, one of them dimorphic; (D) *Cheiloporina circumcincta*, (DBA-175a): part of the colony; (E)-(F) *Stephanollona armata*, (DBA-174a); (E): part of the colony; (F): primary orifice. Scale bars : A, 0.2 mm; B, C, D, E, 0.5 mm; F, 0.1 mm

Figure 4. (A)-(B) *Schizoporella hesperia*, (DBA-166a) ; (A) : groupe de zoïdes ; (B) : zoïdes avec aviculaires supernuméraires ; (C) *Schizoporella cornualis* (DBA-156a) : quelques zoïdes, dont un dimorphique ; (D) *Cheiloporina circumcincta*, (DBA-175a) : partie de la colonie ; (E)-(F) *Stephanollona armata*, (DBA-174a) ; (E) : partie de la colonie ; (F) : orifice primaire. Échelles : A, 0.2 mm ; B, C, D, E, 0.5 mm ; F, 0.1 mm

Remarks

Jullien (1882, p. 527) has cited *Schizoporella unicornis* (Johnston) from stations no. 40 and no. 41 of the *Travailleur*

expedition. We have re-examined only one sample from these localities in the Jullien Collection (MNHN-2344), that in fact contains three fragments of *Schizoporella patula*.

Taking into account this mistake and that *S. unicornis* is typically an intertidal or shallow water species, while the *Travailleur* stations cited by Jullien (*op. cit.*) are from deep water, we believe that the record of *S. unicornis* by this author must be considered invalid.

It is possible that *Schizoporella patula*, a recently described species, had been previously cited from the Iberian Peninsula as *Schizoporella dunkeri* (Reuss); however, it would be necessary to re-examine the original material to establish its geographical distribution. Therefore, we consider the present citation of *S. patula* to be the first valid one from Iberian waters.

Schizoporella hesperia Hayward & Ryland, 1995
(Fig. 4 A, B)

Schizoporella dunkeri (Reuss): Hayward & Ryland, 1979, p. 172, part, fig. 69.

Schizoporella hesperia Hayward & Ryland, 1995, p. 44, Pl. 5 a, b.

Material examined

Departamento de Biología Animal (USC): DBA-127 (part): Ría de Ferrol, 43°27'36"N, 08°17'30"W, 20 m, 13/9/1989. DBA-157a (part): Ría de Ferrol, 43°27'36"N, 08°17'30"W, 20 m, 13/9/1989. DBA-161d (part): Ría de Ferrol, 43°27'36"N, 08°17'30"W, 20 m, 13/9/1989. DBA-166a: Ría de Ferrol, 43°27'36"N, 8°17'30"W, 20 m, 13/9/1989. DBA-166b: Ría de Ferrol, 43°28'15"N, 8°15'30"W, 15 m, 22/10/1990. DBA-166c: Ría de Ferrol, 43°28'03"N, 8°18'36"W, 16 m, 22/10/1990.

Natural History Museum, London: NHM-1985.1.10.18A: *Schizoporella hesperia*. Lundy Island. Hayward Coll. Holotype. NHM-1985.1.10.18B: *Schizoporella hesperia*. Lundy Island. Hayward Coll. Figured.

Remarks

We have observed, in some of the material examined (DBA-166a, DBA-166c), the presence of supernumerary avicularia, similar to those present in *Schizoporella "ansata"* (Canu & Bassler, 1930) after Gautier (1962), a species now considered as a synonym of *Schizoporella magnifica* (Hincks, 1886). However, we believe that the morphology of the zooids, ovicells and especially that of the orifice, coincides fully with that of *S. hesperia*.

This species has recently been described by Hayward & Ryland (1995) from part of the material cited by these authors in the British Fauna (Hayward & Ryland, 1979) as *Schizoporella dunkeri* (Reuss). The geographical distribution of *S. hesperia* must be established by revision of material of the genus *Schizoporella*. We have found several colonies of this species from the NW of the Iberian Peninsula (Lanza Suárez & Fernández Pulpeiro, 1984, as *Schizoporella dunkeri*; Reverter Gil, 1995, as *Schizoporella dunkeri*).

Schizoporella cornualis Hayward & Ryland, 1995
(Figs. 4 C)

Schizoporella longirostris (Hincks): Hayward & Ryland, 1979, p. 173, part, fig. 70.

Schizoporella cornualis Hayward & Ryland, 1995, p. 46, Pl. 5 c, d.

Material examined

Departamento de Biología Animal (USC): DBA-155a: Ría de Vigo, 42°10'15"N, 08°49'44"W, 19 m, 7/8/1985. DBA-155b: Ría de Vigo, 42°10'52"N, 08°53'38"W, 36 m, 16/7/1986. DBA-155c: Ría de Vigo, 42°10'07"N, 08°51'40"W, 43 m, 16/7/1986. DBA-156a: Ría de Vigo, 42°10'52"N, 08°53'38"W, 36 m, 16/7/1986. DBA-156b: 42°48'30"N, 09°23'42"W, 115 m. Some died colonies on a cetacean bone.

Natural History Museum, London: NHM-1994.3.21.1: *Schizoporella cornualis*. West English Channel. Hayward Coll. Holotype.

Remarks

In some of the material examined (DBA-155b, DBA-156a) we have observed the existence of dimorphic zooids similar to those present in *Schizoporella hesperia* Hayward & Ryland. Its orifice is large, almost semicircular, with a small V-shaped sinus, wider than that present in the normal zooids; the frontal wall is heavily calcified, with few perforations; the avicularia tend to be larger and sometimes there is a single suboral avicularium occupying nearly the whole frontal wall.

Hayward & Ryland (1995) consider that under the name *Schizoporella longirostris* (Hincks), a species frequently cited from the Atlanto-Mediterranean region, there are in fact two different species: *Schizoporella dunkeri* (Reuss) and *Schizoporella cornualis*. Their geographical distribution must be established by revision of material of the genus *Schizoporella* held in collections. In the NW of the Iberian Peninsula *S. cornualis* has been cited from the Ría de Vigo (Barcia Leal et al. 1993, as *S. longirostris*, part). We ourselves have encountered some colonies on a cetacean bone, off Cape Fisterra (NW Spain) at a depth of 115 m. The present records of *S. cornualis* are therefore the first valid ones from the Iberian Peninsula.

Cheiloporina circumcincta (Neviani, 1896)
(Fig. 4 D)

Hippoporina circumcincta Neviani, 1896, p. 118, fig. 7.
Lepralia grimaldii Jullien in Jullien & Calvet, 1903, p. 70, Pl. 9, fig. 5.

Cheiloporina circumcincta (Neviani): Barroso, 1925, p. 182, figs. 6, 7; Gautier, 1962, p. 182.

Material examined

Muséum National d'Histoire Naturelle, Paris: MNHN-9986: *Lepralia grimaldii* (Jullien, 1886). *Hirondelle* st. 57, 43°44'30"N, 08°32'30"W, 240 m, 5/8/1886.

Departamento de Biología Animal (USC): DBA-175a, DBA-175b and DBA-177a (part): 42°48'30"N, 09°23'42"W, 115 m. Numerous ovicellate colonies on a cetacean bone.

Description

Colony encrusting, unilaminar, forming large whitish crusts.

Autozooids large, sub-quadrangular to polygonal, in radiating series, separated by sutures. Frontal wall slightly convex, granular, regularly punctured by numerous small pores, the most conspicuous in the corners of the zooid. Two multiporous septula in the distal wall; two pairs of multiporous septula in the distal half of the lateral walls, and two pairs of diatellae in the proximal half.

Primary orifice keyhole-shaped in non-ovicellate zooids, wider than long, bordered by a raised rim; anteriorly horseshoe-shaped, posteriorly shallowly concave, separated by a pair of sharp-pointed condyles. Orifice of ovicellate zooids D-shaped with rounded corners, three times wider than long; a suboral laminar lip present in ovicellate zooids, acute to frontal plane.

Avicularia adventitious, commonly single, sometimes paired and very often missing, lateral to the orifice, with triangular mandible directed laterally.

Ovicell immersed, visible as a crescentic area, imperforate and covered with stout granules.

Measurements (in mm)

MNHN-9986

LZ: 0.90 ± 0.11 (12). IZ: 0.75 ± 0.05 (12)

LO: 0.22 ± 0.01 (10). IO: 0.26 ± 0.016 (11)

LAv: 0.12 ± 0.03 (12). lAv: 0.05 ± 0.006 (11)

DBA-175a

LZ: 0.97 ± 0.12 (20). IZ: 0.71 ± 0.11 (20)

LO: 0.23 ± 0.01 (20). IO: 0.26 ± 0.015 (20)

LOOv: 0.14 (1). IOOv: 0.41 ± 0.015 (13)

LOv: 0.23 ± 0.02 (11). IOv: 0.53 ± 0.03 (11)

LAv: 0.13 ± 0.01 (20). lAv: 0.07 ± 0.009 (20)

Remarks

The synonymy of *Lepralia grimaldii* Jullien with *Cheiloporina circumcineta* (Neviani) has been already proposed by different authors (Barroso, 1925; Gautier, 1962). We ourselves have re-examined one of the specimens cited by Jullien & Calvet (1903), held in the Muséum National d'Histoire Naturelle, Paris (MNHN-9986); the revision of this material, and the figure by this authors (Jullien & Calvet, *op. cit.* Pl. 9, fig. 5), allow confirmation of the proposed synonymy.

Cheiloporina circumcineta ranges from the Bay of Biscay to Morocco and the Western Mediterranean. In the Iberian Peninsula this species has only been cited from Galicia (Jullien & Calvet, 1903, as *Lepralia grimaldii*) and from the Mediterranean coast of Andalusia (Álvarez, 1994).

Stephanollona armata (Hincks, 1862)
(Figs. 4 E, F)

Lepralia armata Hincks, 1862, p. 207, Pl. 12, fig. 5.

Buffonellaria armata (Hincks): Hayward & Ryland, 1979, p. 206, fig. 87.

Brodiella armata (Hincks): Gordon, 1984, p. 126.

Stephanollona armata (Hincks): Gordon, 1994, p. 294.

Material examined

Departamento de Biología Animal (USC): DBA-174a and DBA-178a (part): 42°48'30"N, 09°23'42"W, 115 m. Some colonies on a cetacean bone.

Description

Colony encrusting, forming large unilaminar crusts, sometimes with a second layer formed by frontal budding.

Autozooids oval to polygonal, in radiating series, separated by sutures. Frontal wall slightly convex, granular, perforated by few marginal pores. Basal pore-chambers present.

Primary orifice orbicular, with lateral and distal borders finely denticulate, enclosed by a sub-quadrangular rim; immersed in heavily calcified zooids. A narrow sinus (0.05 mm long by 0.03 mm wide) in the proximal border; proximal half of sinus narrower, separated from the distal one by a marked notch. A pair of elongated condyles reaching the edges of the sinus. Four to six oral articulated spines, two in older zooids.

Avicularia adventitious, single or paired, often missing, lateral to the orifice, with semi-elliptical rostrum directed laterally or disto-laterally; occasionally elongate, enlarged, with a spatulate mandible directed distally.

Ovicell hyperstomial, globular, partially immersed in secondary calcification; frontal surface imperforate, finely granular, sometimes with a short frontal lip.

Measurements (in mm)

DBA-174a

LZ: 0.51 ± 0.07 (20). IZ: 0.43 ± 0.05 (20)

LO: 0.11 ± 0.01 (16). IO: 0.11 ± 0.008 (16)

LOv: 0.23 (0.22-0.27) (7). IOv: 0.24 (0.19-0.29) (7)

LAv: 0.32 (0.27-0.39) (5). lAv: 0.15 (0.14-0.18) (5)

lav: 0.08 (0.08-0.09) (4). lav: 0.06 (0.05-0.06) (4)

Remarks

Gordon (1994) has recently demonstrated that *Stephanollona* Duvergier is a senior synonym of *Brodiella* Uttlé & Bullivant.

Stephanollona armata ranges in the NE Atlantic from the British Isles down to Madeira, and it is also present in the Mediterranean. In the Iberian Peninsula it has been cited from Bilbao (Álvarez, 1989, as *Brodiella armata*), Portugal: Costa da Arrábida (Saldanha, 1974, as *Rhynchozoon armatum* (Hincks, 1861)?), Straits of Gibraltar (López de la Cuadra & García Gómez, 1988, as *Buffonellaria armata*), Andalusia: Cabo Sagra (Álvarez, 1994, as *Brodiella armata*) and from Catalonia (Zabala & Maluquer, 1988, as *Brodiella armata*).

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