

Three new species of the genus *Smittina* from the Weddell Sea, Antarctic (Bryozoa: Cheilostomata: Smittinidae)

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New species *Smittina multanguloporata*, *S. humilis*, and *S. impellucida* collected in the Weddell Sea by the German Antarctic Expedition ANT XIII/3 on research vessel "Polarstern" in 1996 are described. The genus *Smittina*, with 12 Arctic and 16 Antarctic species, has a bipolar distribution.

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The bryozoan fauna of the Weddell Sea is rich but poorly known. The first collection from this sea was gathered by the German Antarctic Expedition ANT XIII/3 on research vessel "Polarstern" in 1996. It contains more than 400 species and subspecies of Bryozoa from the orders Cyclostomata, Ctenostomata, and Cheilostomata (in 32 stations and 64 quantitative and qualitative samples). This paper describes 3 new species from the genus *Smittina*. These are colonies incrusting different substrata, although vertical colonies are predominant in the Weddell Sea. The family Smittinidae (suborder Ascophora) with 25 genera is widely distributed in the World Ocean. It has representatives in both the Arctic and Antarctic. The genus *Smittina* Norman, 1903 has bipolar distribution, which occurs not so often in Bryozoa. Kluge (1962) recorded 12 species of this genus in the Arctic seas with half of them of Arctic distribution and the rest occurring in the boreal waters as well. All Arctic species have incrusting colonies. Hayward (1995) described 12 species from the Antarctic waters, and description of one additional species by me is in progress. No species have bipolar distribution.

The holotypes of new species are deposited at Zoological Institute, St. Petersburg.

***Smittina multanguloporata* sp. n.** (Fig. 1)

Holotype: no. 1/9-2007, Weddell Sea, to the west of Cape Norwegia, 71°29'20"S, 14°18'40"W, ANT XIII Polarstern 39, station 5/EBS, gear EBS 1, sample 1, 8.II.1996, depths 239-254 m, ground: sponges. Collectors: B.I. Sirenko, I.S. Smirnov.

Description. White colony (size 2.5 mm × 8 mm) encrusting small black stone. Autozooids

in single layer (0.85-1 mm long, 0.6-0.75 mm wide), of moderate size, elongate oval, arranged in chess-board pattern. Frontal of autozooid convex, semitransparent, with numerous large multiangular cavities with round pore in bottom of each cavity. Orifice situated near distal wall of autozooid. Secondary orifice of autozooid irregularly rounded, with high peristome and deep narrow sinus between lateral lobes. Primary orifice closed with chitinized semicircular operculum. Wide, quadrangular lyrula on proximal border of orifice occupies 2/3 of its width. Condyles inconspicuous. Secondary orifice (0.25-0.35 mm high, 0.2-0.25 mm wide) rounded, with sinus in its proximal border. Ovicell prominent, semiglobular (0.3-0.4 mm high, 0.4 mm wide), with several irregular pores on its frontal. Spines absent. Some pore chambers situated in lateral walls of autozooid near basal border.

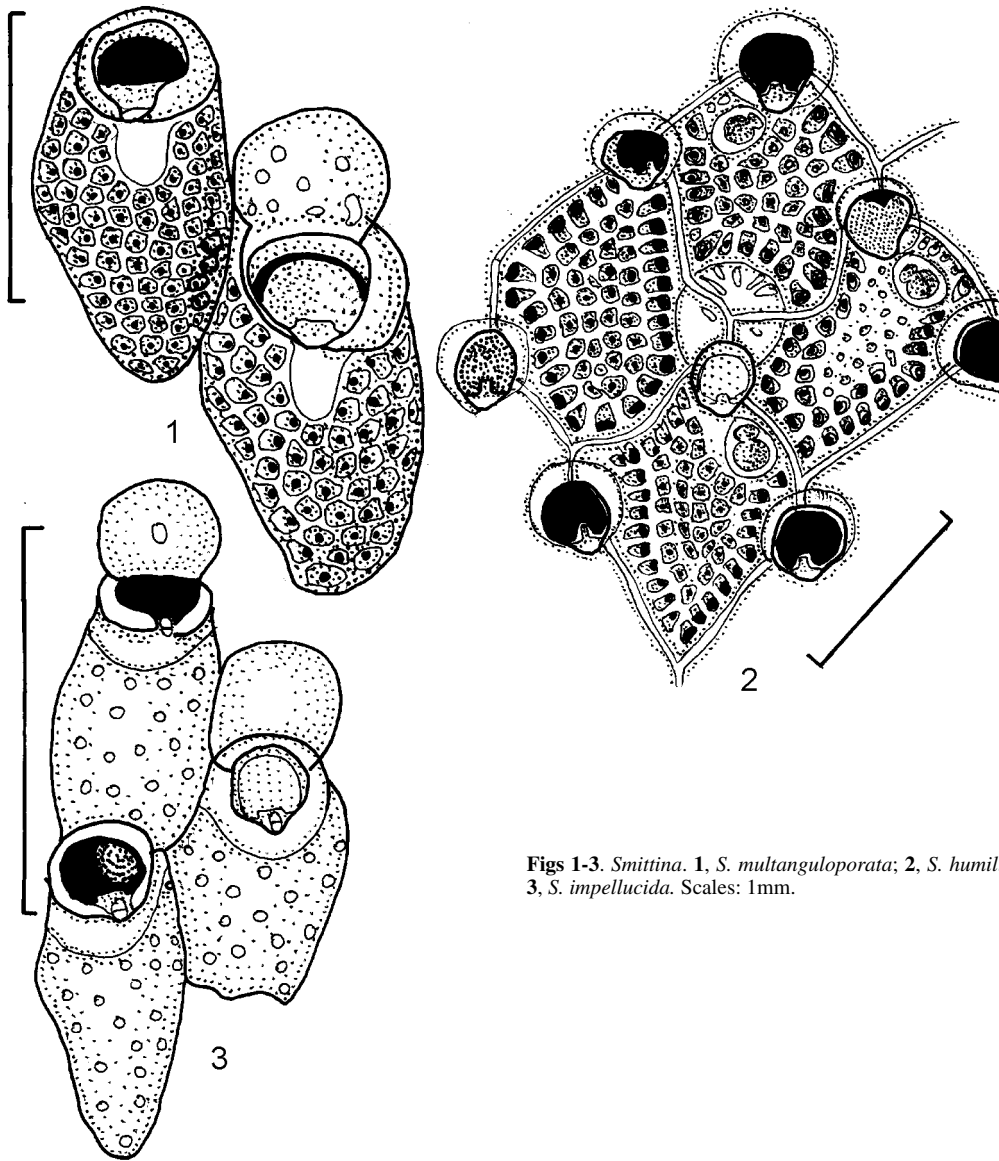
Comparison. This species differs from other species of the genus in the absence of avicularium, shape of lyrula, convex reticulate frontal of autozooid, semiglobular ovicell with pores on its frontal.

Etymology: from *multanguloporata*, Latin, after shape of pores with many angles.

***Smittina humilis* sp. n.** (Fig. 2)

Holotype: no. 1/8-2007, Weddell Sea, SW of Cape Norwegia, 71°40'87"S, 12°43'26"W, ANT XIII/3 Polarstern 39, station 5/EBS, gear EBS 1, sample 1, 8.II.1996, depths 239-254 m, ground: sponges. Collectors: B.I. Sirenko, I.S. Smirnov.

Description. Small white colony (2 cm × 2.5 cm) on small black stone. White autozooids



Figs 1-3. *Smittina*. 1, *S. multanguloporata*; 2, *S. humilis*; 3, *S. impellucida*. Scales: 1mm.

large (1.25-1.5 mm long, 0.3-0.5 mm wide in proximal part and 0.55-0.8 mm wide in middle part), irregularly hexagonal, arranged in chess-board pattern. Autozooidal frontal flat, semitransparent, becoming more calcareous in later ontogeny, with numerous large multiangular recessions with round pore at their bottoms. Autozooidal margins undulate and a little prominent above frontal. With enlarging of calcification, meshy structure of frontal veiled and round pores became of the same sizes as pores in the bottoms of recessions. Orifice near proximal margin of autozooid. Secondary orifice irregular oval, surrounded by

narrow flat peristome with lateral lobes and sinus between them. Peristome divided into three parts by margins of neighbouring zooids. Proximal border of orifice with low tooth of lyrula. Rectangular condyles prominent. Primary orifice and operculum rounded. Operculum chitinized. Frontal to the right or left near sinus bearing large oval avicularium (0.175 mm long, 0.125 mm wide) with irregular oval mandible, which is wider at distal end and directed slantwise proximally. Avicularian chamber unnoticeable. Rounded ovicells (0.275-0.3 mm high, 0.25-0.325 mm wide) with undulate margin and divided in three parts

by margins of neighbouring autozooids: distal and two lateral. Ovicell frontal with 3-4 pores in distal part, sometimes with slit-like pores, sometimes with large transverse slit-like pore in the centre. Spines not preserved. Six pore plates in lateral walls near the border of basal.

Comparison. This species differs from other species of the genus in the shape of autozooids and reticulate frontal, shape of avicularium and its position, and shape of ovicells with pores.

Etymology: from *humilis*, Latin for minute.

***Smittina impellucida* sp. n.**
(Fig. 3)

Holotype: no. 1/7-2007, ANT XIII/3 Polarstern 39, the Weddell Sea, northern-eastern of Cape Norwegia, 70°28'80"S, 8°15'10"W, station 32/D, gear D 27, sample 27, 4.III.1996, depths 283-296 m. Collectors: B.I. Sirenko, I.S. Smirnov.

Description. Small (8 × 5 mm) single-layered white colony on small black stone. White autozooids of middle size (0.75-0.8 mm long, 0.25-0.4 mm wide), elongate hexagonal, situated in lines and arranged in chess-board pattern. Frontal slightly prominent, calcareous, opaque, densely perforated by small round pores. Secondary orifice near distal border, circular (0.125 mm wide and long), surrounded by low thickened peristome with lateral prominences and deep narrow sinus between them. Operculum of primary orifice semicircular, wider than long. Lyrula situated at proximal margin of orifice, wide, quadrangular

or anvil-shaped, with straight border, sometimes triangular with rounded angles. It occupies most of orificial width. Small condyles triangular with rounded angles. Small oval avicularium (0.05 mm) inside of peristome with rostrum in peristomial sinus. Avicularian mandible oval, slightly wide, directed proximal. Avicularian chamber inconspicuous. Sometimes avicularium absent. Ovicells round (0.175-0.225 mm high, 0.225 mm wide), slightly prominent, with granular surface and sometimes with central pore. Spines absent. Basal wall transparent.

Comparison. This species differs from other species of the genus in the shape of autozooids, shape of avicularium and its position, and shape of ovicells with pores.

Etymology: from *impellucida*, Latin for opaque.

Acknowledgements

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