

Современные проблемы развития
фундаментальных и прикладных наук

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ZYGOTHURIA THOMSONI (THÉEL, 1886) AND CHERBONNIERA UTRICULUS SIBUET, 1974 A NEW HOLOTHURIANS FROM THE RUSSIAN SEAS

Abstract

During looking through the collection of the P.P. Shirshov Institute of Oceanology (Russian Academy of Sciences, Moscow, Russia) and scientific trip of the Kamchatka Research Institute of Fisheries and Oceanography (Petropavlovsk-Kamchatsky, Russia) two species of holothurians: *Zygothuria thomsoni* (Théel, 1886) and *Cherbonniera utriculus* Sibuet, 1974 from the Russian seas have been registered for the first time. *Zygothuria thomsoni* was collected in Kurile-Kamchatka Trench and north east part of Okhotsk Sea (west coast of Kamchatka), *Cherbonniera utriculus* - in the Bering Sea.

Introduction

According to the recent facts 8 species of holothurians Aspidochirotida order were registered in the Far East Russian seas. They belong to two families: Synallactidae - *Bathyplores moseleyi*, *Pelopates solea*, *Pseudostichopus mollis*, *P. papillatus*, *P. profundus*, *Synallactes chuni*, *S. nozawai* and Stichopodidae - *Apostichopus japonicus* [6]. *Zygothuria thomsoni* from the family Mesothuriidae (Aspidochirotida) was registered in the Russian seas for the first time. This species was found in Kurile-Kamchatka Trench and north east part of Okhotsk Sea (west coast of Kamchatka).

Cherbonniera utriculus was discovered in the Bering Sea (63°45' N, 176°10' E) on the depth 3850–3900 m. The fact of a discovery of *Cherbonniera utriculus* in the Pacific Ocean is new for the science. This species was known in water area of the Atlantic Ocean only.

Materials

23 June 1953, research ship “Vityaz”, trip 14, station 2209, Kurile-Kamchatka Trench, 49°46'1 N., 157°48'6 E, depth 4010–4130 m.

26 June 1981, research ship “Ak. Shirshov”, trip 39, station 32, Bering Sea, 53°45'0 N, 176°10'0 E, depth 3850–3900 m.

02 July 2014, research ship “Professor Probatov”, station 72, Okhotsk Sea, 57°13'1 N, 154°29'8 E, depth 565 m, soil - silty sand.

Results

Synonymies, diagnoses, figure ossicles and distribution of the species *Zygothuria thomsoni* and *Cherbonniera utriculus* are given below.

Zygothuria thomsoni (Théel, 1886)

Holothuria thomsoni – Théel, 1886: 184–185, pl. 10, figs. 8, 11; Perrier, 1902: 332.

Holothuria thomsoni var. *hyalina* – Théel, 1886: 185.

Mesothuria thomsoni – Östergren, 1896: 350–351.

Zygothuria thomsoni – Solís-Marín, 2003: 277–278; Gebruk et al., 2012: 331–333, figs. 6, 20, table 15.

Diagnosis (Gebruk et al., 2012). Body oval. Mouth ventral. Anus terminal. Twelve tentacles. Simple alternating row of pedicels along each side of ventral surface, and some small papillae scattered on ventral surface in neighbourhood of these rows. No other ambulacral appendages visible. Calcareous ring narrow, fragile, without posterior processes. Three Polian vesicles.

Ossicles: body wall unusually rough, caused by abundance of tables with large, irregularly perforated disks with central holes usually smaller than peripheral ones; stem terminates in three arms, shorter than stem, arms slender and spinous (Fig. 1; compare with Gebruk et al., 2012, fig. 20).

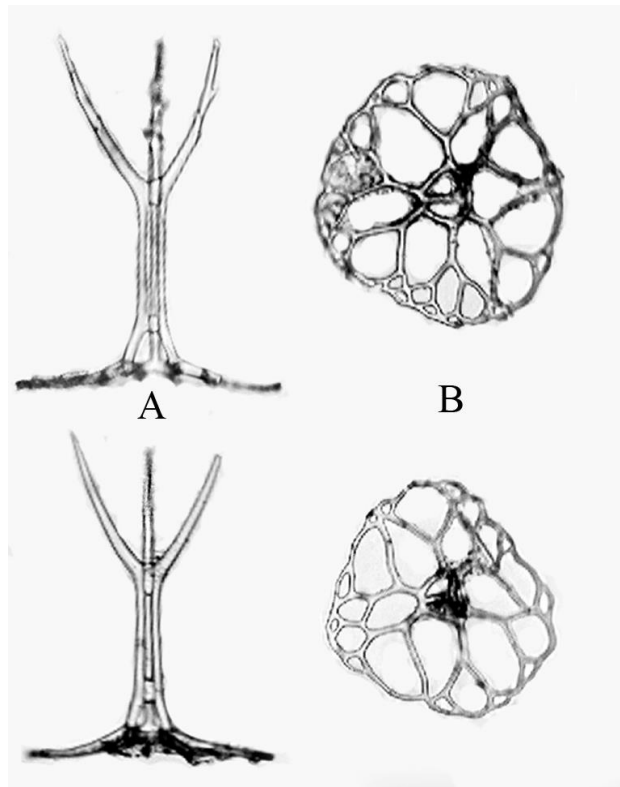


Figure 1. *Zygothuria thomsoni*. Ossicles: *A* – side view; *B* – top view.

Distribution. Earlier the species was come across in the Pacific Ocean on four station: 34°37' N, 140°32' E, depth 3375 m; 35°22' N, 169°53' N, depth 5307 m; 37°37' N, 140° 32' E, depth 3431 m; 50°21' S, 123°4' E, depth 3276 m [3].

In the Russian seas *Z. thomsoni* was found in the north east part of the Okhotsk Sea (west coast of Kamchatka) (57°13'1 N, 154°29'8 E, depth 565 m, silty sand) and in the Kurile-Kamchatka Trench (49°46'1 N, 157°48'6 E, depth 4010–4130 m) for the first time.

***Cherbonniera utriculus* Sibuet, 1974**

Cherbonniera utriculus – Sibuet, 1974: 1443–1445, pl. 1; Sibuet, 1977: 554; Gage et al., 1985: 205; Tyler et al., 1987: 385; Harvey et al., 1988: 191; Pawson et al., 2001: 315–317, fig. 1A–D; Gebruk et al., 2014: 173.

Diagnosis (Sibuet, 1974). Tentacles 13 plain, club shaped, without lateral digits. Animals quite small in size; 2-6 mm long and 1-3 mm in diameter. Tentacular ampullae absent as is the hydorporic canal. One Polian vesicle present. Radial muscles are filiform, undivided. Pseudo-papillae present in the middle of

the mid-ventral radius. Ossicles include tables with three open buckles at base; the tables are slender arrows formed from three columns joined closely at the base and terminating with three diverging points (Fig. 2 A, B, compare with Sibuet, 1974, fig. B, C). Calcareous anal plates are present (Fig. 2 C, compare with Sibuet, 1974, fig. E). Calcareous ring with wing shaped radialia (Fig. 3, compare with Sibuet, 1974, fig. D) and bifurcating posteriorly directed projections as long as the radialia are wide.

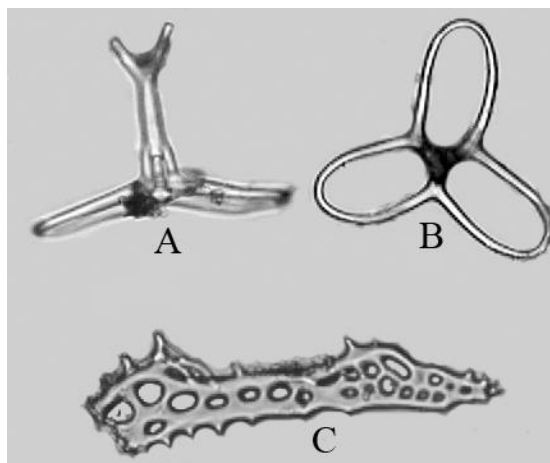


Figure 2. *Cherbonniera utriculus*. Ossicles: *A* – tables, side view; *B* – tables, top view; *C* – fragment of the anal plates.

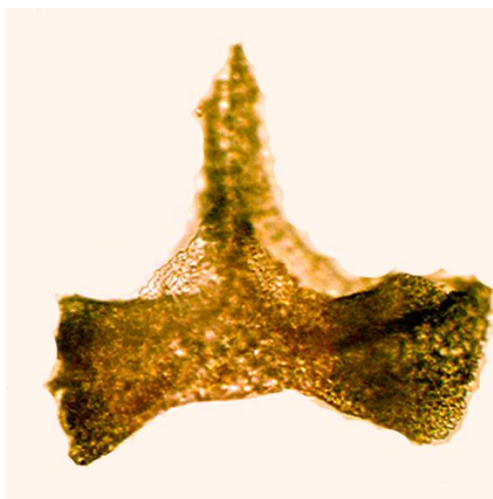


Figure 3. *Cherbonniera utriculus*. Radial segment of calcareous ring.

Distribution. *Cherbonniera utriculus* inhabit in Atlantic Ocean: Bay of Biscay [7] Rockall Trough and adjacent areas [2; 4]; Porcupine Abyssal Plain [1], off New York, east of Cape Hatteras, and north-east of the Falkland Islands [5]. Depth range: 2039–5223 m.

In the Russian seas *Cherbonniera utriculus* was found in the Bering Sea (63°45' N, 176°10' E) on the depth 3850–3900 m for the first time. *Cherbonniera utriculus* was registered in the Pacific Ocean for the first time.

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