

## CIRCEIS VITREOPSIS SP. N. (POLYCHAETA, SPIRORBIDAE) FROM THE JAPAN SEA

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### ABSTRACT

*Circeis vitreopsis* sp. n., from the Russian shores of the Japan Sea, has a tube unusual for *Circeis* in being sinistral, thick-walled and vitreous. It also differs from other *Circeis* in the structure of the operculum and collar chaetae. Worms were collected at depths of 5-10 m from empty bivalve shells.

*Key words:* *Circeis*, Spirorbidae, Japan Sea.

### INTRODUCTION

A new species of *Circeis* was discovered in material from Russian shores of the Japan Sea, and the present paper is devoted to its description.

I thank Dr G. N. Buzhinskaja (Zoological Institute, St. Petersburg) and Dr A. V. Ozolinsh (Institute of Marine Biology, Vladivostok) for placing the spirorbids at my disposal and I am grateful to all workers who collected this material.

### MATERIAL AND METHODS

The undefined material was located in the collections of the Zoological Institute of the Russian Academy of Sciences (St Petersburg) and the Institute of Marine Biology of the Far East Branch of the Russian Academy of Sciences (Vladivostok). All worms were preserved in 70% alcohol. For the total preparations Fore's liquid (aqueous solution of chloral hydrate and gum arabic) was used.

### DESCRIPTION AND DISCUSSION

*Circeis vitreopsis* sp. n.

*Holotype.* N° 1/2068 – total preparation of the body on a slide. Tube was damaged during preparation. Location: 21.7.88., Syvuchia Bay, Very Island, Petra Velikogo Gulf, Japan Sea, depth 5 m, on an empty shell of *Swiftopecten swifti* (Bernardi, 1858), coll. Ozolinsh.

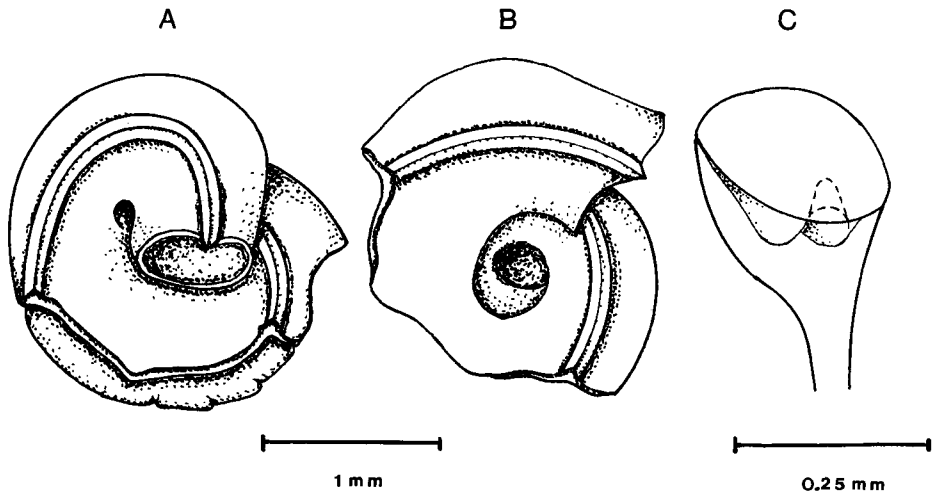


Fig. 1. *Circeis vitreopsis* sp. n. A, B - fragments of the tubes. C - operculum.

*Paratypes*. N° 2/2069 - total preparation of one specimen on a slide without tube. Location: 30.8.87., Ostry Cape, Srednaja Bay (beside Gamova Cape), Petra Velikogo Gulf, Japan Sea, depth 10 m, on the inner side of an empty shell of *Crenomytilus grayanus* (Dunker, 1853). N° 3/2070 - four specimens with the tubes in alcohol. Location: 13.7.88., Pemzovaja Bay, Possieta Gulf, Japan Sea, depth 5-7 m, on the inner side of an empty shell of *C. grayanus*, coll. Ozolins. All these are kept now in the collection of the Kamchatka Institute of the Ecology and Environment of the Far East Branch of the Academy of Sciences (Petropavlovsk-Kamchatsky). Paratypes N° 1/47379 - 22 specimens partly without tubes in alcohol. Location: 13.7.76., Kreyserek Cape, Possieta Gulf, Japan Sea, depth 9-10 m, on the inner side of an empty shell of *C. grayanus*, coll. Sirenko. These are kept in the Zoological Institute (St Petersburg).

*Description*. Tube is sinistral, coiled in one plane usually, or the last whorl covers the inner (Fig. 1A, B). One distinct wide sharp ridge is present. It forms a pointed projection over the aperture. All tubes were damaged to some degree, so difficult to measure exactly, but the largest is about 2-2.5 mm. The walls of tubes are far more thick and solid than those of the other *Circeis* species, and are vitreous, translucent or semitranslucent. They are more similar to the tubes of *Paradexiospira*, but somewhat more fragile. The translucent and semitranslucent sections are irregularly distributed. Maybe clouding of the tube is the result of fixation, for I observed such occurrence with *Paradexiospira* species.

One of the tubes, damaged during preparation, contained embryos stuck to each other and directly to the inside of the tube wall.

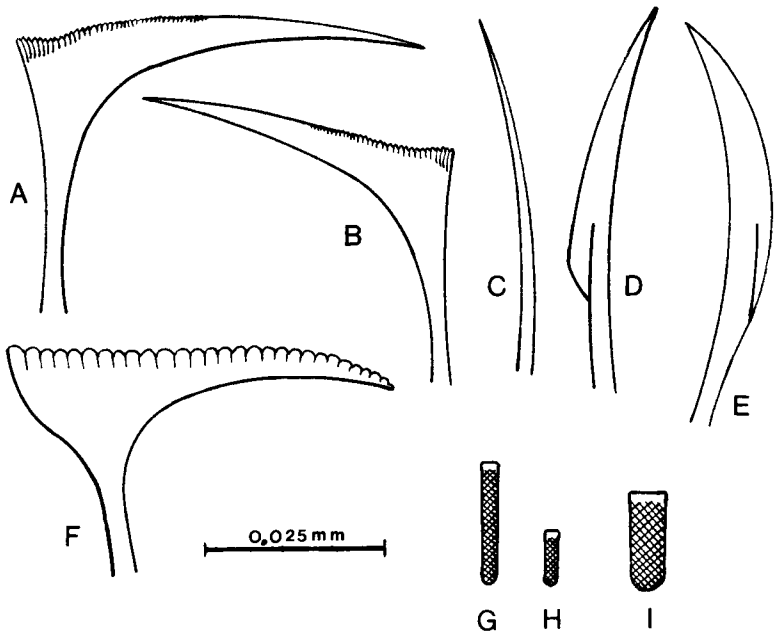


Fig. 2. *Circeis vitreopsis* sp. n., chaetae. A - collar chaeta of the convex side. B - collar chaeta of the concave side. C - accompanying capillary chaeta from the first thoracic fascicle. D - chaeta from the second setiger. E - chaeta from the third setiger. F - abdominal geniculate chaeta. G - largest of the thoracic uncini. H - smallest of the thoracic uncini. I - abdominal uncinus.

The body of fixed specimens is flesh-coloured, nearly colourless. Margins of thoracic membrane are not fused dorsally over thoracic groove.

Distal plate of the operculum (Fig. 1C) is flat. Talon represented by two symmetrical hill-shaped projections separated by a saddle. The structure of the operculum is seen distinctly only under a light microscope.

Three thoracic setigers (two thoracic tori on the concave side of the body).

Collar chaetae (Fig. 2A, B) are simple, geniculate, with delicate serration of the blade, without cross-striation. Collar chaetae of the convex side are geniculated more strongly. The basal part of the blade is usually with a small distinct groove, but has no resemblance to the fin-shaped bases of many collar chaetae. Accompanying capillary chaetae are present in the first fascicle (Fig. 2C). The notochoetae of the second and third setigers (Fig. 2D, E) are simple, as usual for all spirorbids. Sickle chaetae are absent from the third fascicles. Abdominal chaetae are 1-2 per fascicle, with coarsely serrated blades and an optically dense geniculate projection extending beyond the line of the shaft (Fig. 2F). Hooked capillary chaetae are absent.

Thoracic uncini have a blunt anterior peg and about 5-6 longitudinal rows of teeth. They are not very large, the largest of them (Fig. 2G) being not more than

1.5 times the length of the abdominal uncini. The smallest, in the ventral part of each torus, are smaller than abdominal uncini (Fig. 2H). Abdominal tori are present only on the concave side of the body. Largest tori are in the first half of the abdomen. Abdominal uncini are small, with blunt anterior peg and numerous longitudinal rows of teeth. They are wider than any thoracic uncini (Fig. 2I).

*Differential diagnosis.* Four species of *Circeis* in the world fauna were known up to now (Knight-Jones & Knight-Jones 1977, Al-Ogily & Knight-Jones 1981, Rzhavsky 1992). All these species have dextral tubes as a rule. Sinistral forms of *Circeinae* are known only as exceptions (Knight-Jones et al. 1979) and only in *Circeis armoricana* Saint-Joseph, 1894 and *Paradexiospira (Spirorbides) vitrea* (Fabricius, 1780). The unusual tubes of *C. vitreopsis* are immediately noticeable. All specimens are sinistral. Moreover, the tube wall is more similar to that of *Paradexiospira* species in thickness, solidity and transparency. When I first saw *C. vitreopsis*, I thought that it might be the sinistral form of *P. (S.) vitrea*, but it differs from the genus *Paradexiospira* by all significant features, such as number of thoracic setigers, structure of collar chaetae and absence of sickle chaetae. It also differs from other *Circeis* by the structure of the operculum and the groove in the basal part of the collar chaeta blade.

*Ethymology.* The species was named because of the similarity of the tube to that of *P. (S.) vitrea*.

*Ecology.* Worms were collected in depths of 5-10 m from empty bivalve shells (*S. swifti* and *C. grayanus*).

*Distribution.* Japan Sea (Primorsky Krai). Not known elsewhere.

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