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A New Coral Genus (Tabulata) from the Upper Devonian of the Subpolar Urals

V. S. Tsyganko

Institute of Geology, Komi Scientific Center, Ural Branch, Russian Academy of Sciences, Pervomaiskaya ul. 54, Syktyvkar, 167610 Russia

e-mail: tsyganko@geo.komisc.ru

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Abstract—A new tabulate genus, *Sokolovia* gen. nov., with the type species *B. pershinae* sp. nov., from the Upper Devonian (Lower Famennian Substage) of the western slope of the Subpolar Urals is described.

Keywords: Coelenterata, Tabulata, new taxa, Upper Devonian, Subpolar Urals

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INTRODUCTION

The material of the present paper is the corals Coelenterata of the subclass Tabulata collected by the author on the western slope of the Subpolar Urals during paleontological and stratigraphical studies of the Devonian System in the Shar'ya River Basin in 1983 (Fig. 1). One of sections under study outcrops on the left bank of the river, at the middle reaches (outcrop 62): (1) At the base, the section is represented by a member of light gray and greenish gray, thin and very thin platy oozy bumpy-layered limestones (4.0 m thick); (2) These beds are overlain by a member of interbedding bumpy-layered, in places, siliceous limestones (2.0 m thick); (3) The strata are crowned by a member of light gray and greenish gray, thin and very thin platy oozy bumpy-layered limestones (1.7 m thick), enclosing lenticular interbeds of gray claystones and clayey-siliceous shales.

In these strata, five levels with presumably slowed or zero sedimentation have been recognized. These levels have yielded the tetracorals *Gorizdronia profunda* (Soshk.) and *G. tenuis* Różkowska and the brachiopods *Dalmanella* sp., *Monelasmina* sp., conodonts *Nothognatella iowensis* Young., *Palmatolepis delicatula*

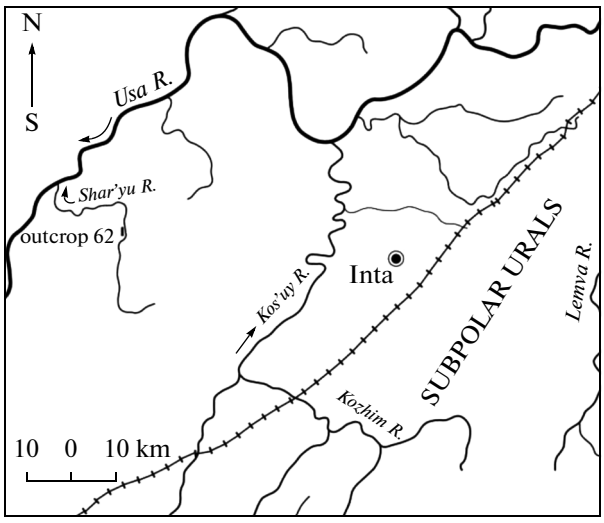

Fig. 1. Locality that has yielded new Late Devonian tubutales, Subpolar Urals, Shar'ya River (outcrop 62).

clarki Zieg., *P. triangularis* Sann., *P. minuta minuta* Brans. et Mehl, *P.* cf. *tenuipunctata* Sann., abundant unidentifiable crinoid columnals and individual poorly preserved trilobites (Tsyganko et al., 1985; Tsyganko, 2011). This faunal assemblage is evidence that the strata in question belong to the basal Famennian Stage (*Palmatolepis triangularis* Zone).

At three of the above levels of the section, I have revealed a number of fossils previously unknown in the Devonian System of this region, including unusual coelenterates of the subclass Tabulata. They are distinguished by the large elongated cylindrical or subcylindrical branches and the presence of lateral branches from the main parent corallites. It is also noteworthy that most of the coral fragments are confined to relatively dense tuberculate surfaces of lenticular limestone layers. Below these corals are described in detail and referred to the new genus *Sokolovia* gen. nov., with the new type species *B. pershinae* sp. nov. The taxonomic position of the new genus is established in view of the data on related coelenterates considered in works of Gerth (1921), Sokolov (1955, 1962), Hill (1981), and other researchers.

The collection described is housed in the Chernov Geological Museum (GMCh) at the Institute of Geology of the Komi Scientific Center of the Ural Branch of the Russian Academy of Sciences, Syktyvkar); collection no. 448.

SYSTEMATIC PALEONTOLOGY

SUBCLASS TABULATA

Order Favositida

Suborder Favositina

Superfamily Pachyporicae Gerth, 1921

Family Pachyporidae Gerth, 1921

Genus *Sokolovia* Tsyganko, gen. nov.

Etymology. In honor of Academician Boris Sergeevich Sokolov, an outstanding researcher of fossil tabulate corals.

Type species. *B. pershinae* sp. nov.

Diagnosis. Polyp colonies in shape of large cylindrical and subcylindrical, procumbent branches with lateral branches. Corallites corniculate and bowl-shaped. Apertures of corallites oval or circular, without regular alternation. Cups deep, bowl-shaped or basally pointed. In paraxial zone, corallites tightly adjoining each other. Corallite walls near apertures strongly thickened and covered with thin ringlike wrinkles. Walls lamellar in structure. Septa rudimentary. Rare thorns present. Bottoms complete and underdeveloped, not always preserved.

Species composition. Type species from the Lower Fammenian of the Chernyshev Uplift.

Comparison. The main differences of *Sokolovia* gen. nov. from all genera of the family Pachyporidae are the procumbent colonies with characteristic lateral branching, the large size of their colonies, and the absence of distinct order in the colony arrangement. A distinctive feature of the genus is also intense development of the stereoplasm, with mostly fine-tuberculate surface and surrounding the corallite cups.

***Sokolovia pershinae* Tsyganko, sp. nov.**

Plate 7, figs. 1–5

Etymology. In honor of the stratigrapher and paleontologist A.I. Pershina, who devoted her life to the study of Devonian deposits in northeastern Europe.

Holotype. ChGM, no. 448/1; Subpolar Urals, middle reaches of the Shar'ya River, left bank, outcrop 62; Upper Devonian, Famennian Stage, Lower Famennian Substage.

Description (Fig. 2). Branching colonies consist of cylindrical and subcylindrical colonies, extending along the surface of mostly dense limestones. The colonies are up to 12 cm long, 3.0–4.0 mm in cross section. The main parent corallites give rise to 8–6-cm long lateral branches deviating an a right or almost right angle. The colonies are formed of corallites diverging from their axis and shaped like horns angular or circular in cross section and tightly adjoining each other. Corallites are replaced in the growth direction through 2.0–2.5 mm. Their cups are mostly oval, from 1.0 × 1.2 to 1.2 × 1.5 mm in dimensions, sometimes round, up to 1.5 mm in diameter. Cups are generally randomly arranged. The corallites apertures are basically oval, from 1.5 × 1.8 to 1.8 × 2.0 mm, or, less often, round, up to 1.5 mm in diameter. Their walls are 0.5–0.8 mm thick, with pores 0.15–0.2 mm in diameter. Germinal septa look like hardly discernible longitudinal ridges or absent. The bottoms are oriented

Explanation of Plate 7

All specimens come from one locality: Subpolar Urals, Shar'ya River (Usa River Basin); Upper Devonian, Famennian Stage, Lower Famennian Substage.

Figs. 1–5. *Sokolovia pershinae* gen. et sp. nov.: (1) holotype ChGM, no. 448/1, general appearance of procumbent colony; (2) specimen ChGM, no. 448/2, lateral branches are seen; (3) specimen ChGM, no. 448/3, fragment of longitudinal section of corallite colony: (3a) longitudinal sections of corallites with bottoms, (3b) cross section of corallite with rudimentary septa; (4) specimen ChGM, no. 448/6, cross section of corallite branch; (5) specimen ChGM, no. 448/5, cross section of corallite branches.

Plate 7

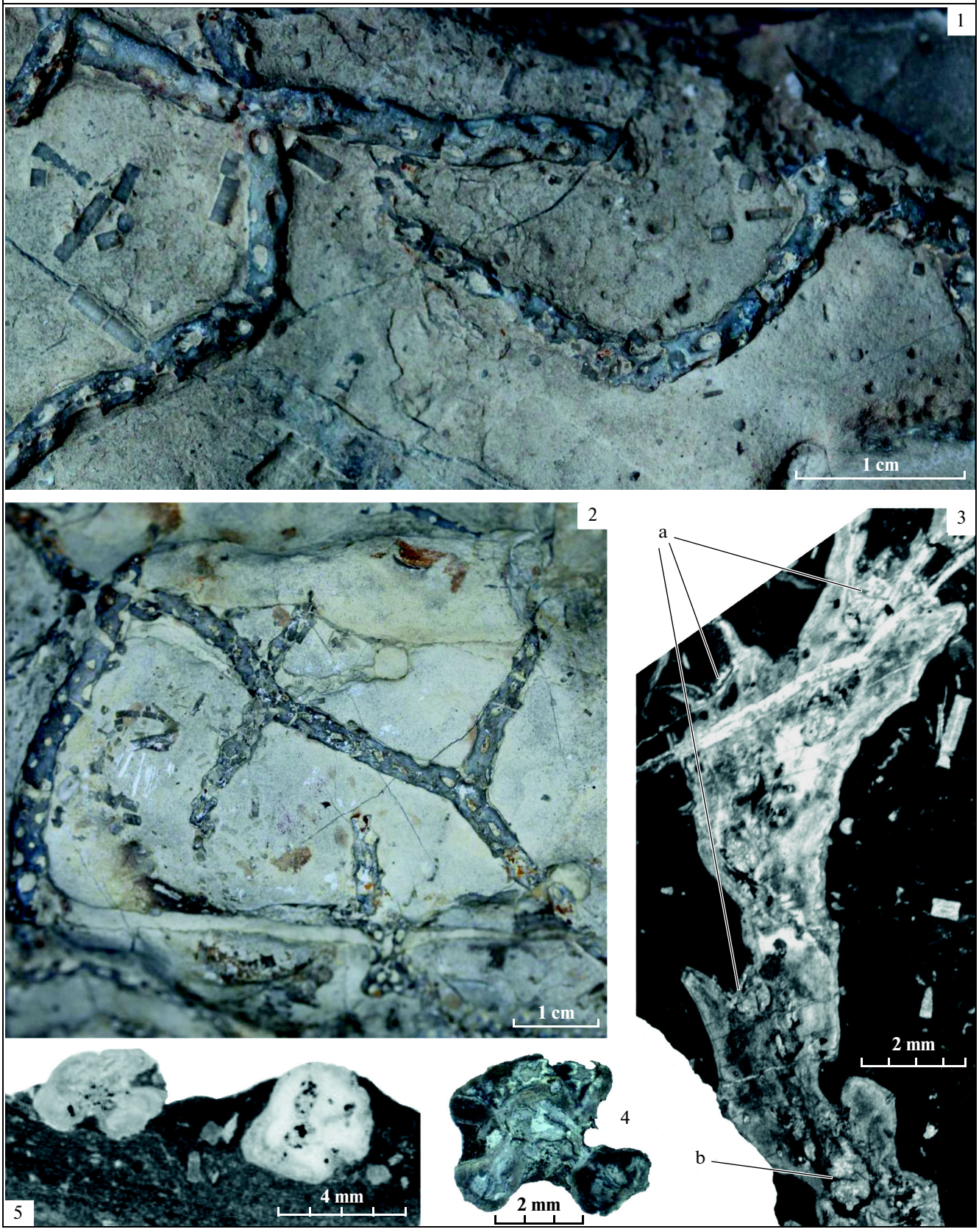

Fig. 2. Procumbent stalks of *Sokolovia pershinae* gen. et sp. nov.: (a) specimen no. 448/7, (b) specimen no. 448/8.

depending on the lifetime position of corallites. Rare thorns are present.

Material. Holotype and 14 specimens (nos. 448/2–15) from the type locality (collected by V.S. Tsyganko in 1983).

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