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New Species of Stenolaemate Bryozoans from the Jurassic of the Moscow and Saratov Regions (Russia)

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Abstract—Three new species of the Middle Jurassic stenolaemate bryozoans of the genera *Reptomultisparsa* d'Orbigny and *Microeciella* Taylor et Sequeiros are described: *R. saratovensis* sp. nov. and *M. seltseri* sp. nov. from the Lower Bathonian and the Upper Callovian of the Saratov Region, respectively, and *R. stupachenkoi* sp. nov. from the Middle Callovian of the Moscow Region. Some specific features of their astogeny and colonial morphology are discussed.

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Key words: bryozoans, *Reptomultisparsa, Microeciella*, Middle Jurassic, Russia.

INTRODUCTION

Bryozoans of the genera *Reptomultisparsa* d'Orbigny, 1853 and *Microeciella* Taylor et Sequeiros, 1982 are recorded from the Jurassic deposits of the Saratov Region for the first time. Specimens of bryozoans that are assigned here to new species of these genera were kindly passed to the author of this paper by V.V. Mitta (Moscow) and V.B. Sel'tser (Saratov). It is worth noting that one of the species of the genus *Reptomultisparsa* was earlier included as *Berenicea* sp. in the faunal list of the Lower Bathonian deposits near the city of Saratov (Mitta et al., 2004). Subsequently, the author tentatively assigned it to *R. cobergonensis* Walter, 1969. The second species comes from Upper Callovian deposits and was also tentatively assigned to *Reptomultisparsa* sp. (based on the computer image sent by Sel'tser). Under these names both species were included in the list of Jurassic bryozoans from the central part of European Russia (Viskova, 2006b). More detailed investigations of the material have shown that the first bryozoan belongs to a new species of the genus *Reptomultisparsa, R. saratovensis* sp. nov., and the second, to a new species of the genus *Microeciella, M. seltseri* sp. nov. Finally, the third new species, which also belongs to the genus *Reptomultisparsa, R. stupachenkoi* sp. nov., was discovered by A.V. Stupachenko (Moscow). This species, as well as a wide variety of bryozoans that were described previously, is confined to the Middle Callovian deposits of the widely known locality near the Gzhel' Railroad Station in the Moscow Region (Gerasimov, 1955; Gerasimov et al., 1996; Viskova, 2006a, 2006b, 2007, 2008).

The encrusting colonies of *R. saratovensis* (Pl. 9, figs. 1, 2, Fig. 1) discovered in Lower Bathonian silty clays in the Saratov region are distinguished by their subdiscoidal shape and intermediate sizes. They are multiserial and unilaminate, and their ancestrular part has a characteristic eccentric position. Two colonies of this bryozoan developed on the external surface of a small valve of oyster. Thus, they were slightly raised above the relatively shallow portion of the seafloor of the Early Bathonian basin and were protected against disastrous littoral drifts apparently up to the moment when the formation of brood chambers in the colonies was completed.

In contrast to the colonies of *R. saratovensis*, the encrusting colony of *R. stupachenkoi* is oval in shape, fairly large, multiserial, and multilaminate (Pl. 10, fig. 1; Fig. 2). It also developed on a substrate elevated above a hard bottom, but this was the external side of a large flat valve of the oyster shell. and as a whole, this colony developed under the conditions of the shallow littoral zone and high hydrodynamics that were characteristic of the Middle Callovian Sea within the Moscow Region (Sazonova and Sazonov, 1967; Gerasimov et al., 1996). The markedly eccentric position of the ancestrular region suggests that the colony of *R. stupachenkoi* grew from the ancestrula at a rate that was higher in the distal and lateral directions than in the proximal direction. This can be related both to the colony organization per se and to some external factors that inhibited the development of the colony in the region proximal to the ancestrula (for example, because of the limited area of substrate). The most remarkable feature in the morphology of this colony is a marginal rim surrounding the colony (this extension is partly destroyed near the lower edge of the longer side of the oval). This extension, which was formed by the distal tips of autozooecia at different stages of their growth, as evidenced by their different diameters, represented a peripheral growth zone of the colony the development

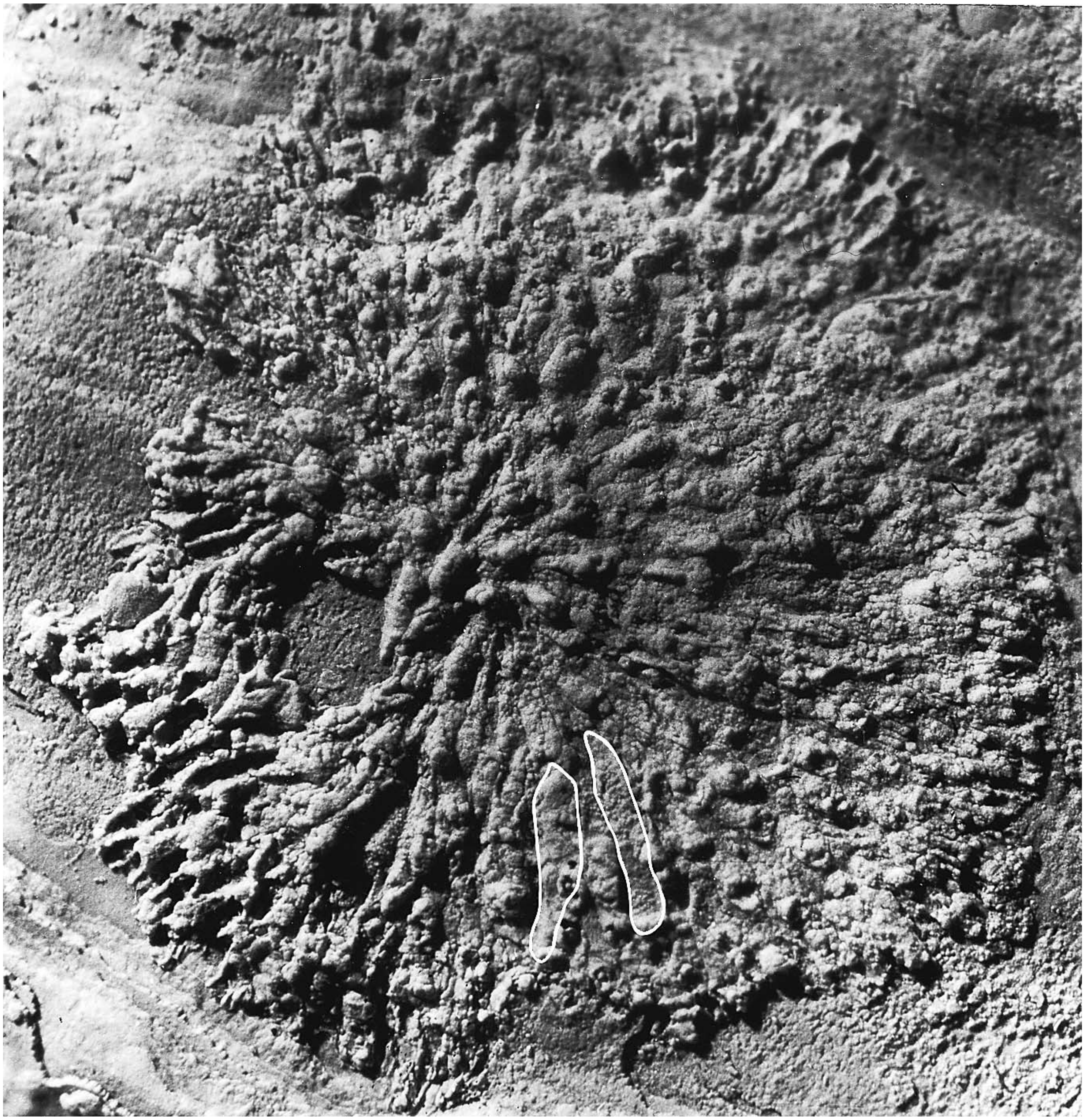


Fig. 1. *Reptomultisparsa saratovensis* sp. nov.; holotype PIN, no. 5038/12: external appearance of the colony, gonozooecia are indicated by white lines, ×24.

of which was not apparently completed, despite its large size. The extension apparently protected the colony from silting and created the conditions favorable for a reliable supply of food resources from water currents to the lophophores of autozooids that were raised by the extension to a higher level. It is worth noting that the peristomes of autozooecia remained open on the extension, while in the internal part of the colony surrounded by the extension they were largely closed by terminal diaphragms. The formation of terminal diaphragms could be related to the degeneration of polypides because of periodic increases in turbidity caused by the deposition of suspended material. In addition, in different parts of the colony of *R. stupachenkoi* there are two types of tubular structures with circular apertures that are larger than peristomes: in the first type they have a diameter of 0.16–0.20 mm; in the second, 0.30–0.35 mm (Fig. 2). The apertures of the tubes of the first type are surrounded by the intact peristomes of autozooecia. In general, they show a certain similarity to the tubular structures recently described by Taylor and Voigt (2006) in *Plagioecia* sp. from the Lower Cen-

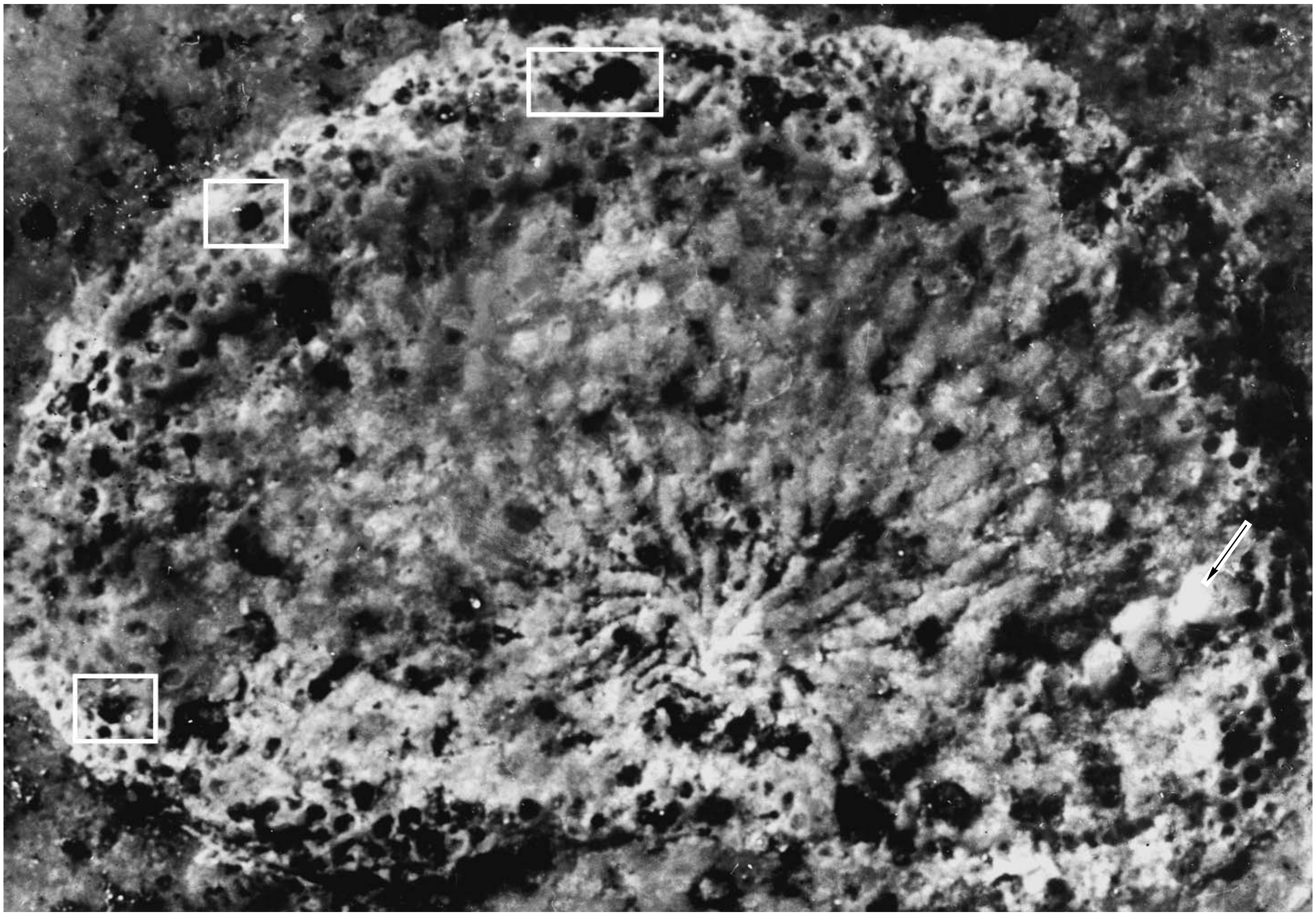


Fig. 2. *Reptomultisparsa stupachenkoi* sp. nov.; holotype PIN, no. 5038/39; external appearance of the colony, ×24, black arrow indicates a gonozooecium, white squares indicate the apertures of the tubular structures of presumed soft-bodied symbionts, and the white rectangle indicates the apertures of boring organisms.

omanian of Germany and identified by them as soft-bodied symbionts of this bryozoan. It is by no means improbable that *R. stupachenkoi* sp. nov. possessed similar soft-bodied symbionts. The tubes of the second type, the apertures of which are surrounded by the destroyed peristomes of autozooecia, could belong to boring organisms that apparently used the colony of *R. stupachenkoi* sp. nov. after its death.

Bryozoans of the new species of the genus *Microeciella, M. seltseri* sp. nov. (Pl. 9, figs. 3, 4; Pl. 10, figs. 2, 3), are represented by a number of disk-shaped unilaminate colonies (not in a quite good state of preservation), which encrusted areas directly on the silty sand bottom. The fact that the colonies of *M. seltseri* sp. nov. located in close proximity to each other differ in size is evidence in favor of an assumption that larvae of this bryozoan appeared and gave rise to new colonies one after another within the same reproductive season. This is also supported by the fact that the largest colony (about 10 mm in diameter) contains a fairly large number of brood chambers, gonozooecia. The same colony developed a vast growth zone and thus inhibited the growth of the adjacent young colony of *M. seltseri* sp. nov. along the line of contact with it (Pl. 9, figs. 3, 4). The developing colonies were buried simultaneously but at different stages of their astogeny: some of them are about 2 mm in diameter; the others, 7.50–8.01 mm in diameter. Unfortunately, all colonies are characterized by very slender exterior walls of zooecia, poor candidates for fossilization, this is particularly true of the smallest colonies. The delicate structure of the colonies of *M. seltseri* sp. nov. suggests adaptation of these bryozoans to the calm (perhaps windless or relatively deep-water) environmental conditions, which could exist in this place of the Late Callovian Sea on the territory of the Saratov Region. It is worth noting that the colonies of the new species of the genus *Microeciella* that was described in my previous paper (Viskova, 2009) from clays of Middle Callovian age in the Bryansk Region also feature quite fragile exterior walls of zooecia (Viskova, 2009).

As to the trophic structure of the bryozoan colonies under consideration, all three species show a relatively uniform distribution of the peristomes of autozooecia. This suggests the individual activity of autozooids when they trap food particles from marine waters.

Below the descriptions of new species of Jurassic bryozoans and the diagnosis of the genus *Reptomultisparsa* d'Orbigny are provided, the diagnosis of the genus *Microeciella* Taylor et Sequeiros was given in my previous paper (Viskova, 2009).

MATERIAL

The material studied is housed in the Laboratory of Higher Invertebrates at the Borissiak Paleontological Institute, Russian Academy of Sciences (PIN), under collection no. 5038.

SYSTEMATIC PALEONTOLOGY

Order Tubuliporida

Suborder Tubuliporina

Family Multisparsidae Bassler, 1934

Genus *Reptomultisparsa* d'Orbigny, 1853

Reptomultisparsa: d'Orbigny, 1853, p. 875; Gregory, 1896, p. 151; Walter, 1969, p. 74; Taylor and Sequeiros, 1982, p. 118; Taylor, 1984, p. 77; Hara and Taylor, 1996, p. 125.

T y p e s p e c i e s. *Diastopora incrustans* d'Orbigny, 1850; France, Sarthe; Middle Jurassic, Upper Bathonian.

D i a g n o s i s. Colonies encrusting, fan-shaped, disk-shaped, oval or tubular, unilaminate or multilaminate, multiserial. Autozooecia cylindrical, with more or less narrowed proximal part. Peristomes of autozooecia circular or oval, low, occasionally projecting obliquely or perpendicularly from colony surface, either closely or widely spaced, usually in quincuncial pattern. Gonozooecia shaped like longitudinally elongated swellings, occasionally with unevenly distributed transverse constrictions, with proximal part shortened or covered by autozooecia. Ooeciopore subterminal, circular or transversely oval in shape, usually greater than the diameter of peristome of autozooecium.

S p e c i e s c o m p o s i t i o n. Twelve species: *R. hybensis* (Prantl, 1938), the only species known from the Triassic (Rhaetian) of Czechoslovakia (Taylor and Michalik, 1991); seven species revised by Walter (1969) come from the Jurassic deposits of western Europe: *R. incrustans* (d'Orbigny, 1850) from the Upper Aalenian–Upper Bathonian of France; *R. cobergonensis* Walter, 1969 from the Upper Aalenian–Lower Bajocian and *R. cricopora* (Vine, 1881) from the Upper Aalenian of England; *R. margopuncta* (Waagen, 1867) from the Upper Aalenian–Lower Bajocian and *R. microstoma* (Michelin, 1845) from the Upper Aalenian–Lower Callovian of France; *R. oolitica* (Vine, 1881); and *R. ventricosa* (Vine, 1881) from the Upper Aalenian of England and the Upper Aalenian–Lower Bajocian of France. These should be supplemented by the following species: *R. tumida* Taylor, 1980 from the Bathonian deposits of England (Taylor, 1980), *R. saratovensis* sp. nov. from the Lower Bathonian of the Saratov Region (Russia), *R. stupachenkoi* sp. nov. from the Middle Callovian of the Moscow Region (Russia), and *R. norberti* Hara et Taylor, 1996 from the Upper Oxfordian of Poland (Hara and Taylor, 1996). The bryozoans that were discovered from the Lower Oxfordian of Poland (Hara, 2006) also may belong to the genus *Reptomultisparsa*.

C o m p a r i s o n. This genus differs from all genera of the family in the unusually elongated shape of gonozooecium with a subterminal position of the ooeciopore, the diameter of which is usually greater than the peristome of autozooecia.

Reptomultisparsa saratovensis **Viskova, sp. nov.**

Plate 9, figs. 1, 2

Reptomultisparsa cobergonensis Walter, 1969: Viskova, 2006a, p. 49, Fig. 2, Fig. 7

E t y m o l o g y. From the city of Saratov, where this species was discovered.

H o l o t y p e. PIN, no. 5038/12; Russia, Saratov Region, city of Saratov, quarry of the KPD Saurskii-2 factory; Middle Jurassic, Lower Bathonian, *Arcticoceras ishmae* Zone.

D e s c r i p t i o n (Fig. 1). The encrusting colonies are circular, multiserial and unilaminate, from 6.30 to 7.00 mm in diameter. Despite the early growth stages have been only partly preserved, the eccentricity of the ancestrular regions of colonies is clearly seen. Most of these colonies were formed by the basal-distal and basal-distolateral budding, the others, by the basal-proximal and basal-proximolateral budding. The autozooecia are cylindrical, more or less narrowing proximally, with well-defined separating walls. Their distal tips are slightly narrowed and rise obliquely above the colony surface. The exterior walls are convex. The autozooecia vary in size: from 0.53 to 0.80 mm in length (occasionally up to 1.00 mm) and from 0.11 to 0.16 mm in width. The peristomes, which are usually thickened by secondary calcification and have been preserved only in places, are slightly projecting and oblique or, occasionally, perpendicular to the surface of autozooecia, they are either circular, 0.10–0.12 mm in diameter, or oval, measuring 0.10×0.15 mm, occasionally they are closed by terminal diaphragms. The gonozooecia represent strongly elongated swellings with unevenly distributed transversely ribbed structure, they have a length of 1.63–2.00 mm and a maximum width of 0.25–0.33 mm. The ooeciopore is subterminal and slightly projecting, oval-shaped, measuring 0.13×0.16 mm. The exterior walls of autozooecia and gonozooecia are pierced by pseudopores, the interior walls are pierced by communication pores, which are seen in places on broken walls, however, they all are poorly seen because of secondary calcification.

Explanation of Plate 9

Figs. 1 and 2. *Reptomultisparsa saratovensis* sp. nov.; external appearance of two colonies, ×12: (1) holotype PIN, no. 5038/12 showing the eccentric position of the ancestrular zone; Russia, Saratov Region, city of Saratov, quarry of the KPD Saurskii-2 factory; Middle Jurassic, Lower Bathonian; *Arcticoceras ishmae* Zone; (2) specimen PIN, no. 5038/13; same age and locality.

Figs. 3 and 4. *Microeciella seltseri* sp. nov.; external appearance of the colonies, ×12; Russia, Saratov Region, Dubki quarry in the vicinity of the city of Saratov; Middle Jurassic, Upper Callovian, *Quenstedtoceras lamberti* Zone; (3) holotype PIN, no. 5038/56; mature discoidal colony showing the walls of gonozooecia (arrows), the gonozooecia and autozooecia are similar in shape, but the former are larger than the latter; (4) specimen PIN, no. 5038/57; young colony that developed in the vicinity of the mature colony, the contact between these colonies is visible: the wider growth zone of the large colony hindered the full development of the young colony.

V a r i a b i l i t y. Inside- and intercolonial variability is mainly observed in the variations in the diameter of colony, in the width and length of autozooecia and gonozooecia, and also in the position of the primary zone of astogenetic change relative to the center of the circular colony.

C o m p a r i s o n. The new species differs from the type species, which has a characteristic multilaminate colony and usually encrusted the shells of gastropods (Buge and Fischer, 1970; Taylor, 1976), in the unilaminate structure of the colony. It differs from the most closely related species *R. cobergonensis* Walter from the Upper Aalenian–Lower Bajocian of France (Walter, 1969, p. 77, pl. 4, figs. 8, 9) in the small diameter of the colony (6.30–7.00 mm instead of 8 mm) and the larger autozooecia (their length is 0.53–0.80 mm instead of 0.40–0.50 mm and their width is 0.11–0.16 mm instead of 0.15 mm in *R. cobergonensis*). The gonozooecia in *R. saratovensis* sp. nov. are somewhat smaller than in *R. cobergonensis.* In addition, the new species shows a markedly eccentric position of the ancestrular region.

M a t e r i a l. In addition to the holotype, one specimen of the satisfactory state of preservation from the same locality and from the same substrate as the holotype, specimen PIN, no. 5038/13.

Reptomultisparsa stupachenkoi Viskova sp. nov.

Plate 10, fig. 1

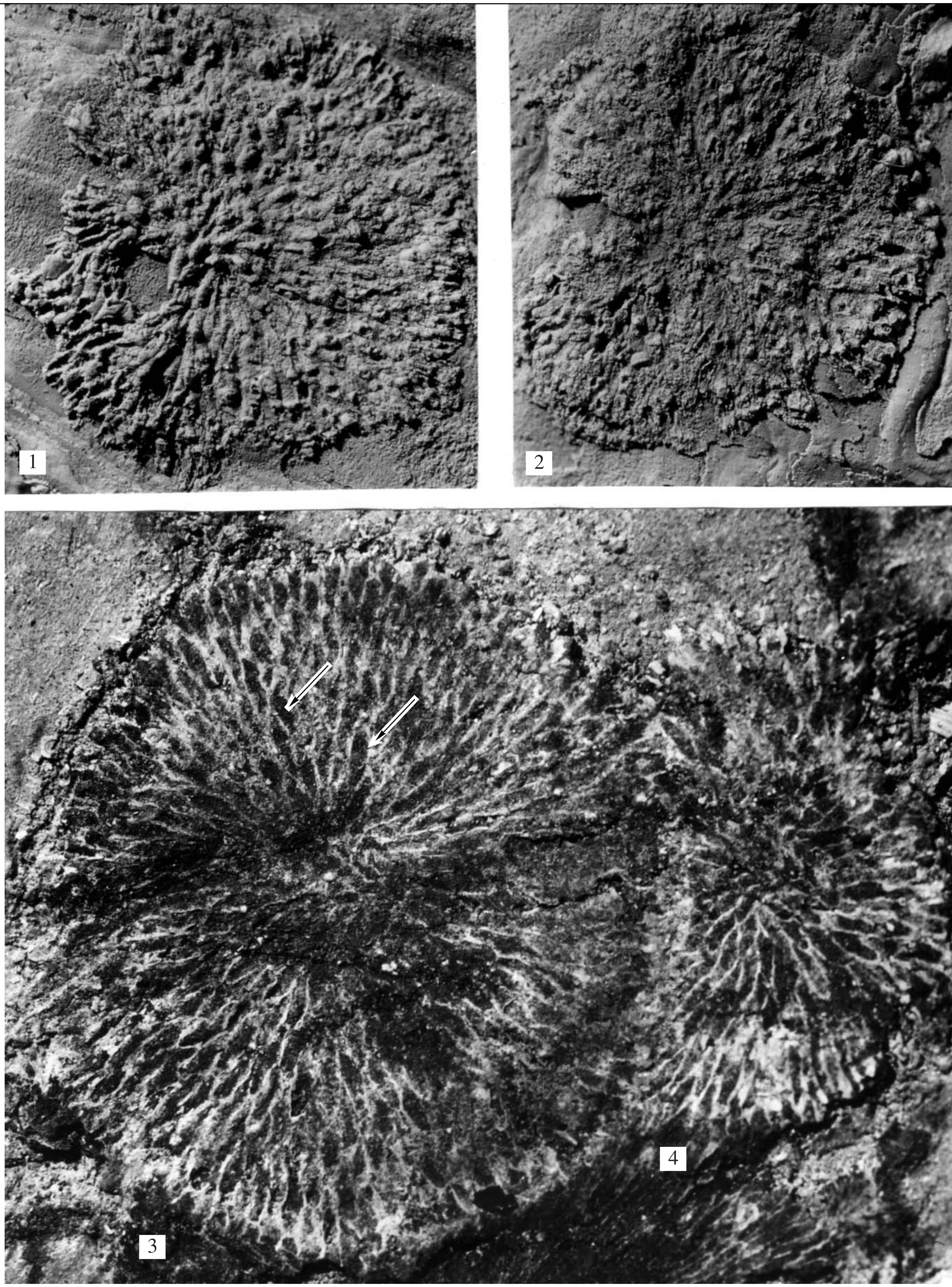
E t y m o l o g y. In honor of A.V. Stupachenko.

H o l o t y p e. PIN, no. 5038/39; Russia, Moscow Region, quarry near the Gzhel' Railroad Station; Middle Jurassic, Middle Callovian, *Erymnoceras coronatum* Zone.

D e s c r i p t i o n (Fig. 2). The colony is encrusting, almost oval-shaped, multiserial, measuring 6.50 × 9.28 mm. In the zone of astogenetic changes it is bilaminate; and in the zone of astogenetic repetition, multilaminate (Pl. 10, fig. 1b). The ancestrula is covered by postancestrular autozooecia arranged in a spiral. Its cross section, measuring 0.10 × 0.13 mm, is easily observable in the section (Pl. 10, fig. 1b). The autozooecia bud from the ancestrula and postancestrular autozooecia, which possess a clear defined eccentric position in the colony, in the distal, lateral, and proximal directions. They first form two layers, in which they are arranged parallel or almost parallel to the basal plate. As the basal plate grows, new autozooecia that bud from the basal plate raise the earlier autozooecia to form four or five layers. The distal parts of the autozooecia forming these layers form a thickened marginal rim. The autozooecia are cylindrical, more or less narrowing proximally and slightly expanding distally, outwardly the dividing walls can be seen in places. The exterior walls are slightly flattened and are largely hidden under the layer of secondary calcification. The dimensions of autozooecia vary: the length varies from 0.83–1.16 mm in the zone of astogenetic changes to 1.30–1.50 mm in the zone of repetition; and the width, from 0.15 to 0.20 mm. The peristomes are slightly projecting, perpendicular to the surface of autozooecia, usually circular, 0.10–0.12 mm in diameter. However, both their shape and size are quite variable because of the great amount of secondary calcification. They are arranged in a quincuncial pattern or in poorly defined radial rows. Some peristomes have interior spines. The peristomes of the internal part of the colony are almost completely closed by terminal diaphragms, which are occasionally perforated. The brood chamber (Pl. 10, fig. 1c, Fig. 2) represents an elongated convex swelling that is expanded distally and has unevenly distributed transverse constrictions dividing the gonozooecium into several chambers (longitudinal section through the terminal chamber and a portion of the subterminal chamber are shown in Pl. 10, fig. 1c). The gonozooecium has a length of 1.83–2.00 mm and a maximum width of 0.25–0.58 mm. There are two subterminal ooeciopores, which are only slightly projecting, shaped like elongate oval, and slightly larger than the peristome in size. They are displaced laterally onto the lateral sides. The exterior walls of autozooecia and brood chamber are pierced by pseudopores; however, they are poorly visible even in sections because of the large amount of secondary calcification (Pl. 10, figs. 1b, 1c). The interior walls are pierced by communication pores, which make the walls moniliform in shape.

V a r i a b i l i t y. Intracolonial variability shows itself in the variations of the dimension of autozooecia.

Plate 9



Explanation of Plate 10

Fig. 1. *Reptomultisparsa stupachenkoi* sp. nov.; holotype PIN, no. 5038/39; (1a) external appearance of the colony, ×12; (1b) longitudinal section through the center of the colony along the minor axis (AB) of its ellipse, arrow indicates the ancestrula, on either side of which the autozooecia first form two and subsequently a larger number of layers, thus forming a marginal rim, ×20; (1c) oblique longitudinal section through a portion of the colony that contains a gonozooecium, arrow indicates the section cut through the terminal chamber of the gonozooecium and a portion of the subterminal chamber, ×20; Russia, Moscow Region, quarry near the Gzhel' Railroad Station; Middle Jurassic, Middle Callovian, *Erymnoceras coronatum* Zone.

Figs. 2 and 3. *Microeciella seltseri* sp. nov.; external appearance of two colonies, ×12; (2) specimen PIN, no. 5038/58; (3) specimen PIN, no. 5038/59; Russia, Saratov Region, Dubki quarry in the vicinity of the city of Saratov; Middle Jurassic, Upper Callovian, *Quenstedtoceras lamberti* Zone.

C o m p a r i s o n. The new species differs from all known species in the development of a marginal rim and in the gonozooecium divided into chambers.

M a t e r i a l. Holotype.

Family Oncousoeciidae Canu, 1918

Genus *Microeciella* Taylor et Sequeiros, 1982

***Microeciella seltseri* Viskova, sp. nov.**

Plate 9, figs. 3, 4; Plate 10, figs. 2, 3

E t y m o l o g y. In honor of V.B. Sel'tser.

H o l o t y p e. PIN, no. 5038/56; Russia, Saratov Region, Dubki quarry in the vicinity of the city of Saratov; Middle Jurassic, Upper Callovian, *Quenstedtoceras lamberti* Zone.

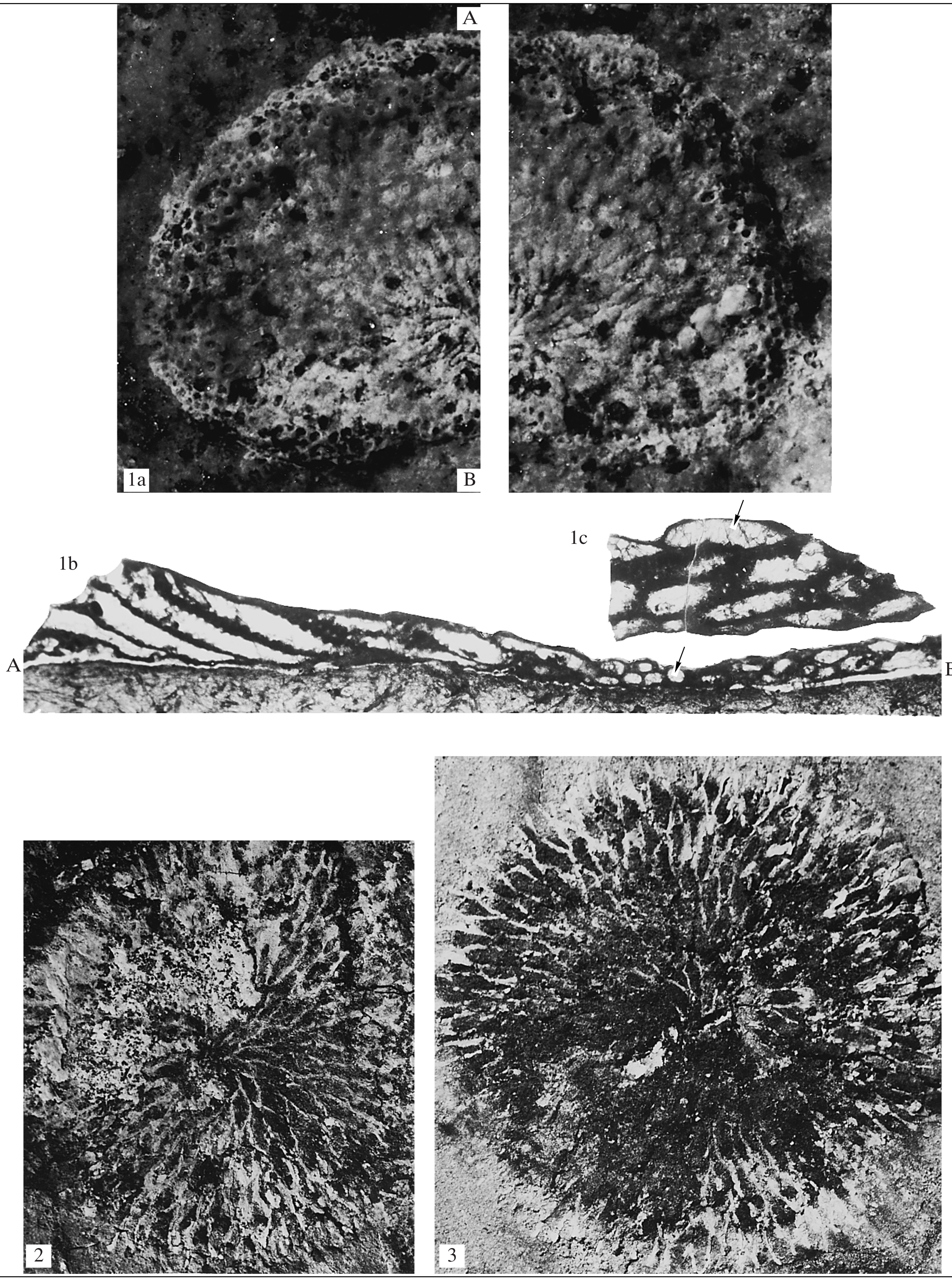
D e s c r i p t i o n (Fig. 3). The encrusting colonies are disk-shaped, unilaminate, multiserial, from almost 2.0 to 10.0 mm in diameter. The convex parts of the exterior walls of autozooecia are almost completely destroyed in all colonies. However, the lateral sites of their walls, contouring most of the zooecia and thus delineating their shapes, are well preserved. Walls of this kind are seen in the center of the largest colony (Pl. 9, fig. 3; Fig. 3a): these are the walls of the basal disk of the ancestrula, 0.17 mm in diameter, and the walls of the postancestrular autozooecia, radiating from the disk as a result of the basal-distal, basal-lateral, and basal-proximal budding and the subsequent intercalation of autozooecia in all directions. The autozooecia are irregularly cylindrical, narrowing proximally, in places unevenly curved. The distal tips of autozooecia are slightly tapered and rise obliquely above the colony surface. Based on the contours of autozooecia, the colonies can be subdivided into zones: the zone of astogenetic changes, where the autozooecia vary from 0.40–0.42 mm to 0.58 mm in length and from 0.08 to 0.10 mm in width, and the zone of astogenetic repetition, in which the autozooecia vary from 0.65 to 0.83 mm in length and from 0.17 to 0.20 mm in width. The peristomes have been preserved in places, they are slightly projecting perpendicular to the surface of autozooecia, usually circular, 0.13–0.15 mm in diameter. The gonozooecia are numerous, they are shaped like autozooecia, but are larger the latter: they have a length of 1.16–1.25 mm and a maximum width of 0.25–0.40 mm, almost equal to the width of one and a half or two autozooecia (Pl. 9, figs. 3, 4; Fig. 3b). The swelling of the distal half of the gonozooecium is confined by more or less parallel lateral walls. At the lower level the swelling passes into the tapering proximal half, which is as wide as the autozooecium. The preserved part of the ooeciopore is apparently subterminal and slightly projecting, circular, 0.10 mm in diameter. The exterior walls are pierced by large pseudopores, which are only seen within small areas of the preserved exterior walls of autozooecia. Their interior walls are pierced by communication pores, which can be easily seen in the contouring walls of autozooecia, discontinuous in character (Pl. 9, figs. 3, 4; Fig. 3b).

V a r i a b i l i t y. Intra- and intercolonial variability is mainly expressed in the variations in the width and length of autozooecia, which are associated with the early and late stages of astogeny and, perhaps, with irregularities in the substrate that was encrusted by the bryozoan.

C o m p a r i s o n. *M. seltseri* sp. nov. differs from the type species *M. beliensis* Taylor et Sequeiros from the Upper Toarcian of Spain (Taylor and Sequeiros, 1982, p. 119, text-figs. 1, 2) in the larger colonies (7.50–10.0 mm in diameter instead of 5.0 mm in *M. beliensis*), in the autozooecia and gonozooecia that are slightly smaller and less uniform in size and, obviously, in the less convex shape of gonozooecia. In addition, the width of the distal half of gonozooecia in *M. seltseri* sp. nov. is 0.25 –0.40 mm instead of 0.33–0.41 mm in *M. beliensis.* From another new species of the genus *Microeciella* from the Middle Callovian of the Bryansk Region in Russia that has small fan-shaped colonies (Viskova, 2009), *M. seltseri* differs in having large disk-shaped colonies and wider autozooecia (0.17–0.20 mm instead of 0.10–0.16 mm), while their autozooecia are almost equal in length.

M a t e r i a l. In addition to the holotype, six specimens from the same locality and the same substrate as the holotype: nos. 5038/57, 5038/58, and 5038/59 and small colonies in a poor state of preservation.

Plate 10



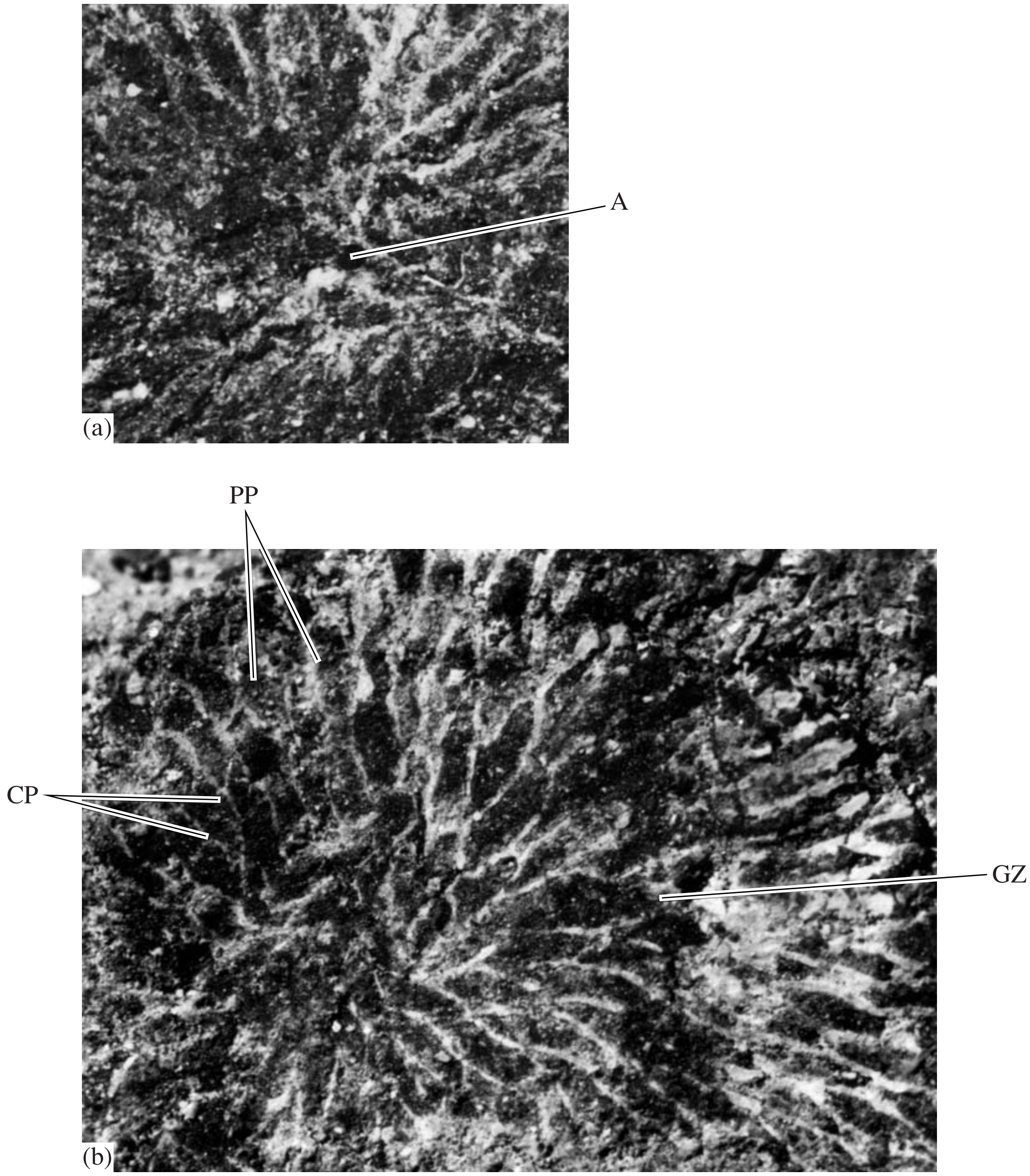


Fig. 3. *Microeciella seltseri* sp. nov., ×24; (a) holotype PIN, no. 5038/56; central region of a disk-shaped colony showing the walls of the basal disk of the ancestrula and the walls of the first postancestrular autozooecia radiating from the disk; (b) specimen PIN, no. 5038/57; portion of the colony showing a gonozooecium, moniliform interior walls with communication pores, and large pseudopores. Designations: (A) walls of the basal disk of the ancestrula, (GZ) gonozooecium indicated by its lateral walls, (PP) pseudopores, (CP) communication pores.

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REFERENCES

1. E. Buge and J. C. Fischer, "*Atractosoecia incrustans* (d'Orbigny) (Bryozoa Cyclostomata) espéce bathonienne symbiotique d'un Pagure," Bull. Soc. Gëol. France **12** (7), 126–133 (1970).

2. P. A. Gerasimov, *Index Fossils of the Mesozoic of the Central Regions of the European Part of the USSR: Part 2. Echi-*

noderms, Crustaceans, Worms, Bryozoans, and Corals from Jurassic Sediments (Gosgeoltekhizdat, Moscow, 1955) [in Russian].

3. P. A. Gerasimov, V. V. Mitta, M. D. Kochanova, and E. M. Tesakova, *Fossils of the Callovian Stage of Central Russia* (Vseros. Nauch. Issled. Geologorazv. Neft. Inst., Moscow, 1996) [in Russian].

4. J. W. Gregory, *The Jurassic Bryozoa. Catalogue of the Fossil Bryozoa in the Department of Geology, British Museum (Natural History)* (Longmans, London, 1896).

5. U. Hara, "Middle and Upper Jurassic Bryozoan Biota of the Southern Poland—Their Diversity, Palaeoecology, Evolution Pattern and Biogeography," in *Jurassic Organisms in Space and Time: 7th International Congress on the Jurassic System, September 6–18, 2006, Kraków, Poland* (Kraków, 2006), pp. 234–235.

6. U. Hara and P. D. Taylor, "Bryozoans from Baltöw, Holy Cross Mountains, Poland," Bull. Nat. Hist. Mus. Lond. (Geol.) **52** (2), 91–102 (1996).

7. V. V. Mitta, I. S. Barskov, J. Gründel, et al., "The Upper Bajocian and Lower Bathonian in the Vicinity of Saratov," VM-Novitates, Novosti Geol. Muzeya im. V.I. Vernadskogo, No. 12, 1–39 (2004).

8. A. d'Orbigny, *Bryozoaires. Paléontologie francaise. Terrains crétacés. Texte et Atlas* (Paris, 1851–1854), Vol. 5, pp. 1–1192.

9. Sazonova I.G. and N. T. Sazonov, *Paleogeography of the Russian Platform in the Jurassic and Early Cretaceous Time: Proceedings of the All-Russia Research Institute of Geology, Issue 62* (Leningrad, Nedra, 1967) [in Russian].

10. P. D. Taylor, "Multilamellar Growth in Two Jurassic Cyclostomatous Bryozoa," Palaeontology **19** (Part 2), 293–306 (1976).

11. P. D. Taylor, "Two New Jurassic Bryozoa from Southern England," Palaeontology **23** (Part 3), 699–706 (1980).

12. P. D. Taylor, "*Reptomultisparsa d'Orbigny, 1853 (Bryozoa, Cyclostomata): Request for Designation of a Type Species. Z.N.(S.) 2400,*" Bull. Zool. Nomencl. **41**, 77–79 (1984).

13. P. D. Taylor and J. Michalic, "Cyclostome Bryozoans from the Late Triassic (Rhaetian) of the West Carpathians, Czechoslovakia," N. Jb. Geol. Paläontol. Abh. **182** (3), 285–302 (1991).

14. P. D. Taylor and L. Sequeiros, "Toarcian Bryozoans from Belchite in North-East Spain," Bull. Brit. Mus. Nat. Hist. (Geol.) **36** (2), 117–129 (1982).

15. P. D. Taylor and E. Voigt, "Symbiont Bioclaustrations in Cretaceous Cyclostome Bryozoans," Cour. Forsch.-Inst. Senckenberg. **257**, 131–136 (2006).

16. L. A. Viskova, "New Data on the Middle Jurassic Bryozoans of Central European Russia," Byull. Mosk. Ob-va Ispyt. Prir., Otd. Geol. **81** (4), 49–59 (2006a).

17. L. A. Viskova, "Diversification of the Jurassic Bryozoans (Stenolaemata) of the Russian Platform," in *Evolution of the Biosphere and Biodiversity* (KMK, Moscow, 2006b), pp. 168–176 [in Russian].

18. L. A. Viskova, "New Bryozoans (Stenolaemata) from the Middle Jurassic of Moscow City and the Moscow Region," Paleontol. Zh., No. 1, 46–55 (2007) [Paleontol. J. **41** (1), 49–60 (2007)].

19. L. A. Viskova, "New Stenolaematous Bryozoans from the Jurassic of Central European Russia (Moscow City and the Moscow and Kostroma Regions)," Paleontol. Zh., No. 2, 46–53 (2008) [Paleontol. J. **42** (2), 149–158 (2008)].

20. L. A. Viskova, "Intracolonial Variability in New Bryozoans from the Middle Jurassic of the Bryansk Region (Russia)," Paleontol. Zh., No. 2, 46–52 (2009) [Paleontol. J. **43** (2), 162–169 (2009)].

21. B. Walter, "Les Bryozoaires jurassiques en France. Étude systématique. Rapports avec la stratigraphie et la paléoécologie," Docum. Lab. Géol. Fac. Sci. Lyon, No. 35, 1–328 (1969).