Paleontological Journal, Vol. 38, No. 3, 2004, pp. 257–264. Translated from Paleontologicheskii Zhurnal, No. 3, 2004, pp. 30–35.

Sokurella galaczi gen. et sp. nov. and Other Middle Jurassic Parkinsoniidae (Ammonoidea) from the Lower Reaches of the Volga River

V. V. Mitta

Paleontological Institute, Russian Academy of Sciences, Profsoyuznaya ul. 123, Moscow, Russia 117997
e-mail: vmitta@mail.ru

Received January 14, 2003

Abstract—A new genus, *Sokurella*, represented by the type species *S. galaczi* sp. nov., is described from the Lower Bathonian near Saratov and assigned to the subfamily Pseudocosmoceratinae (family Parkinsoniidae). The genera *Pseudocosmoceras* and *Medvediceras*, belonging to this subfamily, are briefly described and depicted.

Key words: Ammonoidea, Parkinsoniidae, Middle Jurassic, Lower Volga, Russian Platform.

INTRODUCTION

Ammonites were recently collected in a clay quarry of a large-panel building factory (KPD-2) near Saratov. These ammonites come from the Lower Bathonian, which is generally poorly studied on the Russian Platform. This locality is particularly interesting because representatives of the Tethyan family Parkinsoniidae are for the first time found there in association with early members of the family Cardioceratidae (species of the genera *Arcticoceras* and *Arctocephalites* from the subfamily Arcticoceratinae), which are typical mainly of high boreal latitudes. *Oraniceras besnosovi* Mitta et Seltzer is the most common parkinsoniid species near Saratov. This species was proposed as a zonal index for the new zone of the Lower Bathonian of central Russia (Mitta and Seltzer, 2002). In addition, this locality contains numerous representatives of another taxon, previously identified as Parkinsoniidae gen. et sp. indet. This paper describes these ammonites, which are assigned to a new genus and species, and closely related taxa from the same subfamily Pseudocosmoceratinae.

Pavlov (1904) was the first to find differences between the Jurassic of the lower reaches of the Volga River and the typical Jurassic beds of central Russia, when he found clay with siderite nodules in the Saratov Region ("Upper Dogger with *Parkinsonia Parkinsoni* Sow."). Later, the presence of these beds, preliminary dated as Bajocian, was recorded over the entire territory of the right bank of the Volga in the Saratov and Volgograd regions. Masarowich (1923) suggested that the Bajocian in this area is composed of two zones, the lower *Stephanoceras humphriesianum* Zone and the overlying *Parkinsonia parkinsoni* Zone. He described the new species *"Sonninia" Mojarowskii*, which was found not *in situ* in the lower of these zones. Mourachkin (1930) described this and other ammonites from Masarowich's collection, which comes from the northern extremity of the Don-Medveditskii Ridge. Mourachkin published the first image of *"Parkinsonia ? Mojarowskii"* Masar. (holotype by monotypy). In addition, he described *Parkinsonia subcompressa* sp. nov. (based on a poorly preserved fragment) and established a new genus, *Pseudocosmoceras*, with the type species *Cosmoceras Michalskii* Bor. described by Borissjak (1908) from the lower part of the Bathonian in the Donets Region. The genus *Pseudocosmoceras* included varieties of the type species (*Ps. Michalskii* var. *minor* and var. *media*) and *Ps. Masarowici* sp. nov. (including the varieties *descendens, conjungens*, and *inclara*). Mourachkin was unable to date with certainty the beds with these ammonites and tentatively correlated them with the Upper Dogger, *"Parkinsonia würtembergica"* Zone (based on the stratigraphic chart of the German Jurassic). Hence, Mourachkin referred these beds to the Lower Bathonian in the modern understanding. In his "Table of presumable phylogenetic relationships of ammonites studied," he indicated the *Parkinsonia doneziana* Zone[1] with hypothetical forms similar to this species," and, above this, he placed the beds with *Pseudocosmoceras michalskii* and *Ps. masarowici*.[2]

In the middle of the 20th century, a group of scientists from Saratov, headed by V.G. Kamysheva-Elpat'evskaya, conducted a taxonomic study of Jurassic fossils from the Volga Region near Saratov. In a number of reference books and studies providing a key

[1] Besnosov (1990) showed that this zone corresponds approximately to the *Garantiana garantiana* Chronozone of the standard Bajocian.

[2] The opinion of Sasonov (1957, p. 16) that Mourachkin established the lower beds with *Ps. michalskii* and upper beds with *Ps. masarowici* is not correct.

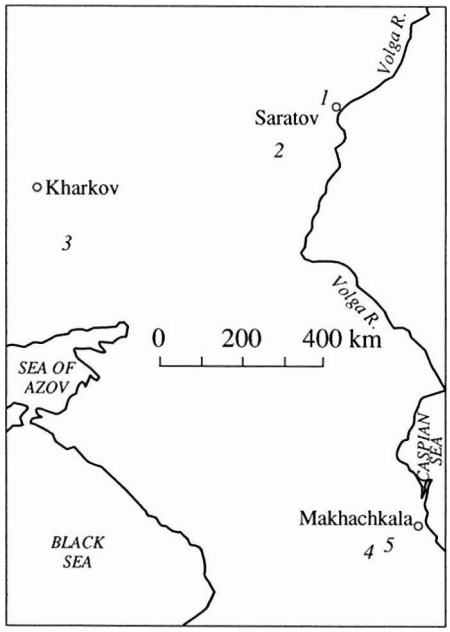


Fig. 1. Scheme showing occurrence with the Pseudocosmoceratinae: (*1*) vicinity of Saratov (*Medvediceras, Sokurella*), (*2*) basin of the Medveditsa River, Linevo (*Pseudocosmoceras, Medvediceras*), (*3*) basin of the Donets River, vicinity of Kharkov (*Pseudocosmoceras*), (*4*) Dagestan, village of Urakhi (*Pseudocosmoceras, Medvediceras*), and (*5*) Chechnya, Chanty-Argun River (*Pseudocosmoceras*).

to ammonites, these researchers described and depicted certain Bathonian parkinsoniids, although they are mainly assigned to the Bajocian (Kamysheva-Elpat'evskaya *et al.*, 1947, 1956, 1959). It is clear from their text that they had at most ten specimens of ammonites, which naturally precluded a comprehensive study of their taxonomy. The age of clay with beds of siderite nodules is determined very provisionally, although in the explanation of the plates, species of the genus *Parkinsonia* are dated Bajocian. In a later paper, also published by Kamysheva-Elpat'evskaya's group (*Atlas...*, 1969), the *Parkinsonia* species are dated Bajocian, while *Pseudocosmoceras* and *Medvediceras* are dated Lower Bathonian.

Several figures of parkinsoniids from the same region have been published by Kamysheva-Elpat'evskaya (1951), Sasonov (1957), and Sasonova and Sasonov (1967).

The taxonomic position and composition of the genus *Pseudocosmoceras* were amended by Nikolaeva (1967), who, based on material from the Ilovlya–Medveditsa interfluve, established a new genus, *Medvediceras*, with the type species *Ps. masarowici* Mourachkin.

The results of study of the newly collected parkinsoniids from the Lower Bathonian of the Volga Region near Saratov (Saratov Povolzhye) are summarized below. Additionally, the specimens used by Mourachkin (1930) and a small undescribed collection of Masarowich from the basin of the Medveditsa River (Volgograd Region) were reexamined. The collections of N.V. Besnosov of 1961 and D.I. Panov of 1989 from the Tsudakhar Formation of the northern Caucasus (Dagestan, section in the village of Urakhi) were also used in this study. Several parkinsoniids from a quarry near Saratov were placed at my disposal by V.B. Seltzer, M.A. Grigoriev, S.A. Bratashova, and I.N. Bratashov (Saratov). E.M. Pervushov and A.V. Ivanov aided in the study of several specimens from the collection of E.A. Troitskaya and V.P. Nikolaeva (Saratov State University).

All material described is housed at Vernadsky State Geological Museum (GGM), Moscow.

SYSTEMATIC PALEONTOLOGY

Family Parkinsoniidae Buckman, 1920

Subfamily Pseudocosmoceratinae Sasonov, 1960

Pseudocosmoceratinae: Sasonov, 1960, p. 147; Donovan *et al.*, 1981, pp. 149, 151.

Diagnosis. Parkinsoniids with primary ribs reduced at early stages and weakly developed ventral band.

Composition. Three genera: *Pseudocosmoceras, Medvediceras*, and *Sokurella* from the Upper Bajocian–Lower Bathonian of southern European Russia and Ukraine.

Comparison. This subfamily is distinguished from the most closely similar parkinsoniines (i.e., the latest genera of the subfamily, *Parkinsonia, Gonolkites*, and *Oraniceras*, Pl. 4, fig. 2) by the less prominent ornamentation of the juvenile whorls and early smoothening of the primary ribs.

Remarks. This subfamily was first established to include the genera *Pseudocosmoceras* Mourachkin and *Hemigarantia* Spath on the basis of the fact that "shells of these ammonites have a flattened venter, on the sides of which small tubercles are developed" (Sasonov, 1960, p. 147). However, later, Sasonov (1965) did not mention this subfamily and assigned the genus *Pseudocosmoceras* to the family Kosmoceratidae. Nevertheless, the subfamily Pseudocosmoceratinae should be retained to include parkinsoniids endemic to the southern Russian Platform and northern Caucasus (Fig. 1) until their relationships with the main phylogenetic stem of parkinsoniids are clarified. The stratigraphic range of *Pseudocosmoceras* and *Medvediceras*, according to the most recent data (Besnosov and Mitta, 1993), can include the terminal Bajocian (*Parkinsonia parkinsoni* Zone) and the Lower Bathonian (*Zigzagiceras zigzag* Zone of the Standard).

Several previously established genera and one new genus are described below.

Genus *Pseudocosmoceras* Mourachkin, 1930

Pseudocosmoceras: Mourachkin, 1930, p. 148; Arkell, 1956, p. L309; Nikolaeva, 1967, p. 53; *Atlas*..., 1969, p. 63; Besnosov and Kutuzova, 1982, p. 49; Besnosov and Mitta, 1993, p. 217.

Pseudocosmoceras (*Pseudocosmoceras*): Besnosov and Mitta, 1998, p. 30.

Type species. *Cosmoceras Michalskii* Borissjak, 1908; Upper Bajocian?, vicinity of Kharkov, Ukraine.

Diagnosis. Shell compressed or moderately compressed, with high whorls oval or trapezoid in cross section. Venter flattened at early stages and becoming rounded with growth. Umbilicus moderately wide, becoming wide in ontogeny. Primary ribs dense, more or less prominent, branching at midflanks into two or three secondary ribs directed orad. Ends of branches elevated on ventrolateral shoulder to form characteristic denticles, which disappear before reaching midventer. As shell grows, ornamentation smoothes, beginning from midflanks. Only weak primary ribs and ventrolateral denticles observed at end of phragmocone and beginning of body chamber. Anterior half of body chamber possessing only growth striae and rugae.

Species composition. Type species from the Upper Bajocian or Lower Bathonian of the Donets Basin, lower course of the Volga River (Volgograd and Saratov regions) and northern Caucasus.

Comparison. This genus is distinguished from *Medvediceras* and *Sokurella* by the development of short secondary ribs in the ventrolateral area.

Remarks. When describing the type species, Borissjak illustrated three specimens (1908, pl. 3, figs. 17–19) up to 30 mm in diameter and published a drawing of the cross section of the large fragment (Borissjak, 1908, pl. 9, fig. 5), which most likely belonged to a shell over 150 mm in diameter. Mourachkin, apparently, did not have large specimens of *Pseudocosmoceras*; however, he considered large size to be the main distinguishing feature between the nominative variety and *Ps. Michalskii* var. *minor* (a small shell with almost flattened whorls and distinct ornamentation) (see Pl. 4, fig. 3) and var. *media* (also a small shell, but with more convex whorls, lesser whorl height, and less prominent ornamentation; Pl. 4, fig. 4), varieties he himself established. Nikolaeva (1967), who had about 50 specimens of *Pseudocosmoceras* in her collection, indicated measurements of the type species up to 220 mm in diameter. However, she depicted only an individual less than 80 mm in diameter (Nikolaeva, 1967, text-fig. 1). The representatives of the genus from Dagestan do not usually exceed 40 mm in diameter (e.g., see Krymgholz and Stankevich, 1963, plate, figs. 1–3). The repository of the syntypes of the type species is not known. Most of Nikolaeva's collection has been lost. In the collections available, the genus *Pseudocosmoceras* is only represented by small shells. These shells are either juveniles or microconch adults (small size, 50–60, more rarely 75 mm, in diameter, wide umbilicus; long body chamber with reduced ornamentation; see Pl. 3, fig. 4). No specimens with a distinct peristome are observed. Therefore, the shape of the aperture was not studied.

Apart from the varieties recognized by Mourachkin, which in subsequent studies were considered to represent species (Besnosov and Kutuzova, 1982), the material studied includes other morphs. Some specimens combine normally convex flanks with distinct ornamentation (Pl. 3, fig. 5), while others have flattened flanks with weak ribs (Pl. 3, fig. 6). In addition to these morphs, the collection from Dagestan includes specimens intermediate between *Pseudocosmoceras* and *Medvediceras* and characterized by comparatively wider whorls with a rounded venter and weakly developed denticles on the ventrolateral shoulder. The absence of data on the precise stratigraphic position of the material does not allow exploration of the phylogenetic relationships between these genera.

Genus *Medvediceras* Nikolaeva, 1967

Medvediceras: Nikolaeva, 1967, p. 58; *Atlas*..., 1969, p. 64; Besnosov and Kutuzova, 1982, p. 50; Besnosov and Mitta, 1993, p. 218.

Pseudocosmoceras (*Medvediceras*): Besnosov and Mitta, 1998, p. 30.

Type species. *Pseudocosmoceras Masarowici* var. *descendens* Mourachkin, 1930; Upper Bajocian (?) of the Volga River Region near Volgograd (Volgograd Povolzhye)

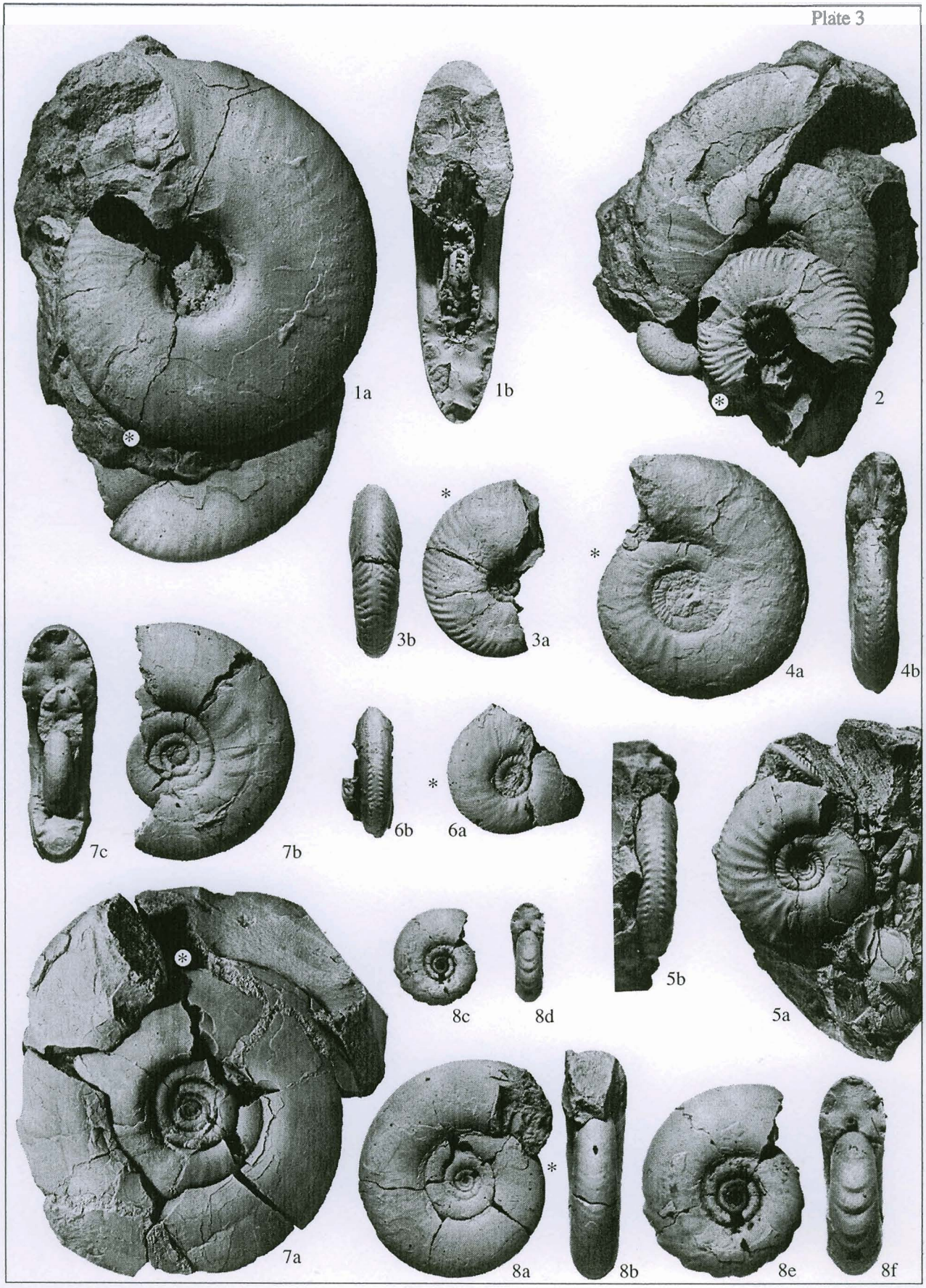
Diagnosis. Shell with slightly compressed or moderately wide whorls. Whorls oval in cross section. Umbilicus wide. Ornamentation usually consisting of only striae and growth rugae. Shell sometimes possessing weakly developed primary ribs on phragmocone at small diameters in umbilical half of flanks (Pl. 3, fig. 7b). Additionally, at early stages, venter sometimes possessing pronounced rib-folds (Pl. 3, figs. 8b–8f).

Species composition. Two species: *M. masarowici* (Mourachkin, 1930) from the Lower Bathonian of Volgograd–Saratov Povolzhye (Pl. 4, fig. 1) and *M. inclarum* (Mourachkin, 1930) from the Upper Bajocian or Lower Bathonian of southern European Russia (Pl. 3, figs. 7, 8).

Comparison. This genus is distinguished from *Pseudocosmoceras* and *Sokurella* by the earlier disappearance of the ornamentation.

Comparison. Mourachkin, describing *"Pseudocosmoceras Masarowici,"* recognized three varieties: var. *descendens*, var. *conjungens*, and var. *inclara*, without indication of which is the type species. Subsequently, Besnosov and Kutuzova (1982) proposed considering these varieties as separate species, and proposed that the morph described as var. *descendens* be considered the type of the species *M. masarowici*. The other two varieties are very similar to one another. Besnosov and Mitta (1998) considered them to be the same species, *M. inclarum*. In that paper, I tried (without success) to separate *Pseudocosmoceras* and *Medvediceras*

Plate 3



into dimorph subgenera. Apparently, *M. masarowici* and *M. inclarum*, which have characters of macro- and microconches, respectively, in actuality represent a dimorphic pair.

Genus *Sokurella* Mitta, gen. nov.

Etymology. After the Sokurskii Road, near which the type locality is situated.

Type species. *S. galaczi* sp. nov.; the Lower Bathonian of the Saratov Region.

Diagnosis. Shell relatively small, with flattened whorls, highly trapezoid and oval in cross section, flattened weakly convex flanks, and rounded or flattened venter. Umbilicus small and moderately narrow or moderately wide. Ornamentation represented by thin primary ribs gradually becoming obsolete with age and by secondary ribs that remain long in ontogeny. Secondary ribs weakly curved anteriorly and disappearing short of reaching venter.

Species composition. Type species.

Comparison. The new genus is readily distinguished from the known genera in the subfamily by its small size in combination with a relatively narrow umbilicus and long secondary ribs, which remain in maturity on the phragmocone and, partly, the body chamber. The early whorls, which are rounded in cross section and possess fine ornamentation, reveal the relationship of *Sokurella* with *Pseudocosmoceras* and *Medvediceras*, i.e., it is a shared character of the subfamily Pseudocosmoceratinae.

Remarks. This genus is very similar to members of the suborder Haploceratina in the shape of the whorls, striate ornamentation in maturity, small size and relatively narrow umbilicus (for parkinsoniids). The general appearance of the adult shells shows a considerable similarity to the Early Bathonian *Lissoceras psilodiscus* (Schloenbach) (see, e.g., Besnosov and Mitta, 1998). Apparently, this homeomorphy is related to the absence of small oxyconic shells of Lissoceratidae and Oppeliidae in the Early Bathonian of southern Russia. Consequently, the presence of the vacant ecological niche favored evolution toward *Sokurella*. A similar case was discussed by Mitta (1999), who suggested that the absence of oppeliids in the Early Callovian central Russian basins was associated with the evolution of the oxyconic genus *Chamoussetia* from the cadiconic representatives of *Cadoceras*. The appearance in the Perisphinctina phylogeny of discoid semi-evolute and semi-involute shells with high and laterally compressed whorls, which lost ribbing at late ontogenetic stages, was suggested to be an adaptation to the nektonic mode of life (Besnosov and Mitta, 2002).

Sokurella galaczi Mitta, sp. nov.

Plate 3, figs. 1–3

Parkinsoniidae gen. et sp. indet.: Mitta and Seltzer, 2002, p. 19, pl. 6, fig. 6.

Etymology. In honor of András Galácz, a specialist in ammonoids and the stratigraphy of the Middle Jurassic.

Holotype. GGM, no. CR-2718a; Saratov, quarry of the building factory KPD-2; Lower Bathonian, ? *Oraniceras besnossovi* Zone (found not *in situ*).

Description. A macroconch species. The shell is relatively small, usually up to 50–70, more rarely 70 mm, in diameter, with high whorls oval–subtrapezoid in cross section, with the maximum width in the umbilical one-third of the flanks. The early whorls (up to 10 mm in diameter) are rounded in cross section, with their width equal to their height. As the shell grows, the whorl cross section rapidly increases in height and becomes highly trapezoid with very weakly convex flanks and a rounded venter. The juvenile whorls are medium-wide and become compressed as

Explanation of Plate 3

All figures, except where specifically stated otherwise, are actual size. Asterisks mark the beginning of the body chamber.

Figs. 1–3. *Sokurella galaczi* sp. nov., quarry in the vicinity of Saratov; Lower Bathonian; not *in situ* (collected by V. Mitta in 2002): (1) holotype CR-2718a, adult with a complete body chamber and preserved aperture: (1a) lateral view, (1b) cross section; the same fragment of a nodule in fig. 1a contains a fragment of the body chamber of paratype CR-2718b; (2) part of another siderite nodule: the posterior of the nodule's fragment shows paratype CR-2724a, a mature individual with a deformed anterior part of the body chamber, lateral view; the front of the nodule, at the bottom, contains the body chamber of the presumable microconch (allotype) CR-2724b, lateral view; on the left side of the nodule, there is paratype CR-2724c, part of the phragmocone of the adult macroconch (the body chamber is separated), ventrolateral view; (3) paratype CR-2737, phragmocone with the initial part of the body chamber: (3a) lateral view, (3b) ventral view.

Figs. 4–6. *Pseudocosmoceras michalskii* (Borissjak, 1908): (4) specimen ANM-1: (4a) lateral view, (4b) apertural view; basin of the Medveditsa River; Upper Bajocian?, clay with interbeds of siderite nodules (from Masarowich's collection); (5) specimen no. 115/9626, phragmocone: (5a) lateral view, (5b) ventral view; (6) specimen no. 115/9626, phragmocone, with a fragment of body chamber: (6a) lateral view, (6b) ventral view; Dagestan, village of Urakhi; upper part of the Middle Member of the Tsudakhar Formation (collected by Panov in 1989).

Figs. 7 and 8. *Medvediceras inclarum* (Mourachkin, 1930); basin of the Medveditsa River; Upper Bajocian?, clay with interbeds of siderite nodules (from Masarowich's collection); (7) specimen no. VI-62/8: (7a) mature individual with a complete body chamber, lateral view, (7b) phragmocone, lateral view, (7c) apertural view; phragmocone was depicted previously (Mourachkin, 1930, pl. 9, figs. 15, 16) as *Pseudocosmoceras Masarowici* var. *conjungens*; (8) holotype no. VI-62/9, mature individual with a body chamber: (8a, 8c) lateral view, (8b, 8d) apertural view, and (8e, 8f) inner whorls, ×2; depicted previously (Mourachkin, 1930, pl. 9, figs. 18–20) as *Pseudocosmoceras Masarowici* var. *inclara*.

Plate 4

the shell grows (at Dm = 25–30 mm). The umbilicus is moderately wide at the juvenile stages and moderately narrows as the shell grows. The umbilical wall descends at a small angle, and the umbilical shoulder is smooth; as the shell grows, the wall slopes more gently. The body chamber usually has flanks that are more convex and occupies slightly more than half a whorl. The aperture is simple, with a small extension. The apertural margin has a sinusoid curvature.

The ornamentation at the early stages is represented by thin ribs that are prominent in the umbilical part of the flanks and branch in the midflank into two or three filamentous ribs, which are curved orad (to become crescentic at the late stages). As the shell grows, the branching point moves upward, while the primary ribs become weaker and almost indiscernible in the molds. The secondary ribs are usually distinct even in maturity, especially in the external parts of the flanks. The venter is usually smooth. The secondary ribs become weaker in the body chamber of adults, which often possess only striate ornamentation. The apertural part of the flanks of the body chamber of a senile individual, which probably reached 80 mm in diameter, have prominent rugae on the flanks and converge in the umbilical part to form a constriction-like structure.

Dimensions in mm and ratios:

Specimen GGM, no.	Dm	WH	WW	UW	WH/Dm	WW/Dm	UW/Dm
Holotype	72	23	19	16	0.32	0.26	0.22
CR-2718a	50	22	14	11	0.44	0.28	0.22
	16	8	6	4	0.50	0.37	0.25
CR-2741a	45	22	13	9	0.49	0.29	0.20
	29	15	10	7	0.52	0.34	0.24
CR-2743a	40	19	12*	9	0.48	0.30	0.23
	33	16	10	7	0.48	0.30	0.21
CR-2737	33	15	10	8	0.45	0.30	0.24
CR-2741b	24	11	8	7	0.46	0.33	0.29
CR-2743c	22	10	7	6	0.45	0.32	0.27
	14	7.5	5.5	4	0.54	0.39	0.29
CR-2724b [m]	32	14	9	9	0.44	0.28	0.28

Note: (*) approximate reconstructed value; (Dm) shell diameter, (WH) whorl height, (WW) whorl width, and (UW) umbilical width.

Variability. The degrees of the shell compression and umbilical width vary.

Remarks. Presumable microconches ([m] in the section Dimensions...; Pl. 3, fig. 2, front of the nodule figured, bottom) reach 40 mm in diameter. The shell is of medium width, with flattened or very weakly convex flanks and a well-pronounced ventral band. The cross section is high. The umbilicus is moderately wide. The complete length of the body chamber and shape of the aperture are unknown. In the specimen shown in the figure, the preserved part of the body chamber is three-fifths of the outer whorl. The ornamentation in the microconches is more strongly developed. The ribs mainly bifurcate, with a bifurcation point in the midflanks. The secondary ribs on the ventral side of the flanks are noticeably curved orad and disappear short of reaching the midventer. The ends of the secondary ribs are raised and approach the venter, alternating on both sides to form a herringbone pattern. At the end of the body chamber, the primary ribs are smoothened. The secondary ribs are well-developed on the ventral third of the flanks and on the venter. Microconches are distinguished from macroconches in their lesser size and longer body chamber, the presence of a well-developed ventral band (even in maturity), the wider umbilicus at the same shell diameter, and the more prominent ornamentation.

The absence of precise stratigraphic data for the specimens in the collection precludes determination of the exact stratigraphic distribution of the species. Previously, the possible level of the bed with nodules containing these ammonites was suggested to be at the base of the section (Bed 0, presently underwater) (for a drawing of the section, see Mitta and Seltzer, 2002, text-fig. 2). According to S.A. Bratashova and I.N. Bratashov (personal communication), similar nodules were recovered from the upper part of Bed 1b, i.e., in the upper part of the *Oraniceras besnosovi* Zone. Thus, the age of *Sokurella galaczi* can be established as Early Bathonian (presumably, the *Oraniceras besnosovi* Zone, which is partly equal to the standard *Zigzagiceras zigzag* Zone).

Explanation of Plate 4

All figures are actual size. Asterisks mark the beginning of the body chamber.

Fig. 1. *Medvediceras masarowici* (Mourachkin, 1930); holotype no. VI-62/7: (1a) complete shell, lateral view, (1b) shell without part of the outer whorl; depicted previously (Mourachkin, 1930, pl. 9, figs. 13, 14, 17) as *Pseudocosmoceras Masarowici* var. *descendens*, basin of the Medveditsa River; Upper Bajocian? clay with interbeds of siderite nodules (from Masarowich's collection).

Fig. 2. *Oraniceras besnosovi* Mitta et Seltzer, 2002; topotype CR-2604: (2a) plaster mold of the imprint with a preserved fragment of the body chamber (the anterior quarter of the outer whorl), lateral view; (2b) juvenile whorls, lateral view, depicted previously (Mitta and Seltzer, 2002, pl. 6, fig. 5) as *Oraniceras* sp. juv.; quarry in the vicinity of Saratov; Lower Bathonian, not *in situ* (collected by Mitta in 2001).

Figs. 3 and 4. *Pseudocosmoceras michalskii* (Borissjak, 1908), basin of the Medveditsa River; Upper Bajocian?, clay with interbeds (from Masarowich's collection); depicted previously (Mourachkin, 1930, pl. 8, figs. 7, 8) as *Pseudocosmoceras Michalskii* var. *minor*; (4) specimen no. ANM-2, juvenile with body chamber preserved, lateral view.

Material. 36 variously preserved specimens of various growth stages, many imprints, and three presumable microconches. All specimens were collected by myself in 2001 and 2002 from three siderite nodules found not *in situ* in the quarry of the building factory KPD-2. In addition, one specimen was found in the fragment of a nodule from the same locality that was received in 2002 from S.A. Bratashova and I.N. Bratashov.

ACKNOWLEDGMENTS

I.A. Starodubtseva assisted in discovering Masarowich's collection from the basin of the Medveditsa River in the Depository of the Vernadsky State Geological Museum (Moscow). Several specimens of parkinsoniids were received from V.B. Seltzer, M.A. Grigoriev, S.A. Bratashova, and I.N. Bratashov (Saratov). E.M. Pervushov and A.V. Ivanov aided in the study of several specimens from the collection of E.A. Troitskaya and V.P. Nikolaeva (Saratov State University). The taxonomy of parkinsoniids was discussed with J.-H. Callomon (London), A. Galácz (Budapest), G. Pavia (Turino), G. Dietl (Stuttgart), G. Schweigert (Stuttgart), and V. Dietze (Riesbürg). I am grateful to all the above friends and colleagues.

The study was supported by the Federal Special Scientific and Technical Program "Coevolution of Ecosystems under Conditions of Global Changes in the Past."

REFERENCES

1. W. J. Arkell, "Jurassic Ammonitina," in *Treatise in Invertebrate Paleontology, Part L. Mollusca* (Univ. Kansas Press, Lawrence–New York, 1957), pp. 232–344.
2. *Atlas of the Mesozoic Fauna and Palynological Assemblages from the Lower Volga Region and Adjacent Regions: Cephalopods* (Saratov. Univ., Saratov, 1969), No. 2 [in Russian].
3. N. V. Besnosov, "Systematics and Stratigraphic Position of the Ammonite Species *Parkinsonia doneziana* Borissjak," Paleontol. Zh., No. 1, 126–127 (1990).
4. N. V. Besnosov and V. V. Kutuzova, "Systematics of Parkinsoniids (Ammonitida)," Paleontol. Zh., No. 3, 41–52 (1982).
5. N. V. Besnosov and V. V. Mitta, *Late Bajocian and Bathonian Ammonitids from the Northern Caucasus and Central Asia* (Nedra, Moscow, 1993) [in Russian].
6. N. V. Besnosov and V. V. Mitta, "Catalogue of Ammonitids and Reference Sections of the Upper Bajocian–Lower Bathonian of the Northern Caucasus," Byull. KF Vsesoyuz. Nauchno-Issled. Geol. Neft. Inst., No. 1, 1–70 (1998).
7. N. V. Besnosov and V. V. Mitta, "Living Forms and Burial Types of Late Bajocian–Middle Bathonian Ammonoids from the Northern Caucasus and Central Asia," Byull. Mosk. O–va Ispyt. Prir. Otd. Geol. **77** (5), 49–58 (2002).
8. A. Borissjak, "Fauna from the Donetsk Jurassic: 1. Cephalopoda," Tr. Geol. Com. Nov. Ser., No. 37, 1–94 (1908).
9. D. T. Donovan, J. H. Callomon, and M. K. Howarth, "Classification of the Jurassic Ammonitina," in *Ammonoidea* (Academic, London–New York, 1981), pp. 101–155 [Syst. Assoc. Spec. Pap., Vol. 18].
10. V. G. Kamysheva-Elpat'evskaya, "On the Jurassic Ammonite Shells Injured during the Animal's Lifetime," Uchen. Zap. Saratov. Univ. Vyp. Geol. **28**, 212–225 (1951).
11. V. G. Kamysheva-Elpat'evskaya and A. N. Ivanova, *Atlas of Index Forms of Extinct Faunas of the Volga Region near Saratov* (Saratov. Univ., Saratov, 1947) [in Russian].
12. V. G. Kamysheva-Elpat'evskaya, V. P. Nikolaeva, and E. A. Troitskaya, *Key to Jurassic Ammonites from the Volga Region near Saratov* (Gosgeoltekhizdat, Moscow, 1956) [in Russian].
13. V. G. Kamysheva-Elpat'evskaya, V. P. Nikolaeva, and E. A. Troitskaya, "Stratigraphy of the Jurassic Beds on the Right Bank of the Volga Region near Saratov Based on Ammonites," in *Stratigraphy and Fauna of the Jurassic and Cretaceous Beds in the Volga Region near Saratov* (GONTI, Leningrad, 1959), pp. 3–264 [in Russian].
14. G. Ya. Krymgholz and E. S. Stankevich, "On Some Bathonian Ammonites from Dagestan," in *Proceedings of Karpinsky Geological Museum* (Moscow–Leningrad, 1963), Vol. 10, pp. 107–114 [in Russian].
15. A. N. Masarowich, "Middle Jurassic Sediments on the Ilovlya River," Vestn. Mosk. Gorn. Akad. **2** (1), 29–60 (1923).
16. V. V. Mitta, "The Genus *Cadochamoussetia* in the Phylogeny of the Jurassic Cardioceratidae (Ammonoidea)," in *Advancing Research on Living and Fossil Cephalopods* (Kluwer Acad.–Plenum, New York, 1999), pp. 125–136.
17. V. V. Mitta and V. B. Seltzer, "The First Finds of the Arctocephalitinae (Ammonoidea) in the Jurassic of the Southeastern Russian Platform and Correlation of the Boreal Bathonian Stage with the Standard Scale," *Tr. Nauchno-Issled. Inst. Geol. Saratov. Univ. Nov. Ser.* **10**, 12–39 (2002).
18. P. K. Mourachkin, "Middle Jurassic Ammonites from the Northern Extremity of the Don-Medveditskii Ridge," Byull. Mosk. O–va Ispyt. Prir. Otd. Geol. **38** (8), 139–159 (1930).
19. V. P. Nikolaeva, "Taxonomic Position and the Composition of the Genus *Pseudocosmoceras*," Paleontol. Zh., No. 2, 52–61 (1967).
20. A. V. Pavlov, "On the Distribution of Jurassic Sediments in Southeastern Russia," Izv. Geol. Kom. **23** (8), 403–410 (1904).
21. N. T. Sasonov, *Jurassic Sediments in the Central Regions of the Russian Platform* (GONTI, Leningrad, 1957) [in Russian].
22. N. T. Sasonov, "New Data on Oxfordian and Kimmeridgian Ammonites," Tr. Vsesoyuz. Nauchno-Issled. Geol. Neft. Inst., No. 16, 133–161 (1960).
23. N. T. Sasonov, "New Data on Callovian, Oxfordian, and Kimmeridgian Ammonites," Tr. Vsesoyuz. Nauchno-Issled. Geol. Neft. Inst., No. 44, 3–99 (1965).
24. I. G. Sasonova and N. T. Sasonov, "Paleogeography of the Russian Platform in the Jurassic and Early Cretaceous," Tr. Vsesoyuz. Nauchno-Issled. Geol. Neft. Inst., No. 62, 1–261 (1967).