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Ammonites of Tethyan Origin in the Ryazanian Stage of the Russian Platform: Genera *Transcaspiites* Luppov and *Karasyazites* gen. nov.

V. V. Mitta[a, b]

[a] *Borissiak Paleontological Institute, Russian Academy of Sciences, Moscow, 117647 Russia*
[b] *Cherepovets State University, Cherepovets, 162600 Russia*
e-mail: mitta@paleo.ru
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Abstract—This paper presents the results of the study of ammonites of the family Himalayitidae from the *Surites spasskensis* Zone of the Ryazanian Stage of Central Russia. The new taxa *Transcaspiites tscheffkini* sp. nov., *T. transitionis* sp. nov., and *Karasyazites* gen. nov., with the type species *Subalpinites bajarunasi* Luppov, are described. The hypothesis that *Transcaspiites* Luppov originated from the genus *Riasanites* Spath is proposed. The analysis of the taxonomic composition of ammonites allows the *Neocosmoceras–Septaliphoria semenovi* regional zone of Mangyshlak to be correlated with the *Spasskensis* zone of the standard scale of the Ryazanian Stage.

Keywords: ammonites, biostratigraphy, Himalayitidae, new genera, Ryazanian Stage, Berriasian Stage, Russian platform

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INTRODUCTION

Ten year ago I began a series of papers based on the study of the taxonomic diversity of ammonites of "Tethyan" origin in the Ryazanian Stage (=equivalent of the Berriasian Stage (Lower Cretaceous) of the International Scale) of Central Russia. In these papers (Mitta, 2008, 2009, 2011a, 2011b), I discussed ammonites from Central Russia assigned to the genera *Riasanites* Spath, 1923, *Malbosiceras* Grigorieva, 1938, *Pomeliceras* Grigorieva, 1938, *Subalpinites* Mazenot, 1939, *Mazenoticeras* Nikolov, 1966, and *Riasanella* Mitta, 2011. This publication is the last in this series of papers.

The above genus-group taxa were described from the Sub-Mediterranean and Central Russian Berriasian basins (which can indirectly correspond to the range of maximum diversity and even centers of origins of these taxa). The type species of the genera *Transcaspiites* Luppov, 1985 and *Karasyazites* gen. nov., the Central Russian representatives of which are described below, are established based on the Mangyshlak material.

HISTORICAL BACKGROUND

The genus *Transcaspiites* Luppov was established in a paper of Bogdanova et al. (1985). Apart from the type species *Protacanthodiscus transcaspius* Luppov, 1949 from the Berriasian of Mangyshlak, the genus originally included species described as *Hoplites (Acanthodiscus) hundesianus* Uhlig from the Spiti Shale of the Himalayas, and species established by Bogoslowsky (1896) from Central Russia (the Oka River basin): *Hoplites micheicus, H. transfigurabilis,* and *H. hospes*. In the original description, its author mentioned *Transcaspiites* aff. *transfigurabilis* (Bogoslowsky) from the Berriasian of Mangyshlak, later described by Luppov et al. (1988); the latter paper also mentions "*T. bogoslovskii* sp. nov. [=*Hoplites* aff. *progenitor* Opp.]"[1] (Luppov et al., 1988, p. 128).

Most taxa established by Bogoslowsky at the end of the 19th century have frequently been included by subsequent authors in lists of ammonites[2] from the basin of the Oka River. Apart from illustrations reproduced from Bogoslowsky's (1896) catalogue, publications contained modern photographs of type specimens of *T. transfigurabilis* and *T. hospes* (Kalacheva and Sey, 2001; Arkadiev, 2009; Arkadiev and Bogdanova,

[1] Apparently, this is a specimen described as *Hoplites* aff. *progenitor* (Oppel) by Bogoslowsky (1896). However, in the absence of direct indications, the name *T. bogoslovskii* is a *nomen nudum*.

[2] Except "*Hoplites*" *inexploratus* Bogoslowsky, which was not even mentioned in Klein's (2005) carefully compiled catalogue.

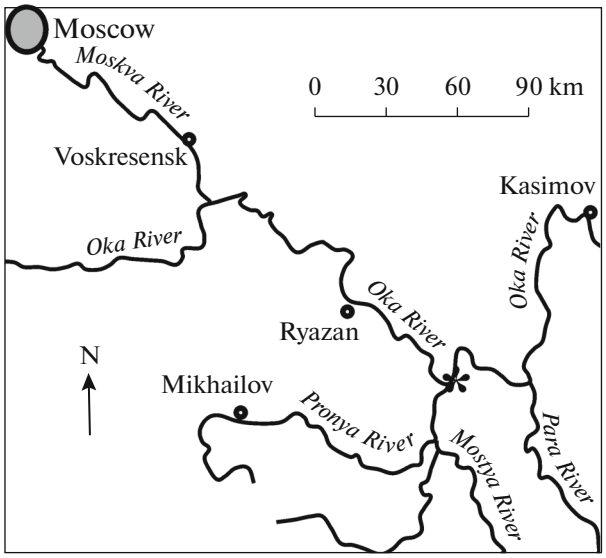


Fig. 1. Location of outcrops of the Ryazanian Stage, near the Nikitino Village, Spassk District of the Ryazan Region.

2009), which is especially important considering that some illustrations in Bogoslowsky's monograph were not very precise. The species *T. transfigurabilis* and related taxa, apart from Mangyshlak, were described from the Caucasus (Rengarten, 1926; Grigorieva, 1938; Khimshiashvili, 1976; Sey and Kalacheva, 2000; Kalacheva and Sey, 2001; Kvantaliani, 1989). There were attempts to revise Bogoslowsky's material, but without additional collections from the type region. For example, the species *transfigurabilis* and, less commonly, *hospes* were assigned to the genera *Euthymiceras* (Grigorieva, 1938; Kalacheva and Sey, 2001) and *Neocosmoceras* (Arkadiev, 2009; Arkadiev and Bogdanova, 2009; Arkadiev et al., 2012). In the last decade, illustrations of new occurrences of *Transcaspiites* were published from the Oka River (Mitta, 2007; Mitta and Bogomolov, 2008), but without descriptions.

The importance of the revision of species assigned to the genus *Transcaspiites* is determined by the trans-Tethyan and Subboreal range of their distribution from the Himalayas to the central regions of European Russia. Unfortunately the material at our disposal is insufficient for a comprehensive revision of the genus. Nevertheless, the collected material suggests a number of conclusions and hypotheses.

MATERIAL

In 1980–2013, with small pauses, I studied numerous sections of the Ryazanian Stage in the Russian Platform, primarily, in the Moscow, Kostroma, Ryazan, Ulyanovsk, and Samara regions, and Chuvash Republic. However, only the deposits of the *Surites spasskensis* Zone, and only in some outcrops in the Ryazan Region, contained ammonites that can be assigned to the genus *Transcaspiites*. The sections are located on the Oka River bank at an interval about 200 m downstream of the mouth of the Pronya River, at the lower end of the village of Nikitino (Spassk District, Ryazan Region; Fig. 1), where structural landslips over the Upper Callovian–Lower Oxfordian clays expose deposits of the Ryazanian Stage. The description and illustration of this section have been previously published (Mitta, 2007). The *Spasskensis* Zone (in the above paper, the upper subzone of the *Riasanites rjasanensis* Zone; see a substantiation of the zonal rank of this unit in Mitta, 2017) is here represented by greenish gray glauconitic sandstones in yellowish and brown lenses (Bed 2) overlain by conglomerate formed by dark brown concretions of arenaceous phosphorites, cemented in orangey-brown sandy-clayey rock (Bed 3). The *Spasskensis* Zone overlies the glauconitic sands of the *Rjasanensis* Zone and is overlain by sands and sandstones of the *Surites tzikwinianus* Zone of the Ryazanian Stage (Fig. 2).

All ammonites described in this paper come from the *Spasskensis* Zone of this section; the original material is housed in the Borissiak Paleontological Institute, Russian Academy of Sciences (PIN, coll. no. 3990), Moscow. I also studied original material from Bogoslowsky's (1896) monograph housed in the F.N. Tchernyshev Central Research Geological-Prospecting Museum (TsNIGR, coll. no. 623), St. Petersburg.

DISCUSSION

In the collection studied, two new species and several fragments in a state of preservation insufficient for positive identification (identified as *T.* cf. *transfigurabilis* (Bogoslowsky)) belong to the genus *Transcaspiites*. Two specimens are preserved as small fragment with remains of nacre, in yellowish brown phosphatized sandstone. One specimen is represented by the terminal part of the phragmocone–the beginning of the body chamber, with partly preserved preceding whorls (Figs. 3a, 3b). It has bipartite and widely spaced prorsiradiate ribs, with distinct nodes at the bifurcation point (slightly below the mid-flank) and on the ventrolateral shoulder; the ribs are interrupted in the mid-venter. This ornamentation is also observed in the preserved parts of the inner whorl. The primary ribs in the umbilical region can be carinate but do not form well-formed nodes. The whorl section is highly oval, with a flattened venter. The second specimen is represented by a (? terminal) portion of a phragmocone of a larger ammonite with a very similar ornamentation, except the ventrolateral nodes are modified in this specimen into carinate thickenings (Figs. 3c, 3d). In addition, the cross-section of this ammonite is lower, with a wider venter. Apparently, these two specimens

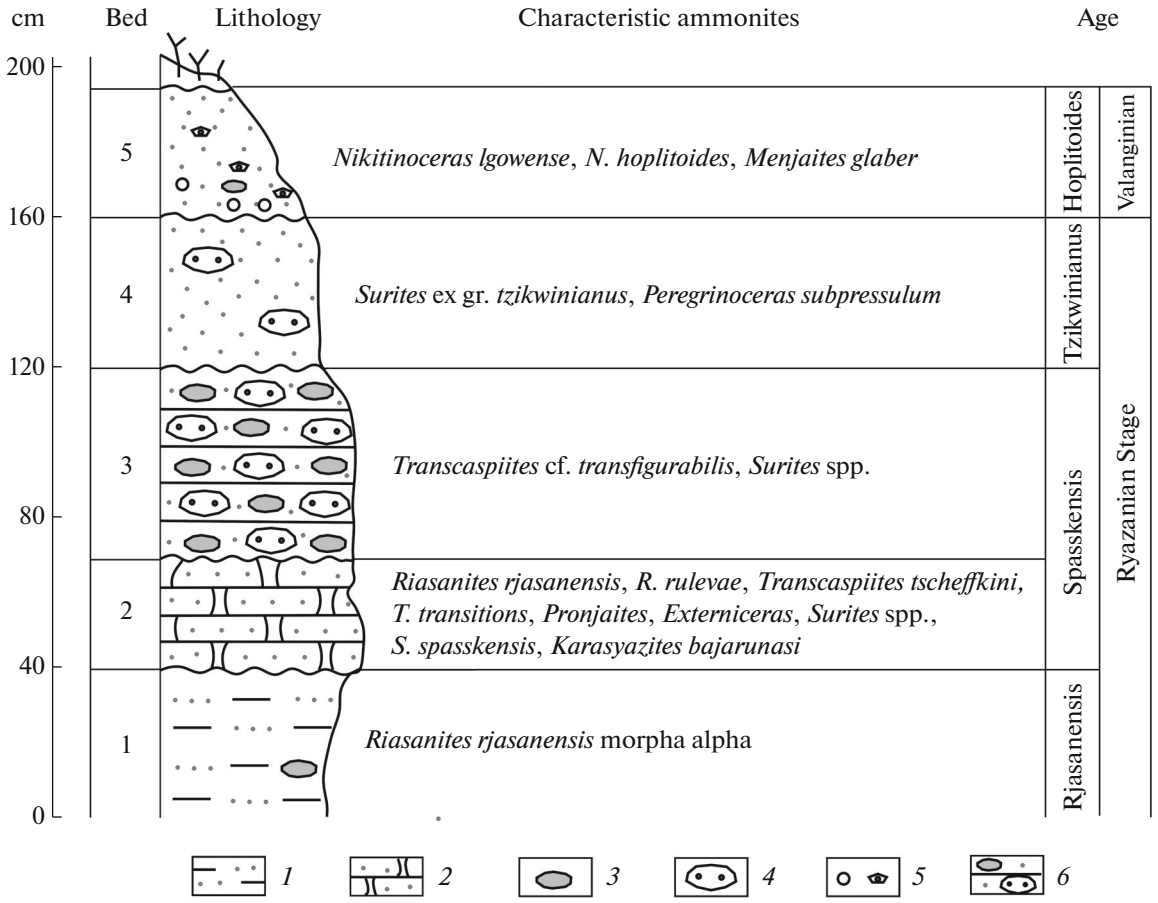


Fig. 2. Lower Cretaceous succession on the Oka River, downstream of the Nikitino Village, Spassk District of the Ryazan Region (after Mitta, 2007, modified): (*1*) argillaceous sand; (*2*) sandstone; (*3*) phosphorite concretions; (*4*) sandstone concretions; (*5*) pebbles and gravel; (*6*) conglomerate.

are macroconchs of one species; namely, *T. transfigurabilis* (Bogoslowsky) (holotype by monotypy: Bogoslowsky, 1896, pl. 6, fig. 3). Due to the incompleteness of these finds they are identified in open nomenclature.

Another specimen represented by the shell of a small ammonite with partly preserved inner whorls replaced by calcite and the beginning of the body chamber in phosphatized sandstone with remains of nacre is probably a microconch of the same species. At Dm = 5–8 mm, the whorl cross-section is low and rounded; the ribs are bipartite lacking visible nodes, slightly rursiradiate on the flanks and discontinued on the venter. At Dm = 12–15 mm, there are distinct nodes in the mid-flank (at the rib bifurcation point) and on the ventrolateral shoulder; there are also singular and intercalating ribs, with no lateral nodes. The phragmocone section at Dm = 19 mm is angular, with a width equal to its height, and a wide venter; the body cross-section is high oval; the venter is noticeably narrowed. The preserved part of the body chamber shows more widely spaced ribs, but the ornamentation is generally unchanged: the shell possesses bifurcating ribs, simple and intercalating, always with ventrolateral nodes and sometimes with lateral nodes. This ammonite is identified as *T.* aff. *transfigurabilis* (Bogoslowsky) (Fig. 4).

Some specimens of macroconchs of *T. micheicus* (Bogoslowsky) (holotype by monotypy: Bogoslowsky, 1896, pl. 6, fig. 1) differ in the absence of the umbilical row of nodes; these ammonites are assigned to a new species *T. tscheffkini* sp. nov. Another new species, *T. transitionis* sp. nov., includes macroconchs and microconchs with a very weakly developed rows of nodes. It is important to note that microconchs of this species are very similar to those of the late representatives of the genus *Riasanites*, which indicates the closeness of these taxa.

A comparatively well-preserved incomplete phragmocone of a large shell is indistinguishable from ammonites described by Luppov from Mangyshlak as *Subalpinites bajarunasi* Luppov (Luppov et al., 1988,

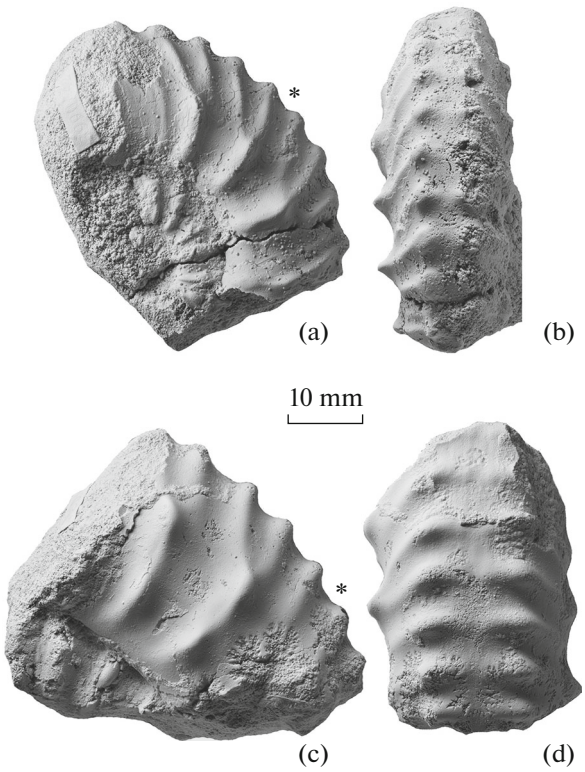


Fig. 3. *Transcaspiites* cf. *transfigurabilis* (Bogoslowsky) [M]: (a, b) specimen no. 3990/423, end of the phragmocone–beginning of the body chamber of a young specimen: (a) lateral view, (b) ventral view; (c, d) specimen no. 3990/424, end of the phragmocone–beginning of the body chamber: (c) lateral view, (d) ventral view. The asterisk (*) here and further indicates the beginning of the body chamber.

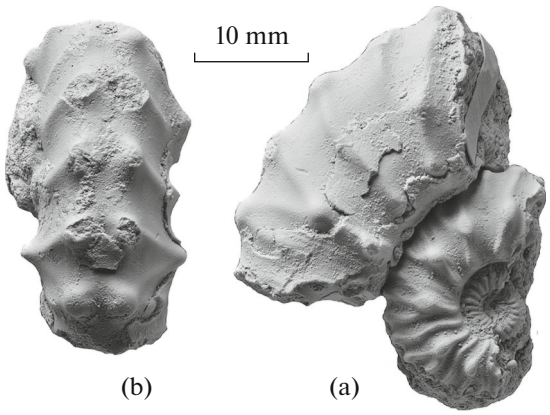


Fig. 4. *Transcaspiites* aff. *transfigurabilis* (Bogoslowsky) [m], specimen no. 3990/422, phragmocone with a part of the body chamber: (a) lateral view, (b) ventral view.

p. 118, pl. 14, fig. 7 [holotype], pl. 15, fig. 1; text-fig. 43). I previously figured a small phragmocone fragment of a similar ammonite from near the village of Nikitino (Mitta, 2007, pl. 2, fig. 6) as *Malbosiceras* cf. *macphersoni* (Kilian). Based on the shell shape and ornamentation I establish a new genus *Karasyazites* gen. nov., with the type genus *Subalpinites bajarunasi*.

The presence in the Berriasian of Mangyshlak of taxa of both Boreal and "Tethyan" origin allows this region to be considered as a Peri-Caspian part of the Boreal-Tethyan ecotone, extending from Central Poland in the west over Central Russia to Kazakhstan in the southeast. Accordingly, the basal Lower Cretaceous deposits of Mangyshlak should be more correctly assigned to the Ryazanian Stage.

The occurrence in the Ryazanian Stage of the Russian Platform of ammonites, taxonomically close or identical to Mangyshlak species, is important for interregional correlation. According to a scheme by Luppov et al. (1988), the Berriasian [=Ryazanian] Stage is subdivided in Mangyshlak into three local zones (from bottom to top): *Neocosmoceras–Septaliphoria semenovi* regional zone, *Buchia volgensis* regional zone, and *Riasanites–Pygurus rostratus* regional zone. These deposits overlie with an unconformity various horizons of the Middle and Upper Jurassic. The lower "*Neocosmoceras*" regional zone is the best characterized by ammonites; according to Luppov et al. (1988, p. 180, pl. 5), it correlates with the lower part of the Ryazanian Stage, whereas all three regional zones of the Berriasian of Mangyshlak correlate with the entire Ryazanian Stage of the Oka River basin, except its upper *Surites tzikwinianus* Zone.

However, based on the occurrences of *Karasyazites bajarunasi* (Luppov), *Transcaspiites* spp., *Riasanites* spp., *Surites* ex gr. *spasskensis* (Nikitin)–*kosakowianus* (Bogoslowsky), the *Neocosmoceras–Septaliphoria semenovi* Regional Zone of Mangyshlak should undoubtedly correlate with the *Surites spasskensis* Zone of the Russian Platform, i.e., with the middle part of the Ryazanian. Only a few poorly preserved ammonites are known from the overlying "*Buchia*" and "*Riasanites*" regional zones; hence a well-based correlation of these units with the standard scale of the Ryazanian Stage (Mitta, 2017) is at present difficult.

Thus, the correlation of the Mangyshlak regional zones with the zones of the Ryazanian Stage of the Oka River basin, proposed by Luppov et al., is incorrect. Deposits corresponding to the *Hectoroceras kochi* and *Riasanites rjasanensis* zones and representing the lower part of the Ryazanian Stage are either not established or eroded in Mangyshlak.

Identification of the microconchs of *Transcaspiites* (species of this genus were established only from macroconchs) is mainly based on the similarity of the ornamentation and to a lesser extent on the shell shape. The similarity of these microconchs to microconchs of the younger species of Riasanites suggests the phylogenetic lineage *Riasanites* → *Transcaspiites*. The studied taxa are systematically described below.

SYSTEMATIC PALEONTOLOGY

Superfamily Perisphinctoidea Steinmann, 1890

Family Himalayitidae Spath, 1925

Genus *Transcaspiites* Luppov in Bogdanova et al., 1985

***Transcaspiites tscheffkini* Mitta, sp. nov.**

Plate 4, figs. 1 and 2

Transcaspiites transfigurabilis: Mitta, 2007, pl. 3, figs. 1 and 2; Mitta and Bogomolov, 2008, pl., fig. 2.

Etymology. After K.V. Tscheffkin (1802–1875), chief of staff of the Corps of Mining Engineers of the Russian Empire (1834–1845), an organizer of the Mining and Geological Service of Russia.

Holotype. PIN, no. 3990/255; Ryazan Region, Spassk District, right bank of the Oka River, downstream of the Nikitino Village; Ryazanian Stage, lower part of the *Surites spasskensis* Zone. Collected by the present author.

Description. Macroconchs medium-sized, up to 90 mm in diameter. The juvenile whorls (Dm = 10–15 mm) are strongly inflated, with a low-rounded cross-section with the maximum width in the umbilical region. With age, the whorl height increases and becomes almost as wide. The umbilicus is wide; the umbilical wall is steep and rounded. The body chamber length is at least 0.6 whorls, no specimens with a preserved aperture are known. The ornamentation is composed of subradiate, weakly prorsiradiate, mainly bipartite ribs, sometimes with one or two intercalating ribs between them. The primary ribs are usually carinate, with nodes at the bifurcation point. The ventral parts of the branches are also usually carinate but become obsolete at the mid-venter to form an indistinct smooth band. The shell possesses infrequent undivided ribs with no carinae or nodes. At the end of the body chamber of adult shells there are widely spaced oblique ventrolateral carinae.

No microconchs of the described species have been identified.

Dimensions in mm and ratios:

Specimen no.	Dm	WH	WW	UW	WH/Dm	WW/Dm	UW/Dm
3990/255,	69	22.5	24	33	0.33	0.35	0.48
holotype	14	6.4	7.6	5	0.46	0.54	0.36

Comparison. This species is distinguished from the most closely similar species *T. micheicus* (Bogoslowsky), and also from *T. transcaspius* (Luppov) and *T. hundesianus* (Uhlig) by the absence of the umbilical row of nodes. It differs from other species of the genus in the lower rounded whorl section.

Remarks. I previously incorrectly identified this species as *T. transfigurabilis* (Mitta, 2002) because at the beginning of my studies of the ammonites of the Ryazanian Stage I did not correctly interpret their dimorphism.

Material. Three specimens represented by molds with no traces of nacre in brownish phosphatized sandstone in the type locality.

***Transcaspiites transitionis* Mitta, sp. nov.**

Plate 5, figs. 1–4

Riasanites (?) sp.: Mitta, 2007, pl. 3, fig. 5.

Etymology. From the Latin *transitionis* (transitional).

Holotype. PIN, no. 3990/420; Ryazan Region, Spassk District, right bank of the Oka River downstream of the Nikitino Village; Ryazanian Stage, lower part of the *Surites spasskensis* Zone. Collected by myself in 2006.

Description. The macroconchs are medium-sized, about 100 mm in diameter; the microconchs reach 50–55 mm in diameter. The inner whorls of the macroconchs are inflated. The last phragmocone whorl and the body chamber are of medium width. The cross-section is rounded-trapezoid, with the maximum width in the umbilical region. In the phragmocone the umbilicus is moderately wide and becomes wide in the body chamber. The umbilical wall is almost vertical in the inner whorls and becomes more gently sloping with age. The umbilical shoulder is rounded. The microconchs have flattened high-oval whorls; the umbilicus is wide, with a relatively steep wall; the umbilical shoulder is rounded. The body chamber of the microconchs occupies half a whorl; no macroconchs with a complete body chamber are known.

The ornamentation is composed of bifurcating, simple and intercalating ribs, subradiate and prorsiradiate. Three rows of small nodes are well developed: in the umbilical region, in the mid-flank at the rib bifurcation point, and on the ventrolateral shoulder. The rib branches become weaker in the mid-venter, but they are not interrupted. Bidichotomous ribs are sometimes observed (with two ribs extending from the umbilical node; and one of these dichotomizing again at the mid-flank). At the end of the body chamber, the lateral row of nodes disappear, whereas the umbilical and ventrolateral rows are transformed into carinate thickenings.

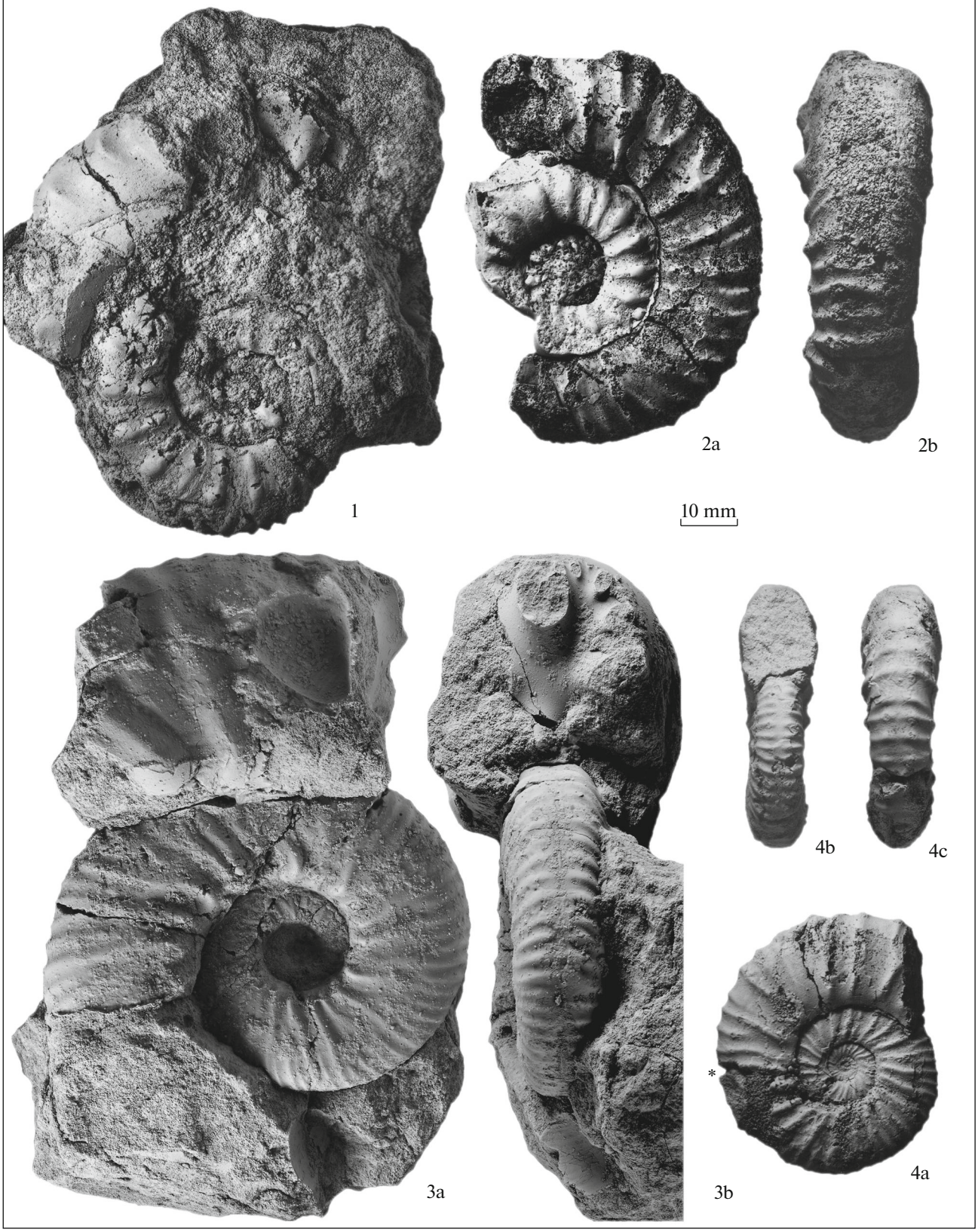
Dimensions in mm and ratios:

Specimen no.	Dm	WH	WW	UW	WH/ Dm	WW/ Dm	UW/ Dm
3990/420,	~50	18.5	16.8	19	0.37	0.34	0.38
holotype	25	11	12	8	0.44	0.48	0.32
3990/419	50	15.5	12	22.5	0.31	0.24	0.45

Variability. In the material studied, the variability is observed in microconchs in the varying extent of the shell compression.

Comparison. This species is distinguished from *T. tscheffkini* by the rounded trapezoid shape of the cross-section and the presence of the umbilical row of nodes. It differs from all other species primarily in the very weakly developed nodes.

Plate 4



Remarks. In their shell shape and ornamentation, the macroconchs and microconchs of *T. transitionis* resemble the geochronologically younger representatives of *Riasanites: R. rjasanensis* (Nikitin) morph β (Pl. 5, fig. 5) and, especially, *R.* aff. *maikopensis* Grigorieva (Pl. 5, fig. 6); but they differ from them in the more strongly inflated and densely ornamented inner whorls, more strongly developed nodes and (microconchs) by the flattened adult whorls. Apparently, the new species is intermediate between *Riasanites* and *Transcaspiites*, hence its name.

Material. Seven specimens from the type locality.

Genus *Karasyazites* Mitta, gen. nov.

Etymology. From the type locality of the type species (Karasyaz Well).

Type species. *Subalpinites bajarunasi* Luppov (Luppov et al., 1988); Kazakhstan, Mangyshlak Peninsula; Ryazanian Stage, *Neocosmoceras* and *Septaliphoria semenovi* Regional Zone.

Diagnosis. Macroconchs about 140 mm in diameter, microconchs up to 60 mm. Whorls moderately wide, becoming more compressed with age. Cross-section subrectangular. Umbilicus moderately wide, expanding with age. Umbilical wall steep in young whorls, becoming more gently sloping in body chamber. Ribs multi-branched, weakly carinate in umbilical region; in mid-venter interrupted or becoming weaker (in body chamber).

Species composition. Type species from Mangyshlak (Kazakhstan), "*Neocosmoceras* and *Septaliphoria semenovi* Regional Zone" of the Ryazanian Stage; and the Oka River basin (Central Russia), *Surites spasskensis* Zone of the Ryazanian Stage.

Comparison. This genus differs from the genus *Subalpinites* Mazenot, to which the type species was originally assigned, in that its macroconchs have a well-distinguished subrectangular cross-section with almost flat flanks and a wide venter, secondary ribs, approaching the mid-venter at a right angle; in addition microconchs, have more widely spaced ribs.

Karasyazites bajarunasi (Luppov in Luppov et al., 1988)

Plate 4, figs. 3 and 4

Hoplites sp. indet. E: Bogoslowsky, 1896, p. 104, pl. 6, fig. 6.

Subalpinites bajarunasi: Luppov et al., 1988, p. 118, pl. 14, fig. 7; pl. 15, fig. 1; text-fig. 43.

Riasanites bogoslowskii: Luppov et al., 1988, p. 134 (non pl. 13, fig. 7).

Malbosiceras cf. *macphersoni*: Mitta, 2007, pl. 2, fig. 6.

Holotype. TsNIGR Museum, no. 11104/9 (Luppov et al., 1988, pl. 14, fig. 7); Kazakhstan, Mangyshlak Peninsula, vicinity of the Karasyaz Well; Ryazanian Stage, *Neocosmoceras–Septaliphoria semenovi* Zone.

Description. The macroconchs reach 140 mm or more in diameter, microconchs up to 60 mm. The inner whorls of the phragmocone are moderately wide, but the shell becomes more compressed with age. The whorl cross-section is subrectangular with almost flat flanks and flattened and weakly convex venter. The umbilicus is moderately wide in the inner whorls, becoming wider in the last whorls of the phragmocone and wide in the body chamber. The umbilical wall in the phragmocone of the macroconchs is steep; the shoulder is rounded; in adult microconchs the umbilicus is shallow and relatively gently sloping. No specimens with a complete body chamber and aperture are known.

The ornamentations of macroconchs is represented by straight or slightly prorsiradiate or rursiradiate multi-branched ribs, weakly carinate in the umbilical region. The branches (up to three or four in fascicles) are very weakly connected with the primary ribs and extend from the primary rib alternating in the mid-flank and slightly above and below. The bifurcation point is sometimes marked by weak inflations in the shape of incipient nodes. The ventrolateral regions of the branches are slightly thickened, almost perpendicularly approaching the mid-venter, and are interrupted to form a longitudinal band. The ornamentation of the microconchs is similar; the body chamber has fewer branches in the fascicles (two or three) and the ventral band is less conspicuous.

Dimensions in mm and ratios:

	Dm	WH	WW	UW	WH/Dm	WW/Dm	UW/Dm
3990/418 [M]	–	46	41	–	–	–	–
	76	28.7	21	26	0.38	0.28	0.34
	57	23.5	19	17	0.41	0.33	0.30
AC/1112 [m]	46.5	16.3	12	17.2	0.35	0.26	0.37
	34	12.5~10		14	0.37	0.29	0.41

Remarks. Judging from the cross-section shape with a wide venter and specific ornamentation, *Hop-*

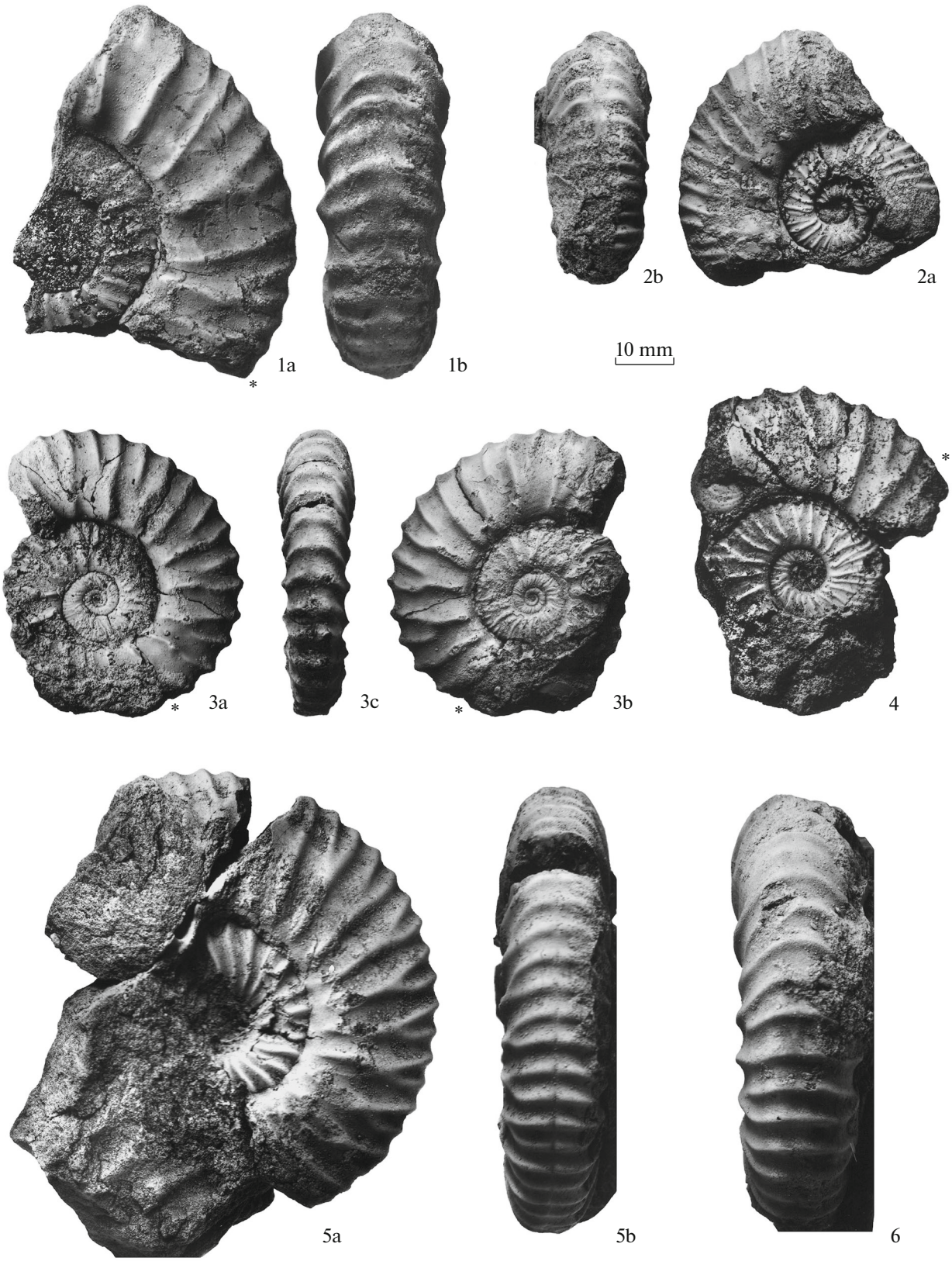
Explanation of Plate 4

Figs. 1 and 2. *Transcaspiites tscheffkini* sp. nov. [M]: (1) specimen no. 3990/416, pragmocone with small fragment of the body chamber, lateral view; (2) holotype no. 3990/255, body chamber with a plaster cast of the inner whorls: (2a) lateral view, (2b) ventral view.

Figs. 3 and 4. *Karasyazites bajarunasi* (Luppov): (3) specimen no. 3990/418, macroconch phragmocone: (3a) lateral view, (3b) apertural view; (4) specimen no. AC/1112, microconch with a part of the body chamber: (4a) lateral view, (4b) apertural view, (4c) ventral view.

Ryazan Region, Spassk District, bank of the Oka River, downstream of the Nikitino Village; Ryazanian Stage, lower part *Surites spasskensis* Zone. Coll. by V.V. Mitta and A.V. Stupachenko.

Plate 5



Explanation of Plate 5

Figs. 1–4. *Transcaspiites transitionis* sp. nov.: (1) specimen no. 3990/421, fragment of the macroconch body chamber with partly preserved inner whorls: (1) lateral view, (1b) ventral view; (2) holotype no. 3990/420, macroconch phragmocone: (2a) lateral view, (2b) ventral view; (3) specimen no. 3990/419, microconch with a complete body chamber but without apertural region; (3a, 3b) lateral view, (3c) ventral view; (4) specimen no. 3990/259, microconch with the beginning of the body chamber, lateral view.

Fig. 5. *Riasanites rjasanensis* (Nikitin) morph β [M], specimen no. 3990/425: (5a) lateral view, (5b) ventral view.

Fig. 6. *Riasanites* aff. *maikopensis* Grigorieva [M], specimen no. 3990/402, ventral view of the macroconch figured by Mitta (2011a; text-fig 3a).

Ryazan Region, Spassk District, bank of the Oka River, downstream of the Nikitino Village; Ryazanian Stage, lower part of the *Surites spasskensis* Zone. Collected by V.V. Mitta.

lites sp. indet. E Bogoslowsky, designated by Luppov as the holotype of the new species *Riasanites bogoslowskii* (see synonymy), belongs to the described species and is its subjective junior synonym. The paratype of *R. bogoslowskii* from Mangyshlak has the higher whorl section, a less steep umbilical wall, and more prominent primary ribs with a lower ribbing coefficient.

The species *Hoplites macphersoni* Kilian (holotype by monotypy: Kilian, 1889, pl. 31, fig. 2; Mazenot, 1939, pl. 10, fig. 2) described from a single specimen from the "Upper Tithonian" of Andalusia is very similar to *K. bajarunasi*. The systematic and stratigraphic position of this species in modern nomenclature remained unknown for a long time. However, in a recent paper by Frau et al. (2016), *H. macphersoni*, along with five other species previously established from the Berriasian of France and Spain, was synonymized under *Ammonites chaperi* Pictet, 1868, designated as the type species of *Lopeziceras* Frau et al., 2016 [= *Chapericeras* Hoedemaeker, 1981, *nomen nudum*]. Apparently, the resemblance of this species to *Karasyazites bajarunasi* is homeomorphic.

M a t e r i a l. Three specimens of molds in grayish brown phosphatized sandstone; right bank of the Oka River, downstream of the Nikitino Village, Ryazan Region; Ryazanian Stage, *Spasskensis* Zone (lower part).

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