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In Defense of the Volgian Stage

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Abstract—The Volgian Stage was a subdivision used in Russian and world geological literature for over a century. The stage was withdrawn from the general scale and replaced by the Tithonian Stage, when the Interdepartmental Stratigraphic Committee of the Russian Federation (ISC RF) came to that decision on February 2, 1996. The paper casts doubts on the decision. A return to the use of parallel stages in the International stratigraphic scale for the time intervals with high geographic differentiation of biota is substantiated.

Key words: Volgian stage, biostratigraphic zonations, parallel stages, Panboreal Paleobiogeographic Superrealm.

The Volgian Stage, the uppermost one in the Jurassic Stratigraphy of boreal sediments, was in use over a century in theoretical and applied works of Russian and foreign geologists. As it was recommended by different-rank International stratigraphic organizations, the Volgian Stage figured during 27 years (1964 to 1991) in the International stratigraphic scale autonomously or in parallel with the Tithonian Stage (Ager, 1964, 1974; *Rekomendatsii mezhdunarodnogo simpoziuma...*, 1974; Saks, 1979). At the meeting of 1991 held in Potie, France, the International Subcommission on the Jurassic System decided to withdraw the Volgian Stage from the general stage scale (Cope, 1993). By ISC RF decision of February 2,1996, the Volgian Stage was divided into the Jurassic and Cretaceous parts, withdrawn from the general scale, and replaced by the Tithonian Stage (Zhamoida and Prozorovskaya, 1997; Rostovtsev and Prozorovskii, 1997). Is the century-long history of the Volgian Stage, the uppermost one of the Boreal Jurassic, terminated? Are the Volgian Stage potentialities exhausted? Is the problem of its correlation with the Tithonian Stage solved? Is the Tithonian Stage identifiable, as easily as the Volgian Stage, over the entire distribution territory of boreal sediments? These questions are not rhetorical. Despite the above-mentioned decision, the Volgian (not Tithonian!) Stage is still used in publications devoted to stratigraphy of Northern Europe, northern North America, all Arctic islands, the huge Greenland inclusive, and shelves of the Barents, Kara, Laptev, East Siberian, Chukchi, and Beaufort seas (figure). Such a practice is lawful, because the stage, in the term meaning suggested by d'Orbigny, corresponds to a group of beds with specific fossils (Cope, 1996). In other words, every stage can be recognized based on its characteristic fauna. It is logical therefore that the Volgian Stage was established based on foraminifers even in Madagascar (Kuznetsova, 1976). According to the figurative sentence by Egoyan (1984), the stage is recognizable owing to its "stiffening core." Ammonites are the orthostratigraphic fossil group for the Jurassic System and even for the entire Mesozoic. It is principal that ammonite "cores" of the Tithonian and Volgian stages are substantially different: it is impossible to find even a single coincidence at the species and generic levels in the nomenclature of over 30 constituting zones and subzones of these stages.

Adherents of the Tithonian Stage applicability to the Boreal Realm are dazzled by idea of the unified nomenclature of stratigraphic units in the International geochronological scale. It is clear that the stage nomenclature in the general Phanerozoic scale should be unified, but without the loss of its merits. Russian geologists defined the Volgian Stage in stratigraphic successions over the vast territory of northern Eurasia. The Volgian Stage is rendered in hundreds of large-scale maps. It is described and mentioned in thousands of publications and hand-written initial reports since the 19th century until present. The refusal from the Volgian Stage complicated substantially the work for Russian geologists, particularly for those engaged in petroleum geology, whose studies are almost entirely dedicated to the boreal-type sections. Is it reasonable to destroy traditions without any forcible arguments? Globalization is useful when it does not violate national interests.

VOLGIAN STAGE AND THE JURASSIC-CRETACEOUS BOUNDARY

The ISC RF accepted the most radical version of the Jurassic-Cretaceous boundary among all others discussed in relevant publications. It placed the boundary at the base of the upper Volgian Substage (the base of the *Kachpurites fulgens* Zone), and four zones of the upper Volgian Substage turn out to be presumably corresponding to the Berriasian *Berriasella jacobi* and,

Table 1. Ammonite zonations in the Jurassic-Cretaceous boundary interval of European Russia, northern Siberia, and southern Europe

Stage	Substage	European Russia (Mesezhnikov *et al.*, 1979)		Northern Siberia (Zakharov *et al.*, 1997)		Substage	Stage	Stage	Substage	Southern Europe (Hoedemaeker and Rawson, 2000)	
"Ryazanian"	upper	*Peregrinoceras albidum*		*Tollia tolli*		upper	Boreal Berriasian	Berriasian	upper	*Fauriella boissieri*	*T. alpinensis*
				Bojarkia mesezhnikowi							*B.picteti*
		Surites tzikwinianus		*Surites analogus*	*S. analogus*						*Malbosiceras paramimounum*
					S. subquadralus						
	lower	*Riazanites rjasanensis*	*Euthymiceras transfigurabilis*	*Hectoroceras kochi*	*S. praeanalogus*	lower					
			Hectoroceras kochi		*Bor. constans*						
					H. kochi						
			Garniericeras	*Chetaites sibiricus*	*Ch. sibiricus*				middle	*Tirnovella occitanica*	*D. dalmasi*
					Pr. maynci						
Volgian	upper	*Craspedites nodiger*	*C. nodiger*	*Chetaites chetae*		upper	Volgian				*B. privasensis*
			C. mosquensis	*Craspedites taimyrensis*							*T. subalpina*
		Craspedites subditus		*Craspedites okensis*	*C. originalis*				lower	*Berriasella jacobi*	
					C. okensis						
		Kashpurites fulgens	*C. nekrassovi*		*P. exoticus*						
			K. fulgens								
	m.	*Epivirgatites nikitini*		*Epivirgatites variabilis*		m.		T.	u.	*Durangites* spp.	

Note: Solid horizontal line shows one of two versions of placing the lover boundary of the Cretaceous System proposed for official discussion (at the base of the *Tirnovella occitanica* Zone). In case that this boundary is adopted, the Volgian Stage remains almost completely in the Jurassic System. The subdivision of the zone into subzones is after Baraboshkin (1999), (m.) middle; (u.) upper; (T.) Tithonian.

partially, *Tirnovella occitanica* zones *(T. subalpina* and *B. privasensis* subzones). In this case, it is possible to speak about similarity in succession of zones in sections, but not about coincidence of their stratigraphic ranges. Thus, the suggested correlation of Boreal and Tethyan biostratigraphic units is very arbitrary (Sei and Kalacheva, 1993; Zhamoida and Prozorovskaya,1997). Generally speaking, the decision to divide the Volgian Stage in two parts and to include the upper one into the Berriasian Stage was incompetent, because, like at present, the Global Stratotype Section and Point for the Berriasian lower boundary, i.e., for the base of the Cretaceous System, was not determined in 1996, and, thus, the official upper boundary of the Jurassic System is still unknown. At the meeting of 1995 held in Brussels, the International Working Group on the Berriasian Stage and the Jurassic-Cretaceous boundary recommended to place the base of the Berriasian Stage at the base of three subdivisions: the *Berriasella jacobi* Zone, *Tirnovella subalpina* Subzone, or *T. occitanica* Zone established in sections of southeastern France or Spain (Zakharov *et al.*, 1996). Thus, none of variants of correlation between the Tithonian, Berriasian, and Volgian stages is unable to give an idea of their ranges and of stratigraphic position of the upper Volgian Substage until the upper boundary of the Jurassic system is determined. Moreover, if the lower boundary of the Berriasian Stage would be at the base of the *T. occitanica* Zone, the *Berriasella jacobi* Zone should be included into the Tithonian, i.e., into the Jurassic System, and the Volgian Stage of the latter appears to be without the *Craspedites nodiger* Zone, the only one, which Mesezhnikov (1984,1989) proposed to transfer into the Cretaceous System (Table 1). Thus, the decision of the ICS RF was evidently premature.

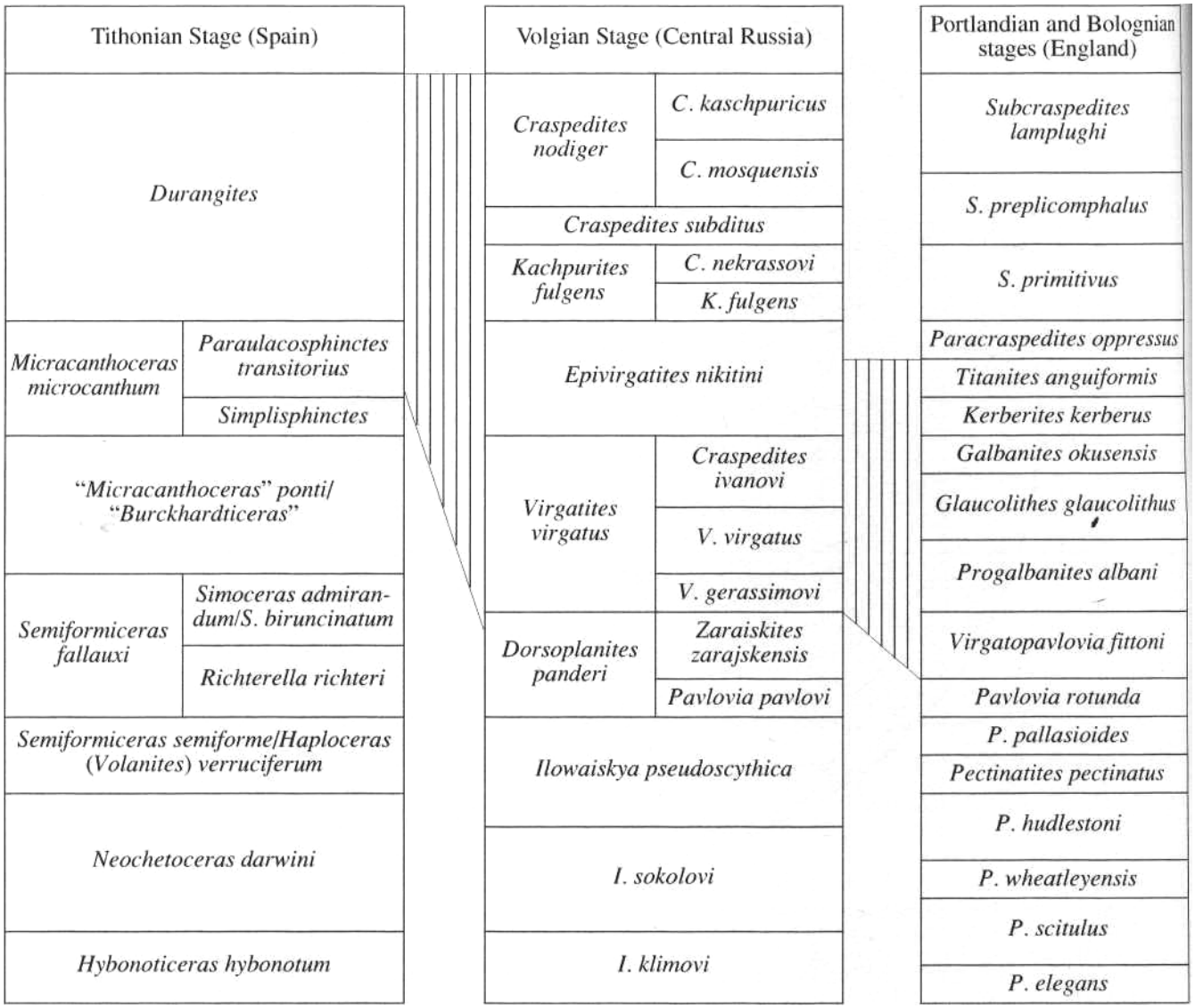
THE VOLGIAN STAGE IN THE GENRAL STRATIGRAPHIC SCALE

The adjective "Volgian" appeared first in the geological formation name at the end of 19th century, and later it was used to name the Lower Volgian and Upper Volgian stages (Nikitin, 1881, 1884). Both stages corresponded in stratigraphic ranges to the middle and upper substages of the Volgian Stage in its present-day meaning. The lower Volgian Substage as an equivalent of the Vetlayansk Horizon (Sokolov, 1901) was included into the Volgian Stage substantially later (Gerasimov and Mikhailov, 1966; *Postanovlenie rasshirennogo zasedaniya...*, 1966). The decision of

Factual and inferable distribution areas (shaded) of the Volgian Stage sediments in the Northern Hemisphere of the Earth (over 20 million of square kilometers in total). Numbered are sections, the candidates for the GSSPs of the Volgian substage boundaries: (1) Gorodishche site (Ul' yanovsk region), the lower boundary of the Volgian Stage and lower boundary of the middle Volgian Substage; (2) Nordvik Peninsula (Yakutia, Republic Sakha), the lower boundary of the upper Volgian Substage and lower boundary of the Boreal Berriasian.

the ISC SSSR (October 29, 1964) was preceded by decision of the Britain Committee on Mesozoic (February of 1963) to refuse from the Portland Stage in favor of the Volgian Stage and by a later decision of the Committee on the Mediterranean Mesozoic in Cassis (France, May of 1994), which admitted the Volgian Stage validity to replace the Tithonian Stage in the standard scale (Ager, 1964, 1974; Krymholtz, 1974). Nevertheless, the International Symposium on Upper Jurassic Stratigraphy held in Moscow recommended to preserve both the Tithonian and Volgian stages in the general scale (*Rekomedatsii mezhdunarodnogo simpoziuma...*, 1974). Ten years after the Moscow symposium, the International Colloquium of 1977 (USSR: Novosibirsk, Ul'yanovsk, Tyumen, Leningrad), authorized again both stages in the general scale. The aspiration to preserve the Volgian Stage in the general scale was not dictated by the whish of Russian (Soviet) specialists only. To a significant extent, the initiative belonged to *western* paleontologists and stratigraphers. The intense geological studies in northern territories of North America, which were initiated after the World War II in Canada, the United States, Greenland, Svalbard, and, later on, in the Arctic shelf areas, showed that boreal sediments widespread in these region occupy an area over 20 millions of square kilometers in the Northern Hemisphere (figure). Throughout this territory, the Mesozoic sections enclose remains of boreal organisms, those of the Volgian Stage included, which are characteristic of the East European platform. The Volgian Stage started to be distinguished in territories north of the 50°N. The fact noted by K.F. Roulliet (1845) as early as in the middle of the 19th century and later confirmed by works of many Russian geologists (G.A. Trautschold, I.I. Lahusen, S.N. Nikitin, A.P. Pavlov, K.O. Milashevich, A.O. Mikhal'skii, D.N. Sokolov,

Table 2. Ammonite zonations in Jurassic terminal stages of Europe (Tithonian, Volgian, Portlandian, and Bolognian)



Note: Vertical lines designate intervals lacking zones (scales after Cope, 1963;Geyssant, 1997;Baraboshkin, 1993;Mitta, 1993; correlation of the Tithonian and Volgian stages after Rogov, 2002).

A.N. Rozanov, D.I. Ilovaiskii, and others), became evident for geologists of the 20th century. The fact is that paleontological characteristics and composition of the uppermost Jurassic deposits, which represent the Volgian Stage in northern areas of the Northern Hemisphere, greatly differ from their southern counterparts, i.e., from deposits of the Portlandian Stage defined by A. d'Orbigny in the Anglo-Parisian basin (Cope, 1996) and of the Tithonian Stage in Mediterranean areas (Oppel, 1865). The difference is so great that the stages cannot be correlated between each other and their nomenclature should be individual. Nowadays, the "faunal cores" of the stages in question are sufficiently well known. They sharply differ first in taxonomic composition of index ammonite species. As is seen in Table 2, the ammonite assemblages in zonal units of the Volgian and Tithonian stages lack any genera in common. Calpionellids (tintinids), which are important for the Tithonian biostratigraphy, are unknown from the Volgian Stage. To the contrary, buchiid bivalves important for the Volgian Stage biostratigraphy are virtually absent in the Tithonian sediments. Tithonian and Volgian foraminiferal assemblages also have little in common (Ivanova, 1973; Kuznetsova, 1979). Most of marine invertebrates and known vertebrates, which dwelt in the Central Russian basin, were endemic taxa (Gerasimov, 1955, 1969, 1992; Gerasimov *et al*, 1995). The number of coexisting boreal and Tethyan mollusks increases only in the ecotone zones between 45 and 55°N (Zakharov and Rogov, 2003).

The integrity of the Volgian Stage throughout its distribution area is primarily based on the succession in

development (phylogeny) of characteristic faunal groups. The phylogenetic lineages of higher ammonite taxa from families Perisphinctidae (genera *Ilowaiskya, Dorsoplanites,* and *Epivirgatites)* and Craspeditidae (genera *Kachpurites* and *Craspedites)* reconstructed within the biogeographic Panboreal Superrealm confirm genetic relation between representatives of these groups during the entire Volgian Age (Ilovaiskii and Florenskii, 1941; Mikhailov, 1966; Shul'gina, 1969; Mesezhnikov *et al,* 1984; Mitta, 1993). Several species of the boreal genus *Buchia* (bivalves), as well as many other invertebrate taxa are characteristic only of the Volgian Stage (Lahusen, 1888; Zakharov, 1981; Gerasimov *et al,* 1995; and others).

TITHONIAN AND VOLGIAN STAGES: MERITS, DEMERITS, AND NOMENCLATURE PROBLEMS

Analyzing merits and demerits of the Volgian and Tithonian stages, it is difficult to decide which one has more advantages. The Tithonian Stage is not ideal, because it has no stratotype (Oppel, 1865). Although the problem of stratotype selection is not an exigency after reorientation of International working groups toward GSSP selection, the geological substance is still a main carrier of geohistorical information that cannot be ignored according to sound sense. In this respect, the Volgian Stage with its stratotype sections along the Volga (near Ul'yanovsk) and Yatriya (Subpolar Urals) rivers is more advantageous as compared with the Tithonian Stage (Gerasimov and Mikhailov, 1966; Zakharov and Mesezhnikov, 1974; Mesezhnikov, 1984).

Moreover, the ammonite zonation of the Tithonian Stage is less detailed than that of the Volgian Stage (9 versus 15 zones and subzones). Several autonomous zonations have been elaborated for the Volgian Stage. For instance, the buchiid zonation enables a complete Panboreal cerrelation and Boreal-Tethyan correlation of lower and middle parts of the stage (Zakharov, 1981). No equivalent zonation is available for the Tithonian. Calpionellids occurring in Tethyan sections only are useful for subdivision of the upper Tithonian sediments only (Remane, 1990). Application of standards based on other fossil groups (benthic mollusks, belemnites, brachiopods, foraminifers, dinocysts) is also limited by distribution areas of different-type sediments.

Although the Tithonian deposits are of significantly wider geographic range (from the Western Mediterranean to Southeast Asia and form the Caribbean basin to South America) than those of the Volgian Stage, they are untraceable north of 50°N in the Northern Hemisphere, and it is also difficult to define them in many areas of the Southern Hemisphere. Even the correlation potential of Tithonian ammonite zones is usually limited by the western Mediterranean region.

The upper Tithonian is missing from the historical locality (southern Germany) and its uppermost *Durangites* Zone is absent in the Berriasian type area. In this respect, the Volgian Stage is equally vulnerable, because sedimentation break and, probably, stratigraphic hiatus are recorded near its top. More exactly, the stratigraphic gap should be most likely at the base of the "Ryazan Horizon" (Mitta, 2001). The break in sedimentation near the lower Berriasian boundary is recorded even in stratigraphically continuous sections of southeastern Spain.

As compared with the Volgian Stage, the Tithonian has an advantage of priority: it was defined by A. Oppel almost 20 years earlier. Nevertheless, as is shown by Mitta (2001, p. 25), the nomenclature stability can be violated, if the variant of correlation of the upper Volgian Substage with a part of the Berriasian will be accepted: "in this case, the first suitable name for the stratigraphic unit (of the Volgian Stage, *V.Z.)* should be the "Khoroshevian" Stage distinguished by Shchurovkii (1867) earlier than the "Berriasian" (Coquand, 1971), and further ... the middle Volgian Substage is an equivalent of the "Moscovian Stage" established by Romanovskii in 1856, i.e., before the "Tithonian" Stage (Oppel, 1865), but the former should not be mixed with the Moscovian Stage of the Carboniferous System (Nikitin, 1890). The lower Volgian Substage can easily be included into the Kimmeridgian Stage sensu anglico or can be defined as the Vetlyanian Stage of Sokolov (1901)."

THE SCALE OF PARALLEL STAGES

The convenience and effectiveness in regional geological works are main arguments in favor of parallel stage scales. Three regional stages (Portlandian, Tithonian, and Volgian) consist of unique successions of ammonite-based zones (Mesezhnikov, 1982; Krymholtz, 1988; Mitta, 1993; Baraboshkin, 1999). Despite undoubted achievements in correlation of the lower parts of these successions (Rogov, 2002), a reliable "through" level suitable for Boreal-Tethyan correlation in the interval from the upper Tithonian to the top of the Berriasian does not exist. The Volgian Stage is well traceable in North Europe (Russia and Poland), Northeast Asia, North America (northern and northwestern Canada, northern Alaska), in all Arctic islands and Arctic sea shelves, that of the North Sea inclusive. The Portlandian Stage is recognizable in the Anglo-Parisian Basin only. Contrary to the opinion of Cope (1996), it is more reasonable to include Greenland in the "sphere of influence" of the Volgian Stage because, in addition to analogues of most zones of the Volgian Stage, established here is the complete succession of buchiid zones, which enable the reliable Panboreal correlation of all three substages of the Volgian Stage (Zakharov, 1981; Håkansson *et al,* 1981; Surlyk and Zakharov, 1982; Callomon and Birkelund, 1983). The ammonite successions of the Tithonian Stage substantiate correlation of

corresponding Tethyan deposits throughout their distribution area. The parallel calpionellid and nannofossil scales are useful for high-precision correlation of the Jurassic-Cretaceous boundary strata on both sides of the Atlantic (Bralower, 1990; Remane, 1998).

The benefit of parallel stages (and constituting zonal scales) is not limited by determining aspects of stratigraphic correlation. The reliable tracing of genetically similar events is important for the detailed reconstruction of geological history in separate segments of the earth crust. For instance, the Mesozoic geodynamic evolution of the Arctic was controlled by tectonic history of major plates in the Northern Hemisphere, but main biotic events were concentrated in the paleogeographic Panboreal Superrealm, where the Boreal zonations are most efficient (Zakharov *et al*, 1997). Precisely the Boreal (not Tethyan) regional chronostratigraphy, that of the Volgian Stage included, offers a possibility to trace all the peculiarities stages in formation and evolution of the Arctic Ocean and near-polar regions of the Earth (Zakharov *et al*, 2002a, 2002b).

Another example is connected with the oil and gas prospecting. It is known that productivity of the West Siberian hydrocarbon-bearing province depends on the generation potential of the high-carbonaceous Bazhenov (Volgian) Formation (Braduchan *et al*, 1986). Concurrent analogues of this formation are established in shelves of the Kara and Barents seas based on finds of Volgian fossils. These sediments are also bituminous. The molluscan remains of the Volgian Stage are found also in the North Sea deposits with a high C_{org} contents. Commercial oil-and-gas deposits are discovered in all these regions.

The high-resolution stratigraphic schemes are necessary to reconstruct regional paleoclimatic events, to define trends in sedimentation (within paleobasins), and to decipher history of paleolandscapes and paleobiome evolution. Finally, there is no need to use the stratigraphic scale of the Tithonian Stage for comparison of any Jurassic events in the East European, West Siberian, and Siberian platforms, because all these structures were located in the biogeographic Panboreal Superrealm and, consequently, hosted similar biotas.

Thus, the parallel stages of the general stratigraphic scale reflect the real specifics of geological and biological evolution of large segments of the earth crust. They demonstrate peculiar and varied events that occurred in the Earth history. In this respect, terminal regional units of the Jurassic System, such as the Portlandian, Volgian, and Tithonian stages will always be demanded by the routine geological practice (Callomon, 1979). Traditions, which reflect not only terminological convenience and semantic comfort, but also an unambiguous understanding of the problem by many generations of geologists, are an important argument in favor of regional stages.

Recent revision of the International stratigraphic scale by the world stratigraphic community and practice of selecting the GSSPs for stage and substage boundaries demand resolution conflicts of a national character. The experience of International subcommissions on stratigraphic systems shows that their members are far from altruism when selecting a GSSP. The acuteness of debates on the standard is frequently determined by motives of the national prestige, rather than by scientific objectivity. Some authoritative specialists and myself believe that the return to the practice of parallel stages, i.e., of secondary stages in terms of Cope (1993,1995,1996) or Abbink and Callomon (2001) can be a temporary measure on the way to unification (Zakharov, 2003) and may help to avoid conflicting situations when selecting GSSPs, making the procedure more objective. Simultaneously, this will also deprive of advantages the voting members of international subcommissions on stratigraphy, which represent the hosting and invited countries (Cope, 1996).

I propose to use the parallel stages along with the main general scale. The introduction of parallel standards is a temporary measure valid until their reliable correlation with the general scale. A parallel standard proposed by national stratigraphic surveys (for instance by ISC RF) must be approved by decision of the International Commission on Stratigraphy (ICS). Boundaries in the parallel stage standard should be determined in the same manner as in the general scale, i.e., by selection of the Secondary Stratotype Section and Point (SSSP). It seems reasonable to place the SSSP for the Volgian lower boundary at the base of the *Ilowaiskiya klimovi* ammonite zone (the base of the lower Volgian Substage) in the Volgian Stage stratotype section near the Gorodishche Village (Volga River near Ul'yanovsk). The SSSP for the lower boundary of the middle Volgian Substage is well defined at the base of the *Dorsoplanites panderi* ammonite zone in the same section. The SSSP of the lower boundary of the upper Volgian Substage should correspond to the base of the *Craspedites okensis* Zone (*Praechetaites exoticus* Subzone) in the Volgian Stage section of the Nordvik Peninsula, Anabar Bay, the Laptev Sea coast (Zakharov *et al*, 1983).

CONCLUSION

The paper is not aimed to revise views on the problem of the Volgian Stage. I just want to attract attention to one of the most acute problems of the Mesozoic stratigraphy in Russia-to destiny of the Volgian Stage. I douht the expediency of the ISC RF decision to divide the Volgian Stage in two units, to include the entire upper Volgian Substage into the Berriasian Stage and Cretaceous System, and to withdraw the Volgian Stage from the general stratigraphic scale of Russia imparting to it a status of the regional stage (horizon). Bearing in mind the fact that boreal sediments cover 90% of the Russian territory, one can easily understand that this formal decision leads to a chaos in work of practical geologists and to unnecessary troubles for specialists

from scientific organizations of the Russian Academy of Sciences. Ignoring the opinion of International subcommissions on stratigraphic systems, the ISC RF came to its decision ahead of recommendations of the International Commission on Stratigraphy (Zakharov *et al*, 1996). Under motto of unification (who argues?), the ISC RF creates comfortable conditions for some (specialists on Tethyan deposits) and difficulties for others (geologists dealing with boreal sediments) researchers. A part of the Volgian Stage should undoubtedly be included into the Cretaceous System, but the question is which one? Until the decision of the International Commission on Stratigraphy about the GSSP of the Berriasian Stage boundary, the ISC RF has no rights to solve this problem ignoring international agreements. This is a leitmotif of the paper. Consequently, the ISC RF decision of February 2, 1996, should be reconsidered, and the Volgian Stage should be returned into the general stratigraphic scale of Russia to be there until the Volgian-Tithonian and Berriasian-Boreal Berriasian zonal correlations will become cogent. Finally, I tried to substantiate the necessity of preservation of the Volgian Stage "status quo" not only in Russia. The Volgian Stage cannot be considered as a regional stage of Russia. The Volgian deposits cover territories of several countries, and an agreement between Russia, Canada, the United States, Denmark, Norway, and England is required on this issue. The ISC RF cannot solve the Volgian Stage problem ignoring other subjects of the international law.

Following J. Cope (1996), I suggest to introduce into the International stratigraphic scale the parallel stages in traditional nomenclature for the geological time intervals of a high biota differentiation. This idea seems sound, and I tried to substantiate this in the paper. Is the existence of national measures of length and weight more justified? They are just a tribute to tradition, but many countries do not hurry refuse them. The scale with parallel stages reflects a variety and unique character of past geological events. During million years, vast territories (blocks) of the Earth were much closer spaced, had a common geological history (tectonics, magmatism, sedimentation cycles, biota evolution, etc.) in distinction from other territories with their own history of geological development. The availability of scale with parallel stages, every of which has its own (original) essence, will enrich the historical geology. It should be emphasized that the parallel scales are free of terminological innovations. As a rule, names of parallel stages existed for a long time in "old" non-revised scales. To the contrary, new stage names are the result of the general scale revision that commenced at the end of the last century. I believe that most of stratigraphers realized during this revision that it was motivated by the national prestige rather than by striving to a universal convenience (Cope, 1996). The parallel scale will smooth the international faction. I consider it possible to borrow the way of official adoption of every parallel stage from initiators of the International stratigraphic scale revision, i.e., to connect it with the procedure of the GSSP selection.

Leaders of the International Commission on Stratigraphy made decision to finish the revision of the International stratigraphic scale by 2008. No one believes however that the revision will ever be finished. The general scale is inexhaustible and many generations of researchers will be busy with its perfection. This process will be determined by a progress in the "regional" stratigraphy. The general stratigraphic scale will be changed based on the regional scales. What if not this is demonstrated by experience of the last decade and by a destiny of some "Russian" stages of the Permian and Carboniferous systems? Thus, the further study of the Volgian Stage is necessary but not only desirable.

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