

**Институт проблем экологии и эволюции им. А.Н. Северцова
Российской Академии Наук**

**Программа фундаментальных научных исследований
Президиума РАН
“Биоразнообразие природных систем. Биологические ресурсы
России”**

Санкт-Петербургский Государственный университет

**М. В. Винарский
Ю. И. Кантор**

**АНАЛИТИЧЕСКИЙ КАТАЛОГ ПРЕСНОВОДНЫХ
И СОЛОНОВАТОВОДНЫХ МОЛЛЮСКОВ
РОССИИ И СОПРЕДЕЛЬНЫХ СТРАН**

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Винарский М.В., Кантор Ю.И. Аналитический каталог пресноводных и солоноватоводных моллюсков России и сопредельных стран. М.: ИПЭЭ РАН, 2016. 544 с.

В монографии обобщены данные о таксономии, номенклатуре, географическом распространении и некоторых аспектах биологии моллюсков пресных и солоноватых вод территории бывшего СССР. Всего в настоящий каталог включены данные о 424 номинальных видах класса Bivalvia и 728 номинальных видах Gastropoda. Актуальное видовое богатство водных континентальных моллюсков бывшего СССР, вероятно, существенно ниже, поскольку валидность многих из номинальных видов нуждается в дополнительном подтверждении, и в будущем часть из них может быть сведена в синонимы. Каждому виду посвящен краткий очерк, построенный по единой схеме. Также в каталоге содержатся данные о распространении всех видов моллюсков по отдельным регионам бывшего СССР, сведения о вселении инвазивных видов, информация об охранном статусе отдельных видов в соответствии с критериями МСОП. Приводятся количественные данные о сходстве водных фаун отдельных регионов бывшего СССР и результаты кластерного анализа, выполненного на их основе. Книга предназначена для специалистов в области малакологии, биогеографии, гидробиологии, а также для преподавателей и студентов высших учебных заведений. 544 стр., 5 рисунков, 22 таблицы, библиография 954 названия.

Рецензенты:

профессор, д.б.н. А.А. Шилейко (ИПЭЭ РАН)

д.б.н. С.И.Андреева (Омский государственный медицинский университет)

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**A.N.Severtsov Institute of Ecology and Evolution
of Russian Academy of Sciences**

**Program of fundamental research of Presidium of RAS
“Biodiversity of natural systems. Biological resources of Russia”**

St. Petersburg State University

**M. V. VINARSKI
Y. I. KANTOR**

**ANALYTICAL CATALOGUE
OF FRESH AND BRACKISH WATER MOLLUSCS OF
RUSSIA AND ADJACENT COUNTRIES**

Moscow ❖ 2016

Vinarski M.V., Kantor Y.I. Analytical catalogue of fresh and brackish water molluscs of Russia and adjacent countries. Moscow: A.N.Severtsov Institute of Ecology and Evolution of RAS, 2016, 544 p.

The monograph summarizes information on taxonomy, nomenclature, distribution and some aspects of bionomics of molluscs of the former USSR fresh and brackish waters. This 'Analytical catalogue' is a deeply improved and updated version of two previously published catalogue works (Yu.I. Kantor, A.V. Sysoev "Catalogue of molluscs of Russia and adjacent countries", 2002, in Russian; and Yu.I. Kantor, M.V. Vinarski, A.A. Shileyko, A.V. Sysoev "Catalogue of the continental mollusks of Russia and adjacent territories", 2010). In total, the data on 424 nominal species of Bivalvia and 728 nominal species of Gastropoda are included into this book. The actual species richness of aquatic continental molluscs of the former USSR perhaps is significantly lower since validity of many of these nominal species may be questioned and a portion of them is destined to be synonymized in future. During preparation of the book the authors tried to take into account different views on systematization of the ex-USSR aquatic molluscs and to find some correspondence between the 'Russian' system (founded in 1960–1970s by Ya.I. Starobogatov) and the approach followed by malacologists working outside Russia. Current approaches to the 'species problem' in malacology are briefly discussed. Also, the catalogue includes information about distribution of all molluscan species among large regions of the former USSR area, some data about invasions of alien species and the conservation status of indigenous taxa in accordance with IUCN Red List criteria. The quantitative estimates of faunistic similarity between aquatic malacofaunas of the ex-USSR large regions and the results of the cluster analysis carried out on the basis of these estimates are also provided. The book is addressed to malacologists, biogeographers, hydrobiologists as well as to university lecturers and students.
544 pages, 5 figures, 22 tables, 954 references.

Reviewers:

Prof., Dr. A.A. Shileyko (A.N.Severtsov Institute)

Dr. S.I. Andreeva (Omsk State Medical University)

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Introduction

This book is not the first attempt to describe and estimate the diversity of molluscs, both snails (Gastropoda) and bivalves (Bivalvia), inhabiting the inland waterbodies of the vast territory of the former USSR (= “Russia and adjacent countries”; RAC hereafter). Vladimir Ivanovich Zhadin (1896–1974), a prominent Soviet malacologist, was the first expert to try to give a full account of all molluscan taxa presented in the RAC continental waterbodies [Zhadin, 1933, 1952]. The most recent handbooks dealing with the diversity of continental aquatic mollusks of Russia or the entire ex-USSR are those by Starobogatov *et al.* [2004] and Kantor & Sysoev [2005]. The electronic compendium of all taxa of extramarine mollusks of RAC accepted as valid in the current Russian literature is also available [Kantor *et al.*, 2010].

Our catalogue is a continuation of the aforementioned works aimed to bring together all accumulated information concerning taxonomy, nomenclature, and geographical distribution of fresh- and brackishwater mollusks of RAC. As compared with its direct predecessors [Kantor & Sysoev, 2005; Kantor *et al.*, 2010], the current catalogue contains more information though still lacks some important sorts of relevant data, for example, maps of species’ distribution and shell illustrations. Besides, our catalogue uses a new mode of presentation of taxonomic information. The previous versions presented the taxonomic diversity of the RAC mollusks as it was described in the Russian literature almost without attempting to reflect different opinions

on the species’ validity and taxonomic status that exist in the current literature. Kantor & Sysoev [2005] as well as Kantor *et al.* [2010] merely followed the system proposed by the so called “Leningrad school” (= “Leningrader Schule” sensu Meier-Brook [1993]) of malacological taxonomy led by a prominent Russian zoologist Yaroslav Igorevich Starobogatov (1932–2004). Since the mid-1970s, this school has dominated the USSR “freshwater” malacology though its theoretical basis and practical results faced strong criticism from some malacologists working in Western Europe, USA and even in the former USSR [Meier-Brook, 1993; Reischütz, 1994; Korniushev, 2002a; Graf, 2007; Bolotov *et al.*, 2013]. In many important aspects, the system of freshwater mollusks used in Russia contradicts the system of the Western European malacologists [Falkner *et al.*, 2001; Glöer, 2002a] and, thus, we have now two distinct versions of the taxonomic framework applied to generally the same set of organisms [Graf, 2007; Vinarski & Andreeva, 2007; Vinarski & Kramarenko, 2015]. Estimates of species richness of mollusks based on these systems are therefore drastically different that manifestly hampers our efforts to quantify taxonomic diversity of the RAC continental malacofauna and leads to non-comparability of the results of zoogeographical and faunistic studies of freshwater mollusks carried out in the former USSR and Western Europe. Consider only two vivid examples. The global diversity of the pond snails (family Lymnaeidae Rafinesque, 1815) is usually estimated as lying be-

tween 40 and 100 species [Hubendick, 1951; Strong *et al.*, 2008], while the Russian authors list about 140 species for the former USSR territory alone [Kruglov & Starobogatov, 1993a, b]. Large freshwater mussels (families Margaritiferidae Henderson, 1929 and Unionidae Rafinesque, 1820) diversity in Europe is traditionally thought to be not very high, including about nine species, whereas not less than 45 nominal species of the European unionid clams are accepted in the Russian literature [Graf, 2007]. Generic classifications of most freshwater mollusks taxa also vary greatly between Russian and Western European taxonomic publications. As it is discussed below, the main reason of such contradiction lies in different approaches to species and genera delineation employed in the two competing taxonomic schools.

To compare the two systems and, especially, to judge which is more realistic is not the task of this catalogue. Rather, the authors try to give alternative viewpoints on molluscan diversity providing a reader with a handbook where different taxonomic opinions are presented. Some recent taxonomic databases are designed to capture more than one authoritative classification and, in a sense, to represent the dynamic of the taxonomic process [Franz, 2005]. We attempted also to indicate explicitly all correspondences between taxa accepted in the “Russian” and “European” systems in order to make this book useful for all scholars regardless of what taxonomic school they are following. It would be impossible without some degree of expert judging on validity and taxonomic status of some taxa. In all cases where it was possible, we critically used most recent revisions of mollusks published

since 2000 including those based on molecular taxonomic methods. That’s why this version of the catalogue is named “analytical”. On the basis of this analysis, new estimates of the overall species richness of fresh- and brackish-water Mollusca of the former USSR are presented.

In compiling the work all available sources were used: monographs, separate papers, as well as species lists and catalogues. Moreover, the original descriptions of most of the species were checked. This was possible through the access to several large libraries in Russia and abroad (principally the libraries of Muséum National d’Histoire Naturelle, Paris, National Museum of Natural History, Smithsonian Institution, Washington D.C., and Zoological Institute of the Russian Academy of Sciences, Saint-Petersburg). In recent years, large digital collections of taxonomic papers have become a new important tool for systematists’ work. We used such large online archives providing free access to old taxonomic and faunistic literature: “Biodiversity Heritage Library” (<http://www.biodiversitylibrary.org/>) and AnimalBase (supported by the Göttingen University, Germany) (<http://www.animalbase.org/>). As a result, hundreds of mistakes in published sources, including the nomenclature of many species were corrected.

Despite the fact that the type specimens of shelled Mollusca are usually presented by dried shells that not infrequently “do not fulfill their nomenclature stabilizing function” [Bouchet & Strong, 2010: 71], the examination of type series is still crucial for resolving many problems in the fields of taxonomy and nomenclature. That’s why we tried to find the exact information about

the current location of species included into the catalog and – when it was possible – to examine them personally. Thus we managed to examine extant type materials of species described by O.F. Müller (ZMUC)¹, J.-P.-R. Draparnaud (NHMV), C.A. Westerlund (ZIN, NMG and SMNH), V.I. Zhadin (ZIN, ZMMU), J.R.C. Quoy and P. Gaimard (MNHN), A. Mozley (USNM), E. von Martens and W. Kobelt (ZMB), Ya.I. Starobogatov, N.D. Kruglov, Z.I. Izzatulaev, I.M. Moskvicheva, M.N. Zatravkin, L.A. Prozorova and some other Russian taxonomists (ZIN). Some results of this taxonomic-nomenclatorial work are already published [Vinarski *et al.*, 2013; Nekhaev *et al.*, 2015], others are under preparation to be issued as separate articles. A series of recent publications by Sitnikova *et al.* [2012, 2014a, 2014b, 2014c] with description of the type materials of the species introduced by J.-R. Bourguignat and Ya.I. Starobogatov was also used.

In many cases, we took into account the information given in J.-P. Rocroi's unpublished electronic compendium "Nomenclator of Molluscan genera" (version of 2014).

Many colleagues assisted us in compiling this list. We want to thank them all, but especially: B.I. Sirenko, P.V. Kiyashko, L.L. Yarokhnovich, R.A. Kormushkina from ZIN; T.Ya. Sitnikova and A.A. Shirokaya (LIN); V.V. Anistratenko (IZU); S.I. Andreeva (Omsk State Medical University), I.O. Nekhaev and A.A. Frolov (Murmansk Marine Biological Institute RAS); M.O. Son (Institute of the Southern Seas Biology, National Academy of Sciences of Ukraine; Odessa); D.M. Palatov (M.V. Lomonosov

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Recent taxonomic debates in taxonomy of freshwater mollusks and principles of compiling of this catalogue

How many species of organisms are living there on Earth? This question has no sense without exact understanding what a species *is*. Possibly, it is the central problem of the biological systematics in general, and many diverse 'species concepts' have been proposed by different authors in order to determine exactly what is a species and what is not [see reviews: Mayr, 1996; Mayden, 1997;

¹ See abbreviated names of zoological museums in the list below.

Wheeler & Meier, 2000; Hey, 2006; Wilkins, 2009]. However, no agreement has been reached among taxonomists, and there is no unanimous answer to this important question. In other words, we lack the ‘universal’ species concept to be applicable to all groups of organisms [Dupré, 2001; Pavlinov, 2007; but see De Queiroz, 2007]. One may use any of available concepts to delineate species in a given taxonomic group, but it leads us to permanent discrepancies between experts that advocate alternative approaches to species delimitation within a concrete taxon. The inability to delineate species consistently affects many important fields of science where exact knowledge of species names and boundaries is needed, and the end-users of taxonomic information often make complaints against endless taxonomic wrangles and splitting (or lumping) of species that usually require renaming of species and/or their displacement from one genus to another [Mina *et al.*, 2006; Chaikovsky, 2007]. The exact species discrimination is crucial for biodiversity studies, biogeography, ecology, and conservation planning. It is of high importance for continental aquatic Mollusca, many species of which are threatened or already have gone extinct [Lydeard *et al.*, 2004; Régnier *et al.*, 2009; Cuttelod *et al.*, 2011]. However, in many important taxa of organisms we are observing taxonomic chaos rather than stability. Certainly, the absolute taxonomic stability is something like a Utopian ideal, and it is regarded even as a kind of ignorancy [Dominguez & Wheeler, 1997]. Unfortunately too often we see examples of drastic taxonomic discrepancies in our everyday practice to avoid dreams of obtaining something like a ‘synthetical’ list of species accepted by

most researchers and serving as a ‘ultimate’ basis for further ecological and biogeographical studies [Vinarski & Kramarenko, 2015].

Though we cannot reach the “universal” species concept applicable to all living beings, it is quite possible to develop species criteria for a given taxonomic group, for example, for freshwater mollusks. The most important papers on the subject are those by Hubendick [1954], Starobogatov [1968, 1977a, 1996a], Boeters [1979, 1982], Giusti & Manganelli [1992], Meier-Brook [1993], and Davis [1994]. Radoman [1983] proposed a set of guidelines for assigning rank of taxa in hydrobiid snails that included some practical rules for species delimitation. Short historical sketches of the species problem in “freshwater” malacology were presented by Meier-Brook [1993] and Vinarski & Andreeva [2007].

The first attempts to express explicitly what is a species in freshwater (continental) mollusks were undertaken in the second half of the nineteenth century by malacologists, who adhered to quite distinct views on molluscan taxonomy. In Germany, Wilhelm Kobelt (1840–1916) formulated his own approach to species delimitation as follows: “I obey a simple, practical rule, no matter how unscientific it may be. I call a good species what I can diagnose without long and careful comparisons and measurements” (“Ich halte mich dabei an einen vielleicht nicht wissenschaftlichen, aber praktischen Character: was ich jederzeit ohne lange und sorgsame Vergleichung und Messung erkennen kann, das nenne ich eine gute Art”) [Kobelt, 1881: 67; quoted after Davis, 2004].

In France, a very peculiar taxonomic school in malacology had existed in the end of the nineteenth century. It was so

called “Nouvelle École” led by Jules René Bourguignat (1829–1892) [Dance, 1970; Meier-Brook, 1993; Graf, 2010]. The followers of it believed that a new species must be established if an individual is found to differ from all others by three characters or more [Davies, 2004]. Such a method led Bourguignat and his associates to accept a huge number of nominal taxa of species rank delineated on the basis of very slight differences, usually in shell shape and proportions. Most European contemporaries of the “Nouvelle École”, including Kobelt, criticized this taxonomic approach and did not accept the overwhelming majority of these ‘new species’ [Dance, 1970]. North American conchologists also strongly objected such approach [Simpson, 1889, 1900].

As a reaction against the extremities of the “Nouvelle École”, a new conservative and apparently “lumping” approach to species delineation in freshwater mollusks arose. The followers of it preferred to accept “a characteristically small number of species, almost worldwide in distribution, but with a high degree of infraspecific interpopulation variation” [Russell-Hunter, 1964: 102]. The most consistent execution of this approach one can find in taxonomic works of Hubendick [1951, 1962, 1970]. In particular, this author has reduced all the diversity of lymnaeid snails of the world fauna to as little as 40 species [Hubendick, 1951]. The most recent application of this taxonomic tradition one can find in the CLECOM check list embracing the continental malacofauna of Northern, Western and Eastern Europe [Falkner *et al.*, 2001; see also Glöer, 2002a; Glöer & Meier-Brook, 2003; Bank *et al.*, 2006].

In the former USSR, a quite different

approach to delimitation of species and genera of freshwater mollusks has been developed. The so called “Leningrad school” established by Ya.I. Starobogatov (see above) proposed an original version of taxonomic framework for almost all families of Palearctic freshwater snails and bivalves. From the point of view of the Leningrad school, many of widely distributed and highly variable species accepted by European taxonomists, are, in reality, nothing but complexes of taxa of different rank, from subspecies to species and even subgenera [Kruglov, Starobogatov, 1987; Starobogatov, 1994b; Korniushev, 1996, 1998, 2002; Rizhishvili, 2011; Vinarski & Kramarenko, 2015]. In practice, this persuasion has resulted in delimitation a vast number of nominal species, several times greater than Western malacologists commonly accept (Tables 1-2). In numerous cases the old names, considered by European malacologists as full synonyms of common species, were resurrected by Ya.I. Starobogatov and his co-authors and applied to newly recognized taxa. The difference is the most obvious when freshwater bivalves (unionid mussels, pea clams, fingernail clams) are considered (see Table 2). The methodological basis of the taxonomic works carried out by Russian malacologists included the “biological species concept” [Starobogatov, 1968, 1996a] as well as the “comparatorial method” many times described both in Russian [Starobogatov & Tolstikova, 1986; Starobogatov *et al.* 2004] and in English [Shikov & Zatravkin, 1991; Kafanov, 1998; Graf, 2007]. In spite of vigorous criticism against the theoretical grounds and practical results of this method [Meier-Brook, 1993; Reischütz, 1994; Kafanov, 1998; Korniushev, 2002a; Chernyshev, 2004; Bank *et al.*,

Table 1. Comparison between European (CLECOM-based) and Russian systems of freshwater snails of Europe (except of the southern part)

CLECOM-project check-list [Falkner <i>et al.</i> , 2001; Glöer, 2002a]		Russian system [Starobogatov <i>et al.</i> , 2004]	
Family	Genus (subgenus)	Family	Genus (subgenus)
Subclass Pulmonata Cuvier in Blainville, 1814			
Acroloxiidae Thiele, 1931	<i>Acroloxus</i> Beck, 1837 [1]	Acroloxiidae	<i>Acroloxus</i> [6]
Lymnaeidae Rafinesque, 1815	<i>Lymnaea</i> Lamarck, 1799 [1]	Lymnaeidae	<i>Lymnaea</i> (<i>Lymnaea</i>) [4]
	<i>Myxas</i> G.B. Sowerby, 1821 [1]		<i>Lymnaea</i> (<i>Myxas</i>) [3]
	<i>Galba</i> Schrank, 1803 [1]		<i>Lymnaea</i> (<i>Galba</i>) [3]
	<i>Radix</i> Montfort, 1810 [5]		<i>Lymnaea</i> (<i>Radix</i>) [2]
	<i>Omphiscola</i> Rafinesque, 1819 [1]		<i>Lymnaea</i> (<i>Peregriana</i>) Servain, 1881 [13]
	<i>Stagnicola</i> Jeffreys, 1830 [4]		<i>Lymnaea</i> (<i>Omphiscola</i>) [3]
	<i>Catascopia</i> Meier-Brook et Bargues, 2002 [1]		<i>Lymnaea</i> (<i>Corvusiana</i>) Servain, 1881 [3]
	no accordance		<i>Lymnaea</i> (<i>Stagnicola</i>) [7]
Physidae Fitzinger, 1833	<i>Physa</i> Draparnaud, 1801 [1]	Physidae	<i>Physa</i> [3]
	<i>Physella</i> Haldeman, 1842 [2]		<i>Costatella</i> Dall, 1870 [2]
	<i>Aplexa</i> Fleming, 1820 [1]		<i>Aplexa</i> [3]
Planorbidae Rafinesque, 1815	<i>Planorbarius</i> Duméril, 1806 [1]	Bulinidae Herrmannsen, 1846	<i>Planorbarius</i> [7]
	<i>Ferrisia</i> Walker, 1903 [1]		<i>Pettancylus</i> Iredale, 1943 [1]
	<i>Planorbis</i> O.F. Müller, 1774 [3]	Planorbidae	<i>Planorbis</i> [4]
	<i>Anisus</i> (<i>Anisus</i>) Studer, 1820 [3]		<i>Anisus</i> (<i>Anisus</i>) [5]
	<i>Anisus</i> (<i>Disculifer</i>) C. Boettger, 1944 [2]		<i>Anisus</i> (<i>Disculifer</i>) [5]
	<i>Anisus</i> (<i>Costorbis</i>) Lindholm, 1926 [1]		<i>Anisus</i> (<i>Vorticulus</i>) Prozorova et Starobogatov, 1997 [3]
	<i>Bathyomphalus</i> Charpentier, 1837 [1]		<i>Anisus</i> (<i>Costorbis</i>) [1]
	<i>Gyraulus</i> (<i>Gyraulus</i>) Charpentier, 1837 [2]		<i>Anisus</i> (<i>Bathyomphalus</i>) [5]
	<i>Gyraulus</i> (<i>Torquis</i>) Dall, 1905 [1]		<i>Anisus</i> (<i>Gyraulus</i>) [7]
	<i>Gyraulus</i> (<i>Lamorbis</i>) Starobogatov, 1967 [2]		<i>Anisus</i> (<i>Torquis</i>) [2]
	<i>Gyraulus</i> (<i>Armiger</i>) W. Hartmann, 1843 [1]		<i>Choanomphalus</i> (<i>Lamorbis</i>) Starobogatov, 1967 [1]
	<i>Hippeutis</i> Charpentier, 1837 [1]		<i>Ch. (Pseudogyraulus)</i> Prozorova et Starobogatov, 1997 [1]
	<i>Segmentina</i> Fleming, 1818 [1]		<i>Armiger</i> [3]
	<i>Ancylus</i> O.F. Müller, 1774 [1]		<i>Hippeutis</i> [3]
			<i>Segmentina</i> [11]
			<i>Ancylus</i> [3]

Table 1. Completed

Subclass Orthogastropoda Ponder et Lindberg, 1995 [= Pectinibranchia sensu Golikov et Starobogatov, 1988 (partim)]**			
Neritidae Lamarck, 1809	<i>Theodoxus</i> Montfort, 1810 [4]	Neritidae	<i>Theodoxus</i> [1]
Viviparidae J.E. Gray, 1847	<i>Viviparus</i> Montfort, 1810 [4]	Viviparidae	<i>Viviparus</i> [4]
			<i>Contectiana</i> (<i>Contectiana</i>) Bourguignat, 1880 [2]
			<i>Contectiana</i> (<i>Kobeltipaludina</i>) Chernogorenko et Starobogatov, 1987 [4]
Bithyniidae Troschel, 1857	<i>Bithynia</i> (<i>Bithynia</i>) Leach, 1818 [1]	Bithyniidae	<i>Bithynia</i> (<i>Bithynia</i>) [3]
			<i>Bithynia</i> (<i>Milletelona</i>) Beriozkina et Starobogatov in Anistratenko et Stadnichenko, 1995 [1]
	<i>Bithynia</i> (<i>Codiella</i>) Locard, 1894 [4]		<i>Codiella</i> [2]
			<i>Opisthorchophorus</i> Beriozkina, Levina et Starobogatov in Anistratenko et Stadnichenko, 1995 [4]
			<i>Paraelona</i> Beriozkina et Starobogatov in Anistratenko et Stadnichenko, 1995 [2]
Valvatidae J.E. Gray, 1840	<i>Valvata</i> (<i>Valvata</i>) O.F. Müller, 1773 [1]	Valvatidae	<i>Valvata</i> (<i>Valvata</i>) [3]
			<i>Valvata</i> (<i>Microcincinna</i>) Sitnikova, 1983 [8]
	<i>Valvata</i> (<i>Tropidina</i>) H. et A. Adams, 1854 [2] <i>Valvata</i> (<i>Cincinna</i>) Hübner, 1810 [2]		<i>Cincinna</i> (<i>Cincinna</i>) [10]
			<i>Cincinna</i> (<i>Atropidina</i>) Lindholm, 1906 [5]
			<i>Cincinna</i> (<i>Sibirovalvata</i>) Starobogatov et Streletzkaja, 1967 [1]
	<i>Borvsthenia</i> Lindholm. 1913 [1]		<i>Borvsthenia</i> [4]

*Numbers of species in each genus are given in square brackets. Non-indigenous species are not included.

**The orthogastropod families Melanopsidae H. et A. Adams, 1854, Moitessieriidae Bourguignat, 1863, Hydrobiidae Troschel, 1857 s. lato, Emmericiidae Brusina, 1870, and Truncatellidae J.E. Gray, 1840 are omitted from the comparison.

2006; Graf, 2007; Bolotov *et al.*, 2013], its proponents have proposed new arguments in defense of it [Bogatov, 2009, 2012b, 2013].

Graf [2007] considered the comparative method as a separate species concept, that is viewed by him as a reincar-

nation of the typological approach to species delineation, and opposes it to the Biological Species Concept (BSC). It is not wholly correct since Starobogatov himself was a supporter of BSC and several times discussed its application to freshwater mollusks [Starobogatov,

Table 2. Comparison between European (CLECOM-based) and Russian systems of freshwater bivalves of Europe (except of the southern part)

CLECOM-project check-list [Falkner <i>et al.</i> , 2001; Glöer & Meier-Brook, 2003]		Russian system [Starobogatov <i>et al.</i> , 2004]	
Family	Genus (subgenus)	Family	Genus (subgenus)
Supeordo Paleoheterodonta Newell, 1965			
Margaritiferidae Henderson, 1929	<i>Margaritifera</i> Schumacher, 1816 [1]	Margaritiferidae	<i>Margaritifera</i> [3]
Unionidae Rafinesque, 1820	<i>Unio (Unio)</i> Retzius, 1788 [3]	Unionidae	<i>Unio (Unio)</i> [4]
			<i>Unio (Tumidiana)</i> Servain, 1882 [3]
	<i>Unio (Crassiana)</i> Servain, 1882 [1]		<i>Crassiana (Crassiana)</i> [1]
			<i>Crassiana (Bataviana)</i> Servain, 1882 [4]
	<i>Anodonta</i> Lamarck, 1799 [2]		<i>Anodonta</i> s. str. [3]
	<i>Pseudanodonta</i> Bourguignat, 1854 [1]		<i>Colleopterum</i> Bourguignat, 1880 [5]
			<i>Pseudanodonta</i> [4]
Supeordo Heterodonta Neumayr, 1884**			
Sphaeriidae Deshayes, 1855 (subfamily Sphaeriinae Deshayes, 1855)	<i>Sphaerium (Sphaerium)</i> Scopoli, 1777 [1]	Sphaeriidae	<i>Sphaerium (Sphaerium)</i> [1] <i>Sphaerium (Sibirisphaerium)</i> Slugina et Starobogatov in Slugina, Starobogatov et Korniushin, 1994 [2]
	<i>Sphaerium (Nucleocyclus)</i> Alimov et Starobogatov, 1968 [2]		<i>Nucleocyclus</i> [2]
	<i>Sphaerium (Parasphaerium)</i> Alimov et Starobogatov, 1968 [1]		<i>Parasphaerium</i> [1]
	<i>Sphaerium (Amesoda)</i> Rafinesque, 1820 [1] <i>Sphaerium (Cyrenastrum)</i> Bourguignat, 1854 [1]		<i>Rivicoliana</i> Servain, 1888 [4] <i>Amesoda (Cyrenastrum)</i> [2] <i>Amesoda (Clessinicyclus)</i> Alimov et Starobogatov, 1968 [3]
	<i>Musculium</i> Link, 1817 [2]		<i>Musculium</i> [9]
Sphaeriidae (subfamily Pisidiinae J.E. Gray, 1857)	<i>Pisidium (Neopisidium)</i> Odhner, 1921 [1]	Pisidiidae	<i>Neopisidium</i> [3]
			<i>Conventus</i> Pirogov et Starobogatov, 1974***
	<i>Pisidium (Odhneripisidium)</i> Kuiper, 1962 [2]		<i>Europisidium</i> Starobogatov in Stadnichenko, 1984 [3]
	<i>Pisidium (Pisidium)</i> C. Pfeiffer, 1821 [2]		<i>Pisidium</i> s. str. [2]
	<i>Pisidium (Euglesa)</i> Jenyns, 1832 [3]	Euglesidae Pirogov et Starobogatov, 1974	<i>Lacustrina</i> Sterki, 1916 [1]
			<i>Euglesa (Euglesa)</i> [2]
<i>Euglesa (Casertiana)</i> Fagot, 1892 [12]			
<i>Euglesa (Potamopisidium)</i> Korniushin, 1991 [1]			
			<i>Roseana</i> Fagot, 1892 [4]

Table 2. Completed

CLECOM-project check-list [Falkner <i>et al.</i> , 2001; Glöer & Meier-Brook, 2003]		Russian system [Starobogatov <i>et al.</i> , 2004]	
Family	Genus (subgenus)	Family	Genus (subgenus)
Sphaeriidae (subfamily Pisidiinae J.E. Gray, 1857)	<i>Pisidium</i> (<i>Cyclocalyx</i>) Dall, 1903 [2]	Euglesidae Pirogov et Starobogatov, 1974	<i>Cyclocalyx</i> s. str. [6]
	<i>Pisidium</i> (<i>Henslowiana</i>) Fagot, 1892 [4]		<i>Cyclocalyx</i> (<i>Hinziana</i>) Dolgin et Korniushin, 1994 [1]
			<i>Henslowiana</i> (<i>Henslowiana</i>) [5] <i>Henslowiana</i> (<i>Supiniana</i>) Korniushin, 1996 [4]
	<i>Pisidium</i> (<i>Hiberneuglesa</i>) Starobogatov, 1983 [1]		<i>Henslowiana</i> (<i>Arcteuuglesa</i>) Pirogov et Starobogatov, 1974 [4]
	<i>Pisidium</i> (<i>Cingulipisidium</i>) Pirogov et Starobogatov, 1974 [3]		<i>Hiberneuglesa</i> [7]
	<i>Pisidium</i> (<i>Pseudeupera</i>) Germain, 1903 [2]		<i>Cingulipisidium</i> (<i>Cingulipisidium</i>) [7]
			<i>Cingulipisidium</i> (<i>Costopisidium</i>) Pirogov et Starobogatov, 1974 [2]
			<i>Pseudosphaerium</i> Korniushin, 1990 [2]
			<i>Tetragonocyclas</i> Pirogov et Starobogatov, 1974 [3]
			<i>Pseudeupera</i> [14]
			<i>Pulchelleuglesa</i> Starobogatov in Dolgin, 1983 [2]

*Numbers of species in each genus are given in square brackets. Non-indigenous species are not included.

**The heterodont family Dreissenidae J.E. Gray, 1840 is omitted from the comparison [see Korniushin, 2002a for explanation].

***Korniushin [1996] and Starobogatov *et al.* [2004] place the genus *Conventus* in the family Euglesidae.

1968, 1977a, 1996a]². However, it is the fact that the use of the comparatorial method has led to drastic increase in number of species, albeit in most cases

² D. Graf responded to it (in litt., November 2015): "...this statement is, in my opinion, misleading. How can there be so many congeneric (even in the Comparatorial sense) species endemic to tiny areas (e.g., Sakhalin Island) without geographical barriers to gene flow if the BSC mechanism of allopatry is to be invoked? What ever Starobogatov may have said, the actions of the Comparatory school do not support an application of the BSC".

the existence of reproductive isolation between "comparatorial" species was deduced indirectly from observed statistical differences between the samples in mean values in any character [Starobogatov, 1977a; Korniushin, 1998; Vinarski & Andreeva, 2007]. Reischütz [1994] viewed this approach as the revival of the "Nouvelle École", or 'Bourguignatismus' as he called it. Some workers believe that all "comparatorial" taxa should be excluded from the system by default, without examination of their validity [Reischütz, 1994; Jackiewicz, 1998a; Bolotov *et al.*, 2013], since they "lack an evolutionary or biological ba-

sis” [Graf, 2007: 78]. Other malacologists regard them as “morphospecies” and believe that their validity should be checked by using of independent approaches such as methods of molecular taxonomy [Vinarski & Andreeva, 2007]. The latter position may be re-defined as the “presumption of species validity”: nominal taxa should be considered valid and listed in species inventories until synonymized by a competent taxonomist (see Bouchet, 2006). Besides, segregating morphospecies, or “comparatorial” species, “at the rank of species will better meet the needs of mapping and conservation programs” [Bouchet, 2006: 312].

It should be noted that some “comparatorial” species could sustain independent testing [Korniushin, 2001; Glöer & Vinarski, 2009; Vinarski *et al.*, 2011, 2013], though inverse examples are not less numerous [Korniushin, 2002a; Mezhzherin *et al.*, 2005, 2008; Bolotov *et al.*, 2013, 2015]. However, the validity of the overwhelming majority of these species is still not assessed by independent authors.

In this catalogue, we adopted three categories to classify the taxa of the species and genus rank accepted in the current Russian taxonomy:

1. Generally accepted taxa, i.e. those species and genera that are regarded valid by both Russian and Western European (or North American) authors. Examples of this category are such species as *Dreissena polymorpha* (Pallas, 1771), *Sphaerium corneum* (L., 1758), *Viviparus viviparus* (L., 1758), and many others. A number of nominal species distributed in Asiatic Russia and, therefore, not assessed by foreign malacologists also would fall into this category (for

example, most of the Baikal Lake endemic species). As a rule, the species of this category differ from each other by qualitative or substantial quantitative difference, i.e. morphological and/or genetic distance separating them from related species is “obvious” (we realize, however, that the very this obviousness is the matter of some subjectivism).

2. “Comparatorial” species and other taxa, whose validity is questioned and is still not corroborated by independent authors. The true taxonomic status of such taxa is uncertain: they may prove to be synonyms of generally accepted taxa or represent meaningful biological and evolutionary entities. In most cases, recognition of these taxa is easy based on assumption that each genus or subgenus of the Russian system usually corresponds to a certain species or a group of closely related species of the European system [Korniushin, 1998a]. For instance, the snail species *V. contectus* (Millet, 1813) as it is accepted by the Europeans conforms to the genus *Coniectiana* Bourguignat, 1880 with eight separate species (Fig. 1) distinguished by Chernogorenko [1988] on the basis of more or less prominent differences in the generating curves reflected in so called Raup’s parameteres studied by using the comparatorial method [Starobogatov & Tolstikova, 1986]. The species falling into the second category are treated similarly to the species of the first one in this catalogue on the principle “valid until synonymized”, though in all cases we mention that their specific status would be questioned if principles of the European system of Mollusca are applied.

3. Doubtful taxa whose validity did not sustain independent testing or whose

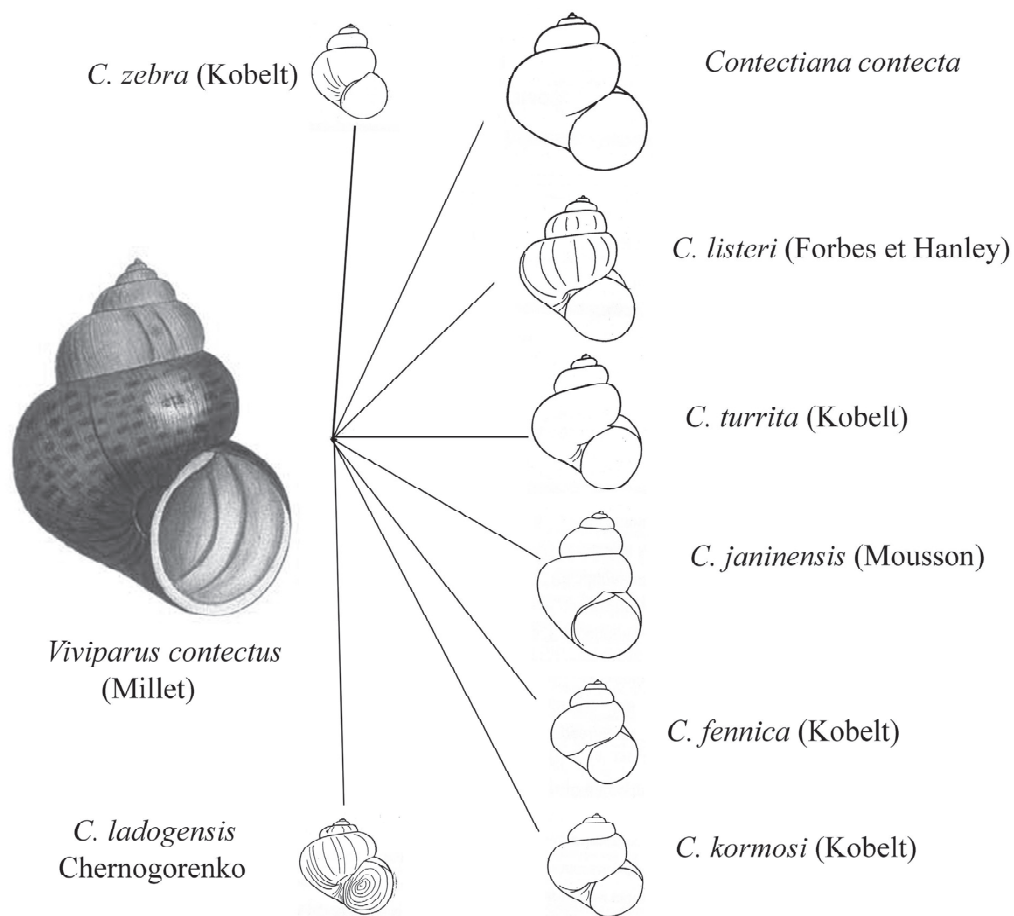


Fig. 1. Eight species of *Viviparus* from one (see explanation in the text). Shells of *Contectiana* after Chernogorenko [1988], the picture of *V. contectus* shell is taken from Küster [1852]. After Vinarski & Kramarenko [2015].

presence in the RAC malacofauna proved to be unlikely. We mention such taxa either in synonymy of valid taxa or in special remarks given in addition to description of particular families of genera.

The new estimate of species richness of Mollusca in the inland waters of RAC given in the last chapter of the book is,

thus, twofold. The “conservative” estimate (list A) is based on the taxa from the first category only. It represents the minimum number of species living in continental waterbodies of the former USSR. Another estimate, “non conservative” (list B), takes account of “comparatorial” species and, hence, it is rather overestimation of the real diversity given the possibility that at least part of

“comparatorial” taxa may prove to be synonyms.

The system of Gastropoda and Bivalvia at the suprageneric level is given according to Bouchet & Rocroi [2005] and Bieler *et al.* [2010], correspondingly.

Each species in the catalogue (excluding the doubtful species) is accounted following the same scheme:

1. Latin name with authorship;
2. Synonymy (not exhaustive);
3. Reference to the original description (protologue);
4. Data on the type locality;
5. Data on the type series, its content and current placement (if available);
6. Global distribution;
7. Distribution in RAC;
8. Subregion(s) of the former USSR in where the species occurs (see below);
9. Bionomics;
10. Conservation status of species (based on the IUCN Red List; <http://www.iucnredlist.org/>);
11. Taxonomical, nomenclatorial and other remarks (optionally).

Accounts of species belonging to the second category (see above) are set by different font of type (Arial instead of Times New Roman). Their order numbers are given in round brackets in the title of each species account.

In the cases of genera including more than one species, the type species is accounted first, other species are given in the alphabetic order.

For the sake of more exact description of species' distribution in RAC all this territory was roughly divided into ten large subregions outlined below:

NE – north European region (European part of Russia north of 52°, Byelorussia and Baltic countries).

SE – south European region (European part of Russia except of Caucasus south of 52°, Ukraine, Moldova).

CT – Caucasus and Transcaucasia (Armenia, Azerbaijan, Georgia, southwest corner of European Russia).

CS – the Caspian Sea.

WS – Western Siberia (including Northern Kazakhstan and Altay Mts.).

ES – Eastern Siberia.

BL – the Baikal Lake.

CA – Central Asia (Central and Southern Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan).

SF – southern part of the Russian Far East (the Amur River basin, the Sakhalin Island, the Kurile Islands).

NF – northern part of the Russian Far East (the Chukchi and Kamchatka Peninsulars, Magadan Region and the northern part of Khabarovsk Territory).

Information on geographical distribution of species was taken from published sources as well as from unpublished data from the catalogue of ZIN and other museum collections.

Mention should be made of the types of some species, described by Ya.I. Starobogatov, especially in co-authorship with B.M. Logvinenko, from the Caspian Sea. These authors wrote the molluscan section in the *Atlas of invertebrates of the Caspian Sea* (Logvinenko & Starobogatov, 1968). Logvinenko and Starobogatov did not mention holotypes in the text (or type localities), but sometimes specified them in the figure captions. Although there is no information about the depository of the types, they should be stored in ZIN (see abbreviations below), where Ya.I. Starobogatov worked most of his life. Nevertheless, we were not able to find many of the types in ZIN collection. According to personal communication of L.L. Yarokh-

novich (collection manager of fresh-water and land mollusks of ZIN), part of the collection of Caspian mollusks, including types of new species, was stored in the Biological Faculty of Moscow State University in the laboratory of B. M. Logvinenko. After his death the material was transferred to ZIN and was kept in the personal office of Starobogatov for many years. After Starobogatov's death all the numerous samples were transferred to the general molluscan storage, but until now not completely processed and therefore not included into type and general collections. Thus it is possible that many of the types that are listed in this publication as "not traced" may be available in future.

A significant number of the types are stored in ZIN. Therefore we should briefly mention the system of inventory numbers used in this collection. Starting in the late nineteenth century there was a card systematic catalogue in mollusks collections of ZIN (probably started by S.M. Herzenstein and N.M. Knipowich). For each species a separate card (with several entries) was started and the locality and the author of identification were cited for each sample. Thus, each sample was given a number which was unique only within single species. In this publication we refer to such numbers as "ZIN No. ** in systematic catalogue". Usually the card started with the type specimens and therefore most of them have No. 1. In the collections the lots are arranged taxonomically in accordance with the systematic catalogue numbers. Beside the systematic catalogue, in the 1960's a system of inventory numbers was started. The inventory numbers cover most of the samples of marine gastropods and only partially those of freshwaters and land. In this

book we provide the inventory numbers (if available), as well as systematic catalogue numbers.

Abbreviations of repositories

- ANSP – Academy of Natural Sciences, Philadelphia, USA
- BMNH – Natural History Museum, London, UK
- IBSS – Institute of Biology and Soil Science, Far Eastern branch of RAS, Vladivostok, Russia
- IZT – Institute of Zoology, Tajik Academy of Sciences, Dushanbe, Tajikistan
- IZU – Institute of Zoology of the National Academy of Sciences, Kiev, Ukraine
- LIN – Limnological Institute, Siberian branch of Russian Academy of Sciences, Irkutsk
- LSL – Linnean Society, London, UK
- MCZ – Museum of Comparative Zoology, Harvard University, Cambridge, USA
- MHNG – Muséum d'Histoire Naturelle, Genève, Switzerland
- MNHN – Muséum National d'Histoire Naturelle, Paris, France
- NMBE – Naturhistorisches Museum der Burgergemeinde Bern, Switzerland
- NMC – National Museum of Canada, Ottawa, Canada
- NMG – Naturhistoriska Museet Göteborg, Sweden
- NHNV – Naturhistorisches Museum, Vienna, Austria
- PIN – Paleontological Institute of Russian Academy of Sciences, Moscow
- RAC – Russia and adjacent countries (= former USSR)
- SMF – Natur-Museum Senckenberg, Frankfurt am Main, Germany

SMNH – Naturhistoriska riksmuseet, Stockholm, Sweden

USNM – National Museum of Natural History, Smithsonian Institution, Washington D.C., USA

UUZM – Evolutionsmuseet Zoologi, Uppsala Universitet, Uppsala, Sweden

ZIN – Zoological Institute of Russian Academy of Sciences, St.-Petersburg, Russia

ZMB – Zoologisches Museum, Museum für Naturkunde der Humboldt-Universität, Berlin, Germany

ZMH – Zoological Museum of Hamburg University

ZMUC – Zoologisk Museum, Københavns Universitet, Denmark

ZMMU – Zoological Museum of Moscow University, Russia

ZMZ – Zoologisches Museum Zürich, Switzerland

Acronyms for methods of fixation of the type species

M – by monotypy; OD – by original designation; SD – by subsequent designation; SM – by subsequent monotypy.

SYSTEMATIC PART

Class Bivalvia Linnaeus, 1758 **Subclass Autobranchia Grobben, 1894** **Superorder Heteroconchia Gray, 1854** **Clade Paleoheterodonta Newell, 1965**

Order Unionida Gray, 1854

Superfamily Unionoidea

Rafinesque, 1820

Family Unionidae Rafinesque, 1820

(Uniodia Rafinesque, 1820: 290)

Type genus: *Unio* Retzius, 1788

This is a very large molluscan family with virtually worldwide distribution. Its global species diversity is estimated at about 620 species [Bogan, 2008]. The system of the family both at species and supraspecific levels has been hotly debated, and there is no full consensus among specialists on this subject. In the most recent survey, seven extant subfamilies of Unionidae are recognized [Bieler *et al.*, 2010], two of them (Unioninae and Gonideinae Ortmann, 1916) are presented in the RAC malacofauna. The most important taxonomic works on recent Palearctic Unionidae are those by Zhadin [1938], Haas [1940, 1969], Modell [1942, 1945, 1949, 1964], Starobogatov [1970], Zatravkin & Bogatov [1987], Bogatov *et al.* [2005], and Graf & Cummings [2007]. Late Cenozoic unionids of RAC were reviewed by Bogachev [1961], Chepaliga [1967], Zykina [1979], and Maderni [1990].

Subfamily Unioninae

Rafinesque, 1820

[= Cafferiinae Modell, 1942; Heudeaninae Mod-

ell, 1942; Nodulariinae Bogatov et Zatravkin, 1987]

Tribe Unionini Rafinesque, 1820

Genus *Unio* Retzius, 1788³

[= *Limnaea* Poli, 1791; *Limnaeoderma* Poli, 1791; *Unigenus* Renier, 1807; *Lymnium* Oken, 1815; *Limnaea* Oken, 1815 non Lamarck, 1799; *Limella* Rafinesque, 1815; *Unionea* Rafinesque, 1815; *Mysca* Turton, 1822; *Chondrostes* Gistel, 1850; *Tumidiana* Servain, 1882; *Tumidusiana* Bourguignat in Locard, 1889; *Pictunio* Jatzko, 1962; *Tumidunio* Jatzko, 1962]⁴

Type species: *Mya pictorum* Linnaeus, 1758 (SD ICZN Opinion 495, 1957)

Remark: Taxonomy of this genus is highly complicated. Recently, at least three different systems were proposed for the European representatives of *Unio* [Falkner *et al.*, 2001; Starobogatov *et al.*, 2004; Graf & Cummings, 2007], and it is almost impossible to co-ordinate them. Western European authors [Falkner *et*

³ The authorship of this genus is often ascribed to Philippon (in Retzius). Woodward [1903: 366] explained that “the author of this genus is Retzius, who wrote the thesis in which it is described, and not Philippon, who merely got his degree for defending in public that portion of the thesis... The rule in these days was for the Praeses to write the thesis” [Woodward, 1903: 366].

⁴ We omit numerous generic names introduced by authors of the “Nouvelle École” and obviously synonymous with *Unio* that are listed by Graf [2010].

Table 3. The genus-level taxonomy of European *Unio* s. l. according to different authors.

Falkner <i>et al.</i> [2001]	Starobogatov <i>et al.</i> [2004]	Graf & Cummings [2007]
<i>Unio</i> (<i>Unio</i>)	<i>Unio</i> s. str. (genus) <i>Tumidiana</i> Servain, 1882 (genus)	<i>Unio pictorum</i> (L., 1758) <i>U. tumidus</i> Retzius, 1788
<i>Unio</i> (<i>Crassiana</i>) Servain, 1882	<i>Crassiana</i> (genus)	<i>Unio crassus crassus</i> Retzius, 1788
<i>Unio</i> (<i>Eolymnium</i>) Prashad, 1919	<i>Eolymnium</i> (genus)	<i>Unio crassus gontieri</i> Bourguignat, 1856

Table 4. Taxonomy of European *Unio* s. l. according to Zatravkin [1983] and Starobogatov *et al.* [2004].

Subfamily	Genus	Subgenus	Species
Unioninae	<i>Unio</i> Retzius, 1788	–	<i>U. pictorum</i> s. str. <i>U. limosus</i> Nilsson, 1822 <i>U. protractus</i> Lindholm, 1932 <i>U. rostratus</i> Lamarck, 1819
	<i>Tumidiana</i> Servain, 1882	–	<i>T. tumida</i> <i>T. conus</i> (Spengler, 1793) <i>T. muelleri</i> (Rossmässler, 1838)
Psilunioninae Starobogatov, 1970	<i>Eolymnium</i>	<i>Shadininaia</i> Starobogatov in Zatravkin, 1983	<i>E. araxenum</i> (Drouët, 1881) <i>E. byzantinum</i> (Drouët, 1879) <i>E. colchicum</i> (Drouët, 1881) <i>E. raddei</i> (Drouët, 1881) <i>E. koutaisianum</i> (Kobelt, 1886)
		<i>Crassiana</i> s. str.	<i>C. crassa</i>
	<i>Crassiana</i>	<i>Bataviana</i> Servain, 1882	<i>C. cyprinorum</i> (Locard, 1882) <i>C. fuscula</i> (Rossmässler, 1835) <i>C. gregorii</i> (Kobelt, 1912) <i>C. irenjensis</i> (Kobelt, 1912) <i>C. irgizlaica</i> (Lindholm, 1904) <i>C. mingrelia</i> (Drouët, 1881) <i>C. musiva</i> (Spengler, 1793) <i>C. nana</i> (Lamarck, 1819) <i>C. sobrievskii</i> (Rosen, 1925) <i>C. stevenianiformis</i> (Zhadin, 1938)

al., 2001] accept three subgenera within the genus *Unio*: *Unio* s. str., *Crassiana* Servain, 1882, and *Eolymnium* Prashad, 1919. Zatravkin [1983] and Starobogatov *et al.* [2004] developed much more detailed system distributing representa-

tives of *Unio* s. l. among two subfamilies, four genera and 23 nominal species, whereas Graf & Cummings [2007] do not subdivide the genus *Unio* into subgenera at all (Tables 3, 4). Here, we follow deliberately the system of Falkner

et al. [2001] as being the “golden mean”⁵. The generic or even subgeneric rank of *Tumidiana* (*U. tumidus* and allied species) accepted by Zatravkin [1983] and Starobogatov *et al.* [2004] seems not to be well established due to low genetic distance between species *U. pictorum* and *U. tumidus* [Kallersjö *et al.*, 2005]. Bogachev [1961] hypothesized that the two species are able to hybridize with production of viable hybrids described by him as a distinct “species” *U. hybrida* Bogachev, 1961.

Subgenus *Unio* s. str.

1(1). *Unio (Unio) pictorum* (Linnaeus, 1758)

[= *Unio ovalis* Retzius, 1788; *Mya nodosa* Gmelin, 1791; *Mya ovalis* Donovan, 1801; *Unio nodulosa* Lamarck, 1819; *Unio inflatus* Studer, 1820; *Unio deshayesii* Michaud, 1832; *Unio platyrhynchus* Rossmässler, 1835; *Unio ponderosus* Spitzzi in Rossmässler, 1842; *Unio pictorum* var. *grandis* Rossmässler, 1842; *Unio latirostris* Küster, 1854; *Unio praeposterus* Küster, 1854; *Unio malzani* Küster, 1854; *Unio requieni* Moquin-Tandon, 1855; *Unio pictorum* var. *pachyodon* Jordan, 1879; *Unio pictorum* var. *okensis* Zhadin, 1938; *Unio pictorum* var. *pygmaeus* Zhadin, 1938]⁶

Mya pictorum Linnaeus, 1758: 671.

- Type locality: Europe, in rivers (“Habitat in Europaea fluviis”; Linnaeus, 1758: 671).
- Types: UUZM Nos. 808, 809 (probable syntypes).
- Global distribution: Europe from the Atlantic to the Volga River and the Black

Sea [Graf, 2007], the Urals [Andreeva *et al.*, 2009].

- Distribution in the former USSR: Europe (except of north and north-east), Western Transcaucasia, the Middle and South Urals; introduced to Transbaikalia [Starobogatov *et al.*, 2004; Andreeva *et al.*, 2009]. Recently recorded in the Irtysh River near Tobolsk and Omsk cities [Vinarski & Grebennikov, unpublished].
- Subregions: NE, SE, CT, WS, ES (introduced).
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: LC (least concern).

1(2). *Unio (Unio) limosus* Nilsson, 1822

Unio limosus Nilsson, 1822: 110.

- Type locality: Sweden, in rivers (“in amni-bus et rivis, in Scania vulgaris”; Nilsson, 1822: 111).
- Types: Not traced.
- Global distribution: Europe [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: Western and southern Europe (basins of the Baltic, the North and the Black seas), the lower Volga basin; introduced to Transbaikalia [Starobogatov *et al.*, 2004].
- Subregions: NE, SE, ES (introduced).
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] considered this species as a synonym of *U. pictorum*.

1(3). *Unio (Unio) protractus* Lindholm, 1932

Unio protractus Lindholm, 1932a: 24, pl. IV, fig. 16-18.

- Type locality: Northern Kazakhstan, right bank of the Beteke River near Selim-Djevar village, upper Pliocene deposits [fide Zykin, 1979].
- Lectotype: F.N. Chernyshev Central Re-

⁵ Some paleontologists [i.e. Chepaliga, 1967] accept the same system with three recent subgenera of *Unio*.

⁶ We omit numerous taxonomic names synonymic to *U. pictorum* s. l. created by authors of the “Nouvelle École”. Complete synonymy for this species is given by Haas [1969] and Graf & Cummings [2013].

search Geological Exploration Museum, Sankt-Petersburg, No. 3355/962 [fide Zykina, 1979]. Maderni [1990] gives different museum number for the lectotype: 3355/963. Who and when designated the lectotype is unknown.

- Global distribution: Endemic to the southern part of the European Russia [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: Basin of the Ural River and the south-east of the European part of Russia [Pirogov *et al.*, 1994; Starobogatov *et al.*, 2004].
- Subregions: SE.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Sometimes the date of description of this species was erroneously referred to 1922 [Starobogatov *et al.*, 2004; Graf, 2007]. Zatravkin [1983b] stated that *U. protractus* is virtually identical with another unionid species described from the Pliocene deposits of the Don Region, *U. kalmykorum* Bogachev, 1924. In this case, the latter name would have priority before *U. protractus*. However, in the paleontological literature the two species are treated as distinct (see, for example, Maderni [1990]), and we are inclined to reject the synonymy proposed by Zatravkin. Probably, *Unio annulatus* Kobelt, 1912 should be regarded as a senior synonym of *U. protractus* [Kantor *et al.*, 2010]. Graf [2007] considered this species as a synonym of *U. pictorum*.

1(4). *Unio (Unio) rostrata* Lamarck, 1819

[= *Unio longirostris* Rossmässler, 1836; *Unio pictorum* var. *tumens* de Joannis, 1859; *Unio pictorum* var. *vinceleus* de Joannis, 1859; *Unio schrenkianus* Clessin, 1880; *Unio gentilis* Haas in Hesse, 1911]

Unio rostrata Lamarck, 1819: 77.

- Type locality: Europe (France, Germany, Poland and other countries) ["dans le Rhône et les grandes rivières de l'Allemagne, de la Silésie, etc."; Lamarck, 1819: 77].
- Types: possibly, in MNHN [fide Dance, 1986].

- Global distribution: Europe [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: Europe (except of north and north-east), the Middle and South Urals [Starobogatov *et al.*, 2004; Andreeva *et al.*, 2009].
- Subregions: NE, SE.
- Bionomics: Lives in lakes and slowly flowing rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] considered this species as a synonym of *U. pictorum*. The Russian authors use an alternative incorrect spelling *Unio rostratus* for designation of this species (see, for example, Starobogatov *et al.* [2004]).

2(5). *Unio (Unio) tumidus* Retzius, 1788

[= *Mya depressa* Donovan, 1801; *Mysca solida* Turton, 1822; *Unio inflata* Hecart, 1833; *Unio tumidus* var. *corrosus* Zelebor, 1851; *Unio tumidus* var. *saccatus* Rossmässler, 1854; *Unio pictorum* var. *niger* de Joannis, 1859; *Unio tumidus picta* Mörch, 1863; *Unio tumidus limicola* Mörch, 1863; *Unio tumidus maxima* Mörch, 1863; *Unio tumidus* var. *heckingi* Colbeau, 1868; *Unio tumidus* var. *incurvatus* Colbeau, 1868; *Unio gerstfeldtianus* Clessin, 1880; *Unio tumidus* var. *rohrmanni* Kobelt, 1880; *Unio tumidus* var. *falcatus* Drouët, 1881; *Unio rhenanus* Kobelt, 1886; *Unio tumidus* var. *ilekensis* Kobelt, 1912; *Unio lateborni* Haas, 1909; *Unio tumidus* var. *bashkiricus* Zhadin, 1938; *Unio tumidus* var. *fridmani* Zhadin, 1938; *Unio tumidus* var. *kobeltianus* Zhadin, 1938; *Unio tumidus* var. *moltshanovi* Zhadin, 1938]⁷

Unio tumidus Retzius, 1788: 17.

- Type locality: Europe, in rivers ("in fluviis Europae").
- Types: Unknown.
- Global distribution: Europe from the Atlantic to the Volga River and the Black

⁷ We omit numerous taxonomic names synonymic to *U. tumidus* s. l. created by authors of the "Nouvelle École". Complete synonymy for this species is given by Haas [1969] and by Graf & Cummings [2013].

Sea [Graf, 2007], the Urals [Andreeva *et al.*, 2009].

- Distribution in the former USSR: Europe (except of north and north-east), the Middle and South Urals [Starobogatov *et al.*, 2004; Andreeva *et al.*, 2009].
- Subregions: NE, SE.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: LC (least concern).

2(6). *Unio (Unio) conus* Spengler, 1793

[*Unio tumidus* var. *borysthenensis* Kobelt, 1880]

Unio conus Spengler, 1793: 60.

- Type locality: "Fra Tranquebar" [Spengler, 1793: 61]. Tranquebar (now Tharangambadi) is not situated in Europe; between 1620 and 1845 it was a Danish colony in India.
- Types: Not traced.
- Global distribution: Europe [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: Europe, except of north and north-east [Starobogatov *et al.*, 2004].
- Subregions: NE, SE.
- Bionomics: Lives in rivers, on soft substrates [Stadnichenko, 1984; Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] considered this species as a synonym of *U. tumidus*. It should be noted, however, that the type locality of *U. conus* stated in the original description lies in India (Tranquebar), where no species of *Unio* is known. Possibly, the label in Spengler's collection was wrong, and the type specimens of *U. conus* were, in fact, collected somewhere in Europe.

2(7). *Unio (Unio) muelleri* Rossmässler, 1838

Unio muelleri Rossmässler, 1838: 41, pl. 40, fig. 541.

- Type locality: Germany, Schulensee Lake near Kiel (54°17'11" N 10°05'36" E).
- Types: SMF No. 10815 [fide Zilch, 1967].

- Global distribution: Europe [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: Europe, except of north and north-east [Starobogatov *et al.*, 2004].
- Subregions: NE, SE.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] considered this species as a synonym of *U. tumidus*.

Subgenus *Crassiana* Servain, 1882

[= *Bataviana* Servain, 1882; *Batavusiana* Bourguignat in Locard, 1889; *Consentunio* Jatzko, 1962; *Crassunio* Modell, 1964]⁸

Type species: *Unio crassus* Retzius, 1788 (SD Graf, 2010)

Remark: Chepaliga [1967] and Falkner *et al.* [2001] classify *Crassiana* as a subgenus of the genus *Unio* s. l. The generic rank for *Crassiana* proposed by Starobogatov [1970] was supported by electrophoretic studies [Korniushin, 2002a] though Graf [2007] regards *Crassiana* as equal to two subspecies of the species *U. crassus* s. l. Evaluation of ITS rDNA sequences did not corroborate the generic distinctness of *Crassiana* [Källersjö *et al.*, 2005].

3(8). *Unio (Crassiana) crassus* Retzius, 1788

[= *Mya batava* Maton et Rackett, 1807; *Unio ater* Nilsson, 1822; *Unio rubens* Menke, 1828; *Unio rugatus* Menke, 1828; *Unio cytherea* Küster, 1833; *Unio sinuolata* Küster, 1833; *Unio decurvatus* Rossmässler, 1835; *Unio consentaneus* Rossmässler, 1836; *Unio carneus* Küster, 1854; *Unio gangraenosus* Küster, 1854; *Unio heldii* Küster, 1854; *Unio nessorhynchus* Küster, 1854;

⁸ We omit numerous generic names introduced by authors of the "Nouvelle École" and obviously synonymous with *Unio* that are listed by Graf [2010] and Graf & Cummings [2013].

Unio rivularis Moquin-Tandon, 1855; *Unio elegans* Westerlund, 1867; *Unio crassus* var. *maximus* Kobelt, 1872; *Unio bosnensis* Möllendorff, 1874; *Unio pseudolittoralis* Clessin, 1875; *Unio phaseolus* Kobelt, 1879; *Unio desectus* Westerlund, 1879; *Unio vicarius* Westerlund, 1879; *Unio neocomensis* Drouët, 1881; *Unio kochi* Kobelt, 1886; *Unio hamburgiensis* Servain, 1888; *Unio pseudolittoralis* var. *curonicus* Riemenschneider, 1907; *Unio brandisi* Kobelt, 1910; *Unio crassus heimburgi* Polinski, 1911; *Unio kungurensis* Kobelt, 1912; *Unio kungurensis chlebnikowi* Kobelt, 1912; *Unio kungurensis sylviensis* Kobelt, 1912; *Unio crassus thuringianus* Israel, 1913; *Unio crassus* var. *ornatus* Polinski, 1917; *Unio crassus* var. *polonicus* Polinski, 1917; *Unio crassus* var. *ishmensis* Zhadin, 1938⁹

Unio crassus Retzius, 1788: 17.

- Type locality: Europe, in rivers (“in fluviis Europae”).
- Types: Unknown.
- Global distribution: Europe, except its northern part [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: The European part of RAC, except of north [Starobogatov *et al.*, 2004].
- Subregions: NE, SE.
- Bionomics: Lives in small rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: EN (endangered).

3(9). *Unio (Crassiana) cyprinorum* Bourguignat in Locard, 1882

Unio cyprinorum Locard, 1882: 289 and 358.

- Type locality: France, in several localities (“La Seine, à Chatou, dans Seine et-Oise”; Locard, 1882: 289).
- Types: MHNH No. 22185 [fide Graf & Cummings, 2013].
- Global distribution: Europe, except of north [Starobogatov *et al.*, 2004].

⁹ We omit numerous taxonomic names synonymous to *U. crassus* s. l. introduced by authors of the “Nouvelle École”. Complete synonymy for this species is given by Haas [1969] and Graf & Cummings [2013].

- Distribution in the former USSR: The European part of RAC, except of north [Starobogatov *et al.*, 2004].
- Subregions: NE, SE.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] considered this species as a synonym of *U. crassus crassus*.

3(10). *Unio (Crassiana) fuscus* Ziegler in Rossmässler, 1835

Unio fuscus Rossmässler, 1835b: 21, fig. 129.

- Type locality: Austria (“aus den Kaltengänge in Oesterreich”; Rossmässler, 1835b: 21). Kaltengänge was a borough (no longer exists) in Eastern Austria near Ebreichsdorf Town (approximately 47°57'50"N 16°24'05"E).
- Types: SMF No. 10839 [fide Zilch, 1967].
- Global distribution: Europe, except of north [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: The European part of RAC, except of north [Pirogov *et al.*, 1994; Starobogatov *et al.*, 2004].
- Subregions: NE, SE.
- Bionomics: Lives in rivers [Stadnichenko, 1984; Starobogatov *et al.*, 2004]. It should be noted that Rossmässler regarded this mussel himself as the ordinary brook ecotype of *Unio crassus* (“*U. fuscus* <...> ist die gewöhnliche Bachform” [1835b: 21].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] considered this species as a synonym of *U. crassus crassus*.

3(11). *Unio (Crassiana) irenjensis* Kobelt, 1912

Unio kungurensis irenjensis Kobelt, 1912: 26, fig. 2626.

- Type locality: Russia, Perm' Region, the Iren' River near Kungur Town (approximately 57°26'00"N 56°56'00"E).
- Types: SMF No. 10975.
- Global distribution: Endemic to the former USSR (European part).
- Distribution in the former USSR: The European part of RAC, except of north [Kobelt, 1912; Stadnichenko, 1984].

- Subregions: NE, SE.
- Bionomics: Lives in rivers [Stadnichenko, 1984].
- IUCN conservation status: Not assessed.
- Remark: Starobogatov [1977b], Zatravkin [1984], Stadnichenko [1984], and Antonova & Starobogatov [1988] mentioned this species as valid, but it was omitted in Starobogatov *et al.* [2004] keys. Graf [2007] considered this species as a synonym of *U. crassus crassus*.

**3(12). *Unio (Crassiana) irgizlaicus*
Lindholm, 1904**

Unio ater var. *irgizlaicus* Lindholm, 1904: 343.

- Type locality: Russia, Republic of Bashkiria (Bashkortostan), the Irgizla River.
- Types: Not traced (absent in ZIN).
- Global distribution: Endemic to the former USSR (south-east corner of its European part).
- Distribution in the former USSR: The South Urals (basins of the Volga and Ural Rivers) [Pirogov *et al.*, 1994; Starobogatov *et al.*, 2004].
- Subregions: SE.
- Bionomics: Lives in streams and rivers [Lindholm, 1904; Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] considered this species as a synonym of *U. crassus crassus*.

**3(13). *Unio (Crassiana) musivus*
Spengler, 1793**

[= *Unio stevenianus* Stepanoff, 1870]

Unio musivus Spengler, 1793: 57.

- Type locality: Germany, in rivers [fide Haas, 1969].
- Types: Not traced.
- Global distribution: Europe [Starobogatov, 1977b].
- Distribution in the former USSR: The European part of RAC, except of north [Starobogatov, 1977b].
- Subregions: CT, NE, SE.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

- Remark: Graf [2007] considered this species as a synonym of *U. crassus crassus*.

**3(14). *Unio (Crassiana) nana*
Lamarck, 1819**

Unio nana Lamarck, 1819: 76.

- Type locality: Eastern France, Franche-Comté Region.
- Types: Not traced. Lamarck [1819] described this species on the basis of the material from Férussac collection, now kept in MHNG [fide Dance, 1986].
- Global distribution: Europe [Starobogatov, 1977b].
- Distribution in the former USSR: The European part of RAC, except of north [Starobogatov, 1977b].
- Subregions: NE, SE.
- Bionomics: Lives in rivers on muddy-sand bottoms [Starobogatov, 1977b].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] considered this species as a synonym of *U. crassus crassus*.

**4(15). *Unio (Crassiana) mengrelicus*
Drouët, 1881**

Unio mengrelicus Drouët, 1881: 16.

- Type locality: Western Georgia (Mingrelia Region).
- Types: Not traced.
- Global distribution: Endemic to the Caucasian Region.
- Distribution in the former USSR: Transcaucasia [Zhadin, 1938, 1952]. In the Lower Pleistocene this species also inhabited the Dniestr River basin [Chepaliga, 1967].
- Subregions: CT.
- Bionomics: Lives in small rivers [Zhadin, 1952].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] considered this species as a synonym of *U. crassus gontieri* Bourguignat, 1856. In the Russian literature an incorrect spelling, *Crassi-*

ana (or *Batavusiana*) *mingrelica*, was used [Zatravkin, 1983; Antonova & Starobogatov, 1988] instead of *mengrelica* as it is in the original description.

**4(16). *Unio (Crassiana) gregorii*
Kobelt, 1912**

Unio gregorii Kobelt, 1912: 30, fig. 2632.

- Type locality: Russia, Krasnodar Region, the Teshebs River near Grigoryevskaya Stanitsa settlement (approximately 44°46'25"N 38°50'16"E).
- Types: Not traced. Possibly, in SMF.
- Global distribution: Endemic to the Caucasian Region.
- Distribution in the former USSR: The Black Sea coast of the Caucasus [Antonova & Starobogatov, 1988].
- Subregions: CT.
- Bionomics: Lives in small rivers [Kobelt, 1912; Zhadin, 1938].
- IUCN conservation status: Not assessed.
- Remark: Zhadin [1938] regarded this species as a variety of *U. mengrelicus*. Graf [2007] considered it as a synonym of *U. crassus gontieri*.

**4(17). *Unio (Crassiana) sobrievskii*
(Rosen, 1925)**

Unio mingrelicus var. *sobrievskii* Rosen, 1925: 8, fig. 2.

Type locality: Georgia, Tskhaltubo Town near Kutaisi City (approximately 42°20'00" N 42°36'00" E).

- Types: ZIN, Nos. 1, 2 in systematic catalogue. There are shells of six syntypes in ZIN.
- Global distribution: Endemic to the Caucasian Region.
- Distribution in the former USSR: The Black Sea coast of the Caucasus [Antonova & Starobogatov, 1988].
- Subregions: CT.
- Bionomics: Not studied. Most probably, the ecological preferences of this species are similar to those of other *Crassiana* from Transcaucasia.
- IUCN conservation status: Not assessed.

- Remark: Graf [2007] considered this species as a synonym of *U. crassus gontieri*.

**4(18). *Unio (Crassiana) stevenianiformis*
Zhadin, 1938**

Unio mingrelicus var. *stevenianiformis* Zhadin, 1938: 96, fig. 28.

Type locality: Georgia, the Gubis-Tshali River near Kutaisi City (approximately 42°15'00" N 42°42'00" E).

- Types: ZIN, Nos. 1, 2 in systematic catalogue. The type series includes five shells and ten separate valves of syntypes.
- Global distribution: Endemic to the Caucasian Region.
- Distribution in the former USSR: The Black Sea coast of the Caucasus [Antonova & Starobogatov, 1988].
- Subregions: CT.
- Bionomics: Lives in rivers [Zhadin, 1938].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] considered this species as a synonym of *U. crassus gontieri*.

**Subgenus *Eolymnium*
Prashad, 1919**

[= *Nemrodia* Pallary, 1939; *Shadininaia* Starobogatov in Zatravkin, 1983]

Type species: *Unio terminalis* Bourguignat, 1852 (M)

Remark: Graf [2007] considered *Eolymnium* as a full synonym of the genus *Unio*; it coincides with opinion of Haas [1940: 124] that this subgenus was introduced "without sufficient reason".

**5(19). *Unio (Eolymnium) byzantinus*
Drouët, 1879**

[= *Unio sieversi* Drouët, 1881]

Unio byzantinus Drouët, 1879: 141.

- Type locality: Greece, Spercheios River.
- Types: Not traced.
- Global distribution: Southern Europe (Greece), Transcaucasia.
- Distribution in the former USSR: Ar-

menia [Akramowski, 1976], Western Georgia [Antonova & Starobogatov, 1988].

- Subregions: CT.
- Bionomics: Lives in rivers and streams [Zhadin, 1952].
- IUCN conservation status: Not assessed.
- Remark: This species was known in the Russian literature under the names *Unio sieversi* Drouët, 1881 [Zhadin, 1938, 1952] and *Crassiana crassa sieversi* [Akramowski, 1976]. Zatravkin [1983a] established a new synonymy: *U. sieversi* = *U. byzantinum* (with no arguments provided). *U. byzantinum* was selected as the type species of the subgenus *Eolymnium* (*Shadininaia*) Starobogatov in Zatravkin, 1983. In our opinion, the conspecificity of *U. sieversi* described from Georgia (Mingrelia) with a species with type locality situated in Greece needs stronger confirmation. Graf [2007] considered this species (spelled erroneously as *E. byzantinum*) as a synonym of *U. crassus gontieri*.

**5(20). *Unio* (*Eolymnium*) *araxenus*
Drouët, 1881**

Unio araxenus Drouët, 1881: 18.

- Type locality: Armenia or Azerbaijan, the Araks River.
- Types: Not traced. Kobelt [1886: Taf. LIII, fig. 285] gives a picture of the “Drouët’s Original” (type?).
- Global distribution: Endemic to the Caucasian Region.
- Distribution in the former USSR: The Araks River [Antonova & Starobogatov, 1988].
- Subregions: CT.
- Bionomics: Lives in rivers [Antonova & Starobogatov, 1988].
- IUCN conservation status: Not assessed.
- Remark: Zhadin [1938, 1952] regarded *E. araxenus* as a variety of *U. sieversi*. Graf [2007] considered it as a synonym of *U. crassus gontieri*.

**5(21). *Unio* (*Eolymnium*) *colchicus*
Drouët, 1881**

Unio colchicus Drouët, 1881: 18.

- Type locality: Georgia (Mingrelia).
- Types: Not traced. Kobelt [1886: Taf. LIII, fig. 283] presented a figure of the “Drouët’s Original” (type?).
- Global distribution: Endemic to the Caucasian Region.
- Distribution in the former USSR: Western Georgia [Antonova & Starobogatov, 1988].
- Subregions: CT.
- Bionomics: Lives in streams [Kobelt, 1886].
- IUCN conservation status: Not assessed.
- Remark: Zhadin [1938, 1952] regarded *E. colchicus* as a variety of *U. sieversi*. Graf [2007] considered it as a synonym of *U. crassus gontieri*.

**5(22). *Unio* (*Eolymnium*) *koutaisiana*
(Kobelt, 1886)**

Unio raddei var. *koutaisiana* Kobelt, 1886: 40, Taf. LII, fig. 283.

- Type locality: Georgia (Mingrelia).
- Types: Not traced (in SMF?).
- Global distribution: Endemic to the Caucasian Region.
- Distribution in the former USSR: Western Georgia [Antonova & Starobogatov, 1988].
- Subregions: CT.
- Bionomics: Lives in rivers [Antonova & Starobogatov, 1988].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] considered it as a synonym of *U. crassus gontieri*.

**5(23). *Unio* (*Eolymnium*) *raddei*
Drouët, 1881**

Unio Raddei Drouët, 1881: 17.

- Type locality: Georgia (Mingrelia), the Rion River.
- Types: Not traced. Kobelt [1886: Taf. LII, fig. 282] gives a figure of the “type” shell.
- Global distribution: Endemic to the Caucasian Region.
- Distribution in the former USSR: Western Georgia [Antonova, Starobogatov, 1988]. Drouët [1881] mentioned this species also from vicinities of Odessa (south of Ukraine), but in the most recent taxonomic publication [Stadnichenko, 1984] no species of *Eolymnium* was included in the fauna of Ukraine.

- Subregions: SE(?), CT.
- Bionomics: Lives in rivers [Antonova & Starobogatov, 1988].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] considered this species as a synonym of *U. crassus gontieri*.

Addition to the subgenus *Eolymnium*. Zhadin [1938] described a new species of large mussels from Transcaucasia belonging to the “*Unio tigridis* group” – *Unio lindholmi*. The species *U. tigridis* Bourguignat, 1852 and its closest relatives occur in the Middle East basins only [Haas, 1940; Graf, 2007]. *U. lindholmi* was described upon a single shell (ZIN collection) and its identity is not clear to us. Graf & Cummings [2013] treated it as a synonym of *U. pictorum*.

Genus *Middendorffinaia*

Moskvicheva et Starobogatov, 1973

Type species: *Unio mongolicus* Middendorff, 1851 (OD)

Remark: The system of Unionini mussels of the Russian Far East adopted by Starobogatov *et al.* [2004] is much more complex when compared to the system of Graf [2007] (Table 5). The genus *Middendorffinaia* is considered by the latter author as composed of two species: *Unio crassus mongolicus* (Middendorff) and *Inversidens pantoensis* (Neumayr, 1899). According to Chernyshev [2004], the placement of the Far Eastern pearl mussels into the genus *Unio* is erroneous since the conchological similarity between the European and East Asian species is of convergent origin. Later, Bogatov [2009b, 2012b] presented additional anatomical evidence in favour of generic status of *Middendorffinaia*.

Subgenus *Middendorffinaia* s. str.

6(24). *Middendorffinaia* (*Middendorffinaia*) *mongolica* (Middendorff, 1851)

Unio mongolicus Middendorff, 1851: 277, pl. XXVII, figs. 7, 8.

- Type locality: Russia, Zabaikalsky Territory, a mountain spring near Gorbitsa village.
- Types: Lost [fide Moskvicheva & Starobogatov, 1973].
- Global distribution: Endemic to Asiatic Russia (possibly also in Eastern Mongolia).
- Distribution in the former USSR: Upper courses of the Amur River (Transbaikalia), basin of the Khanka Lake, basins of the Kukhtui and Ussuri Rivers [Bogatov, 2012b].
- Subregions: SF.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] treated it as a subspecies of *Unio crassus*.

6(25). *Middendorffinaia* (*Middendorffinaia*) *alimovi* Bogatov, 2012

Middendorffinaia alimovi Bogatov, 2012b: 400, fig. 4; 5 (1, 7a).

- Type locality: Russia, the Amur Region, the Argi River opposite the Orlinoe Lake, the upper Zeya Basin.
- Types: ZIN (holotype and 14 paratypes).
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: Middle part of the Amur River basin, the Zeya River basin [Bogatov, 2012b].
- Subregions: SF.
- Bionomics: Lives in rivers [Bogatov, 2012b].
- IUCN conservation status: Not assessed.

Table 5. Taxonomy of large pearl mussels (Unionini) of the Russian Far East according to the Russian authors and Graf [2007]

Starobogatov <i>et al.</i> [2004]; Bogatov [2012b]				Graf [2007]
Subfamily	Genus	Subgenus	Species	
Nodulariinae Starobogatov et Zatravkin in Zatravkin et Bogatov, 1987*	<i>Middendorffinaia</i> Moskvicheva et Starobogatov, 1973	<i>Middendorffinaia</i> s. str.	<i>M. alimovi</i> Bogatov, 2012 <i>M. mongolica</i> (Middendorff, 1851) <i>M. ochotica</i> Bogatov, 2000 <i>M. ussuriensis</i> Moskvicheva et Starobogatov, 1973	<i>Unio crassus</i> <i>mongolicus</i>
		<i>Pseudopotomida</i> Moskvicheva et Starobogatov, 1973	<i>M. dulkeitiana</i> Moskvicheva et Starobogatov, 1973 <i>M. shadini</i> Moskvicheva et Starobogatov, 1973 <i>M. suifumensis</i> Moskvicheva et Starobogatov, 1973 <i>M. weliczkowski</i> Moskvicheva et Starobogatov, 1973	<i>Inversidens</i> <i>pantoensis</i> (Neumayr, 1899)
	<i>Nodularia</i> Conrad, 1857	<i>Nodularia</i> s.str.	<i>N. amurensis</i> (Mousson, 1887) <i>N. middendorffi</i> (Westerlund, 1890) <i>N. moskvichevae</i> Bogatov et Starobogatov, 1992 <i>N. sakhalinensis</i> Bogatov, 2001 <i>N. schrencki</i> (Westerlund, 1890) <i>N. vladivostokensis</i> Moskvicheva, 1973	<i>N.</i> <i>douglasiae</i> (Griffith et Pigeon, 1834)
		<i>Magadaninaia</i> Martynov et Chernyshev, 1992**	<i>N. extremalis</i> Martynov et Chernyshev, 1992	
Unioninae	<i>Lanceolaria</i> Conrad, 1853	<i>Pericylindrica</i> Tomlin, 1930	<i>L. bogatovi</i> Zatravkin et Starobogatov, 1984 <i>L. chankensis</i> Moskvicheva, 1973 <i>L. maacki</i> Moskvicheva, 1973 <i>L. ussuriensis</i> Moskvicheva, 1973	<i>L. cylindrica</i> (Simpson, 1900)

*Chernyshev [2004] considered the establishing of a separate subfamily Nodulariinae for two genera – *Nodularia* Conrad, 1857 and *Middendorffinaia* Moskvicheva et Starobogatov, 1973 – as premature. His opinion was based on the absence of the comparison of the diagnosis of the new subfamily with that of Unioninae. Nevertheless he himself did not formally synonymize Nodulariinae with any other group of Unionidae.

**According to Chernyshev [2004], this subgenus is a full synonym of *Nodularia*.

**6(26). *Middendorffinaia*
(*Middendorffinaia*) *ochotica* Bogatov,
2000**

Middendorffinaia ochotica Bogatov, 2000: 861-862,
textfig. a-r.

- Type locality: Russia, Khabarovsk Territory, the Kukhtui River northward of Okhotsk.
- Holotype: ZIN, No. 1 in systematic catalogue. The type series includes a single shell of the holotype.

- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Kukhtui and Ussuri river basins [Bogatov, 2012b].
- Subregions: SF.
- Bionomics: Lives in rivers [Starobogatov et al., 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] treated this species as a synonym of *Unio crassus mongolicus*.

**6(27). *Middendorffinaia*
(*Middendorffinaia*) *ussuriensis*
Moskvicheva et Starobogatov, 1973**

[= *Middendorffinaia arsenievi* Moskvicheva et Starobogatov, 1973]

Middendorffinaia ussuriensis Moskvicheva & Starobogatov, 1973: 28-29, fig. 3 и-л.

- Type locality: Russia, the Primorye Territory, the Arsenievka (= Daubikhe) River, near Yakovlevka village (approximately 44°25'37" N 133°28'47" E).
- Types: ZIN, Nos. 1-3 in systematic catalogue. The type series includes the holotype and eight paratypes.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Ussuri River basin [Bogatov, 2012b].
- Subregions: SF.
- Bionomics: Lives in rivers [Starobogatov et al., 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] treated this species as a synonym of *Unio crassus mongolicus*.

Subgenus *Pseudopotomida*
Moskvicheva et Starobogatov, 1973
Type species: *Middendorffinaia* (*Pseudopotomida*) *shadini* Moskvicheva et Starobogatov, 1973 (OD)

**7(28). *Middendorffinaia*
(*Pseudopotomida*) *shadini*
Moskvicheva et Starobogatov, 1973**

[= *Middendorffinaia martensi* Moskvicheva et Starobogatov, 1973]

Middendorffinaia shadini Moskvicheva & Starobogatov, 1973: 31-32, fig. 5, а-в (nom. nov. pro *Unio continentalis* Zhadin, 1938 non Haas, 1910).

- Type locality: Russia, the Primorye Territory, the Rakovka River (a tributary of the Razdol'naya [= Sujfun] River).
- Types: ZIN Nos. 1-5 in systematic catalogue. The type series includes the lectotype and eight paralectotypes.
- Global distribution: Endemic to the Far East (Russia and, possibly, Korea).
- Distribution in the former USSR: Southern part of the Primorye Territory [Starobogatov et al., 2004].
- Subregions: SF.
- Bionomics: Lives in rivers and lakes [Starobogatov et al., 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] treated it as a synonym of *Inversidens pantoensis*.

**7(29). *Middendorffinaia*
(*Pseudopotomida*) *dulkeitiana*
Moskvicheva et Starobogatov, 1973**

Middendorffinaia dulkeitiana Moskvicheva, Starobogatov, 1973: 33, fig. 5, г, д.

- Type locality: Russia, the Primorye Territory, a tributary of the Suputinka River near Ussuriysk Town (approximately 43°48'00"N, 131°57'00"E).
- Types: ZIN, Nos. 1, 2 in systematic catalogue. The type series includes the holotype and a single paratype.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Razdol'naya River basin [Starobogatov et al., 2004].
- Subregions: SF.
- Bionomics: Lives in rivers [Starobogatov et al., 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] treated this species as a synonym of *Inversidens pantoensis*.

**7(30). *Middendorffinaia*
(*Pseudopotomida*) *sujfunensis*
Moskvicheva et Starobogatov, 1973**

Middendorffinaia sujfunensis Moskvicheva & Starobogatov, 1973: 30, fig. 4.

- Type locality: Russia, the Primorye Territory, the Razdol'naya (= Suifun) River, 1.5 km S from Razdol'noye station (approximately 43°22'00"N, 131°53'50"E).
- Types: ZIN, Nos. 1-2 in systematic catalogue. The type series includes the holotype and three separate valves of the paratypes.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: Southern part of the Primorye Territory [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] treated this species as a synonym of *Inversidens pantoensis*.

**7(31). *Middendorffinaia*
(*Pseudopotomida*) *welickowskii*
Moskvicheva et Starobogatov, 1973**

[= *Middendorffinaia hassanica* Moskvicheva et Starobogatov, 1973; *Middendorffinaia maihensis* Moskvicheva et Starobogatov, 1973]

Middendorffinaia welickowskii Moskvicheva & Starobogatov, 1973: 33-34, fig. 5 e, ж.

- Type locality: Russia, the Primorye Territory, the Olenevka River, basin of the Razdol'naya (= Suifun) River.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: Southern part of the Primorye Territory [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] treated this species as a synonym of *Inversidens pantoensis*.

Genus *Nodularia* Conrad, 1853

[= *Nodularidia* Cockerell, 1901; *Amurunio* Zatravkin et Bogatov, 1987; *Magadaninaia* Martynov et Chernyshev, 1992]

Type species: *Unio douglasiae* Gray in Griffith & Pidgeon, 1834 (M)

**8(32). *Nodularia amurensis*
(Mousson, 1887)**

[= *Unio pictorum* var. *longirostris* Westerlund, 1877 non Rossmässler, 1836]

Unio pictorum var. *amurensis* Mousson, 1887: 26, pl. I, fig. 8.

- Type locality: Russia, Khabarovsk Territory, vicinities of Khabarovsk and Nikolaevsk-na-Amure ("Chabarofka... Nicolajewsk"; see Mousson, 1887: 27).
- Types: SMF 3663/2 [fide Zilch, 1967].
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Amur River, basins of the Ussuri River and Khanka Lake [Bogatov, 2012b].
- Subregions: SF.
- Bionomics: Lives in rivers and lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] treated it as a synonym of *Nodularia douglasiae*.

**8(33). *Nodularia extremalis* Martynov et
Chernyshev, 1992**

Nodularia (Magadaninaia) extremalis Martynov & Chernyshev, 1992: 19, fig. 1-3.

- Type locality: Russia, Magadan Region, Olskiy district, a river near Motyleika village.
- Holotype: 10602/Bv-1484, Zoological Museum of the Far Eastern State University (No. 254 was erroneously mentioned in the original publication).
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Ola River basin (Magadan Region) [Starobogatov *et al.*, 2004].

- Subregions: NF.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] treated this species as a synonym of *Nodularia douglasiae*.

**8(34). *Nodularia middendorffi*
(Westerlund, 1890)**

[= *Unio pictorum* var. *longirostris* Middendorff, 1851 non Rossmässler, 1836; *Nodularia lebedevi* Zatravkin et Starobogatov, 1984]

Unio middendorffi Westerlund, 1890: 133.

- Type locality: Russia, Zabaikalsky Territory, the Nercha River near Nerchinsk Town (sampling site of the lectotype; approximately 51°54'00"N, 116°35'00"E).
- Types: ZIN, No. 1, 7 (the lectotype and paralectotypes; the lectotype was designated by Moskvicheva [1973b]).
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Amur River basin [Bogatov, 2012b]. Westerlund [1890] also recorded this species from the Lena River basin and from Transbaikalia (Eastern Siberia), but these data need to be confirmed as no species of Unionini is known currently from this area [Prozorova & Slugina, 2009].
- Subregions: SF.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Haas [1969] treated this species as a synonym of *Unio douglasiae amurensis*.

8(35). *Nodularia moskvichevae* Bogatov et Starobogatov, 1992

Nodularia moskvichevae Bogatov & Starobogatov, 1992: 134, fig. 1 (5, 6).

- Type locality: Russia, the Primorye Territory, inlet of the Razdol'naya River in 1 km from station Razdol'noye (approximately 43°32'00"N, 131°53'50"E).
- Types: ZIN, Nos. 1-3 in systematic catalogue. The type series includes the holotype and four paratypes.

- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Razdol'naya (= Suifun) River basin [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] treated this species as a synonym of *Nodularia douglasiae*.

Genus *Lanceolaria* Conrad, 1853

[= *Cylindrica* Simpson, 1900 non Clessin, 1882; *Prolanceolaria* Moskvicheva, 1973]

Type species: *Unio grayanus* Lea, 1834 (M)

Remark: The number of species in this genus in the Russian Far East waterbodies is estimated from one [Graf, 2007] and two [Zhadin, 1952] to four [Starobogatov *et al.*, 2004]. The species content of the genus in Russia has also been debated. Further study is needed to re-evaluate the taxonomic status of *Lanceolaria* of the Russian malacofauna by comparison with Chinese representatives of the genus.

**9(36). *Lanceolaria maacki*
Moskvicheva, 1973**

[= *Unio grayanus* sensu Schrenck, 1867, non Lea, 1834; *Nodularia cylindrica* Simpson, 1900, part.]

Lanceolaria maacki Moskvicheva, 1973b: 1465, fig. 2, e-ж (nom. nov. pro *Unio grayanus* sensu Schrenck, 1867, non Lea, 1834).

- Type locality: Russia, the Ussuri River. According to ZIN catalogue, the lectotype shell was collected in 1855 near Sheremetievo village in Khabarovsk Territory (approximately 47°22'30"N, 134°15'36"E).
- Lectotype: ZIN No. 1 in systematic catalogue.

- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Amur River, basins of the Ussuri River and the Khanka Lake [Zatravkin & Bogatov, 1987].
- Subregions: SF.
- Bionomics: Lives in rivers and lakes [Zatravkin & Bogatov, 1987].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] treated it as a synonym of *Lanceolaria cylindrica*.

9(37). *Lanceolaria bogatovi* Zatravkin et Starobogatov, 1984

Lanceolaria bogatovi Zatravkin & Starobogatov, 1984: 1785-1787, fig. 1-4.

- Type locality: Russia, Khabarovsk Territory, the Amur River, the Sakhaljan Island against Amursk city, an inner lake connected with the Amur River (approximately 50°13'05"N, 136°52'47"E).
- Types: ZIN Nos. 1-5 in systematic catalogue. The type series consists of the holotype and 11 paratypes.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Amur River, basins of the Ussuri River and the Khanka Lake [Zatravkin & Bogatov, 1987].
- Subregions: SF.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] treated this species as a synonym of *L. cylindrica*.

9(38). *Lanceolaria chankensis* Moskvicheva, 1973

Lanceolaria chankensis Moskvicheva, 1973b: 1466, fig. 2, к-л.

- Type locality: Russia, the Primorye Territory, the Mel'gunovka (= Mo) River inflowing to the Khanka Lake (approximately 44°37'6"N, 132°13'47"E).

- Types: ZIN, Nos. 1-4 in systematic catalogue. The type series consists of the holotype and 4 paratypes (separate valves).
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Khanka Lake and its basin [Zatravkin & Bogatov, 1987]; Ussuri Basin [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] treated this species as a synonym of *L. cylindrica*.

9(39). *Lanceolaria ussuriensis* Moskvicheva, 1973

[= *Lanceolaria grayana* sensu Zhadin, 1952, non Lea, 1834]

Lanceolaria chankensis Moskvicheva, 1973b: 1465-1466, fig. 2, з-и (nom. nov. pro *Lanceolaria grayana* sensu Zhadin, 1952, non Lea, 1834).

Type locality: Russia, the Primorye Territory, the Khanka Lake near Troitskoye Village (approximately 44°49'09"N, 132°04'09"E).

- Types: ZIN, Nos. 1-6 in systematic catalogue. The type series consists of the holotype and 12 paratypes.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Khanka Lake and its basin [Zatravkin & Bogatov, 1987]; the Amur Basin, including the Ussuri River drainage [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] treated this species as a synonym of *L. cylindrica*.

Tribe Anodontini Rafinesque, 1820

[= Alasmidontinae Rafinesque, 1820; Strophitinae Starobogatov, 1970; Pseudanodontinae Stadnichenko, 1984]

(Anodontidea Rafinesque, 1820: 316)

Table 6. Classification of Euro-Siberian (Palearctic) taxa of anodontine mussels according to different authors.

Starobogatov <i>et al.</i> [2004], Bogatov <i>et al.</i> [2005]			Graf [2007]
Genus	Subgenus	Species	Species
<i>Anodonta</i> Lamarck, 1799	–	<i>A. cygnea</i> (L., 1758) <i>A. stagnalis</i> (Gmelin, 1791) <i>A. zellensis</i> (Gmelin, 1791)	<i>A. cygnea</i>
<i>Colletopterum</i> Bourguignat, 1880	<i>Colletopterum</i> s. str.	<i>C. apollonicum</i> (Bourguignat, 1880) <i>C. baeri</i> Bogatov, Starobogatov et Prozorova, 2005 <i>C. convexum</i> (Drouët, 1888) <i>C. milashevichi</i> Bogatov, Starobogatov et Prozorova, 2005 <i>C. ostiarium</i> (Drouët, 1881) <i>C. subcirculare</i> (Clessin, 1873)	<i>A. anatina</i>
		<i>C. anatinum</i> (L., 1758) <i>C. depressum</i> (Bourguignat, 1881) <i>C. nilssonii</i> (Küster, 1842) <i>C. piscinale</i> (Nilsson, 1822) <i>C. ponderosum</i> (Pfeiffer, 1825) <i>C. rostratum</i> (Rossmässler, 1836) <i>C. sorensianum</i> (W. Dybowski in B. Dybowski, 1913)	
	<i>Piscinaliana</i> Bourguignat, 1881	<i>C. cyreum</i> (Drouët, 1881) <i>C. bactrianum</i> (Rolle, 1897) <i>C. kokandicum</i> Starobogatov et Izzatullaev, 1984	<i>A. cyrea</i>
<i>Pseudanodonta</i> Bourguignat, 1877	–	<i>P. complanata</i> (Rossmässler, 1835) <i>P. elongata</i> (Holandre, 1836) <i>P. kletti</i> (Rossmässler, 1835) <i>P. nordenskioldi</i> Bourguignat, 1880	<i>P. complanata</i>

Type genus: *Anodonta* Lamarck, 1799

Remark: Taxonomy of *Anodonta*-like large mussels of the RAC territory is in the flux both at the generic and species levels, especially for the Far Eastern taxa [Chernyshev, 2004; Graf, 2007]. Some authors preferred to lump majority of species into a single genus *Anodonta* with vast Holarctic distribution [Graf, 2007]. In Russia most taxonomists adhered to opposite approach and splitted the tribe into a series of smaller genera and subgenera [Zatravkin, 1983a; Starobogatov *et al.*, 2004]. Tables 6 and 7 contain

comparison of the ‘Russian’ and ‘Western’ approaches to the taxonomy of anodontine mussels. Here, the system proposed by Chernyshev [2004] is provisionally accepted for arrangement of the Far Eastern representatives of the Anodontini.

Genus *Anodonta* Lamarck, 1799

[= *Mytilus* Linnaeus, 1758, partim; *Glochidium* Rathke, 1797 (nomen rejectum); *Anodonte* Fischer von Waldheim, 1807; *Cista* Hübner, 1810; *Anodon* Oken, 1815; *Anodontes* Cuvier, 1817; *Edentula* Ersch et Gruber, 1820; *Lipodonta* Ersch et Gruber, 1820; *Anodontina* Mörch, 1853;

Table 7. Classification of the Russian Far East taxa of anodontine mussels according to different authors

Zatravkin [1983b]; Zatravkin & Bogatov [1987]; Starobogatov <i>et al.</i> [2004]			Graf [2007]
Genus	Subgenus	Species	Species
<i>Amuranodonta</i> Moskvicheva, 1973	—	<i>Amuranodonta boloniensis</i> (Zatravkin et Bogatov, 1987) <i>A. kijaensis</i> Moskvicheva, 1973 <i>A. lomakini</i> (Zatravkin et Bogatov, 1987) <i>A. parva</i> Moskvicheva, 1973 <i>A. pulchra</i> Bogatov et Starobogatov, 1996 <i>A. sitaensis</i> (Bogatov et Starobogatov, 1996)	<i>Anodonta arcaeformis</i> (Heude, 1877)
<i>Buldowskia</i> Moskvicheva, 1973	—	<i>Buldowskia cylindrica</i> Moskvicheva, 1973 <i>B. flavotincta</i> (Martens, 1905) <i>B. koreana</i> Bogatov et Starobogatov, 1996 <i>B. possietica</i> Bogatov et Starobogatov, 1996 <i>B. starobogatovi</i> Moskvicheva, 1973 <i>B. suputinensis</i> Moskvicheva, 1973 <i>B. sujfunensis</i> (Zhadin, 1938) <i>B. sujfunica</i> (Lindholm, 1925)	
<i>Anemina</i> Haas, 1969	—	<i>Anemina buldowskii</i> (Moskvicheva, 1973) <i>A. fuscoviridis</i> (Moskvicheva, 1973) <i>A. shadini</i> (Moskvicheva, 1973)	<i>A. euscaphys</i> (Heude, 1879)
<i>Beringiana</i> Starobogatov in Zatravkin, 1983	—	<i>Beringiana beringiana</i> (Middendorff, 1851) <i>B. chereshevi</i> Bogatov et Starobogatov, 2001 <i>B. compressa</i> Sayenko et Bogatov, 1998 <i>B. derzhavini</i> Bogatov et Starobogatov, 2001 <i>B. kamchatica</i> Bogatov et Starobogatov, 2001 <i>B. youkanensis</i> (Lea, 1867)	<i>A. beringiana</i>
<i>Cristaria</i> Schumacher, 1817	—	<i>Cristaria herculea</i> (Middendorff, 1847) <i>C. tuberculata</i> Schumacher, 1817	<i>C. plicata</i> (Leach, 1815)
<i>Kunashiria</i> Starobogatov in Zatravkin, 1983	—	<i>Kunashiria compressa</i> (Bogatov et Starobogatov, 1996) <i>K. coptzevi</i> (Zatravkin et Bogatov, 1987) <i>K. haconensis</i> (von Ihering, 1893) <i>K. iturupica</i> Bogatov, Sayenko et Starobogatov, 1999 <i>K. iwakawai</i> (Suzuki, 1939) <i>K. japonica</i> (Martens in Clessin, 1874) <i>K. sinanodontoides</i> Bogatov, Sayenko et Starobogatov, 1999 <i>K. taranetzi</i> (Zhadin, 1938) <i>K. zarjaensis</i> (Bogatov et Zatravkin, 1988) <i>K. zimini</i> (Zatravkin et Bogatov, 1987)	<i>Anodonta woodiana japonica</i>
<i>Sinanodonta</i> Modell, 1945	<i>Sinanodonta</i> s. str.	<i>Sinanodonta amurensis</i> Moskvicheva, 1973 <i>S. crassitesta</i> Moskvicheva, 1973 <i>S. fukudai</i> Modell, 1945 <i>S. gibba</i> (Benson, 1855) <i>S. likharevi</i> Moskvicheva, 1973 <i>S. orbicularis</i> (Heude, 1880) <i>S. primorjensis</i> Bogatov et Zatravkin, 1988 <i>S. puerorum</i> (Heude, 1880) <i>S. schrencki</i> Moskvicheva, 1973	<i>Anodonta woodiana woodiana</i> (Lea, 1834)
	<i>Ellipsanodon</i> Bogatov et Starobogatov, 1996	<i>S. manchurica</i> Bogatov et Starobogatov, 1996	

Brachyanodon Crosse et Fischer, 1894; *Mesodon* Crosse et Fischer, 1894]¹⁰

Type species: *Mytilus cygneus* Linnaeus, 1758 (M)

Remark: The species of *Anodonta* living in Northern Palearctic were split into two genera, *Anodonta* s. str. and *Colletopterum* Bourguignat, 1880, by Starobogatov and his followers [Zatravkin, 1983a; Starobogatov & Izzatullaev, 1984; Bogatov *et al.*, 2005]. Though there are some differences between these taxa in their shell morphology [Bogatov *et al.*, 2005], the molecular data obtained by Källersjö *et al.* [2005] suggested that there are no serious reasons to consider *Colletopterum* as a separate genus sister to *Anodonta* s. str. Here we accept conventionally the subgeneric rank for *Colletopterum*.

Subgenus *Anodonta* s. str.

10(40). *Anodonta (Anodonta) cygnea* (Linnaeus, 1758)

[= *Mytilus radiatus* O.F. Müller, 1774; *Mytilus maxima* Schröter, 1779; *Anodonta variabilis* Draparnaud, 1801; *Mytilus avonensis* Montagu, 1803; *Anodonta oblonga* Millet, 1813; *Anodonta intermedia* Lamarck, 1819; *Anodonta sulcata* Lamarck, 1819; *Mytilus incrassatus* Sheppard, 1821; *Mytilus macula* Sheppard, 1821; *Anodon paludosus* Turton, 1822; *Anodonta ventricosa* C. Pfeiffer, 1825; *Anodonta callosa* Küster, 1839; *Anodonta cariosa* Küster, 1842; *Anodonta opalina* Küster, 1842; *Anodonta sindermannii* Küster, 1842; *Anodonta tumida* Küster, 1842; *Anodonta contorta* Brown, 1844; *Anodonta ranarum* Morelet, 1845; *Anodonta regularis* Morelet, 1845; *Anodonta glabra* Stabile, 1845; *Anodonta moulinsiana* Dupuy, 1850; *Anodonta crassa* Zelibor, 1851; *Anodontes europaea* Leach, 1852; *Anodonta mutabilis* Clessin, 1877; *Anodonta anura* West-

erlund, 1898; *Anodonta fedderseni* Westerlund, 1898; *Anodonta goesi* Westerlund, 1898]¹¹

Mytilus cygneus Linnaeus, 1758: 706.

- Type locality: Europe, in river mouths (“Habitat ad Europa ad ostia fluviorum”; Linnaeus, 1758: 706).
- Holotype: Linnean Society of London, No. 257 [Graf & Cummings, 2013].
- Global distribution: Europe [Falkner *et al.*, 2001; Starobogatov *et al.*, 2004] and Northern Africa [Van Damme, 1984].
- Distribution in the former USSR: The European part of RAC, except of the north [Starobogatov *et al.*, 2004]; the Caspian Sea [Bogutskaya *et al.*, 2013].
- Subregions: NE, SE, CS.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: LC (least concern).

10(41). *Anodonta (Anodonta) stagnalis* (Gmelin, 1791)

Mytilus stagnalis Gmelin, 1791: 3362.

- Type locality: Germany, the Schwansee Lake (“Schwansee, stagno ducatus Isenacensis”, i.e. a lake in Duchy of Saxe-Eisenach, now in Thuringia).
- Types: Unknown.
- Global distribution: Europe, except of the north [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: The European part of Russia and Ukraine [Starobogatov *et al.*, 2004].
- Subregions: NE, SE.
- Bionomics: Lives in lakes and ponds [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] treated this species as a synonym of *Anodonta cygnea*.

¹⁰ We omit here those numerous generic names proposed by authors of the “Nouvelle École” and obviously synonymous with *Anodonta* that are listed by Graf [2010].

¹¹ We omit here numerous taxonomic names synonymic to *A. cygnea* s. l. proposed by authors of the “Nouvelle École”. Complete synonymy for this species is given by Haas [1969] and Graf & Cummings [2013].

10(42). *Anodonta (Anodonta) zellensis* (Gmelin, 1791)

[= *Anodonta cellensis* auct., nom. err. pro *zellensis*; *Anodonta zellensis* var. *micheli* Modell, 1945]

Mytilus zellensis Gmelin, 1791: 3362.

- Type locality: Germany, Lower Saxony, a ditch around Celle fortress [fide Haas, 1969].
- Types: Unknown.
- Global distribution: Europe, except of the north [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: The European part of Russia and Ukraine [Starobogatov *et al.*, 2004].
- Subregions: NE, SE.
- Bionomics: Lives in lakes and ponds [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] treated this species as a synonym of *A. cygnea*.

**Subgenus *Colletopterum*
Bourguignat, 1880**

[= *Piscinaliana* Bourguignat, 1881; *Ponderosiana* Bourguignat, 1881]

Type species: *Anodonta letourneuxi* Bourguignat, 1870 (SD; Simpson, 1900: 649¹²)

11(43). *Anodonta (Colletopterum) anatina* (Linnaeus, 1758)

[= *Anodonta minima* Millet, 1833; *Anodonta anserirostris* Küster, 1842; *Anodonta charpentierii* Küster, 1842; *Anodonta inornata* Küster, 1842; *Anodonta tenella* Küster, 1842; *Anodonta lusitana* Morelet, 1845; *Anodonta dupuyi* Ray et Drouët, 1848; *Anodonta milletii* Ray et Drouët, 1848; *Anodonta sedakovi* Siemaschko, 1848; *Anodonta rayii* Dupuy, 1849; *Anodonta scaldiana* Dupuy, 1850; *Anodonta anatina crasiuscula* Moquin-Tandon, 1855; *Anodonta variabilis crassula* Moquin-Tandon, 1855; *Anodonta variabilis rhomboideus* Moquin-Tandon, 1855; *Anodonta variabilis subinflata* Moquin-Tandon, 1855; *Anodonta fallax* Colbeau, 1868; *Anodonta gibba*

¹² Bogatov *et al.* [2005] erroneously state that the type species of the genus *Colletopterum* was designated by Zatravkin [1983b].

Clessin, 1873; *Anodonta oviformis* Clessin, 1873; *Anodonta seisanensis* Kobelt, 1911; *Anodonta piscinalis* var. *sorica* W. Dybowski in B. Dybowski, 1913; *Anodonta anatina* var. *lenae* Zhadin, 1938, part.; *Anodonta anatina* var. *petshoric* a Zhadin, 1938, partim]¹³

Mytilus anatinus Linnaeus, 1758: 706.

- Type locality: Europe.
- Types: Two syntypes in Linnean Society of London, No. 258 [Graf & Cummings, 2013].
- Global distribution: Northern Eurasia (Europe, Siberia, Mongolia) [Falkner *et al.*, 2001; Slugina & Starobogatov, 2004; Starobogatov *et al.*, 2004]; Northern Africa [Van Damme, 1984].
- Distribution in the former USSR: The European part of RAC, southern regions of Western and Eastern Siberia; the Baikal Lake [Bogatov *et al.*, 2005; Vinarski *et al.*, 2007].
- Subregions: NE, SE, WS, ES, BL.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: LC (least concern).

11(44). *Anodonta (Colletopterum) apollonica* Bourguignat, 1880

[= *Anodonta piscinalis* var. *volgensis* Zhadin, 1938, partim]

Anodonta apollonica Bourguignat, 1880: 91, pl. 15, fig. 1-3.

- Type locality: Western Turkey, vicinity of Bursa City, the Uluabat (= Apolyont; = Apollonia) Lake (approximately 40°11'44"N, 28°33'49"E).
- Types: Unknown.
- Global distribution: Southern Europe and Asia Minor [Bogatov *et al.*, 2005].
- Distribution in the former USSR: Southern

¹³ We omit numerous taxonomic names synonymic to *A. anatina* s. l. proposed by authors of the "Nouvelle École". Complete synonymy for this species is given by Haas [1969] and Graf & Cummings [2013].

part of the European Russia and Ukraine [Starobogatov *et al.*, 2004].

- Subregions: SE.
- Bionomics: Lives in lakes and ponds [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] treated this species as a synonym of *A. anatina*.

11(45). *Anodonta (Colletopterum) baeri* (Bogatov, Starobogatov et Prozorova, 2005)

Colletopterum baeri Bogatov *et al.*, 2005: 1055-1056, figs. 3л, 3м, 4д.

- Type locality: Russia, Astrakhan' Region, the Volga River near Astrakhan' (approximately 46°16'N 47°56'E).
- Types: ZIN, Nos. 1-4 in systematic catalogue. The type series includes the holotype and three paratypes.
- Global distribution: Endemic to Eastern Europe (Russian part).
- Distribution in the former USSR: The lower Volga Basin, including the Volga delta [Bogatov *et al.*, 2005].
- Subregions: SE.
- Bionomics: Recorded from a large river (Volga).
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] treated this species as a synonym of *A. anatina*.

11(46). *Anodonta (Colletopterum) convexa* Drouët, 1888

[= *Anodonta piscinalis* var. *sorica* W. Dybowski in B. Dybowski, 1913, partim; *Anodonta piscinalis* var. *volgensis* Zhadin, 1938, partim]

Anodonta convexa Drouët, 1888: 110.

- Type locality: France, La Saône, à Charrey-sur-Seine (approximately 47°56'N 04°30'E).
- Types: MNHN MP_0016 [Graf & Cummings, 2013].
- Global distribution: Described from France; mentioned also from the southern part of the European Russia.
- Distribution in the former USSR: The lower Volga Basin and adjacent territories; the alleged presence of this species in the Baikal

Lake is, most probably, based on erroneous label [Bogatov *et al.*, 2005].

- Subregions: SE.
- Bionomics: Recorded from a large river (Volga).
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] treated this species as a synonym of *A. anatina*.

11(47). *Anodonta (Colletopterum) depressa* Bourguignat, 1881

Anodonta depressa "Schmidt" Bourguignat, 1880-1881: 221.

- Type locality: Southern Austria and Slovenia ("Dans les lacs de la Carniole et de la Carinthe, notamment dans ceux des environs de Klagenfurt"; Bourguignat, 1880-1881: 222).
- Types: Not traced.
- Global distribution: Southern Europe.
- Distribution in the former USSR: south of the European part of RAC, including the Black Sea Coast [Starobogatov *et al.*, 2004].
- Subregions: SE, CT(?).
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Bogatov *et al.* [2005] did not mention this species in their revision of the genus. Graf [2007] considered this species as a synonym of *A. anatina*.

11(48). *Anodonta (Colletopterum) milashevichi* (Bogatov, Starobogatov et Prozorova, 2005)

[= *Anodonta piscinalis* var. *volgensis* Zhadin, 1938, partim]

Colletopterum milashevichi Bogatov *et al.*, 2005: 1056, figs. 3н-3р, 4в.

- Type locality: Russia, Astrakhan' Region, the Volga Delta, Kabaniy Il'men'.
- Types: ZIN, Nos. 1-8 in systematic catalogue. The type series includes the holotype and eight paratypes.
- Global distribution: Southern Europe, Asia Minor [Bogatov *et al.*, 2005].
- Distribution in the former USSR: The lower Volga Basin [Bogatov *et al.*, 2005].
- Subregions: SE.

- Bionomics: Recorded from a large river (Volga).
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] treated this species as a synonym of *A. anatina*.

11(49). *Anodonta (Colletopterum) nilssonii* Küster, 1842

[= *Anodonta piscinalis* var. *sorica* W. Dybowski in B. Dybowski, 1913, partim; *Anodonta cellensis* var. *selengensis* W. Dybowski in B. Dybowski, 1913, partim]

Anodonta nilssonii Küster, 1842: 61, pl. 17, fig. 2 [fide Graf & Cummings, 2013].

- Type locality: Germany, the Regnitz River near Erlangen City (approximately 49°35'N 11°00'E).
- Types: Not traced.
- Global distribution: Europe, Siberia [Bogatov *et al.*, 2005].
- Distribution in the former USSR: The European part of Russia, Siberia eastward to the Baikal Lake [Bogatov *et al.*, 2005].
- Subregions: NE, SE (?), WS, ES, BL.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] treated this species as a synonym of *A. anatina*.

11(50). *Anodonta (Colletopterum) ostiaria* Drouët, 1881

[= *Anodonta piscinalis* var. *volgensis* Zhadin, 1938, partim; *Anodonta piscinalis shadini* Starobogatov et Pirogov, 1970]

Anodonta ostiaria Drouët, 1881: 26.

- Type locality: Ukraine, the Dnieper Liman ("Hab. le liman du Dniéper").
- Types: Not traced.
- Global distribution: Southern part of Central and Eastern Europe [Bogatov *et al.*, 2005].
- Distribution in the former USSR: The species is known from the Dnieper, Dniestr, and lower Volga basins [Bogatov *et al.*, 2005].
- Subregions: SE.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

- Remark: Graf [2007] treated this species as a synonym of *A. anatina*. Stadnichenko [1984] recorded it in the Black Sea Maritime territory under the name *Colletopterum sub-circulare plattenicum* (Servain, 1881).

11(51). *Anodonta (Colletopterum) piscinalis* Nilsson, 1822

[= *Anodonta falcata* Drouët, 1879; *Anodonta cellensis* var. *selengensis* W. Dybowski in B. Dybowski, 1913, partim; *Anodonta nova* B. Dybowski, 1913; *Anodonta piscinalis sibirica* Krivosheina et Starobogatov, 1970]

Anodonta piscinalis Nilsson, 1823: 116.

- Type locality: Southern Sweden (Scania), in fishponds and ditches ("Habitat in piscinis & fossis Scaniae passim"; Nilsson, 1822: 117).
- Types: Not traced.
- Global distribution: Northern Eurasia (Europe, Siberia) [Bogatov *et al.*, 2005].
- Distribution in the former USSR: The European part of RAC except its extreme north-east, southern parts of Siberia eastward to the Baikal Lake, Armenia [Akramowski, 1976; Pirogov, *et al.*, 1994; Starobogatov *et al.*, 2004; Bogatov *et al.*, 2005].
- Subregions: NE, SE, CT, WS, ES.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] treated this species as a synonym of *A. anatina*.

11(52). *Anodonta (Colletopterum) rostrata* Rossmässler, 1836

[= *Anodonta anatina* var. *lenae* Zhadin, 1938, partim]

Anodonta rostrata Rossmässler, 1836b: 25, pl. 20, fig. 284.

- Type locality: Germany and Austria. The locus typicus of this species is defined as "im Wörthsee bei Klagenfurth und in dessen beiden Ausflüssen, dem Lendkanale und dem Glanfurtbachem und im Salzsee im Mannsfeldischen" [Rossmässler, 1836b: 25]. The type shell (SMF) was collected in the Wörthsee Lake, vicinity of Klagenfurth, southern Austria.

- Types: Holotype (?) is kept in SMF No. 5160 [Graf & Cummings, 2013].
- Global distribution: Northern Eurasia (Europe, Siberia) [Bogatov *et al.*, 2005].
- Distribution in the former USSR: The European part of RAC and Siberia, eastward to the Lena River [Bogatov *et al.*, 2005].
- Subregions: NE, WS, ES.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] treated this species as a synonym of *A. anatina*.

**11(53). *Anodonta (Colletopterum) sorensiana* W. Dybowski
in B. Dybowski, 1913**

Anodonta complanata var. *sorensiana* B. Dybowski, 1913: 214, pl. 6, fig. 34.

- Type locality: Russia, Irkutsk Region, the Baikal Lake, Bolshoy Sor Bay.
- Holotype: ZIN No. 2 is systematic catalogue.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The species is still known after a single specimen; its probable occurrence is restricted to the shallow zone of the Baikal Lake [Bogatov *et al.*, 2005].
- Subregions: BL.
- Bionomics: Not studied.
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] treated this species as a synonym of *A. anatina*.

11(54). *Anodonta (Colletopterum) subcircularis* Clessin, 1873

[= *Anodonta piscinalis* var. *volgensis* Zhadin, 1938, partim; *Anodonta subcircularis astrachanica* Starobogatov et Pirogov, 1970]

Anodonta subcircularis Clessin, 1873b: 87, Taf. 22, fig. 3-4.

- Type locality: Albania and Montenegro, the Scutari (Skadarsko) Lake.
- Types: Not traced. Clessin's collection was in Stuttgart Museum but totally destroyed during 1939-1945 war [Dance, 1986].

- Global distribution: Southern Europe.
- Distribution in the former USSR: South of the European part of RAC [Bogatov *et al.*, 2005].
- Subregions: SE.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] treated this species as a synonym of *A. anatina*.

12(55). *Anodonta (Colletopterum) ponderosa* C. Pfeiffer, 1825

[= *Anodonta anatina* var. *lenae* Zhadin, 1938, partim; *Anodonta anatina* var. *petschorica* Zhadin, 1938, partim; *Anodonta piscinalis* var. *volgensis* Zhadin, 1938, partim; *Anodonta ponderosa altaica* Krivosheina et Starobogatov, 1970]

Anodonta ponderosa C. Pfeiffer, 1825: 31, pl. 4, fig. 1-6.

- Type locality: Germany, Lower Saxony, in vicinities of Bar Pyrmont Town ("Aus flusse des Radsieker Teiches in den Wörntebach, in der Gegend von Pyrmont"; Pfeiffer, 1825: 31).
- Types: Unknown.
- Global distribution: Northern Eurasia (Europe, Siberia, Mongolia) [Bogatov *et al.*, 2005].
- Distribution in the former USSR: The European part of RAC, Siberia [Bogatov *et al.*, 2005; Vinarski *et al.*, 2007].
- Subregions: NE, SE, WS, ES.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Most malacologists working outside the former USSR regarded this species as a junior synonym of *A. anatina* [Haas, 1969; Graf & Cummings, 2013]. Nevertheless, there are stable differences between *A. anatina* and *A. ponderosa* both in shell morphology and ecological preferences that allows us to

assume it represents a good ‘biological’ species [M. Vinarski, unpublished].

13(56). *Anodonta (Colletopterum) cyrea* Drouët, 1881

Anodonta cyrea Drouët, 1881: 32.

- Type locality: Caucasus, the Kura River (“le Kour ...; les cours d’eau du Caucase et de la mer Caspienne”; Drouët, 1881: 29).
- Types: Unknown.
- Global distribution: the Caucasus, Central Asia, the Aral Sea and the southern Caspian Sea drainages [Zhadin, 1938; Graf & Cummings, 2013].
- Distribution in the former USSR: The Caucasian Region and Central Asia [Zhadin, 1938].
- Subregions: CA, CT.
- Bionomics: Lives in lakes, rivers, and streams [Zhadin, 1938].
- IUCN conservation status: DD (data deficient).
- Remark: According to Starobogatov & Izzatullaev [1984], this species includes two subspecies (see below).

13(56a). *Anodonta (Colletopterum) cyrea cyrea* Drouët, 1881

[= *Anodonta georgiana* Drouët, 1881; *Anodonta lenkoranensis* Drouët, 1881; *Anodonta cygnea* var. *armenica* Ovtschinnikov, 1935]

- Distribution in the former USSR: The Caucasian Region, Transcaucasia [Zhadin, 1938; Bogatov *et al.*, 2005]; the Caspian Sea (ZIN catalogue, determined by Ya.I. Starobogatov).
- Subregions: CT, CS.

13(56b). *Anodonta (Colletopterum) cyrea sogdiana* Kobelt, 1896

[= *Anodonta retteri* Drouët, 1889; *Anodonta samarkandensis* Kobelt, 1913]

Anodonta sogdiana Kobelt, 1896: 102.

- Type locality: Uzbekistan, the Zeravshan River near Bukhara City (approximately 39°44’N 64°34’E).
- Types: SMF No. 4414 [fide Zilch, 1967].
- Distribution in the former USSR: Central Asia [Starobogatov & Izzatullaev, 1984].
- Subregions: CA.

13(57). *Anodonta (Colletopterum) bactriana* Rolle, 1897

Anodonta bactriana Rolle, 1897: 172.

- Type locality: Uzbekistan, the Zeravshan River near Bukhara City (approximately 39°44’N 64°34’E).
- Types: SMF No. 4412.
- Global distribution: Endemic to Central Asia (within the borders of the former USSR).
- Distribution in the former USSR: The Amu-Daria and Syr-Daria drainages [Antonova & Starobogatov, 1988].
- Subregions: CA.
- Bionomics: Not studied.
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] treated this species as a synonym of *A. cyrea*.

13(58). *Anodonta (Colletopterum) kokandica* (Starobogatov et Izzatullaev, 1984)

Colletopterum kokandicum Starobogatov & Izzatullaev, 1984: 78, fig. 4.

- Type locality: Uzbekistan, the Pechkoran Lake, 6 km N from Kokand city (approximately 40°37’N 70°56’E).
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and three paratypes.
- Global distribution: Endemic to Central Asia (within the borders of the former USSR).
- Distribution in the former USSR: The Amu-Daria and Syr-Daria drainages [Antonova & Starobogatov, 1988].
- Subregions: CA.
- Bionomics: Not studied.
- IUCN conservation status: Not assessed.

- Remark: Graf [2007] treated this species as a synonym of *A. cyrea*.

Genus *Pseudanodonta*
Bourguignat, 1876

[= *Elongatiana* Servain, 1888; *Complanatiana* Servain, 1890; *Rayana* Servain, 1890; *Rossmassleriana* Locard, 1890; *Scrupeana* Servain, 1890]

Type species: *Anodonta complanata* Rossmässler, 1835 (SD Westerlund, 1902)

14(59). *Pseudanodonta complanata*
(Ziegler in Rossmässler, 1835)

[= *Anodonta rhomboidea* Schlüter, 1838; *Anodonta complanata* var. *cristata* Moquin-Tandon, 1855; *Anodonta borealis* Kobelt, 1890; *Pseudanodonta anticomplanata* Locard, 1890; *Pseudanodonta schumanni* Locard, 1890; *Anodonta acutalis* Drouët in Westerlund, 1894; *Pseudanodonta pechaudi* var. *inflata* Germain, 1904; *Pseudanodonta elongata* var. *silesiaca* Kobelt et Haas, 1911].

Anodonta complanata Rossmässler, 1835a: 112, pl. 3, fig. 68.

- Type locality: Germany, the Elbe River (the locality of the lectotype). In the original description, “Elbe bei Dresden” is mentioned among other numerous localities of this species in Germany.
- Lectotype: SMF No. 10652.
- Global distribution: Southern Europe east to the Volga River [Graf & Cummings, 2013].
- Distribution in the former USSR: The Volga Delta and the waterbodies of the Baltic Sea basin [Starobogatov *et al.*, 2004].
- Subregions: NE, SE.
- Bionomics: Lives in lakes and rivers on soft substrates [Starobogatov *et al.*, 2004].
- IUCN conservation status: VU (vulnerable).

14(60). *Pseudanodonta nordenskioldi*
Bourguignat, 1880

[= *Pseudanodonta nordenskioldi* var. *maelarensis* Kobelt, 1911]

Pseudanodonta nordenskioldi Bourguignat, 1880: 41 (nom. nov. pro *Anodonta complanata* sensu Nordenskiöld et Nylander, 1856, non Ziegler in Rossmässler, 1835).

- Type locality: Finland.
- Types: Not traced.
- Global distribution: Northern Europe.
- Distribution in the former USSR: The Baltic Sea basin [Starobogatov *et al.*, 2004].
- Subregions: NE.
- Bionomics: Lives in rivers and lakes, on soft substrates [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Haas [1969] and Graf [2007] treated this species as a synonym of *P. complanata*.

15(61). *Pseudanodonta kletti*
(Ziegler in Rossmässler, 1835)

[= *Anodonta middendorffi* Siemaschko, 1848; *Anodonta complanata* var. *compacta* Zelebor in Haidinger, 1851; *Anodonta complanata* var. *tumida* Zelebor in Haidinger, 1851; *Alasmodonta berlani* Bourguignat, 1870; *Alasmodonta penchinati* Bourguignat, 1870; *Pseudanodonta danubialis* Bourguignat, 1880; *Pseudanodonta ellipsiformis* Bourguignat, 1880; *Pseudanodonta le-tourneuxi* Bourguignat, 1880; *Pseudanodonta mecyna* Bourguignat, 1880; *Pseudanodonta panciei* Bourguignat, 1880; *Pseudanodonta praeclara* Bourguignat, 1880; *Pseudanodonta rosmaessleri* Bourguignat, 1880; *Pseudanodonta scrupiei* Bourguignat, 1880; *Pseudanodonta tanousi* Bourguignat, 1880; *Anodonta complanata* var. *jijiana* Nicodim, 1909; *Pseudanodonta complanata sabensis* Kobelt, 1911; *Pseudanodonta rosmaessleri* var. *euxina* Kobelt, 1911; *Pseudanodonta compacta kuesteri* Haas, 1913; *Pseudanodonta complanata sobriewskii* Rosen, 1925; *Pseudanodonta complanata lacustrina* Grossu, 1962].

Anodonta kletti Rossmässler, 1835a: 112.

- Type locality: Germany, Saxony [fide Haas, 1969].
- Types: SMF No. 13101 [fide Zilch, 1967].
- Global distribution: Europe [Stad-

nichenko, 1984; Starobogatov *et al.*, 2004].

- Distribution in the former USSR: The waterbodies of the Baltic Sea basin [Starobogatov *et al.*, 2004]; Ukraine [Stadnichenko, 1984].
- Subregions: NE, SE.
- Bionomics: Lives in lakes and rivers on soft substrates [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Stadnichenko [1984] regarded *P. kletti* as a senior synonym of *P. middendorffi* (Siemaschko, 1848). Haas [1969] and some subsequent authors [Graf & Cummings, 2013] synonymized *P. kletti* with *P. complanata* and used the name *P. middendorffi* for designation of a particular species of *Pseudanodonta* living in the Danube basin and other river systems belonging to the Black Sea basin.

**16(62). *Pseudanodonta elongata*
(Holandre, 1836)**

[= *Anodonta gratelupeana* Gassies, 1849; *Anodonta jobae* Dupuy, 1849; *Anodonta normandi* Dupuy, 1849; *Anodonta siliqua* Küster, 1853; *Pseudanodonta occidentalis* Coutagne, 1895; *Pseudanodonta limosina* Dumas, 1895; *Anodonta nicarica* Haas, 1908; *Pseudanodonta elongata milachevitchi* Starobogatov et Pirogov, 1970]¹⁴.

Anodonta elongata Holandre, 1836: 54.

- Type locality: France, Moselle Department, “sur les bords de la Moselle en Chambières, au-dessous du Poutiffroy” [Holandre, 1836].
- Types: Not traced.

¹⁴ We omit numerous taxonomic names synonymic to *A. anatina* s. l. introduced by authors of the “Nouvelle École”. Complete synonymy for this species is given by Haas [1969] and Graf & Cummings [2013].

• Global distribution: Atlantic western Europe east to the Volga River [Graf & Cummings, 2013].

- Distribution in the former USSR: The Volga Delta and the waterbodies of the Baltic Sea basin [Starobogatov *et al.*, 2004].
- Subregions: NE, SE.
- Bionomics: Lives in lakes and rivers on soft substrates [Starobogatov *et al.*, 2004].
- IUCN conservation status: DD (data deficient).

Genus *Cristaria* Schumacher, 1817

[= *Dipsas* Leach, 1814, non Laurenti, 1768 (Reptilia); *Barbala* Gray, 1825; *Appius* Menke, 1830; *Dianisotis* Rafinesque, 1831; *Dipsax* Voigt in Cuvier, 1834; *Craspedodonta* Küster, 1842; *Cleone* Gistel, 1848; *Pletholophus* Simpson, 1900]

Type species: *Cristaria tuberculata* Schumacher, 1817 (M)

**17(63). *Cristaria tuberculata*
Schumacher, 1817**

Cristaria tuberculata Schumacher, 1817: 107, pl. XX, fig. 2.

- Type locality: Not stated.
- Types: Not traced.
- Global distribution: The Far East of Russia, Eastern Mongolia (ZIN collection, determined by Ya.I. Starobogatov).
- Distribution in the former USSR: Basin of the Khanka Lake and the Ussuri River [Zatravkin & Bogatov, 1987].
- Subregions: SF.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] regarded this species as a junior synonym of *C. plicata* (Leach, 1814).

**17(64). *Cristaria herculea*
(Middendorff, 1847)**

Anodonta herculea Middendorff, 1847: 302-303 (see also Middendorff, 1851: 278, pl. 21, fig. 5; pl. 22, fig. 1, 2; pl. 26, fig. 1, 2)

- Type locality: Russia, Zabaikalsky Territory, the Onon River near Ust'-Ulyatui settlement (approximately 51°13'N 115°56'E).
- Types: ZIN Nos. 1 and 2 in systematic catalogue. The type series includes the lectotype and several paralectotypes.
- Global distribution: South of Asiatic Russia, Mongolia. Two shells from Northern Vietnam determined by Ya.I. Starobogatov as *C. herculea* are kept in ZIN (No. 56 in systematic catalogue).
- Distribution in the former USSR: Lakes of the Iturup Island (the Kuriles), basins of the Khanka Lake, the Onon, Nercha, Argun, Shilka, Zeya, and the lower Amur rivers [Zatravkin & Bogatov, 1987]; the Sakhalin Island [Prozorova *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in rivers, river channels, creeks and lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] treated this species as a synonym of *C. plicata*. Klishko *et al.* [2014] presented additional data in support of this point of view.

Genus *Anemina* Haas, 1969

[= *Haasiella* Lindholm, 1925, non Pocock, 1901 (Myriapoda), nec Kieffer, 1913 (Diptera); *Amuranodonta* Moskvicheva, 1973]

Type species: *Anodon arcaeformis* Heude, 1877 (by typification of replaced name)

Remark: All mussel species that are placed into the genus *Anemina* (including *Amuranodonta* and *Buldowskia*) by the Russian authors, some malacologists [Graf, 2007; Graf & Cumming, 2013] regarded as synonyms of only two species – *Anodonta arcaeformis* (Heude) and *A. euscaphys* (Heude). These two

taxa are not listed in the most recent Russian handbooks devoted to the malacofauna of the former USSR [Kantor & Sysoev, 2005; Kantor *et al.*, 2010].

Subgenus *Anemina* s. str.

**18(65). *Anemina (Anemina)*
fuscoviridis (Moskvicheva, 1973)**

[= *Anodonta euscaphys* sensu Zhadin, 1938, non Heude, 1879; *Anemina shadini deflexa* Martynov et Chernyshev, 1992]

Sinanodonta (Anemina) fuscoviridis Moskvicheva, 1973a: 830 (nom. nov. pro *Anodonta euscaphys* sensu Zhadin, 1938, non Heude, 1879)

- Type locality: Russia, Primorye Territory, the Ulakhe River (a tributary of the Ussuri River) near Koksharovka village (approximately 44°31'31"N 134°03'16"E).
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the lectotype (designated by Moskvicheva [1973a]) and 11 paralectotypes.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Ussuri River, the Trostnikovoye Lake, introduced in vicinities of Vladivostok [Zatravkin & Bogatov, 1987; Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in shallow lakes, river channels and oxbows [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] regarded this species as a junior synonym of *Anodonta euscaphys*.

**19(66). *Anemina (Anemina) shadini*
(Moskvicheva, 1973)**

[= *Anodonta arcaeformis* sensu Zhadin, 1938, non Heude, 1877]

Sinanodonta (Anemina) shadini Moskvicheva, 1973a: 828-829 (nom. nov. pro *Anodonta arcaeformis* sensu Zhadin, 1938).

- Type locality: Russia, Primorye Territory, the Mandzhurka (Troitskaya) River, basin of the Khanka Lake.
- Types: ZIN, Nos. 1, 2 in systematic catalogue. The type series includes the lectotype (designated by Moskvicheva [1973a]) and 3 paralectotypes.
- Global distribution: The Far East of Russia, the Silaokhe River basin (China, Inner Mongolia) and the Buir-Nuur Lake, Mongolia [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: The Shilka, Kerulen, Zeya, Amur (lower), and Troitskaya rivers [Zatravkin & Bogatov, 1987].
- Subregions: SF.
- Bionomics: Lives in lakes, river bays and oxbows [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] regarded this species as a junior synonym of *Anodonta arcaeformis*.

19(67). *Anemina (Anemina) buldowskii* (Moskvicheva, 1973)

Sinanodonta (Anemina) buldowskii Moskvicheva, 1973a: 829-830, fig. 2 (3).

- Type locality: Russia, Primorye Territory, the Ulakhe River (a tributary of the Ussuri River), 150 m from the northern shore of the Khanka Lake.
- Types: ZIN, Nos. 1-3 in systematic catalogue. The type series includes the holotype and five paratypes.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Khanka Lake and the Ussuri River basins [Zatravkin & Bogatov, 1987].
- Subregions: SF.
- Bionomics: Lives in rivers, river channels, creeks and lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

- Remark: Graf [2007] treated this species as a synonym of *Anodonta arcaeformis*.

**Subgenus *Buldowskia*
Moskvicheva, 1973**

[= *Amurbuldowskia* Bogatov et Starobogatov, 1996]

Type species: *Anodonta arcaeformis suifunica* Lindholm, 1925 (OD)

20(68). *Anemina (Buldowskia) suifunica* (Lindholm, 1925)

Anodonta arcaeformis var. *suifunica* Lindholm, 1925: 138.

- Type locality: Russia, Primorye Territory, the Razdol'naya (= Sujfun) River near Ussuriysk (formerly Nikol'sk) Town (approximately 43°48'N 131°57'E).
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Razdol'naya River basin [Starobogatov *et al.*, 2004]
- Subregions: SF.
- Bionomics: Lives in lakes, river bays and oxbows [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] regarded this species as a junior synonym of *Anodonta arcaeformis*.

20(69). *Anemina (Buldowskia) boloniensis* (Zatravkin et Bogatov, 1987)

Buldowskia boloniensis Zatravkin & Bogatov, 1987: 86-87, fig. 18, 3-к.

- Type locality: Russia, Khabarovsk Territory, Amur District, the Bolon' Lake (approximately 49°51'41"N 136°27'55"E).
- Holotype: ZIN No. 1 in systematic catalogue.
- Global distribution: The Russian Far East, Transbaikalia.

- Distribution in the former USSR: Type locality [Zatravkin & Bogatov, 1987]; Areyskoye Lake, Transbaikalia [Klishko, 2009].
- Subregions: SF.
- Bionomics: Lives in lakes [Zatravkin & Bogatov, 1987; Klishko, 2009].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] treated this species as a synonym of *Anodonta arcaeformis*.

20(70). *Anemina (Buldowskia) cylindrica* (Moskvicheva, 1973)

Buldowskia cylindrica Moskvicheva, 1973b: 1467-1468, fig. 3, B, r.

- Type locality: Zatravkin & Bogatov [1987] stated that the type locality is "the Knevichanka River near the Losinoe Lake" (Russia, Primorye Territory, vicinity of Artyom Town). However, the holotype shell has label "Primorye Territory, the Maikhe River basin, the Batalyanza River".
- Types: ZIN Nos. 1-3 in systematic catalogue. The type series includes the holotype and four paratypes.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: Type locality [Zatravkin & Bogatov, 1987].
- Subregions: SF.
- Bionomics: Lives in lake bays [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] treated this species as a synonym of *Anodonta arcaeformis*.

20(71). *Anemina (Buldowskia) flavotincta* (Martens, 1905)

Anodonta arcaeformis var. *flavotincta* Martens, 1905: 64, pl. 2, fig. 4.

- Type locality: Korea, "Söul, Provinz Kyöngkwido, Keumgang bei Konju, Provinz Chhungchhôngdo" [Martens, 1905: 64].
- Types: ZMB, Nos. 36371 and 55623. The type series contains four syntypes.
- Global distribution: Far East (Korea, Russia).
- Distribution in the former USSR: South of the Primorye Territory [Starobogatov *et al.*, 2004].

- Subregions: SF.
- Bionomics: Lives in lake bays [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: According to Modell [1945], it is a subspecies of *Anodonta lauta* Martens, 1877. Graf [2007] treated this species as a synonym of *A. arcaeformis*.

20(72). *Anemina (Buldowskia) kijaensis* (Moskvicheva, 1973)

Amuranodonta kijaensis Moskvicheva, 1973a: 831-832, fig. 2 (5).

- Type locality: Russia, Khabarovsk Territory, the Zarechnoye Lake, basin of the River Kiya near Polyotnoye Settlement (approximately 47°54' N 135°36' E).
- Types: ZIN, Nos. 1-5, 7 in systematic catalogue. The type series contains the holotype and 27 paratypes.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: Basins of the Ussuri and lower Amur rivers [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in floodplain lakes and oxbows [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] treated this species as a synonym of *Anodonta arcaeformis*.

20(73). *Anemina (Buldowskia) koreana* (Bogatov et Starobogatov, 1996)

Buldowskia koreana Bogatov & Starobogatov, 1996b: 1331, fig. 2 B, r.

- Type locality: Russia, Primorye Territory, Khasan District, lake of former bed of the Gladkaya River in 2 km of Gvozdevo settlement (approximately 42°41' N 130°54' E).
- Types: ZIN, Nos. 1-3 in systematic catalogue. The type series contains the holotype and two paratypes.
- Global distribution: Far East: Russia, possibly also in China and Korea [Bogatov & Starobogatov, 1996b].
- Distribution in the former USSR: Basins of the Ussuri and lower Amur rivers [Starobogatov *et al.*, 2004].

- Subregions: SF.
- Bionomics: Lives in floodplain lakes and oxbows [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] treated this species as a synonym of *Anodonta arcaeformis*.

**20(74). *Anemina (Buldowskia) lomakini*
(Zatravkin et Bogatov, 1987)**

[= *Amuranodonta inflata* Bogatov et Starobogatov, 1996]

Buldowskia lomakini Zatravkin & Bogatov, 1987: 86, fig. 18 д-п.

- Type locality: Russia, Khabarovsk Territory, the Amur River near Susanino village (approximately 52°47'34"N, 140°04'04"E).
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series contains the holotype and a single paratype.
- Global distribution: The Russian Far East, Transbaikalia.
- Distribution in the former USSR: Basins of the Ussuri and lower Amur rivers [Starobogatov *et al.*, 2004]; recorded also from the Areyskoye Lake in Transbaikalia [Klishko, 2009].
- Subregions: SF.
- Bionomics: Lives in rivers and floodplain lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] treated this species as a synonym of *Anodonta arcaeformis*.

**20(75). *Anemina (Buldowskia) parva*
(Moskvicheva, 1973)**

[= *Anemina (Buldowskia) lacustris* Labay et Shulga, 1999]

Amuranodonta parva Mokvicheva, 1973a: 832, fig. 2(6).

- Type locality: Russia, Khabarovsk Territory, the Amur River near Nikolaevsk-na-Amure Town (approximately 54°08'N 140°42'E).
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series contains the holotype and 4 paratypes.
- Global distribution: The Russian Far East, Transbaikalia.
- Distribution in the former USSR: Basin of the lower Amur River and the Sladkoye Lake

(the northwestern Sakhalin) [Starobogatov *et al.*, 2004], the Areyskoye Lake in Transbaikalia [Klishko, 2009].

- Subregions: SF.
- Bionomics: Lives in lakes, on muddy sand substrates [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] treated this species as a synonym of *Anodonta arcaeformis*.

**20(76). *Anemina (Buldowskia) possietica*
(Bogatov et Starobogatov, 1996)**

Buldowskia possietica Bogatov & Starobogatov, 1996b: 1329-1330, fig. 3 a, б.

- Type locality: Russia, Primorye Territory, lake on Boisman Bay shore, the Ryazanovka River basin [Bogatov & Starobogatov, 1996b]. However, the holotype (ZIN) is labeled "Primorye Territory, Khasan District, an oxbow of the Gladkaya River, 2 km from Gvozdevo settlement". The Boisman Bay is the locality where one of the paratypes was collected.
- Types: ZIN, Nos. 1-3 in systematic catalogue. The type series contains the holotype and 7 paratypes.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: Southern part of Primorye Territory [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] treated this species as a synonym of *Anodonta arcaeformis*.

**20(77). *Anemina (Buldowskia) pulchra*
(Bogatov et Starobogatov, 1996)**

Amuranodonta pulchra Bogatov & Starobogatov, 1996a: 974-975, textfig. (3, 4, 66).

- Type locality: Russia, Primorye Territory, lake in old river bed, 0.5 km upstream of Vostretsovo settlement, right bank of the Bol'shaya Ussurka River (approximately 45°53'50"N, 134°55'36"E).
- Types: ZIN, Nos. 1-3 in systematic cata-

logue. The type series contains the holotype and 7 paratypes.

- Global distribution: The Russian Far East, Transbaikalia.
- Distribution in the former USSR: Southern part of Primorye Territory [Starobogatov *et al.*, 2004], the Sakhalin Island [Prozorova *et al.*, 2004], the Areyskoye Lake in Transbaikalia [Klishko, 2009].
- Subregions: SF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004; Klishko, 2009].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] treated this species as a synonym of *Anodonta arcaeformis*. Klishko [2009] failed to find any morphological difference between *A. pulchra* and *A. parva* living sympatrically in the Areyskoye Lake. Possibly, the two taxa are conspecific.

20(78). *Anemina (Buldowskia) sitaensis* (Bogatov et Starobogatov, 1996)

[= *Anemina (Buldowskia) adotymensis* Labay et Shulga, 1999]

Buldowskia (Amurbuldowskia) sitaensis Bogatov & Starobogatov, 1996a: 973-974, textfig. (1, 2).

- Type locality: Russia, Khabarovsk Territory, inlet of the Sita River near bridge of road Khabarovsk–Vladivostok in vicinity of Kn-yaze-Volkonskoye settlement (approximately 48°27'58"N, 135°26'52"E).
- Holotype: ZIN, No.1 in systematic catalogue.
- Global distribution: Russian Far East, Transbaikalia.
- Distribution in the former USSR: Basins of the Ussuri and lower Amur rivers, the Krivushka Lake (the northern Sakhalin) [Starobogatov *et al.*, 2004], the Areyskoye Lake in Transbaikalia [Klishko, 2009].
- Subregions: SF.
- Bionomics: Lives in lakes, channels and oxbows [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] treated this species as a synonym of *Anodonta arcaeformis*. Klishko [2009] failed to find any morphological difference between *A. sitaensis* and *A. ki-*

jaensis living sympatrically in the Areyskoye Lake. Possibly, the two taxa are conspecific.

20(79). *Anemina (Buldowskia) starobogatovi* (Moskvicheva, 1973)

Amuranodonta starobogatovi Moskvicheva, 1973a: 831, fig. 2 (4).

- Type locality: Russia, Primorye Territory, a small lake on the Krasnoyarskaya mound, vicinities of city Ussuriysk, formerly Nikol'sk (approximately 43°48'N 131°57'E).
- Types: ZIN, Nos 1–3 in systematic catalogue. The type series includes the holotype and three paratypes.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: Southern part of Primorye Territory [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lake bays [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] treated this species as a synonym of *Anodonta arcaeformis*.

20(80). *Anemina (Buldowskia) sufjunensis* (Zhadin, 1938)

[= *Anemina (Buldowskia) zatrawkini* Martynov et Chernyshev, 1992]

Anodonta beringiana var. *sufjunensis* Zhadin, 1938: 132, fig. 48.

- Type locality: Russia, Primorye Territory, the Bokhiyskoye lake, basin of the Razdol'naya (= Sujfun) River.
- Types: ZIN, Nos 1 and 2 in systematic catalogue. The type series includes the lectotype (designated in Moskvicheva [1973a]) and nine paralectotypes.
- Global distribution: The Russian Far East.
- Distribution in the former USSR: Southern part of Primorye Territory [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] treated this species as a synonym of *Anodonta arcaeformis*.

20(81). *Anemina (Buldowskia) suputinensis* (Moskvicheva, 1973)

Buldowskia suputinensis Moskvicheva, 1973a: 833, fig. 2 (8).

- Type locality: Russia, Primorye Territory, the Lug Lake, basin of the Komarovka River, vicinities of city Ussuriysk.
- Types: ZIN, Nos. 1–7 in systematic catalogue. The type series includes the holotype and 47 paratypes.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Razdol'naya (= Sujfun) River basin [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in rivers and lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] treated this species as a synonym of *Anodonta arcaeformis*.

Genus *Beringiana* Starobogatov
in Zatravkin, 1983

[= *Kunashiria* Starobogatov in Zatravkin, 1983; *Arsenievinaia* Zatravkin et Bogatov, 1987]

Type species: *Anodonta cellensis* var. *beringiana* Middendorff, 18510 (OD)

21(82). *Beringiana beringiana* (Middendorff, 1851)

Anodonta cellensis var. *beringiana* Middendorff, 1851: 284-287, pl. 29, figs. 1-3.

- Type locality: USA, the Aleutian Islands, the Unalashka Island, the Kenai Lake.
- Types: ZIN, Nos 1–3 in systematic catalogue. The type series includes the holotype and five paratypes.
- Global distribution: North-West of USA (Alaska, the Aleutian Islands), North-East of Asiatic Russia.
- Distribution in the former USSR: The Kamchatka and Chukchi Peninsulars, the Kunashir and Paramushir islands (the

Kurile Archipelago) [Zatravkin & Bogatov, 1987; Starobogatov *et al.*, 2004].

- Subregions: NF.
- Bionomics: Lives in lagoon lakes and oxbows [Starobogatov *et al.*, 2004].
- IUCN conservation status: LC (least concern).
- Remark: Modell [1945] considered this species as a subspecies of the Nearctic mussel *Anodonta marginata* Say, 1817.

21(83). *Beringiana chereshevi* Bogatov et Starobogatov, 2001

Beringiana chereshevi Bogatov & Starobogatov, 2001: 26-27, figs. 2 a, 2 b, 4 ж.

- Type locality: Russia, Chukchi Autonomous District, the Elergytygyn Lake, the Khartarka River basin (most probably, it is the Elgygytygyn Lake, 67°30'N 172°00'E).
- Types: ZIN, Nos 1–3 in systematic catalogue. The type series includes the holotype and six paratypes.
- Global distribution: Northern part of the Russian Far East.
- Distribution in the former USSR: The Chukchi and Kamchatka Peninsulars [Starobogatov *et al.*, 2004].
- Subregions: NF.
- Bionomics: Lives in cold-water lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] treated this species as a synonym of *Anodonta beringiana*.

21(84). “*Beringiana compressa*” Sayenko et Bogatov, 1998

Beringiana compressa Sayenko & Bogatov, 1998: 1414-1417, fig. 2, 3 b, 4.

- Type locality: Russia, the northern Kurile Archipelago, the Paramushir Island, the Pernatoye Lake (50°27'34"N, 155°23'32"E).
- Types: ZIN, Nos 1 and 2 in systematic catalogue. The type series includes the holotype and two paratypes.
- Global distribution: Endemic to the Paramushir Lake.
- Distribution in the former USSR: Type locality [Bogatov & Starobogatov, 2001].
- Subregions: NF.

- Bionomics: Recorded from a lake with sandy bottom [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] treated this species as a synonym of *Anodonta beringiana*. According to Chernyshev [2004], the genus *Beringiana* is the senior synonym of the genus *Arsenievinaia* Zatravkin et Bogatov, 1987. If this synonymy is accepted, the taxonomic name *Beringiana compressa* Sayenko et Bogatov, 1998 becomes a secondary homonym of the taxonomic name *B. compressa* (Bogatov et Starobogatov, 1996) that is described below under No. 21(89).

**21(85). *Beringiana derzhavini*
Bogatov et Starobogatov, 2001**

Beringiana derzhavini Bogatov & Starobogatov, 2001: 27, figs. 2 б, 2 г, 4 а.

- Type locality: Russia, Kamchatka Peninsula, vicinities of Petropavlovsk-Kamchatsky City, the Blizhnyaya River, source of the Blizhneye Lake (approximately 52°58'N, 158°20'E).
- Types: ZIN, Nos 1 and 2 in systematic catalogue. The type series includes the holotype and 14 paratypes.
- Global distribution: Endemic to the Kamchatka Peninsula.
- Distribution in the former USSR: The Kamchatka Peninsula [Bogatov & Starobogatov, 2001].
- Subregions: NF.
- Bionomics: Lagoon lakes with sandy-mud bottom, oxbows and river bays [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] treated this species as a synonym of *Anodonta beringiana*.

**21(86). *Beringiana kamchatica*
Bogatov et Starobogatov, 2001**

Beringiana kamchatica Bogatov & Starobogatov, 2001: 27-28, figs. 2 д, 2 е, 4 г.

- Type locality: Russia, the Kamchatka Peninsula, vicinities of Petropavlovsk-Kamchatsky City, the Blizhnyaya River, source of the Blizhneye Lake (approximately 52°58'N, 158°20'E).

- Types: ZIN, Nos 1–6 in systematic catalogue. The type series includes the holotype and 9 paratypes.
- Global distribution: Extreme North-East of Russia, the Aleutian Islands [Bogatov & Starobogatov, 2001].
- Distribution in the former USSR: The Kamchatka Peninsula, the North Kurile Islands, Magadan Region [Starobogatov *et al.*, 2004].
- Subregions: NF.
- Bionomics: Lagoon lakes with sandy-mud bottom, oxbows and river bays [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] treated this species as a synonym of *Anodonta beringiana*.

**21(87). *Beringiana youconensis*
(Lea, 1867)**

[= *Anodonta youkanensis* Lea, 1868; *Anodonta beringiana* sensu Zhadin, 1938, non Middendorff, 1851]

Anodonta youconensis Lea, 1867: 81.

- Type locality: USA, Alaska, the Upper Yukon River ("Head waters of the Youcon, Arctic America"; Lea, 1867: 81).
- Lectotype: USNM No. 86624 [Graf & Cummings, 2013].
- Global distribution: Extreme North-East of Russia, the Aleutian Islands, Alaska [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: Yakutia, Magadan Region, Kamchatka, the Chukchi Peninsula, basin of the Anadyr' River [Zatravkin & Bogatov, 1987; Starobogatov *et al.*, 2004].
- Subregions: ES, NF.
- Bionomics: Lagoon lakes with sandy-mud bottom, oxbows and river bays [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] treated this species as a synonym of *Anodonta beringiana*.

**22(88). *Beringiana japonica*
(Martens in Clessin, 1874)**

Anodonta japonica Clessin, 1874a: 144-145, pl. 47, figs. 3-4.

- Type locality: Japan, Yokohama.
- Types: ZMB, No. 9093. The type series includes four intact specimens and 13 separate valves.
- Global distribution: Far East.
- Distribution in the former USSR: The southern Sakhalin and the southern Kurile Islands [Zatravkin & Bogatov, 1987; Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lagoon lakes and channels [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] regarded this species as a synonym of *Sinanodonta woodiana* (Lea, 1834).

**22(89). *Beringiana compressa*
(Bogatov et Starobogatov, 1996)**

Arsenievinaia compressa Bogatov & Starobogatov, 1996b: 1332, fig. 4 B, r.

- Type locality: Russia, Primorye Territory, Dal'negorsk District, Lake Zerkal'noye, the Rudnaya River basin.
- Holotype: ZIN, No. 1. Paratypes are absent.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: Primorye Territory, Rudnaya River basin [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lakes on sandy-mud bottoms [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] regarded this species as a synonym of *Anodonta woodiana japonica*.

**22(90). *Beringiana coptzevi*
(Zatravkin et Bogatov, 1987)**

[= *Arsenievinaia alimovi* Bogatov et Zatravkin, 1988]

Arsenievinaia coptzevi Zatravkin & Bogatov, 1987: 104-105, fig. 20, 6, 24 B, r.

- Type locality: Russia, Primorye Territory,

Dal'negorsk District, the Vas'kovskoye Lake near village Rudnaya Pristan' (approximately 44°21'N, 135°49'E).

- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and four paratypes.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: Primorye Territory, eastern slope of the Sikhote-Alin' Ridge and the northern Sakhalin [Zatravkin & Bogatov, 1987; Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lakes and oxbows [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] regarded this species as a synonym of *Anodonta woodiana japonica*.

**22(91). *Beringiana haconensis*
(Ihering, 1893)**

[= *Amuranodonta sihotealinica* Zatravkin et Starobogatov, 1984; *Kunashiria japonica boreosakhalinensis* Labay et Shulga, 1999]

Anodonta haconensis Ihering, 1893: 153, fig. 4.

- Type locality: Japan, the Honshû Island, the Ashi (= Hakone) Lake (35°12'35"N, 139°0'16"E).
- Holotype: SMF No. 3683 (Zilch, 1967).
- Global distribution: The Far East (Japan, Russia).
- Distribution in the former USSR: Eastern slope of the Sikhote-Alin' Ridge (Primorye Territory), the southern Sakhalin, the southern Kurile Islands [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lagoon lakes and channels [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] regarded this species as a synonym of *Anodonta woodiana japonica*.

**22(92). *Beringiana iturupica* (Bogatov,
Sayenko et Starobogatov, 1999)**

Kunashiria iturupica Bogatov *et al.*, 1999: 60-62, fig. 4.

- Type locality: Russia, the Kurile Archipela-

go, the Iturup Island, the Kuibyshevskoye Lake.

- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and a single paratype.
- Global distribution: Endemic to the Kurile Archipelago.
- Distribution in the former USSR: The southern Kurile Islands: the Kunashir and the Iturup [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lagoon lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] regarded this species as a synonym of *Anodonta woodiana japonica*.

**22(93). *Beringiana iwakawai*
(Suzuki, 1939)**

Anodonta iwakawai Suzuki, 1939: 130-138 (in Japanese), 139-143 (in English), pl. 5, 6, textfigs. 1-7.

- Type locality: Japan, Tarukawa-numa, NW of Sapporo.
- Types: Geological Institute, University of Tokyo, LF1.
- Global distribution: The Far East (Japan, Russia).
- Distribution in the former USSR: The Lesser Kurile Islands (the Zelenyi, Tanfilyeva, Yuri islands), the southern Sakhalin [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lagoon lakes and deep channels [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] regarded this species as a synonym of *Anodonta woodiana japonica*, whereas Graf & Cummings [2013] believe it to be identical with *Anemina arcaeformis* (Heude).

**22(94). *Beringiana sinanodontoides*
(Bogatov, Sayenko et Starobogatov,
1999)**

Kunashiria sinanodontoides Bogatov *et al.*, 1999: 59-60, fig. 1, 3.

- Type locality: Russia, the Kurile Archipelago,

go, the Iturup Island, the Dobroye Lake, Dobroye Nachalo Bay Basin.

- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and three paratypes.
- Global distribution: Endemic of the Kurile Archipelago.
- Distribution in the former USSR: Type locality [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Registered from a lake [Bogatov *et al.*, 1999].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] regarded this species as a synonym of *Anodonta woodiana japonica*.

**22(95). *Beringiana taranetzi*
(Zhadin, 1938)**

[= *Arsenievinaia zatravkini* Bogatov et Starobogatov, 1996]

Anodonta beringiana var. *taranetzi* Zhadin, 1938: 133, fig. 49.

- Type locality: Russia, the Sakhalin Island, a lake in the floodplain of the river Tym' near the Kotik Island.
- Lectotype: ZIN, No. 1 in systematic catalogue. The type series includes the lectotype and a single paralectotype.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: Primorye Territory, eastern slope of the Sikhote-Alin' Ridge and the Sakhalin Island [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lagoon lakes and deep channels [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] regarded this species as a synonym of *Anodonta woodiana japonica*.

**22(96). *Beringiana zarjaensis*
(Bogatov et Zatravkin, 1988)**

Arsenievinaia zarjaensis Bogatov & Zatravkin, 1988: 166-167, fig. 6.

- Type locality: Russia, Primorye Territory, the Zarya Lake (43°01'59"N, 134°09'02"E).
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: Type locality [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Recorded in a large lake [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] regarded this species as a synonym of *Anodonta woodiana japonica*.

**22(97). *Beringiana zimini*
(Zatravkin et Bogatov, 1987)**

Arsenievinaia zimini Zatravkin & Bogatov, 1987: 102-104, fig. 24, a, 6.

- Type locality: Russia, Primorye Territory, the Zarya Lake, 30 km SW from the village Valentin (43°01'59"N, 134°09'02"E).
- Types: ZIN, Nos. 1–3 in systematic catalogue. The type series includes the holotype and six paratypes.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: Primorye Territory, eastern slope of the Sikhote-Alin' Ridge and the Sakhalin Island [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] regarded this species as a synonym of *Anodonta woodiana japonica*.

Genus *Sinanodonta* Modell, 1945

[= *Anodonta* Lamarck, 1799, partim; *Anodon* Oken, 1815, partim; *Symphynota* Lea, 1829, partim; *Pteranodon* Fischer, 1886 non Marsh, 1876 (Reptilia); *Cristariopsis* Moskvicheva, 1973; *Ellipsanodon* Bogatov et Starobogatov, 1996]

Type species: *Symphynota magnifica*

Lea, 1834 (by typification of a replaced name)¹⁵

Remark: All nominal species of *Sinanodonta* described from the Russian Far East waterbodies [Zatravkin & Bogatov, 1987; Starobogatov *et al.*, 2004; Bogatov, 2007] are sometimes regarded as a synonym of *S. woodiana* (Lea) [Graf & Cummings, 2013]. Chernyshev [2004] produced evidence that the species *S. fukudai* Modell is distinct from *S. woodiana* s. l.

**23(98). *Sinanodonta woodiana*
(Lea, 1834)**

[= *Symphynota magnifica* Lea, 1834; *Anodon rotundatus* Swainson, 1841; *Anodonta aurata* Küster, 1853; *Anodonta harlandi* Baird et Adams, 1867; *Anodon tricostatus* Sowerby, 1870; *Anodonta edulis* Heude, 1874; *Anodonta undulifera* Clessin, 1876; *Anodon securiformis* Heude, 1877; *Anodon lucida* Heude, 1877; *Anodon nigricans* Heude, 1877; *Anodonta lauta* Martens, 1877; *Anodon dolium* Heude, 1878; *Anodon elliptica* Heude, 1878; *Anodon fenouilli* Heude, 1878; *Anodon friniana* Heude, 1878; *Anodon fusca* Heude, 1878; *Anodon joreti* Heude, 1878; *Anodon pacifica* Heude, 1878; *Anodon piscatorum* Heude, 1878; *Anodon striata* Heude, 1878; *Anodonta calypigos* Kobelt, 1879; *Anodonta lauta* var. *rostrata* Kobelt, 1879; *Anodon agriculturalum* Heude, 1879; *Anodon irregularis* Heude, 1879; *Anodon lineata* Heude, 1879; *Anodon melanochlorea* Heude, 1879; *Anodon mingorum* Heude, 1879; *Anodon pumila* Heude, 1879; *Anodon subtetragona* Heude, 1879; *Anodon tumida* Heude, 1879; *Anodon bigibba* Heude, 1880; *Anodon castanea* Heude, 1880; *Anodon cheniana* Heude, 1880; *Anodon despecta* Heude, 1880; *Anodon indecora* Heude, 1880; *Anodon limosa* Heude, 1880; *Anodon livida* Heude, 1880; *An-*

¹⁵ Established as a substitute name for *Pteranodon* P. Fischer, 1886, non Marsh, 1876 (Reptilia). Modell cited the type species as "*Sinanodonta woodiana* Lea 1834", but under Art. 67.8 the type species of *Pteranodon* is also the type species of *Sinanodonta*.

odon minuta Heude, 1880; *Anodon navicella* Heude, 1880; *Anodon scaphydium* Heude, 1880; *Anodon succinea* Heude, 1880; *Anodon aubryi* Heude, 1881; *Anodon confusa* Heude, 1881; *Anodon florida* Heude, 1881; *Anodon obturata* Heude, 1881; *Anodon pulchella* Heude, 1881; *Anodon rosea* Heude, 1881; *Anodon rubella* Heude, 1881; *Anodon sorini* Heude, 1881; *Anodon retusa* Heude, 1884; *Anodon filippiana* Heude, 1885; *Anodon intemerata* Heude, 1885; *Anodon fantozatiana* Heude, 1885; *Anodonta jourdyi* Morlet, 1886; *Anodon calypigos* var. *humerosa* Westerlund, 1887; *Anodonta kobelti* Ihering, 1893; *Anodonta richthofeni* Neumayr, 1899; *Anodonta suilla* Martens, 1902; *Anodontites lautus tumens* Haas, 1910]

Symphynota woodiana Lea, 1834: 42, pl. 5, fig. 13.

- Type locality: China, Canton (nowadays Guangdong Province).
- Types: two syntypes USNM No. 86380 [fide Graf & Cummings, 2013].
- Global distribution: The native range of this species lies in Eastern Asia, including China, Japan, Thailand, Cambodia and other countries. During the second half of the XX century, *S. woodiana* gained a foothold as an invasive species in many countries of Europe, northwards to Sweden, in Central Asia, Indonesia and even Costa Rica and Dominican Republic in Central America [Watters, 1997; von Proschwitz, 2008; Sousa *et al.*, 2014]. *S. woodiana*, thus, appears to be among the world's most successful molluscan invasive species.
- Distribution in the former USSR: Introduced to the western and south-western parts of Ukraine [Korniushin *et al.*, 2002; Son, 2007] as well as to Moldova [Munjiu & Shubernetski, 2008]. Possibly, the species of *Sinanodonta* introduced to the Central Asian states of the former USSR [Starobogatov & Izzatul-lae, 1984] should be synonymized with *S. woodiana* [see Graf, 2007].
- Subregions: SE (introduced).

- Bionomics: Occurs in waterbodies of different types – lakes, channels, rivers, desalinated seashores and sea lagoons [Son, 2007].
- IUCN conservation status: LC (least concern).

23(99). *Sinanodonta amurensis* Moskvicheva, 1973

Sinanodonta amurensis Moskvicheva, 1973a: 826–827, fig. 1 (11).

- Type locality: Russia, Khabarovsk Territory, vicinity of Khabarovsk City, Malyie Chepchiki channel (approximately 48°43'N, 135°30'E).
- Types: ZIN, Nos. 1–22 in systematic catalogue. The type series includes the holotype and 38 paratypes.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Amur Basin [Bogatov, 2007].
- Subregions: SF.
- Bionomics: Recorded in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] regarded this species as a synonym of *Anodonta woodiana woodiana*.

23(100). *Sinanodonta crassitesta* Moskvicheva, 1973

[= *Sinanodonta renzini* Bogatov et Zatravkin, 1988; *Sinanodonta ovata* Bogatov et Starobogatov, 1996]

Sinanodonta crassitesta Moskvicheva, 1973a: 828, fig. 2 (1).

- Type locality: Russia, Primorye Territory, the Razdol'naya (= Sujfun) River basin, lower courses of the Suputinka River.
- Types: ZIN, Nos. 1–3 in systematic catalogue. The type series includes the holotype and five paratypes.
- Global distribution: Far East: Japan (Hokkaido), northern part of Korea, Russia [Bogatov, 2007].
- Distribution in the former USSR: Southern part of the Primorye Territory [Bogatov, 2007].
- Subregions: SF.

- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] regarded this species as a synonym of *A. woodiana woodiana*.

**23(101). *Sinanodonta gibba*
(Benson in Cantor, 1842)**

Anodon gibbum Cantor, 1842: 489.

- Type locality: China, the Chusan (= Zhoushan) Island.
- Types: MCZ No. 177314.
- Global distribution: Far East (China). Ya.I. Starobogatov identified specimens of *S. gibba* in samples from the Konin Lakes, Poland [Kraszewski & Zdanowski, 2001].
- Distribution in the former USSR: Central Asia (introduced): Tashkent Region, the Zervavshan River basin [Starobogatov & Izzatullaev, 1984; Izzatullaev, 2002].
- Subregions: CA.
- Bionomics: Reophilic species [Izzatullaev & Stadnichenko, 2010].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] regarded this species as a synonym of *A. woodiana woodiana*.

**23(102). *Sinanodonta likharevi*
Moskvicheva, 1973**

Sinanodonta likharevi Moskvicheva, 1973a: 827, fig. 1 (12).

- Type locality: Russia, Zabaikalsky Territory, the Shilka River in the vicinities of the town Sretensk-Zabaikalskiy (approximately 52°15'N, 117°42'E).
- Types: ZIN, Nos. 1–21 in systematic catalogue. The type series includes the holotype and 29 paratypes.
- Global distribution: Far East of Russia; Mongolia (the Buin-Nuur Lake) [Bogatov, 2007].
- Distribution in the former USSR: The Amur River basin [Bogatov, 2007].
- Subregions: SF.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] regarded this spe-

cies as a synonym of *A. woodiana woodiana*.

**23(103). *Sinanodonta manchurica*
Bogatov et Starobogatov, 1996**

Sinanodonta manchurica Bogatov & Starobogatov, 1996b: 1329, fig. 2 в, г.

- Type locality: Russia, Primorye Territory, a lake of former bed of the Gladkaya River in 2 km of Gvozdevo settlement (approximately 42°42'N, 130°54'E).
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: Type locality [Bogatov, 2007].
- Subregions: SF.
- Bionomics: Lives in oxbows [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] regarded this species as a synonym of *A. woodiana woodiana*.

**23(104). *Sinanodonta orbicularis*
(Heude, 1880)**

Anodon orbicularis Heude, 1880b: pl. 42, fig. 82, caption on opposite unnumbered page

- Type locality: China, "Lac de Ma-tang, district de Peng-tse (Kiang-si), au bord du fleuve Bleu".
- Types: Not traced, probably lost. Johnson [1973] gives no information on the types in his catalogue of Heude's type materials.
- Global distribution: Far East (China). Ya.I. Starobogatov identified specimens of *S. orbicularis* in samples from the Konin Lakes, Poland [Kraszewski & Zdanowski, 2001].
- Distribution in the former USSR: Central Asia (introduced): Tashkent Region, the Zervavshan River basin [Starobogatov & Izzatullaev, 1984; Izzatullaev, 2002].
- Subregions: CA.
- Bionomics: Reophilic species [Izzatullaev & Stadnichenko, 2010].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] regarded this species as a synonym of *A. woodiana woodiana*.

**23(105). *Sinanodonta primorjensis*
Bogatov et Zatravkin, 1988**

[= *Sinanodonta fukudai* sensu Moskvicheva, 1973 non Modell, 1945]

Sinanodonta (Cristariopsis) primorjensis Bogatov & Zatravkin, 1988: 162-163, fig. 4

- Type locality: Russia, the Primorye territory, the Soldatskoye Lake in the basin of the Razdol'naya (= Sujfun) River.
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series contains the holotype and four paratypes.
- Global distribution: Far East (north of Korea, Russia) [Bogatov, 2007].
- Distribution in the former USSR: Southern part of the Primorye Territory [Bogatov, 2007].
- Subregions: SF.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] regarded this species as a synonym of *A. woodiana woodiana*.

**23(106). *Sinanodonta puerorum*
(Heude, 1880)**

Anodon puerorum Heude, 1880b: pl. 47, fig. 90, caption on opposite unnumbered page

- Type locality: China, "les fosses de la plaine de Tch'ao-hien, sue les bords du Yang-tze".
- Types: USNM No. 126509, 2 syntypes [fide Johnson, 1973].
- Global distribution: Far East (China).
- Distribution in the former USSR: Central Asia (introduced): Tashkent Region, the Zerafshan River basin [Starobogatov & Izzatullaev, 1984; Izzatullaev, 2002].
- Subregions: CA.
- Bionomics: Reophilic species [Izzatullaev & Stadnichenko, 2010].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] regarded this species as a synonym of *A. woodiana woodiana*.

**23(107). *Sinanodonta schrencki*
Moskvicheva, 1973**

[= *Anodonta magnifica* sensu Schrenck, 1867, non

Lea, 1834; *Anodonta woodiana* sensu Shadin, 1938, non Lea, 1834]

Sinanodonta schrencki Moskvicheva, 1973a: 826 (nom. nov. pro *Anodonta magnifica* sensu Schrenck, 1867, non Lea, 1834)

- Type locality: Russia, the Primorye Territory, the Ussuri River near mouth of the river Khor ("Poor").
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the lectotype and two paralectotypes.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Amur River basin [Bogatov, 2007].
- Subregions: SF.
- Bionomics: Lives in lakes and river bays [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] regarded this species as a synonym of *A. woodiana woodiana*.

**24(108). *Sinanodonta fukudai*
Modell, 1945**

Sinanodonta woodiana fukudai Modell, 1945: 96, textfig. 24.

- Type locality: North Korea ("Zenra Dô, Fuan Gun, Turuppo, Nordkorea").
- Types: Zoologische Staatsammlung München No. 3420 [fide Chernyshev, 2004].
- Global distribution: Far East (North Korea, Russia).
- Distribution in the former USSR: The southern Primorye Territory [Bogatov, 2007].
- Subregions: SF.
- Bionomics: In lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Chernyshev [2004] believed *S. manchurica* Bogatov et Starobogatov, 1996 (see above) to be a junior synonym of *S. fukudai*.

Subfamily Gonideinae

Ortmann, 1916

[= Pseudodontinae Frierson, 1927; Limnoscaphinae Lindholm, 1932; Hyriopsinae Modell, 1942; Lamprotulinae Modell, 1942; Leguminaiini Starobogatov, 1970; Psilunioninae Starobogatov, 1970]

(Gonideinae Ortmann, 1916: 53)

Type genus: *Gonidea* Conrad, 1857.

Genus *Potomida* Swainson, 1840

[= *Mysca* Turton, 1822, partim; *Rhomboidiana* Locard, 1889; *Simonisiana* Locard, 1889; *Subreniformiana* Fagot, 1893; *Iridea* Stefanescu, 1896 non Swainson, 1840; *Psilunio* Stefanescu, 1896; *Rytia* Stefanescu, 1896 non Hübner, 1823 (Lepidoptera); *Sabbaia* Cossmann, 1897; *Rhombunio* Germain, 1911; *Migranaja* Hannibal, 1912; *Cuneopsidea* Wenz, 1928; *Wenziella* Modell, 1959; *Cyclopotomida* Starobogatov, 1970; *Uralinaia* Starobogatov, 1970]

Type species: *Mysca* (*Potomida*) *corrugata* Swainson, 1840 (OD)

**25(109). *Potomida komarowi*
(Boettger, 1880)**

Unio rothi var. *komarowi* O. Boettger, 1880: 160, Taf. V, fig. 1a-b.

- Type locality: Eastern Turkey, the Kars River near Kars Town.
- Types: Not traced, possibly in SMF [fide Dance, 1986].
- Global distribution: Transcaucasia, possibly Asia Minor.
- Distribution in the former USSR: The Araks River basin in Armenia [Antonova & Starobogatov, 1988].
- Subregions: CT.
- Bionomics: Lives in brooks [Zhadin, 1938].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] considered this species as a synonym of *Potomida littoralis* (Cuvier, 1798).

**25(110). *Potomida armeniaca*
(Kobelt, 1912)**

Unio armeniacus Kobelt, 1912: 29, Taf. XDIII, fig. 2631.

- Type locality: Armenia ("Aufenthalt in dem Bach Karasu in der Nähe des Dorfer Aralucha, kreis Surmalin, Gouv. Eriwan"; Kobelt, 1912: 29-30).
- Types: Not traced, possibly in SMF.
- Global distribution: Endemic to Transcaucasia.
- Distribution in the former USSR: The Araks River basin in Armenia [Zhadin, 1938; Antonova & Starobogatov, 1988].
- Subregions: CT.
- Bionomics: Lives in brooks [Zhadin, 1938].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] regarded this species as a synonym of *Potomida littoralis*.

**Family Margaritiferidae
Henderson, 1929**

[= Margaritanae Ortmann, 1910; Cumberlandiinae Heard et Guckert, 1970]

(Margaritiferidae Henderson, 1929: 53)

Type genus: *Margaritifera* Schumacher, 1816

A relatively small family distributed now in Northern Eurasia (except of Siberia), the Far East, Southeastern Asia and North America [Starobogatov, 1970]. Smith [2001] proposed a revised classification of the family to include three genera and 12 species. Some authors tried to lump all the diversity of living margaritiferid mussels to a single genus *Margaritifera* [Haas, 1969; Graf, 2007; Graf & Cummings, 2013], whereas the Russian malacologists prefer to accept several extant taxa of generic rank in the family (Table 8). For example, the Far Eastern species of Margaritiferidae are considered in Russia as belonging to the endemic genera other than *Margaritifera*

Table 8. Classification of the pearl (margaritiferid) mussels of the former USSR according to different authors

Bogatov <i>et al.</i> [2003]; Starobogatov <i>et al.</i> [2004]		Graf [2007]
Genus	Species	Species
<i>Margaritifera</i> Schumacher, 1816	<i>Margaritifera margaritifera</i> (L., 1758) <i>M. borealis</i> (Westerlund, 1871) <i>M. elongata</i> (Lamarck, 1819)	<i>M. margaritifera</i>
<i>Dahurinaia</i> Starobogatov, 1970	<i>Dahurinaia dahurica</i> (Middendorff, 1850) <i>D. komarovi</i> Bogatov, Prozorova et Starobogatov, 2003 <i>D. prozorovae</i> Bogatov et Starobogatov in Bogatov, Prozorova et Starobogatov, 2003 <i>D. suifunensis</i> Moskvicheva, 1973 <i>D. tumovae</i> Bogatov et Zatravkin, 1988 <i>D. ussuriensis</i> Bogatov, Prozorova et Starobogatov, 2003	<i>M. dahurica</i>
<i>Kurilinaia</i> Bogatov et Zatravkin, 1988	<i>Kurilinaia laevis</i> (Haas, 1910) <i>K. kurilensis</i> (Zatravkin et Starobogatov, 1984) <i>K. zatravkini</i> Bogatov, Prozorova et Starobogatov, 2003 <i>K. kamchatica</i> Bogatov, Prozorova et Starobogatov, 2003 <i>K. middendorffi</i> (Rosen, 1926)	<i>M. laevis</i> <i>M. middendorffi</i>

[Starobogatov, 1970; Chernyshev, 2004]¹⁶.

Type species: *Margaritifera fluviatilis* Schumacher, 1815 (M)¹⁷

Genus *Margaritifera* Schumacher, 1816

[= *Unio* Retzius, 1788, partim; *Margaritana* Schumacher, 1817; *Potodoma* Herrmannsen, 1846, non Meigen, 1800; *Damalis* Gray, 1847, non Fabricius, 1805 (Diptera); *Baphia* Mörch, 1853, non Gray, 1847; *Danalis* Mörch, 1853; *Baryana* Locard, 1889; *Margaritiferana* Fagot, 1893; *Pseudunio* Haas, 1910]

¹⁶ Two important publications on taxonomy of the Russian Far-East Margaritiferidae [Klishko, 2014; Bolotov *et al.*, 2015] became available to us after this “Catalogue” was completed. We thus were not able to take these papers into consideration. According to these papers, the overall species diversity of the Far Eastern pearl mussels is well lower than it was accepted by Zatravkin & Bogatov [1987] and Starobogatov *et al.* [2004].

26(111). *Margaritifera margaritifera* (Linnaeus, 1758)

[= *Margaritana fluviatilis* Schumacher, 1817; *Unio elongata* Lamarck, 1819; *Alasmodonta arcuata* Branes, 1823; *Unio roissyi* Michaud, 1831; *Unio margaritifera* var. *minor* Rossmässler, 1835; *Unio brunnea* Bonhomme, 1840; *Unio tristis* Morelet, 1845; *Margaritana borealis* Westerlund, 1871; *Margaritana compressa* Westerlund, 1873; *Margaritana ventricosa* Westerlund, 1873; *Margaritana freytagi* Kobelt, 1886; *Margaritana michaudi* Locard, 1889; *Margaritana pirenaica*

¹⁷ Placed on the Official List (with the date 1816) by Opinion 495, 1957, Opinions and Declarations rendered by the ICZN, 17(17): 289. *Margaritifera fluviatilis* is a substitute name for *Mya margaritifera* Linnaeus, 1758. Senior objective synonym of *Margaritana* and *Damalis*. Date of publication after Bogatov *et al.* [2003].

Bourguignat in Locard, 1889; *Margaritana allenii* Locard, 1889; *Margaritana margaritifera parvula* Haas, 1908; *Margaritana margaritifera* var. *siluriana* Bloomer, 1926; *Margaritana durrovensis* Phillips, 1928]

Mya margaritifera Linnaeus, 1758: 671.

- Type locality: "Habitat in totius orbis arctici cataractis" [Linnaeus, 1758: 671].
- Lectotype: Linnean Society of London, No. 29 [fide Graf & Cummings, 2013].
- Global distribution: Widespread in eastern North America and western Eurasia; reported from Iceland [Graf & Cummings, 2013].
- Distribution in the former USSR: North of the European part of RAC [Zhadin, 1938].
- Subregions: NE.
- Bionomics: Lives in small rivers [Zhadin, 1938].
- IUCN conservation status: EN (endangered).

Addition to the genus *Margaritifera*. In the recent Russian literature, two more species of *Margaritifera*, *M. elongata* (Lamarck, 1819) and *M. borealis* (Westerlund, 1871), have been recognized as valid [Bogatov *et al.*, 2003; Starobogatov *et al.*, 2004; Kantor & Sysoyev, 2005]. These species were distinguished by means of the 'comparatorial method' [see Shikov & Zatravkin, 1991; Graf, 2007 for details]. Sergeeva *et al.* [2008] on the basis of statistical analyses of more than 300 shells from the northern Russia concluded that only one species should be recognized, *Margaritifera margaritifera*. This conclusion concurs with the generally accepted viewpoints on the taxonomy of the genus. Bogatov [2009a] provided some arguments against this synonymization, but later the conspecificity of the three spe-

cies of pearl mussels has been corroborated by means of the molecular genetic methods [Bolotov *et al.*, 2013]. It should be noted that Bogatov [2013] still holds his previous position and accepts three distinct species of the genus in the malacofauna of the European Russia.

Genus *Dahurinaia* Starobogatov, 1970

[= *Margaritifera* Schumacher, 1816, partim; *Ptychorhynchus* Simpson, 1900, partim; *Kurilinaia* Bogatov et Zatravkin, 1988]

Type species: *Unio dahuricus* Middendorff, 1850 (OD)

Remark: Smith [2001] placed all species of *Dahurinaia* to the genus *Margaritinopsis* Haas, 1912.

27(112). *Dahurinaia dahurica* (Middendorff, 1850)

Unio dahuricus Middendorff, 1850: 3; 1851: 275, Taf. XXVI, fig. 3-5.

- Type locality: Russia, Zabaikalsky Territory, the Argun' River at the place of its joining with the Shilka River (approximately 53°20'N 121°28'E).
- Lectotype: ZIN No. 7a (selected by Bogatov *et al.*, 2003). There is a single paralectotype in the type series presented by a unpaired valve [Bogatov *et al.*, 2003].
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Amur basin and the Sakhalin Island (in its north-western part) [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: DD (data deficient).

27(113). *Dahurinaia komarovi* Bogatov, Prozorova et Starobogatov, 2003

Dahurinaia komarovi Bogatov *et al.*, 2003: 45-46, fig. 3 A, D.

- Type locality: Russia, the Primorye Territory, the Komarovka (= Suputinka) River near the Komarov's house, Ussuriysky Nature Reserve, the Razdol'naya (= Sujfun) River drainage.
- Types: ZIN, Nos. 1, 2; some paratypes are kept in IBSS. The type series contains the holotype and 12 paratypes [see Bogatov *et al.*, 2003 for details].
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: Type locality [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in small rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] regarded this species as a synonym of *Margaritifera dahurica*.

27(114). *Dahurinaia prozorovae* Bogatov et Starobogatov in Bogatov, Prozorova et Starobogatov, 2003

Dahurinaia prozorovae Bogatov *et al.*, 2003: 48, fig. 3 C, I.

- Type locality: Russia, the Primorye Territory, the Bol'shaya Ussurka (Iman) River 30 km downstream of the Melnichnoye settlement, the Ussuri River basin.
- Types: ZIN, Nos. 1 and 2 in systematic catalogue; some paratypes are kept in IBSS. The type series contains the holotype and four paratypes [see Bogatov *et al.*, 2003 for details].
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Ussuri River basin [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in small rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] regarded this species as a synonym of *M. dahurica*.

27(115). *Dahurinaia sujfunensis* Moskvicheva, 1973

Dahurinaia sujfunensis Moskvicheva, 1973b: 1468, fig. 3, д-ж.

- Type locality: Russia, the Primorye Territory, the Komarovka (= Suputinka) River (a left tributary of the river Razdol'naya).
- Types: ZIN, Nos. 1-3 in systematic catalogue; The type series contains the holotype and eight paratypes.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: Small rivers of the basin of Razdol'naya (= Suifun) River [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in small rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] regarded this species as a synonym of *M. dahurica*.

27(116). *Dahurinaia tiunovae* Bogatov et Zatravkin, 1988

Dahurinaia (Dahurinaia) tiunovae Bogatov & Zatravkin, 1988: 156-158, fig. 1.

- Type locality: Russia, the Primorye Territory, the Komissarovka River near village Dvoryanka (approximately 44°52'N, 131°30'E).
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Amur basin and the Sakhalin Island (in its northwestern part) [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] regarded this species as a synonym of *M. dahurica*.

27(117). *Dahurinaia ussuriensis* Bogatov, Prozorova et Starobogatov, 2003

[= *Dahurinaia transbaicalica* Klishko, 2008]

Dahurinaia ussuriensis Bogatov *et al.*, 2003: 47-48, fig. 3 B, G.

- Type locality: Russia, the Primorye Territory, the Komissarovka River near Barabash-Levada settlement, the Khanka Lake basin (approximately 44°45'N, 131°26'E).
- Types: ZIN, Nos. 1–3 in systematic catalogue; some paratypes are kept IBSS. The type series contains the holotype and 26 paratypes (see Bogatov *et al.*, 2003 for details).
- Global distribution: The Far East of Russia, Eastern Mongolia [Bogatov *et al.*, 2003].
- Distribution in the former USSR: The Amur basin [Starobogatov *et al.*, 2004]; Transbaikalia [Bogatov, 2012a].
- Subregions: SF.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf [2007] regarded this species as a synonym of *M. dahurica*.

**28(118). *Dahurinaia laevis*
(Haas, 1910)**

[= *Margaritana sachalinensis* Zhadin, 1938]

Ptychorhynchus laevis Haas, 1910: 498.

- Type locality: Russia, the Sakhalin Island.
- Lectotype: SMF No. 3626 [Zilch, 1967].
- Global distribution: The Far East of Russia; Japan (Hokkaido) [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: The Sakhalin Island (middle part) [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: DD (data deficient).

**28(119). *Dahurinaia kurilensis*
Zatravkin et Starobogatov, 1984**

[= *Dahurinaia shigini* Zatravkin et Bogatov, 1987]

Dahurinaia kurilensis Zatravkin & Starobogatov, 1984: 1789–1790, fig. 11–14.

- Type locality: Russia, the Shikotan Island (the southern Kurile Islands), Krabovaya Bay, river mouth near the sea tidal zone.
- Types: ZIN, Nos. 1 and 2 systematic catalogue. The type series includes the holotype and a single paratype
- Global distribution: Far East (Japan, Russia) [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: The Kurile Islands, the southern Sakhalin [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in brooks and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] regarded this species as a synonym of *Margaritifera laevis*.

**28(120). *Dahurinaia zatravkini* (Bogatov,
Prozorova et Starobogatov, 2003)**

Kurilinaia zatravkini Bogatov *et al.*, 2003: 49–50, fig. 4 B, F.

- Type locality: Russia, the Kurile Islands, a spring near Golovnino settlement, southern part of the Kunashir Island (approximately 43°44'N, 145°31'E).
- Types: ZIN, Nos. 1, 2, 7–9 in systematic catalogue; some paratypes are kept IBSS. The type series includes the holotype and 33 paratypes [see Bogatov *et al.*, 2003 for details].
- Global distribution: The Far East (Japan, Russia) [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: The southern Kurile Islands, the southern Sakhalin [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lakes and small rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] regarded this species as a synonym of *M. laevis*.

**29(121). *Dahurinaia middendorffi*
(Rosen, 1926)**

[= *Unio complanatus* Middendorff, 1851 non Dillwyn, 1817]

Margaritana middendorffi Rosen, 1926: 269.

- Type locality: Russia, the southern Kamchatka Peninsula, the Mekeshino Lake, Lopatka Cape [Bogatov *et al.*, 2003].
- Lectotype: ZIN No. 6 in systematic catalogue. The type series contains the lectotype and 16 paralectotypes (15 complete shells and one unpaired valve) [Bogatov *et al.*, 2013].
- Global distribution: The Kamchatka Peninsula [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: The Kamchatka Peninsula (southern and south-western parts) [Starobogatov *et al.*, 2004].
- Subregions: NF.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: DD (data deficient).

**29(122). *Dahurinaia kamchatica*
(Bogatov, Prozorova et
Starobogatov, 2003)**

Kurilinaia kamchatica Bogatov *et al.*, 2003: 48, fig. 4 A, C.

- Type locality: Russia, the Kamchatka Peninsula, the Golygina River.
- Types: Types: ZIN, Nos. 1–4 in systematic catalogue. The type series includes the holotype and 12 paratypes (11 complete shells and one unpaired valve)
- Global distribution: The Kamchatka Peninsula [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: The Kamchatka Peninsula (southern and south-western parts) [Starobogatov *et al.*, 2004].
- Subregions: NF.
- Bionomics: Lives in lakes and small rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] regarded this species as a synonym of *Margaritifera laevis*.

**Clade Heterodonta
Neumayr, 1884
Order Venerida Gray, 1854**

Superfamily Cardioidea
Lamarck, 1809

Family Cardiidae Lamarck, 1809

(Les Cardiadées Lamarck, 1809: 318)

Type genus: *Cardium* Linnaeus, 1758.

Remark: Genera treated herein are characterized by the presence of both marine (especially from the Caspian Sea) and brackishwater species. In order not to split them we deal with entire genera. Recent information on the system and phylogeny of this family can be obtained from the works of Schneider [1992, 1998, 2002 and others]. Taxonomic and nomenclatorial questions concerning the Caspian representatives of Cardiidae (Lymnocyprinae) were reviewed by P. Kijashko [in Bogutskaya *et al.*, 2013].

Subfamily Lymnocyprinae
Stoliczka, 1870

(Lymnocyprinae Stoliczka, 1870: 8b, 205, 211)

[= Lymnocyprinae auct.]

Type genus: *Lymnocardium* Stoliczka, 1870

Remark: This taxon is sometimes considered as a separate family distinct from Cardiidae s. str. [Grossu, 1993; Starobogatov *et al.*, 2004], though this would result in paraphyly [Bieler *et al.*, 2010].

Genus *Adacna* Eichwald, 1838

[= *Glycymeris* Da Costa, 1878, partim]

Type species: *Glycymeris laeviuscula* Eichwald, 1829 (SD Vest, 1875)

Subgenus *Adacna* s. str.

**30(123). *Adacna (Adacna) laeviuscula*
(Eichwald, 1829)**

Glycymeris laeviuscula Eichwald, 1829: 279, Tab. V, fig. 1.

- Type locality: Azerbaijan, the Caspian Sea, Gulf of Baku.
- Lectotype: ZIN No. 90/1 in systematic catalogue (selected and illustrated by Kijashko in Bogutskaya *et al.* [2013]). The type series includes lectotype and a single paralectotype (ZIN No. 91/2).
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: Northern, middle and southern parts of the Caspian Sea [Bogutskaya *et al.*, 2013].
- Subregions: CS.
- Bionomics: Lives on muddy, sandy-mud and, rarely, sandy bottoms between 30 and 60 m of depth [Bogutskaya *et al.*, 2013].
- IUCN conservation status: Not assessed.

**30(124). *Adacna (Adacna) fragilis*
Milaschewitsch, 1908**

Adacna fragilis Milaschewitsch, 1908: 992-993.

- Type locality: Ukraine, Odessa Region, the Dniester liman and the Katlabukh lake.
- Types: Not traced.
- Global distribution: The northern Black Sea maritime area.
- Distribution in the former USSR: Fresh and brackish-water waterbodies of the Danube Delta, Dniester and Dnieper-Bug limans [Scarlato & Starobogatov, 1972; Starobogatov *et al.*, 2004].
- Subregions: SE.
- Bionomics: Lives in lakes and small rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] and Bouchet & ter Poorten [2013] regarded this species as a synonym of *Adacna laeviuscula*.

**31(125). *Adacna (Adacna) minima*
Ostroumoff, 1907**

Adacna minima Ostroumoff, 1907: 23, textfig., pl. IV, figs. 1-5.

- Type locality: The Northern Caspian Sea and the Aral Sea.
- Types: Not traced.
- Global distribution: Central Asia.
- Distribution in the former USSR: The Aral and Caspian seas.
- Subregions: CA, CS.
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] regarded this species as a synonym of *Adacna vitrea* (Eichwald, 1829). According to Bogutskaya *et al.* [2013], the species comprises two subspecies.

**31(125a). *Adacna (Adacna) minima minima*
Ostroumoff, 1907**

- Distribution in the former USSR: The Aral Sea [Starobogatov, 1974]. It was not found since the 1970s and, most probably, is extinct [Andreeva & Andreev, 2003].
- Subregions: CA.
- Bionomics: The species was dredged from muddy and sandy bottoms at depths between 14 and 26 m [Andreeva & Andreev, 2003].

31(125b). *Adacna (Adacna) minima ostroumovi*

(Logvinenko et Starobogatov, 1967)

Hypanis minima ostroumovi Logvinenko & Starobogatov, 1967: 233.

- Type locality: South-eastern part of the Caspian Sea, near the Ogurchinsky Island.
- Holotype: ZIN, No. 1/61901. Illustrated by Bogutskaya *et al.* [2013: fig. 49].
- Distribution in the former USSR: Mid-

dle, southern and (rarely) northern parts of the Caspian Sea [Bogutskaya *et al.*, 2013].

- Subregions: CS.
- Bionomics: Lives on sandy-mud and sandy bottoms, down to depth of 35 m [Bogutskaya *et al.*, 2013].
- Remark: Graf & Cummings [2013] regarded this subspecies as a synonym of *Adacna vitrea* (Eichwald, 1829).

32(126). *Adacna (Adacna) vitrea vitrea* (Eichwald, 1829)

[= *Amphidesma caspia* Krynicki, 1837: 62; *Adacna aspera* Ostroumoff et Rosen in Ostroumoff, 1905]

Glycymeris vitrea Eichwald, 1829: 279, Tab. V, fig. 3.

- Type locality: Iran, the Caspian Sea, Gorgan (Astrabad) Gulf [“Hab. australem oram caspii maris, Astrabadensem”; Eichwald, 1829: 279]
- Types: Not traced.
- Global distribution: Central Asia.
- Subregions: CA, CS.
- IUCN conservation status: Not assessed.
- Remark: This species includes three subspecies [Andreeva & Andreev, 2003; Bogutskaya *et al.*, 2013]. Graf & Cummings [2013] did not accept their validity.

32(126a). *Adacna (Adacna) vitrea vitrea* (Eichwald, 1829)

- Distribution in the former USSR: The Caspian Sea, in its middle, southern and north-eastern parts [Bogutskaya *et al.*, 2013].
- Subregions: CS.
- Bionomics: Inhabits muddy and sandy-mud substrates at depths between 0 and 30 m and salinity from 2–5 to 12‰ [Bogutskaya *et al.*, 2013].

32(126b). *Adacna (Adacna) vitrea glabra* Ostroumoff, 1905

Adacna glabra Ostroumoff, 1905: 18–19.

- Type locality: Ukraine, the Dniester Liman [fide Kantor *et al.*, 2010].
- Types: Not traced
- Distribution in the former USSR: Type locality; the Caspian Sea, in its northern and north-western parts [Bogutskaya *et al.*, 2013]; the Azov Sea and lower courses of the Don River [Nabozhenko, 2008].
- Subregions: CS.
- Bionomics: Inhabits muddy and sandy-mud substrates in desalinated regions [Bogutskaya *et al.*, 2013].

32(126c). *Adacna (Adacna) vitrea bergi* (Starobogatov, 1974)

Hypanis vitrea bergi Starobogatov, 1974: 245–246, fig. 212.

- Type locality: Western coast of the Aral Sea near well Kara-Kibir.
- Holotype: ZIN.
- Distribution in the former USSR: The delta of the Amu-Darya River, north-western part of the Aral Sea [Starobogatov, 1974; Andreeva & Andreev, 2003].
- Subregions: CA.
- Bionomics: Probably extinct since 1980s [Andreeva & Andreev, 2003].

Subgenus *Monodacna*

Eichwald, 1838

Type species: *Corbula caspia* Eichwald, 1829 (SD Vest, 1875)

Remark: Graf & Cummings [2013] regarded *Monodacna* as a distinct genus, rather than subgenus of *Adacna*. Albrecht *et al.* [2014a] accepted this opinion (with a proviso that “further studies should be directed to the genetic distinctness of *Adacna*, *Monodacna*, and *Hypanis*”).

33(127). *Adacna (Monodacna) acuticosta* (Logvinenko et Starobogatov, 1967)

[= *Mya edentula* “Pallas” Grimm, 1877, non Pallas, 1771]

Hypanis acuticosta Logvinenko & Starobogatov, 1967: 232.

- Type locality: The northern Caspian Sea, central part of the slope, 22 m.
- Types: ZIN No. 5/44-1897. One of the paratypes is illustrated in Bogutskaya *et al.* [2013: fig. 50].
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: The middle Caspian Sea [Logvinenko & Starobogatov, 1968; Starobogatov *et al.*, 2004].
- Subregions: CS.
- Bionomics: Lives on muddy, sandy-mud and, rarely, sandy bottoms between 30 and 60 m of depth [Bogutskaya *et al.*, 2013].
- IUCN conservation status: Not assessed.

34(128). *Adacna (Monodacna) albida* (Logvinenko et Starobogatov, 1967)

[= *Cardium pseudocatillus* “Abich” Grimm, 1877, non Barbot de Marny, 1869]

Hypanis albida Logvinenko & Starobogatov, 1967: 232.

- Type locality: The western Caspian Sea, southeastward from Derbent, 56 m.
- Types: ZIN No. 1/6-1900. The holotype is illustrated in Bogutskaya *et al.* [2013: fig. 51].
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: The middle and southern Caspian Sea [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs between 0 and 150 m of depth [Bogutskaya *et al.*, 2013].

- IUCN conservation status: Not assessed.

35(129). *Adacna (Monodacna) angusticostata* (Borcea, 1926)

[= *Monodacna colorata* var. *razelmiana* Borcea, 1926, partim]

Monodacna colorata var. *angusticostata* Borcea, 1926: 452, pl. XV, fig. 27, 28; pl. XVIII, fig. 143.

- Type locality: Romania, the Razelm-Sinoe lake (lagoon) system [fide Popa *et al.*, 2009]. Borcea [1926: 453] gave it as “Liman de Jalpoug, Bratesch, Razelm”.
- Types: Not traced.
- Global distribution: The Black Sea region.
- Distribution in the former USSR: Limans, estuaries and near-coast lakes of the northern Black Sea maritime area [Scarlato & Starobogatov, 1972].
- Subregions: SE.
- Bionomics: Occurs between 0 and 150 m of depth [Bogutskaya *et al.*, 2013].
- IUCN conservation status: Not assessed.
- Remark: Popa *et al.* [2011] revealed that *A. angusticostata* from the type locality are morphologically disparate but genetically almost indistinguishable from *A. colorata* (Eichwald, 1829) and proposed to regard it as a morphotype of the latter. Both the species are classified within the genus *Hypanis* by Popa *et al.* [2011].

36(130). *Adacna (Monodacna) caspia* (Eichwald, 1829)

Corbula caspia Eichwald, 1829: 281, Tab. V, fig. 6.

- Type locality: The Caspian Sea.
- Types: Not traced.
- Global distribution: The Caspian Sea.
- Subregions: CS.
- Remark: The species is represented by three subspecies [Bogutskaya *et al.*, 2013].

36(130a). *Adacna (Monodacna) caspia caspia* (Eichwald, 1829)

- Distribution in the former USSR: North-eastern part of the Caspian Sea [Logvinenko & Starobogatov, 1968].
- Bionomics: Inhabits muddy and sandy-mud substrates at depths between 2 and 15 m and under salinity between 2-4 and 14‰ [Bogutskaya *et al.*, 2013].

36(130b). *Adacna (Monodacna) caspia filatovae* (Logvinenko et Starobogatov, 1967)

[= *Cardium caspium* sensu Grimm, 1876, non *Corbula caspia* Eichwald, 1829]

Hypanis caspia filatovae Logvinenko & Starobogatov, 1967: 231.

- Type locality: Azerbaijan, the Caspian Sea, Gulf of Baku.
- Holotype: ZIN No. 1/44-1897 (illustrated by Bogutskaya *et al.*, 2013: fig. 52).
- Distribution in the former USSR: The southern Caspian Sea [Logvinenko & Starobogatov, 1968].
- Bionomics: Inhabits muddy and sandy-mud substrates at depths between 2 and 15 m and under salinity between 2-4 and 14‰ [Bogutskaya *et al.*, 2013].

36(130c). *Adacna (Monodacna) caspia knipowitschi* (Logvinenko et Starobogatov, 1966)

[= *Cardium caspium* sensu Grimm, 1876, non *Corbula caspia* Eichwald, 1829]

Hypanis caspia knipowitschi Logvinenko & Starobogatov, 1966a: 15, fig. 2.

- Type locality: The middle Caspian Sea, 39°38'N, 52°08'E (central Caspian Sea), 71 m.
- Holotype: ZIN No. 1/10560 (illustrated by Bogutskaya *et al.*, 2013: fig. 53).
- Distribution in the former USSR: The

Middle and Southern Caspian Sea [Logvinenko & Starobogatov, 1968].

- Bionomics: Occurs at depths between 50 and 200 m [Bogutskaya *et al.*, 2013].

37(131). *Adacna (Monodacna) grossui* (Scarlato et Starobogatov, 1972)

Hypanis grossui Scarlato & Starobogatov, 1972: 214, pl. 4, fig. 1 A, B.

- Type locality: Ukraine, Semyeny, the Dniester liman, the northern Black Sea.
- Types: ZIN, uncataloged.
- Global distribution: The northern Black Sea maritime area.
- Distribution in the former USSR: Limans and lakes of the Danube delta and low-salinity parts of the Dniester liman, the northern Black Sea maritime area [Scarlato & Starobogatov, 1972].
- Subregions: SE.
- Bionomics: Lives in lakes and small rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] regarded this species as a synonym of *Monodacna caspia*.

38(132). *Adacna (Monodacna) colorata* (Eichwald, 1829)

[= *Monodacna colorata* var. *tanaisiana* Milachevitch, 1916; *Monodacna colorata* var. *razelmiana* Borcea, 1926, partim]

Glycimeris colorata Eichwald, 1829: 279, Taf. 5, fig. 4.

- Type locality: Ukraine, the Yuzhnyi Bug River, lower courses ("Hypanis fluvium, ad nigrum usque mare", Eichwald, 1829: 279; Hypanis is the Ancient name for the Yuzhnyi Bug River).
- Types: Not traced.
- Global distribution: The Black Sea region.
- Distribution in the former USSR: Waterbodies of the Danube delta, Dniester and Dnieper-Bug limans (the northern Black Sea and the Azov Sea mari-

time area), the Don and Volga deltas, the Kuban River mouth, water reservoirs of the lower Don and Volga. Introduced to the northern Caspian Sea, the Balkhash Lake [Logvinenko & Starobogatov, 1968; Scarlato & Starobogatov, 1972; Starobogatov *et al.*, 2004; Bogutskaya *et al.*, 2013].

- Subregions: SE, CS (introduced), CA (introduced).
- Bionomics: Occurs at depths between 0 and 8-12 m and salinity 0.03-4‰ [Bogutskaya *et al.*, 2013].
- IUCN conservation status: Not assessed.

39(133). *Adacna (Monodacna) ialpugensis* (Borcea, 1926)

Monodacna colorata var. *ialpugensis* Borcea, 1926: 452, pl. XV, fig. 16.

- Type locality: Ukraine, Odessa Region, the Yalpug Lagoon Lake in the Danube delta, and “Razelm, Golovitza” [Borcea, 1926: 452].
- Types: Not traced.
- Global distribution: The Black Sea region.
- Distribution in the former USSR: Waterbodies of the Danube Delta and the Inguletz River mouth, the northern Black Sea maritime area [Scarlato & Starobogatov, 1972].
- Subregions: SE.
- Bionomics: Occurs in rivers, lakes and lagoons, on soft substrates [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

40(134). *Adacna (Monodacna) luciae* (Borcea, 1926)

Monodacna colorata var. *luciae* Borcea, 1926: 469, pl. XVIII, fig. 146, 148, 149, 151-153; pl. XXI, fig. 8, 9.

- Type locality: Romania, Doloşman Cape [fide Popa *et al.*, 2009].
- Types: Not traced.
- Global distribution: The Black Sea region.
- Distribution in the former USSR: The north-western Black Sea maritime area [Starobogatov *et al.*, 2004, as “*Adacna luciea*”].
- Subregions: SE.
- Bionomics: Occurs in lagoon lakes [Scarlato & Starobogatov, 1972].
- IUCN conservation status: Not assessed.

41(135). *Adacna (Monodacna) polymorpha*

(Logvinenko et Starobogatov, 1967)

Hypanis angusticostata polymorpha Logvinenko & Starobogatov, 1967: 232.

- Type locality: Central part of the northern Caspian Sea, 3 m.
- Types: ZIN, No. 12/44-1897. One of the paratypes was illustrated by Bogutskaya *et al.* [2013: fig. 54]
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: The northern Caspian Sea, except most desalinated areas [Logvinenko & Starobogatov, 1968; Starobogatov *et al.*, 2004].
- Subregions: CS.
- Bionomics: Brackishwater species avoiding areas with low salinity [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.

42(136). *Adacna (Monodacna) semipellucida*

(Logvinenko et Starobogatov, 1967)

[= *Adacna edentula* Grimm, 1877, partim, non *Mya edentula* Pallas, 1771]

Hypanis semipellucida Logvinenko & Starobogatov, 1967: 232-233.

- Type locality: The Caspian Sea off Tokmak Cape, near shoreline.
- Types: ZIN, No. 9/44-1897. One of the paratypes was illustrated by Bogutskaya *et al.* [2013: fig. 55].
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: Middle part of the Caspian Sea [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs at depths between 0 and 30 m [Bogutskaya *et al.*, 2013].
- IUCN conservation status: Not assessed.

Addition to the subgenus *Mono-dacna*. Graf & Cummings [2013] added one more species of this taxon, *M. edentula* (Pallas, 1771), to their list of the valid cardiid species. Nevertheless, this taxonomic name is a *nomen nudum* [Huber, 2010]. It is not enlisted in the most current Russian sources [Bogutskaya *et al.*, 2013].

Genus *Cerastoderma* Poli, 1795

Type species: *Cardium edule* Linnaeus, 1758 (SD Martens, 1870)

Remark: The genus includes euryhaline species occurring both in marine and brackishwater inland habitats. Here we consider only those species known from the Aral and Caspian seas. The recent molecular study by Albrecht *et al.* [2014a] has revealed that *Cerastoderma* should not be classified within the Lymnocardinae s. str., being, most probably, the member of the subfamily Cardiinae, however, the number of species studied by these authors is rather small, and their results cannot be con-

sidered definitive, and new more comprehensive studies are required.

43(137). *Cerastoderma glaucum* (Bruguière, 1789)

[= *Cardium glaucum* Poiret, 1789; *Cardium clodiense* Brocchi, 1814; *Cardium eichwaldi* Reeve, 1845 non Krynicki, 1837; *Cardium edule* var. *umbonatum* Wood, 1850; *Cardium ornatum* Eichwald, 1855]¹⁸

Cardium glaucum Bruguière, 1789: 221-222.

- Type locality: The Mediterranean Sea off the French coast [“Cette espèce est très-commune sur les côtes de la mer Méditerranée. principalement sur celles du Languedoc”; Bruguière, 1789: 221].
- Types: Not traced.
- Global distribution: Eastern Atlantic Basin along the coasts of Europe and North Africa.
- Distribution in the former USSR: The Caspian, Baltic, Black and Azov seas [Kantor & Sysoev, 2005; Bogutskaya *et al.*, 2013].
- Subregions: CS.
- Bionomics: In the Caspian Sea, this species is very widely distributed at depths between 10 and 50 m [Bogutskaya *et al.*, 2013].
- IUCN conservation status: Not assessed.
- Remark: The authorship of this species is often ascribed to Poiret [1789], including the most recent Russian publications [Kantor & Sysoev, 2005; Bogutskaya *et al.*, 2013]. The compilers of the World Register of Marine Species (WoRMS) accepted the authorship of Bruguière [1789], since “the pages (221-222) of the *Encyclopédie Méthodique*

¹⁸ More comprehensive lists of synonyms are provided by Kantor & Sysoev [2005] and ter Poorten & Gofas [2013].

containing *Cardium glaucum* were published by Bruguière in June 1789 according to Evenhuis [2003]. The date of publication of Poiret's *Voyage en Barbarie* is not known to the month, and under Art. 21.3.2 of the Code the date to be adopted is 31 December 1789. Palfary [1919] would have acted as first revisor if both the works of Bruguière and Poiret were contemporaneous. He supported Poiret as species author for *C. glaucum*, and this selection has been followed in the classification of British lamellibranchs by Bowden & Heppell [1968]; however this is superseded by actual priority (by six months) of Bruguière" [Bouchet *et al.*, 2013].

**43(138). *Cerastoderma isthmicus*
(Issel, 1869)**

Cardium isthmicus Issel, 1869: 74, Tav. IX, fig. 11.

- Type locality: Egypt, coast of the Attaka desert in Suez ("Spiaggia del deserto d'Attaka presso Suez (!)"; Issel, 1869: 75).
- Types: MNHN IM-2000-4000: an unpaired (right) valve.
- Global distribution: North Africa (Egypt), Middle East (?), Central Asia.
- Distribution in the former USSR: The Aral Sea [Izzatullaev 2002; Andreeva & Andreev, 2003].
- Subregions: CA.
- Bionomics: Brackishwater species; in the Aral Sea it lived in areas with increased salinity [Andreeva & Andreev, 2003].
- IUCN conservation status: Not assessed.
- Remark: Kantor & Sysoev [2005] considered this species as identical to *C. glaucum*.

**44(139). *Cerastoderma rhomboides*
(Lamarck, 1819)**

[= *Cardium edule* Eichwald, 1829, non Linnaeus, 1758; *Cardium edule* var. *lamarcki* Reeve, 1843]

Cardium rhomboides Lamarck, 1819: 18.

- Type locality: Italy, vicinities of Sien-

na, fossil ("Fossile d'Itale, des environs de Sienne"; Lamarck, 1819: 18).

- Types: Not traced, possibly lost.
- Global distribution: Eastern Atlantic Basin along the coasts of Europe.
- Distribution in the former USSR: The Aral, Caspian, Baltic, Black and Azov seas [Kantor & Sysoev, 2005; Bogutskaya *et al.*, 2013].
- Subregions: CA, CS.
- Bionomics: In the Caspian Sea this species is distributed in the shallow zone, at 0-10 m [Bogutskaya *et al.*, 2013]. In the Aral Sea it occurred at depths 0-12 m; since the middle 1970s it has not been registered in this waterbody [Andreeva & Andreev, 2003].
- IUCN conservation status: Not assessed.
- Remark: ter Poorten [2013] considered this species to be a synonym of *Cerastoderma glaucum*.

Genus *Didacna* Eichwald, 1838

Type species: *Cardium trigonoides* Pallas, 1771 (SD Stoliczka, 1870)

Remark: The history and taxonomic content of the genus *Didacna* were reviewed by Nevesskaja [2007]. We follow system of this genus provided by Bogutskaya *et al.* [2013].

**45(140). *Didacna trigonoides*
(Pallas, 1771)**

[= *Cardium trilaterum* Gmelin, 1791]

Cardium trigonoides Pallas, 1771: 478.

- Type locality: The Caspian Sea ("Copiosissima testa Mare Caspii"; Pallas, 1771: 478).
- Neotype: PIN, No. 694/1327; the Caspian Sea, the Chechen Island, beach [fide Nevesskaja, 2007]. The original type materials are lost.

- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: The Northern, Southern, and Middle (in its south-eastern part) Caspian Sea [Bogutskaya *et al.*, 2013].
- Subregions: CS.
- Bionomics: Occurs at depths between 5 and 40 m, on sandy and mixed hard substrates. Being a mesohalinic species, it may intrude the oligohaline areas of the sea [Bogutskaya *et al.*, 2013].
- IUCN conservation status: Not assessed.
- Remark: Following Logvinenko & Starobogatov [1968], Kantor & Sysoev [2005] accept two subspecies of *D. trigonoides*: *D. t. trigonoides* and *D. t. praetrigonoides* Nalivkin et Anisimov, 1914. In the most recent revision of the Caspian bivalves [Bogutskaya *et al.*, 2013], no subspecific divisions within the species are given. Nevesskaja [2007] considered *D. praetrigonoides* as a good species that still rarely occurs in the Caspian sea. Bogutskaya *et al.* [2013] did not include *D. praetrigonoides* to the list of the recent Caspian malacofauna.

**46(141). *Didacna baeri*
(Grimm, 1877)**

[= *Cardium crassum* sensu Eichwald, 1829, non Gmelin, 1791; *Cardium eichwaldi* Krynicki, 1837, nom. nov. pro *Cardium crassum* Eichwald, 1829, non Gmelin, 1791; ? *Didacna alibajramliensis* Gadjiev, 1966]

Cardium baeri Grimm, 1877: 51-54, pl. 8, figs. 2a-c, 3a-d.

- Type locality: The Caspian Sea, station 132, 40°32'N, 52°23'E [fide Bogutskaya *et al.*, 2013].
- Lectotype: ZIN, No. 1/44-1879. It was illustrated in Bogutskaya *et al.* [2013: fig. 41].
- Global distribution: Endemic to the Caspian Sea.

- Distribution in the former USSR: The Southern and Middle (mostly in its eastern part) Caspian Sea [Bogutskaya *et al.*, 2013].
- Subregions: CS.
- Bionomics: Occurs at depths between 7.5 and 60 m [Bogutskaya *et al.*, 2013].
- IUCN conservation status: Not assessed.

**47(142). *Didacna barbotdemarnii*
(Grimm, 1877)**

Cardium Barbot-de-marnii Grimm, 1877: 56-58, pl. 8, figs. 5a-c, 6a-d.

- Type locality: The Caspian Sea, station 116, 44°17'N, 50°22'E [fide Bogutskaya *et al.*, 2013].
- Lectotype: ZIN, No. 1/44-1879. It was illustrated in Bogutskaya *et al.* [2013: fig. 42]
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: The Southern, Northern (in its southern part) and Middle Caspian Sea [Bogutskaya *et al.*, 2013].
- Subregions: CS.
- Bionomics: Occurs at depths between 30 and 42 m, mostly on sandy bottoms [Bogutskaya *et al.*, 2013].
- IUCN conservation status: Not assessed.

**48(143). *Didacna longipes*
(Grimm, 1877)**

[= ? *Didacna carinata* Nevesskaja, 2007]

Cardium longipes Grimm, 1877: 54-56, pl. 8, fig. 4a-c.

- Type locality: The Caspian Sea, station 104, 40°39'N, 50°16'E [fide Bogutskaya *et al.*, 2013].
- Lectotype: ZIN, No. 1/44-1879. It is illustrated in Bogutskaya *et al.* [2013: fig. 43].

- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: Southern, Northern (in its southern part) and Middle Caspian Sea [Bogutskaya *et al.*, 2013].
- Subregions: CS.
- Bionomics: Occurs at depths between 0 and 30 m, mostly on sandy bottoms [Bogutskaya *et al.*, 2013].
- IUCN conservation status: Not assessed.

**49(144). *Didacna parallela*
Bogachev, 1932**

Didacna parallela Bogachev, 1932a: pl. 2, figs. 2 and 3.

- Type locality: Azerbaijan, vicinity of Baku, village of Khala, Lower Khvalynian Subhorizon [fide Nevesskaja, 2007].
- Types: The type series is lost [Nevesskaja, 2007]. Nevesskaja [2007] designated the lectotype based on a photo provided by Bogachev [1932b: pl. 5, fig. 1].
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: The Southern and Middle (in its western part) Caspian Sea [Bogutskaya *et al.*, 2013].
- Subregions: CS.
- Bionomics: Occurs at depths between 50 and 85 m [Bogutskaya *et al.*, 2013].
- IUCN conservation status: Not assessed.
- Remark: Nevesskaja [2007] considered this species as an extinct one, not present in the recent Caspian fauna.

**50(145). *Didacna profundicola*
Logvinenko et Starobogatov, 1966**

[= *Cardium catillus* Grimm, 1877, non Eichwald, 1841, partim]

Didacna profundicola Logvinenko & Starobogatov, 1966a: 13-14, fig. 1.

- Type locality: The Central Caspian Sea, 39°38'N, 52°02'E, 94 m.
- Holotype: ZIN No. 1/10300 (= 1/57-1966). It was illustrated in Bogutskaya *et al.* [2013: fig. 45].
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: The Southern and Middle Caspian Sea [Bogutskaya *et al.*, 2013].
- Subregions: CS.
- Bionomics: Deep-water species occurring at depths between 50 and 409 m [Bogutskaya *et al.*, 2013].
- IUCN conservation status: Not assessed.

**51(146). *Didacna protracta*
(Eichwald, 1841)**

[= ? *Cardium protractum* Eichwald, 1829; *Cardium catillus* Grimm, 1877 non Eichwald, 1841, partim; *Didacna protracta* var. *grimmeri* Andrusoff, 1910; *Didacna protracta* var. *media* Andrusoff, 1910; *Didacna protracta* var. *submedia* Andrusoff, 1910]

Adacna protracta Eichwald, 1841: 280, pl. 40, figs. 10, 11 (not 9, 10, as indicated in the text).

- Type locality: Eichwald [1841] found fossilized shells of this species in a desert place in vicinity of the Elton Lake situated in the Near-Caspian Lowland, southern Russia ("cum antecedente fossilis in argillaceo deserto circa lacum Eltonensem"; Eichwald, 1841: 281). The locality of the neotype is Northern Caspian Region, Lower Khvalynian subhorizon [Nevesskaja, 2007].
- Neotype: PIN, No. 694/1550 [fide Nevesskaja, 2007].
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: The Southern and Middle Caspian Sea [Bogutskaya *et al.*, 2013].
- Subregions: CS.
- Bionomics: Occurs predominantly be-

tween 25 and 80 m of depth [Bogutskaya *et al.*, 2013].

- IUCN conservation status: Not assessed.

- Remark: Traditionally, the authorship of the species is referred to as “Eichwald, 1841” [Logvinenko & Starobogatov, 1968; Kantor & Sysoev, 2005; Nevesskaja, 2007], but recently Bogutskaya *et al.* [2013] suggested that this species was described by Eichwald earlier, in 1829, under the name *Cardium protractum*. The type locality of *C. protractum* is indicated as “Hab. calcem Poczauiowensem” [Eichwald, 1829: 283]. According to Schneider *et al.* [2013], this locality may correspond to Staryi Pochaiv, situated about 55 km NNW of Ternopil, in Western Ukraine. In our opinion, it is somewhat doubtful that a representative of the endemic Caspian genus *Didacna* might have lived in an area that constitutes nowadays a part of Western Ukraine. In our opinion, *Cardium protractum* Eichwald, 1829 and *Adacna protracta* Eichwald, 1841 may well not be conspecific.

Logvinenko & Starobogatov [1968] divided the species into two subspecies: *D. p. protracta* and *D. p. submedia* Andrusoff, 1910. Bogutskaya *et al.* [2013] brought evidence that there is no sharp morphological distinction between the two subspecies, and thus their reality is not warranted.

**52(147). *Didacna pyramidata*
(Grimm, 1877)**

Cardium pyramidatum Grimm, 1877: 46-49, pl. 8, fig. 1a-d.

- Type locality: Caspian Sea, station 79, 39°47' E', 49°59'30"E [fide Bogutskaya *et al.*, 2013].
- Lectotype: ZIN No. 1/44-1879. It is illustrated in Bogutskaya *et al.* [2013: fig. 47].

- Global distribution: Endemic to the Caspian Sea.

- Distribution in the former USSR: Southern and Middle (in its middle part) Caspian Sea [Bogutskaya *et al.*, 2013].

- Subregions: CS.

- Bionomics: Occurs at depths between 30 and 100 (sometimes to 130) m [Bogutskaya *et al.*, 2013].

- IUCN conservation status: Not assessed.

**Genus *Hypanis*
Pander in Ménétries, 1832**

Type species: *Glycymeris plicata* Eichwald, 1829 (M)

**53(148). *Hypanis plicata*
(Eichwald, 1829)**

[= *Adacna grimmi* Andrusov, 1923; *Hypanis regularis* Starobogatov in Starobogatov, Prozorova, Bogatov et Sayenko, 2004]

Glycymeris plicata Eichwald, 1829: 279, Tab. V, fig. 2.

- Type locality: Iran, the Caspian Sea near Astrabad (the locality of the lectotype, fide Bogutskaya *et al.*, 2013).

- Lectotype: ZIN No. 205/1. It was designated and illustrated in Bogutskaya *et al.* [2013: fig. 47].

- Global distribution: Southern Europe.

- Subregions: CS, SE.

- IUCN conservation status: Not assessed.

- Remark: The species includes two subspecies.

**53(148a). *Hypanis plicata plicata*
(Eichwald, 1829)**

- Distribution in the former USSR: Northern, middle and southern parts of the Caspian Sea [Bogutskaya *et al.*, 2013].

- Subregions: CS.

- Bionomics: Inhabits shallow areas with relatively low salinity [Bogutskaya *et al.*, 2013].

**53(148b). *Hypanis plicata relict*
(Milaschewitsch, 1916)**

Adacna relict Milaschewitsch, 1916: 274-276, pl. 8, figs. 10-12.

- Type locality: Dniester liman, Berezan liman (the northern Black Sea maritime area).
- Types: Not traced.
- Distribution in the former USSR: Waterbodies of the Danube Delta, Dniester and Dnieper-Bug limans (the northern Black Sea maritime area) [Scarlato & Starobogatov, 1972].
- Subregions: SE.
- Bionomics: Inhabits fresh- and brackishwater lakes and lagoons [Scarlato & Starobogatov, 1972].

**54(149). *Hypanis sidorovi*
Starobogatov, 1974**

Hypanis minima sidorovi Starobogatov, 1974: 246, fig. 213.

- Type locality: Western coast of the Aral Sea near well Kara-Kibir.
- Lectotype: ZIN.
- Global distribution: Endemic to the Aral Sea.
- Distribution in the former USSR: The Aral Sea [Starobogatov, 1974].
- Subregions: CA.
- IUCN conservation status: Not assessed.
- Bionomics: Occurred at depths between 0 and 10 m; probably extinct since the 1970s [Andreeva & Andreev, 2003].
- Remark: The generic position of this species as well as its validity should be clarified. Starobogatov [1974] described this species as the subspecies of *Hypanis minima* that is recently placed in the genus *Adacna* (see above). Graf & Cum-

mings [2013] treated this species as a synonym of *A. vitrea*.

**Superfamily Dreissenoidae
Gray, 1840**

Family Dreissenidae Gray, 1840

[= Enocephalidae de Stefani, 1880; Tichogoniidae Andrusov, 1893]

(Dreissenadae Gray, 1840a: 299)

Type genus: *Dreissena* Van Beneden, 1835

Remark: Dreissenidae is a rather small family of fresh- and brackishwater bivalves having, presumably, south European origin. The most important sources for dreissenid taxonomy and biogeography are Andrusov [1897], Babak [1983], Nuttall [1990], Rosenberg & Ludyanskiy [1994], Starobogatov [1994], Starobogatov & Andreeva [1994].

**Genus *Dreissena*
van Beneden, 1835**

[= *Mytilus* Linnaeus, 1758, partim; *Dithalmia* Jay, 1835; *Tichogonia* Rossmässler, 1835; *Mytilina* Cantraine, 1837, non Bory de Saint Vincent, 1824 (Rotifera); *Mytilomya* Bronn, 1838; *Dreissensia* Bronn, 1862; *Mytolimax* Schaufuss, 1869]

Type species: *Mytilus polymorphus* Pallas, 1771 (M)

Subgenus *Dreissena* s. str.

**55(150). *Dreissena (Dreissena)*
polymorpha (Pallas, 1771)**

[= *Mytilus polymorphus fluviatilis* Pallas, 1771; *Mytilus polymorphus marinus* Pallas, 1771; *Pinna fluviatilis* Sander, 1780; *Mytilus volgae* Chemnitz, 1795; *Mytilus volgensis* Gray, 1825; *Mytilus hagenii* Baer, 1825; *Mytilus arca* Kickx, 1834; *Dythalmia danubii* Jay, 1835; *Tichogonia chemnitzi* Rossmässler, 1835; *Dreissena kusteri* Dunker, 1855; *Dreissena fluviatilis* Bourguignat, 1856; *Dreissensia belgrandi* Locard, 1893; *Dreissensia complanata* Locard, 1893; *Dreissensia curta*

Locard, 1893; *Dreissensia eximia* Locard, 1893; *Dreissensia lacunosa* Locard, 1893; *Dreissensia lutetiana* Locard, 1893; *Dreissensia occidentalis* Locard, 1893; *Dreissensia recta* Locard, 1893; *Dreissensia servaini* Locard, 1893; *Dreissensia sulcata* Locard, 1893; *Dreissensia tumida* Locard, 1893; *Dreissensia ventrosa* Locard, 1893; *Dreissensia westerlundii* Locard, 1893; *Dreissensia latro* Andrusov, 1897; *Dreissensia polymorpha* var. *angustiformis* Kolesnikov, 1950; *Dreissensia cornuliformis* Ali-zade, 1961; *Dreissensia gubkini* Ali-zade, 1961; *Dreissensia kambai* Ali-zade, 1961; *Dreissensia kopetdagica* Ali-zade, 1961; *Dreissensia lunata* Ali-zade, 1961; *Dreissensia nalivkini* Ali-zade, 1961; *Dreissensia vestae* Ali-zade, 1961]¹⁹

Mytilus polymorphus Pallas, 1771: 368, 435, 478.

- Type locality: The Volga and Yaik (nowadays Ural) rivers, the Caspian Sea.
- Types: Not traced.
- Global distribution: Europe, Central Asia (the Aral Sea), North America (introduced) [Starobogatov & Andreeva, 1994; Mackie & Schloesser, 1996]. It is considered to be among the 100 World's worst invasive alien species²⁰.
- Subregions: NE, SE, CA, CS.
- IUCN conservation status: LC (least concern).
- Remark: Four recent subspecies of *D. polymorpha* are currently accepted [Starobogatov, 1994a; Starobogatov *et al.*, 2004].

**55(150a). *Dreissena* (*Dreissena*)
polymorpha polymorpha
(Pallas, 1771)**

- Distribution in the former USSR: Low-salinity areas of the Black and Azov seas, the Aral Sea, fresh waters of the European Russia, eastward to the Urals

¹⁹ We omit the full synonymy of this species that may be found in Andrusov [1897].

²⁰ See Global Invasive Species Database: <http://www.issg.org/database/species/search.asp?st=100ss>.

Mts. and northward to 62°N [Starobogatov, 1994a; Starobogatov & Andreeva, 1994].

- Subregions: NE, SE, CA.
- Bionomics: Freshwater subspecies. Lives in lakes and rivers [Starobogatov & Andreeva, 1994; Starobogatov *et al.*, 2004].

**55(150b). *Dreissena* (*Dreissena*)
polymorpha andrusovi
(Brusina in Andrusov, 1897)**

Dreissensia andrusovi Andrusov, 1897: 374-375, pl. 18, figs. 21-23.

- Type locality: The Caspian Sea.
- Lectotype: PIN No. 451/97 (designated by Rosenberg & Ludyanskiy, 1994).
- Distribution in the former USSR: The Northern Caspian Sea [Starobogatov, 1994a; Starobogatov & Andreeva, 1994].
- Subregions: CS.
- Bionomics: Brackishwater subspecies. Lives under salinity 2-7‰ [Bogutskaya *et al.*, 2013].

**55(150c). *Dreissena* (*Dreissena*)
polymorpha aralensis
(Andrusov, 1897)**

Dreissensia polymorpha var. *aralensis* Andrusov, 1897: 354-355, pl. 18, fig. 40.

- Type locality: The Aral Sea.
- Syntype: PIN No. 451/159 [fide Rosenberg & Ludyanskiy, 1994].
- Distribution in the former USSR: The Aral Sea and adjacent waterbodies [Starobogatov, 1994a; Starobogatov & Andreeva, 1994].
- Subregions: CA.
- Bionomics: This subspecies prefers to live in freshwater; sometimes it occurs in brackishwater habitats with reduced salinity. Most probably, it no longer lives in the Aral Sea, being confined to adjacent waterbodies only [Starobogatov & Andreeva, 1994].

**55(150d). *Dreissena (Dreissena)*
polymorpha obtusecarinata
(Andrusov, 1897)**

Dreissensia polymorpha var. *obtusecarinata* Andrusov, 1897: 354.

- Type locality: The Aral Sea.
- Syntype: PIN No. 451/185 [fide Rosenberg & Ludyanskiy, 1994].
- Distribution in the former USSR: The Aral Sea [Starobogatov, 1994a; Starobogatov & Andreeva, 1994].
- Subregions: CA.
- Bionomics: This subspecies lived in the open part of the Aral Sea; probably extinct since the 1980s [Starobogatov, 1994a; Starobogatov & Andreeva, 1994; Andreeva & Andreev, 2003].

**56(151). *Dreissena (Dreissena) caspia*
Eichwald, 1855**

Dreissena caspia Eichwald, 1855: 311, pl. 10, figs. 19-21.

- Type locality: The Caspian Sea, Chisty Bank and the Cheleken Island.
- Types: Not traced; possibly in the Geological Museum of Sankt-Petersburg State University.
- Global distribution: The Aral and the Caspian seas.
- Subregions: CA, CS.
- IUCN conservation status: CR (critically endangered).
- Remark: Two recent subspecies of *D. caspia* are currently accepted [Starobogatov, 1994a; Starobogatov & Andreeva, 1994].

**56(151a). *Dreissena (Dreissena)*
caspia caspia (Eichwald, 1855)**

- Distribution in the former USSR: The Caspian Sea [Starobogatov, 1994a; Starobogatov & Andreeva, 1994].
- Subregions: CS.
- Bionomics: Lived at depths 0-35 m.

Now it is extinct [Logvinenko & Starobogatov, 1968; Bogutskaya *et al.*, 2013].

**56(151b). *Dreissena (Dreissena)*
caspia pallasii (Andrusov, 1897)**

Dreissensia pallasii Andrusov, 1897: 671-672, pl. 20, figs. 33-35.

- Type locality: The Aral Sea, near the St. Nicholas Island.
- Syntypes: PIN, No. 451/113, 451/115 [fide Rosenberg & Ludyanskiy, 1994].
- Distribution in the former USSR: The Aral Sea [Starobogatov, 1994a; Starobogatov & Andreeva, 1994].
- Subregions: CA.
- Bionomics: Lived at depths below 8-10 m [Starobogatov, 1974]. It was last recorded in 1980 [Rosenberg & Ludyanskiy, 1994], and is probably extinct since the 1990s [Starobogatov, 1994a; Starobogatov & Andreeva, 1994; Andreeva & Andreev, 2003].

**57(152). *Dreissena (Dreissena) elata*
(Andrusov, 1897)**

[= *Dreissena polymorpha* var. *lata* Andrusov, 1897; *Dreissena polymorpha* var. *marina* auct., non Pallas, 1771]

Dreissensia polymorpha var. *elata* Andrusov, 1897: 353, pl. 20, fig. 25

- Type locality: The Western Caspian Sea, Kuuli Cape, Dazmyk, Apsheron.
- Syntype: PIN No. 451/159 [fide Rosenberg & Ludyanskiy, 1994].
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: The Caspian Sea [Starobogatov, 1994].
- Subregions: CS.
- IUCN conservation status: Not assessed.
- Bionomics: Occurred down to 30 m; now probably extinct [Starobogatov, 1994; Starobogatov & Andreeva, 1994]

Subgenus *Pontodreissena*

Logvinenko et Starobogatov, 1966

Type species: *Mytilus rostriformis* Deshayes in Verneuil et Deshayes, 1838 (OD)

58(153). *Dreissena (Pontodreissena) rostriformis* (Deshayes in Verneuil et Deshayes, 1838)

[= *Mytilus gracilis* Rousseau, 1842; ? *Dreissena caspia* Issel, 1865, non Eichwald, 1855; *Dreissena brardi* Eichwald, 1855; *Dreissena grimmi* Andrusov, 1890]

Mytilus rostriformis Verneuil & Deshayes: 61, pl. 4, fig. 14-16.

- Type locality: Crimea Peninsula (fossil, Pliocene).
- Lectotype: no. L124b in collection of École des mines, now University of Lyon [designated by Archambault-Guezou, 1976; illustrated by Rosenberg & Ludyanskiy, 1994].
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: The Caspian Sea [Starobogatov, 1994].
- Subregions: CS.
- IUCN conservation status: LC (least concern).
- Remark: The species comprises more than 10 subspecies, four of which are extant (see below).

58(153a). *Dreissena (Pontodreissena) rostriformis compressa* Logvinenko et Starobogatov, 1966

Dreissena rostriformis compressa Logvinenko & Starobogatov, 1966a: 15-16, fig. 3.

- Type locality: The Caspian Sea, off the Samur River mouth, 90 m
- Types: ZIN Nos. 1-8 in systematic catalogue. The type series includes the holotype and more than 850 paratypes.
- Distribution in the former USSR: The

Caspian Sea [Starobogatov, 1994; Starobogatov & Andreeva, 1994]

- Subregions: CS.
- Bionomics: Occurs at depths 70-300 m [Starobogatov & Andreeva, 1994].

58(153b). *Dreissena (Pontodreissena) rostriformis distincta* (Andrusov, 1897)

Dreissensia rostriformis var. *distincta* Andrusov, 1897: 273-276, pl. 14, figs. 18-24.

- Type locality: Numerous localities of the Volga River basin, the Caspian, Black and Marmara seas (recent and fossil).
- Lectotype: PIN No. 451/159 [designated by Rosenberg & Ludyanskiy, 1994].
- Distribution in the former USSR: Northern and northeastern parts of the Caspian Sea [Starobogatov, 1994; Starobogatov & Andreeva, 1994]
- Subregions: CS.
- Bionomics: Occurs at depths 20-50 m [Starobogatov & Andreeva, 1994].

58(153c). *Dreissena (Pontodreissena) rostriformis grimmi* (Andrusov, 1897)

[= *Dreissensia grimmi* Andrusov, 1890, *nomen nudum*].

Dreissensia grimmi Andrusov, 1897: 279-280, pl. 16, figs. 16-18.

- Type locality: The Caspian Sea, 43°35' N, 0°30'30 E; 35 fathoms.
- Lectotype: PIN No. 451/81 [designated by Rosenberg & Ludyanskiy, 1994].
- Distribution in the former USSR: The Middle Caspian Sea [Starobogatov, 1994; Starobogatov & Andreeva, 1994]
- Subregions: CS.
- Bionomics: Occurs at depths 45-80 m [Starobogatov & Andreeva, 1994].
- Remark: During the expedition to the Caspian Sea by Grimm, when the type material was collected, the longitude was

calculated from Baku, situated approximately at 50°E. Therefore the correct longitude of the mentioned in the type locality stations should be approximately 51°00'E.

58(153d). *Dreissena (Pontodreissena) rostriformis pontocaspica* (Andrusov, 1897)

Dreissensia tschaudae var. *pontocaspica* Andrusov, 1897: 294-297, pl. 9, figs. 27-32, pl. 15, figs. 29-30.

- Type locality: Several localities on Apsheron Peninsula (the Caspian Sea), eastern Caspian Sea coast, the Black Sea at 30-101 fathoms (fossil and subfossil).
- Syntypes: PIN No. 451/41-44 [fide Rosenberg & Ludyanskiy, 1994].
- Distribution in the former USSR: The southwestern and southeastern Caspian Sea [Starobogatov, 1994; Starobogatov & Andreeva, 1994]
- Subregions: CS.
- Bionomics: Occurs at depths 20–80 m [Starobogatov & Andreeva, 1994].

59(154). *Dreissena (Pontodreissena) bugensis* (Andrusov, 1897)

Dreissensia bugensis Andrusov, 1897: 285-286, pl. 15, figs. 31-37.

- Type locality: Ukraine, Bug Liman near Nikolaev City, at the Ingul River mouth (across Nikolaev).
- Lectotype: PIN No. 451/77 (designated by Rosenberg & Ludyanskiy, 1994).
- Global distribution: Southern Europe (Black Sea basin); introduced to Western Europe and North America [Bogutskaya *et al.*, 2013].
- Distribution in the former USSR: The native range of this species covered desalinated parts of the Dnieper-Bug Liman, lower courses of the Dnieper and Yuzhnyi Bug rivers. Now *D. bugensis* occurs in many large rivers of the

Black Sea basin as well as in the Taganrog Bay of the Sea of Azov and the Northern Caspian Sea [Bogutskaya *et al.*, 2013].

- Subregions: SE, CS.
- Bionomics: Lives in lakes and (rarely) in rivers, on slow current [Starobogatov *et al.*, 2004].
- IUCN conservation status: LC (least concern).
- Remark: Sometimes, on the basis of molecular data *D. bugensis* is regarded as a subspecies of *D. rostriformis* [Orlova *et al.*, 2005; Therriault *et al.*, 2005], however there are certain morphological and ecological differences between the two species giving us reasons to treat *D. bugensis* as a distinct species [Bogutskaya *et al.*, 2013].

Genus *Mytilopsis* Conrad, 1857

[= *Mytilus* Linnaeus, 1758, partim; *Praxis* H. et A. Adams, 1857, non Guenée, 1852 (Lepidoptera)]

Type species: *Mytilus leucophaeatus* Conrad, 1831 (SD Stoliczka, 1871)

60(155). *Mytilopsis leucophaeata* (Conrad, 1831)

[= *Mytilus cochleatus* Kickx in Nyst, 1835; *Dreissena cumingiana* Dunker, 1855; *Mytilus americanus* Reeve, 1858; *M. tenebrosus* Reeve, 1858]

Mytilus leucophaeatus Conrad, 1831: p. 263-264, pl. 11, fig. 13.

- Type locality: “Southern coast of the [eastern] United States” [Rosenberg, 2009].
- Types: Not traced. Most probably in the Academy of Natural Sciences, Philadelphia (USA).
- Global distribution: USA (Gulf of Mexico, Hudson River, Upper Mississippi, New England); since 1835 it has been recorded in Europe and recently was revealed as a cryptic invader in some

European countries, including those situated in the Black Sea–Caspian Sea region. The species is also known now from northeastern Brazil [Therriault *et al.*, 2004; Kennedy, 2011].

- Distribution in the former USSR: In the Black Sea region the species is registered in two areas: the Dniester Liman [Therriault *et al.*, 2004] and the Yuzhnyi Bug River [Heiler *et al.*, 2010]. Recently, it has been registered from the Southern Caspian Sea [Heiler *et al.*, 2010].
- Subregions: SE, CS.
- Bionomics: Brackishwater species, in the Black Sea region it inhabits limans and river mouths; lives on hard substrates [Son, 2010].
- IUCN conservation status: LC (least concern).
- Remark: Some authors considered *Mytilopsis* as a subgenus of the genus *Congeria* Partsch, 1835 [Andrusov, 1897; Starobogatov, 1970; Babak, 1983] and consequently the species is sometimes referred to as *Congeria leucophaeata* [see Glöer & Meier-Brook, 2003]. *Mytilopsis* was elevated to the genus level by Nuttall [1990], and subsequent authors accepted this taxonomic solution [Rosenberg & Ludyansky, 1994; Gittenberger *et al.*, 1998; Falkner *et al.*, 2001].

Superfamily Tellinoidea Blainville, 1814

Family Semelidae Stoliczka, 1870

[= Amphidesmatidae Latreille, 1825 (invalid under ICZN Art. 40.2)]

(Semelinae Stoliczka, 1870: 8b, 106, 108)

Type genus: *Semele* Schumacher, 1817

Subfamily Scrobiculariinae H. et A. Adams, 1856

[= Lavignonidae Récluz, 1869]

(Scrobiculariinae H. et A. Adams, 1856: 408)

Genus *Abra* Lamarck, 1818

[= *Syndosmya* Récluz, 1843; *Orixa* Leach in Gray, 1852; *Lutricularia* Monterosato, 1884; *Syndesmya* Fischer, 1887; *Abrina* Habe, 1952]

Type species: *Mactra tenuis* Montagu, 1803 (SD Herrmannsen, 1846)

61(156). *Abra segmentum* (Récluz, 1843)

[= *Erycina ovata* Philippi, 1836, non Gray, 1825; *Amphidesma lactea* Krynicky, 1837; *Syndosmya apelina* Récluz, 1843; *Abra segmentina* H. et A. Adams, 1856; *Scrobicularia fabula* Brusina, 1865; *Syndesmya segmentum* var. *brevis* Fischer, 1867; *Syndesmya segmentum* var. *incrassata* Fischer, 1867; *Syndesmya segmentum* var. *subrostrata* Fischer, 1867; *Syndesmya caillaudii* Fischer, 1867]

Syndosmya segmentum Récluz, 1843: 366.

- Type locality: Italy, the Adriatic Sea coast near Tarente settlement (“les côtes de l’Adriatique, à Tarente”; Récluz, 1843: 367).
- Types: Not traced.
- Global distribution: Atlantic coast of Europe, Mediterranean, Black, Azov, Aral, and Caspian seas [Bogutskaya *et al.*, 2013].
- Distribution in the former USSR: The Black and Azov seas. Since 1939 has been acclimatized in the Caspian Sea [Starobogatov, 1974], and since the 1960s – in the Aral Sea [Andreeva & Andreev, 2003].
- Subregions: SE, CS, CA.
- Bionomics: Brackishwater species, inhabits depths between 50 and 70 m in the Black and Caspian seas; in the Aral Sea occurred at depths between 10 and 15 m under salinity not less than 8–9‰ [Starobogatov, 1974; Kantor & Sysoev, 2005; Bogutskaya *et al.*, 2013].
- IUCN conservation status: Not assessed.
- Remark: The Russian authors some-

times referred to this species as *Syndosmya segmentum* [Andreeva & Andreev, 2003].

Superfamily Cyrenoidea Gray, 1840 Family Cyrenidae Gray, 1840

[= Corbiculidae Gray, 1847; Serrilaminulinae Lindholm, 1933; Geloinidae Iredale, 1943; Polyemesodinae Habe, 1977]

(Cyrenidae Gray, 1840b: 133, 149)

Type genus: *Cyrena* Lamarck, 1818

Genus *Corbicula* Megerle von Mühlfeldt, 1811

[= *Cyanocyclas* Blainville, 1818; *Cyrena* Lamarck, 1818; *Venulites* Schloth, 1820; *Cernodonax* Dall, 1903; *Corbiculina* Dall, 1903; *Posostrea* Bogen et Bouchet, 1998]

Type species: *Tellina fluminalis* O.F. Müller, 1774 (M; ICZN Opinion 335)

62(157). *Corbicula fluminalis* (O.F. Müller, 1774)

[= *Cyclas euphratica* Lamarck, 1806; *Cyrena consobrina* Cailliaud, 1823; *Cyrena pusilla* Philippi, 1846; *Cyrena radiata* Philippi, 1846; *Corbicula crassula* Bellardi, 1854; *Corbicula inaequilateralis* Prime, 1861; *Corbicula difficilis* Prime, 1867; *Corbicula saulcyi* Bourguignat, 1868; *Corbicula delessertiana* Prime, 1870; *Corbicula zeleborei* Jickeli, 1874; *Corbicula saharica* Fischer, 1878; *Corbicula alba* Clessin, 1879; *Corbicula heuglini* Clessin, 1879; *Corbicula jickeli* Clessin, 1879; *Corbicula meridionalis* Clessin, 1879; *Corbicula nilotica* Clessin, 1879; *Corbicula senegalensis* Clessin, 1879; *Corbicula radiata* var. *tanganyicensis* Crosse, 1881; *Corbicula hebraica* Locard, 1883; *Corbicula syriaca* Locard, 1883; *Corbicula callipyga* Bourguignat, 1885; *Corbicula gravieriana* Bourguignat, 1885; *Corbicula soleilleti* Bourguignat, 1885; *Corbicula delousei* Bourguignat, 1889; *Corbicula subtruncatula* Bourguignat, 1889; *Corbicula foai* Mabilie, 1901; *Corbicula pequinoti* Pallary, 1901; *Corbicula pequinoti* var. *mauritanica* Pallary, 1901; *Corbicula pequinoti* var. *minor* Pallary, 1901; *Corbicula thomasi* Pallary, 1901; *Corbicula artini*

Pallary, 1903; *Corbicula tsadiana* Martens, 1903; *Corbicula artini* var. *albina* Pallary, 1903; *Corbicula doufilei* Rochebrune et Germain, 1904; *Corbicula lacoini* Germain, 1906; *Corbicula cunningtoni* Smith, 1906; *Corbicula jouberti* Germain, 1906; *Corbicula kyngarica* Germain, 1906; *Corbicula lavigeriana* Germain, 1906; *Corbicula fischeri* Germain, 1907; *Corbicula subtruncatula* var. *cyanea* Pallary, 1909; *Corbicula gabonensis* Preston, 1909; *Corbicula audoini* Germain, 1909; *Corbicula radiata edwardi* Pilsbry et Bequaert, 1927; *Corbicula innesi* Gardner, 1932; *Corbicula vara* Gardner, 1932; *Corbicula africana albertiana* Mandahl-Barth, 1954]

Tellina fluminalis O.F. Müller, 1774: 205.

- Type locality: Euphrates River.
- Lectotype: ZMUC No. BIV-034 [illustrated by Korniushev, 2004].
- Global distribution: Native to Central Asia, the Middle East and Africa. Widely introduced to Europe and South America [Graf & Cummings, 2013].
- Distribution in the former USSR: The eastern Transcaucasia and plains of Central Asia [Kursalova & Starobogatov, 1971; Starobogatov *et al.*, 2004]; introduced to the Danube basin, south-eastern Ukraine [Son, 2007].
- Subregions: SE, CA.
- Bionomics: Occurs in rivers, irrigation channels and lakes. May live in brackish waterbodies [Zhadin, 1952].
- IUCN conservation status: LC (least concern).
- Remark: According to Korniushev [2004], *Corbicula consobrina* (Cailliaud, 1823) should be listed as a synonym of *C. fluminalis*. The former has been accepted as a distinct species in the Russian literature [Kursalova & Starobogatov, 1971].

62(158). *Corbicula cor* (Lamarck, 1818)

[= *Corbicula hohenackeri* Clessin, 1879; *Corbicula feliciani* Locard, 1883]

Cyrena cor Lamarck, 1818: 552.

- Type locality: Not stated. The syntype ori-

gins from the Euphrates River [fide Graf & Cummings, 2013].

- Types: MNHN MP 3515.
- Global distribution: Middle East, Central Asia.
- Distribution in the former USSR: Azerbaijan and Turkmenia [Kursalova & Starobogatov, 1971].
- Subregions: SE, CA.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *Corbicula fluminalis*.

62(159). *Corbicula purpurea* Prime, 1867

Corbicula purpurea Prime, 1867: 77, fig. 26.

- Type locality: The Tigris River ("In flumine Tigris, Asiae"; Prime, 1867: 77).
- Types: Not traced.
- Global distribution: Middle East, Central Asia.
- Distribution in the former USSR: Azerbaijan, Turkmenia and Uzbekistan [Kursalova & Starobogatov, 1971].
- Subregions: SE, CA.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *C. fluminalis*.

63(160). *Corbicula amurensis* Bogatov et Starobogatov, 1994

Corbicula amurensis Bogatov & Starobogatov, 1994: 149, fig. 1 D-F.

- Type locality: Russia, Khabarovsk Territory, the Lower Amur near Balbinskiy Cliff (22 km upstream of Kalinovka settlement and 337 km from the mouth).
- Holotype: ZIN, No. 1 in systematic catalogue. Paratypes: three intact specimens, and separate left and right valves [Bogatov & Starobogatov, 1994].
- Global distribution: Endemic to the

Russian Far East [Bogatov & Starobogatov, 1994].

- Distribution in the former USSR: Lower course of the Amur River [Bogatov & Starobogatov, 1994].
- Subregions: SF.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: DD (data deficient).

64(161). *Corbicula elatior* Martens, 1905

[= *Corbicula suifuensis* Lindholm, 1925]

Corbicula elatior Martens, 1905: 65, pl. 2, fig. 4.

- Type locality: Originally stated as "Provinz Kyöngsangdo, zwischen Tongnai und Kimhai. Imjingang bai Imjin, Provinz Kyöngkwido"; Martens, 1905: 65). Glaubrecht *et al.* [2007] designated the lectotype collected in Naktong River near Kimhae, Kyongsang-namdo (35°11'57"N, 128°54'00"E).
- Types: ZMB, Nos. 55624 (lectotype), 38430b, 38439, 38929, and 55626. The type series includes the lectotype and 18 paralectotypes represented either by pairs of valves or separate valves [see Glaubrecht *et al.*, 2007 for details].
- Global distribution: The Far East [Graf & Cummings, 2013].
- Distribution in the former USSR: Southern part of the Primorye Region [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

65(162). *Corbicula finitima* (Lindholm, 1927)

[= *Corbicula fluminea* var. *suifuensis* sensu Golikov et Scarlato, 1967, non Lindholm, 1925]

Corbicula suifuensis var. *finitima* Lindholm, 1927b: 552, Taf. 32, fig. 2.

- Type locality: Russia, the Primorye Territory, estuary of the river Artemovka.
- Types: ZIN.
- Global distribution: The Far East, including Russia and Korea [Graf & Cummings, 2013].
- Distribution in the former USSR: Southern part of the Primorye Region [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lower courses of rivers inflowing to the sea [Starobogatov *et al.*, 2004].
- IUCN conservation status: DD (data deficient).
- Remark: Graf & Cummings [2013] synonymized it with *C. fluminea*.

**66(163). *Corbicula fluminea*
(O.F. Müller, 1774)**

[= *Tellina fluviatilis* O.F. Müller, 1774; *Venus fluviatilis euphratis* Martini et Chemnitz, 1782; *Cyclas chinensis* Lamarck, 1806; *Cyrena fuscata* Lamarck, 1818; *Cyrena orientalis* Lamarck, 1818; *Cyrena woodiana* Lea, 1831; *Corbicula grandis* Deshayes, 1854; *Corbicula triangularis* Deshayes, 1854; *Corbicula primeana* Mörch, 1861; *Corbicula chemnitziana* Prime, 1867; *Corbicula pexata* Prime, 1867; *Corbicula pfeifferiana* Prime, 1867; *Corbicula andersoniana* Nevill, 1877; *Corbicula yunnanensis* Nevill, 1877; *Corbicula inflata* Clessin, 1879; *Corbicula ovata* Clessin, 1879; *Corbicula crebricostis* Westerlund, 1887; *Corbicula fulgida* Bullen, 1901; *Corbicula sandai* Annandale, 1916]²¹

Tellina fluminea O.F. Müller, 1774: 206.

- Type locality: China, in rivers (“In arena fluviali *Chinae*”; Müller, 1774: 206).

²¹ We omit here numerous nominal species introduced by Heude [1887]. The complete list of these synonymous names one can find in Graf & Cummings [2013].

- Lectotype: ZMUC, No. BIV-035 [designated by Araujo *et al.*, 1993].
- Global distribution: Native to Eastern Asia, widely introduced to America and Europe [Beasley *et al.*, 2003; Graf & Cummings, 2013].
- Distribution in the former USSR: The species has invaded some waterbodies of the Danube delta within the boundaries of Ukraine [Son, 2007].
- Subregions: SE.
- Bionomics: Lives in rivers and brackishwater lakes [Glöer & Meier-Brook, 2003].
- IUCN conservation status: LC (least concern).
- Remark: The species distinctness of *C. fluminea* and *C. fluminalis* has been questioned many times by different authors [see, for example, Pfenniger *et al.*, 2002]. Korniushev [2004] has shown that the two taxa are distinguishable on the basis of their shell characters (especially the patterns of sculpture); also the size of spermatozoa may represent a distinctive character.

**67(164). *Corbicula japonica*
Prime, 1867**

[= *Corbicula biformis* Reinhardt, 1877; *Corbicula ovalis* Reinhardt, 1877; *Corbicula leana* Martens, 1877; *Corbicula transversa* Martens, 1877; *Cyrena yokohamanensis* Sowerby, 1877; *Corbicula fuscata atrata* Reinhardt, 1878; *Corbicula doenitziana* Clessin, 1879; *Corbicula martensii* Clessin, 1879; *Corbicula reiniana* Clessin, 1879; *Corbicula sadoensis* Pilsbry, 1901; *Corbicula nipponensis* Pilsbry, 1907; *Corbicula nipponensis* var. *delicatula* Pilsbry, 1907; *Corbicula fluminalis* var. *extrema* Lindholm, 1929; *Corbicula fluminea* sensu Zhadin, 1952, partim, non O.F. Müller, 1774]

Corbicula japonica Prime, 1867: 68, fig. 15.

- Type locality: “Japonia” [Prime, 1867: 69].
- Syntypes: Kept in ZMB and MCZ [see Glaubrecht *et al.*, 2007 for details].

- Global distribution: The Far East [Graf & Cummings, 2013].
- Distribution in the former USSR: Japan Sea, the southern Sakhalin, the southern Kurile Islands, also lower reaches of the Amur River and some lakes and rivers near the sea [Zatravkin & Bogatov, 1987; Kafanov, 1991; Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lower courses of rivers inflowing to the sea [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

**68(165). *Corbicula lindholmi*
Kursalova et Starobogatov, 1971**

Corbicula lindholmi Kursalova & Starobogatov, 1971: 94.

- Type locality: Russia, the Primorye Territory, lower course of the Pachikheza River.
- Holotype: ZIN.
- Global distribution: The Far East (Russia, northern China).
- Distribution in the former USSR: The Southern Primorye Territory (Razdol'naya River and other rivers of the Japan Sea basin) [Zatravkin & Bogatov, 1987; Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

**69(166). *Corbicula nevelskoyi*
Bogatov et Starobogatov, 1994**

Corbicula nevelskoyi Bogatov & Starobogatov, 1994: 148-149, fig. 1 A-C.

- Type locality: Russia, the Khabarovsk Territory, the lower Amur near Balbinskiy Cliff (22 km upstream of Kalinovka settlement and 337 km from the mouth).

- Holotype: ZIN, No. 1. Paratypes: a separate right valve from the type locality and a separate left valve from the Amur River, 7 km upstream Maxim Gorky settlement [Bogatov & Starobogatov, 1994].
- Global distribution: Endemic to the Russian Far East [Bogatov & Starobogatov, 1994].
- Distribution in the former USSR: Lower course of the Amur River [Bogatov & Starobogatov, 1994].
- Subregions: SF.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: DD (data deficient).

**70(167). *Corbicula producta*
Martens, 1905**

[= *Corbicula fluminea* sensu Zhadin, 1952 partim, non O.F. Müller, 1774]

Corbicula producta Martens, 1905: 66, pl. 2, fig. 8.

- Type locality: Originally stated as “Keumgang bei Kongju, Provinz Chhungchöngdo, Korea”. According to Glaubrecht *et al.* [2007], it means South Korea: Province Ch’ungch’ong-namdo, Keum River near Kongju (36°28’N, 127°06’E).
- Types: ZMB, No. 55625. The type series includes the lectotype (designated by Glaubrecht *et al.*, 2007) and four paralectotypes.
- Global distribution: The Primorye, Russia and the Korean peninsula [Graf & Cummings, 2013].
- Distribution in the former USSR: The southern Primorye territory (the Razdol'naya River and other rivers of the Japan Sea basin) [Zatravkin & Bogatov, 1987; Starobogatov *et al.*, 2004].
- Subregions: SF.

- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: DD (data deficient).

**70(168). *Corbicula ferghanensis*
Kursalova et Starobogatov, 1971**

Corbicula ferghanensis Kursalova & Starobogatov, 1971: 95.

- Type locality: Uzbekistan, Ferghana, a large aryk behind the railway station.
- Types: ZIN.
- Global distribution: Central Asia.
- Distribution in the former USSR: Uzbekistan [Kursalova & Starobogatov, 1971].
- Subregions: CA.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *C. producta*.

**71(169). *Corbicula sirotskii* Bogatov
et Starobogatov, 1994**

Corbicula sirotskii Bogatov & Starobogatov, 1994: 149, fig. 1 G-I.

- Type locality: Russia, the Khabarovsk Territory, the Lower Amur, 7 km upstream of Maxim Gorky settlement and 397 km from the mouth.
- Types: ZIN. The type series includes the holotype and a single paratype.
- Global distribution: Endemic to the Russian Far East [Bogatov & Starobogatov, 1994].
- Distribution in the former USSR: Lower courses of the Amur River [Bogatov & Starobogatov, 1994].
- Subregions: SF.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: DD (data deficient).

**72(170). *Corbicula tibetensis*
Prashad, 1929**

Corbicula tibetensis Prashad, 1929: 61-62, pl. 8, figs. 3-5.

- Type locality: Tibet.
- Holotype: Zoological Survey of India, No. M 12837/2.
- Global distribution: Central Asia: Tibet and Kazakhstan [Graf & Cummings, 2013]; Syria, Israel [Kursalova & Starobogatov, 1971].
- Distribution in the former USSR: Mountain areas of Central Asia, basin of the Syr-Darya River, eastern Kazakhstan [Kursalova & Starobogatov, 1971; Starobogatov *et al.*, 2004].
- Subregions: CA.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

**Superfamily Sphaerioidea
Deshayes, 1855**

Family Sphaeriidae Deshayes, 1855

(Sphaeriina Deshayes, 1855: 261)

Type genus: *Sphaerium* Scopoli, 1777

Remark: Sphaeriidae s. lato is a large and widely distributed family of freshwater bivalves to include fingernail clams, pea clams and similar forms. The most conservative estimate of its global diversity is almost 200 species worldwide [Bogan, 2008]. The taxonomy of this family, especially at the species level, is known as being very intricate that led to serious debates about criteria of delineation of species, subgenera and genera in sphaeriid clams [Meier-Brook, 1993; Korniushev, 1996, 2002]. The "Russian" taxonomy of this family [Korniushev, 1996; Starobogatov *et al.*, 2004] has been based on the use of the 'com-

paratorial' method [Shikov & Zatravkin, 1991; Korniushev, 1998a, 2002a; Graf, 2007] that resulted in a drastic increase in number of accepted taxa as compared to the European system. The most comprehensive recent works on taxonomy of Sphaeriidae are those by Korniushev [1996, 2001, 2002a, b], Cooley & O'Foighil [2000], Glöer & Meier-Brook [2003], Lee & O'Foighil [2003], and Starobogatov *et al.* [2004].

The differences in the genus-level classification of this family accepted in Russia and Western Europe are summarized in Table 2. Following the system of Bouchet & Rocroi [2010], we accept here the family Sphaeriidae in its wider sense with three subfamilies presented in the RAC malacofauna: Sphaeriinae s. str., Euglesinae Pirogov et Starobogatov, 1974, and Pisidiinae Gray, 1857.

Subfamily Sphaeriinae Deshayes, 1855

[= Corneocycladidae Hannibal, 1912; Sphaeriatrininae Alimov et Starobogatov, 1968]

Tribe Sphaeriini Deshayes, 1855

Genus *Sphaerium* Scopoli, 1777

[= *Tellina* Linnaeus, 1758, partim; *Nux* Humphrey, 1797; *Cyclas* Lamarck, 1799; *Cornea* Megerle von Mühlfeld, 1811; *Cycladea* Rafinesque, 1815; *Corneocyclas* Blainville, 1818; *Phymesoda* Rafinesque, 1820; *Cycladites* Krüger, 1823; *Amesodon* Agassiz, 1846; *Sphaeriastrum* Bourguignat, 1854; *Calyculina* Clessin, 1872; *Corneola* Westerlund, 1873 non Held, 1837 (Gastropoda); *Corneana* Servain, 1888; *Lacustriana* Servain, 1888; *Solidiana* Servain, 1888; *Primella* Cooper, 1892; *Pseudocorbicula* Dautzenberg, 1908; *Serratisphaerium* Germain, 1909; *Sphaerinova* Iredale, 1943; *Clessinicyclas* Alimov et Starobogatov, 1968; *Herringtonium* Clarke, 1973; *Asiocyclas* Starobogatov et Korniushev, 1986; *Asiomusculium* Starobogatov et Korniushev,

1986; *Shadinicyclas* Starobogatov et Korniushev, 1986; *Sibirisphaerium* Slugina et Starobogatov, 1994]

Type species: *Tellina cornea* Linnaeus, 1758 (SD Gray, 1847)

Remark: The systems of Palearctic taxa of the genus *Sphaerium* s. l. (= Sphaeriidae sensu Korniushev, 1996) used by different authors [Slugina & Starobogatov, 1999; Falkner *et al.*, 2001; Korniushev, 2001; Starobogatov *et al.*, 2004] are mutually contradictory, and it is hardly possible to synthesize them unambiguously. Their comparison is given in Table 9. Here, we follow in general the taxonomic scheme developed by Korniushev [2001] since it was supported by thorough examination of taxonomically significant anatomical characters. Besides, the author studied the type material of many taxa, including the type species of certain sphaeriid genera and subgenera. However, we prefer to elevate three "species groups" within the genus *Sphaerium* s. l. accepted by Korniushev [2001] to the subgeneric rank to make the system more compatible with that proposed by the authors of the CLECOM initiative [Falkner *et al.*, 2001].

Subgenus *Sphaerium* s. str.

73(171). *Sphaerium* (*Sphaerium*) *corneum* (Linnaeus, 1758)

[= *Tellina rivalis* O.F. Müller, 1774; *Cardium nux* Da Costa, 1778; *Nux nigella* Humphrey, 1797; *Cornea communis* Megerle von Mühlfeld, 1811; *Cyclas stagnicola* Lamarck, 1818; *Cyclas lutea* Anton, 1838; *Cyclas globosa* Villa, 1841; *Cyclas leachii* Villa, 1841; *Cyclas plumbeus* Villa, 1841; *Cyclas flavescens* Macgillivray, 1843; *Cyclas citrina* Brown, 1844; *Cyclas isocardioides* Dupuy, 1852; *Cyclas alata* Prime, 1870; *Cyclas fossarum* Prime, 1870]

Tellina cornea Linnaeus, 1758: 678.

Table 9. Classification of species of the genus *Sphaerium* s. l. of the former USSR according to different authors

Falkner <i>et al.</i> [2001]	Korniushin [2001]		Slugina & Starobogatov [1999], Starobogatov <i>et al.</i> [2004]	
Species	Subgenus (or group of species)	Species	Genus (subgenus)	Species
<i>Sphaerium</i> (<i>Sphaerium</i>) <i>corneum</i> (Linnaeus, 1758)	Species group of <i>Sph.</i> <i>corneum</i>	<i>Sph. corneum</i> <i>Sph. baicalense</i> W. Dybowski, 1902	<i>Sphaerium</i> s. str.	<i>Sph. corneum</i>
			<i>Sibirisphaerium</i> Slugina et Starobogatov in Slugina, Starobogatov et Korniushin, 1994	<i>Sph. baicalense</i> <i>Sph. capiduliferum</i> Lindholm, 1909 <i>Sph. dybowskii</i> Lindholm, 1909 <i>Sph. kozhovi</i> Starobogatov in Starobogatov et Korniushin, 1986 <i>Sph. levinodis</i> Westerlund, 1877 <i>Sph. mamillanum</i> Westerlund, 1871 <i>Sph. westerlundi</i> Clesin in Westerlund, 1873
<i>Sph. (Nucleocyclus)</i> <i>nucleus</i> (Studer, 1820) <i>Sph. (N.) ovale</i> (A. Férussac, 1807)	Species group of <i>Sph. nucleus</i>	<i>Sph. nucleus</i> <i>Sph. ovale</i>	<i>Nucleocyclus</i> Alimov et Starobogatov, 1986 (genus)	<i>N. nucleus</i> <i>N. marisminus</i> Starobogatov in Starobogatov et Korniushin, 1986 <i>N. radiata</i> (Westerlund, 1897)
<i>Sph. (Parasphaerium)</i> <i>nitidum</i> Clessin, 1876	Species group of <i>Sph. nitidum</i>	<i>Sph. nitidum</i>	<i>Parasphaerium</i> Alimov et Starobogatov, 1968 (genus)	<i>P. nitidum</i> <i>P. rectidens</i> (Starobogatov et Streletzkaia, 1967)
<i>Sph. (Amesoda)</i> <i>rivicola</i> (Lamarck, 1818)	<i>Rivicoliana</i> Servain, 1888	<i>Sph. rivicola</i>	<i>Rivicoliana</i> (genus)	<i>R. rivicola</i> <i>R. boettgeriana</i> (Servain, 1882) <i>R. bourguignati</i> (Servain, 1882) <i>R. morini</i> (Servain, 1882)
<i>Sph. (Cyrenastrum)</i> <i>solidum</i> (Normand, 1844)	<i>Cyrenastrum</i> Bourguignat, 1854	<i>Sph. solidum</i> <i>Sph. asiaticum</i> (Martens, 1864)	<i>A. (Asiocyclus)</i> Starobogatov et Korniushin, 1986	<i>A. asiatica</i> <i>A. caperata</i> (Westerlund, 1897) <i>A. falsinucleus</i> Novikov in Starobogatov et Korniushin, 1986 <i>A. korotmiewii</i> (W. Dybowski, 1902) <i>A. transversalis</i> (Westerlund, 1898)
			<i>Amesoda</i> (<i>Cyrenastrum</i>)	<i>A. solida</i> <i>A. subsolida</i> (Clessin, 1888)
			<i>A. (Clessinicyclus)</i> Alimov et Starobogatov, 1968)	<i>A. draparnaldii</i> (Clessin in Westerlund, 1873) <i>A. galitzini</i> (Clessin, 1875) <i>A. scaldiana</i> (Normand, 1844)

- Type locality: Europe, in swamps and stagnant waters (“Habitat in Europae paludibus, stagnis”; Linnaeus, 1758: 678).
- Types: Unknown, probably lost. As early as in 1855, Hanley [1855] was unable to provide the information on the types of *Tellina cornea*. No materials of this species are kept in UUZM [Wallin, 2001].
- Global distribution: Native to northern Eurasia. Introduced to the Laurentian Great Lakes in North America [Graf & Cummings, 2013].
- Distribution in the former USSR: The European part of Russia, Ukraine, Central Asia, southern part of the Western Siberia [Stadnichenko, 1984; Korniushev, 1994; Izzatullaev, 2002; Krasnogorova, 2011].
- Subregions: NE, SE, WS, CA.
- Bionomics: Lives in permanent waterbodies rich by vegetation [Starobogatov *et al.*, 2004].
- IUCN conservation status: LC (least concern).

73(172). *Sphaerium* (*Sphaerium*) *capiduliferum* Milaschewitsch in Lindholm, 1909

Sphaerium capiduliferum Lindholm, 1909: 81, pl. 2, fig. 51.

- Type locality: Russia, Republic of Buryatia, the Baikal Lake, Kruglaya Inlet of Chivyrkuy Bay.
- Syntypes: ZIN, No. 1. The type series includes two syntypes.
- Global distribution: Endemic to the Eastern Siberia.
- Distribution in the former USSR: Lakes of the Eastern Siberia (Yenisei and Lena basins), bays of Baikal Lake [Slugina *et al.*, 1994].
- Subregions: ES, BL.
- Bionomics: Occurs at depths between 0 and 5 m; lives on sandy and mud bottoms [Slugina & Starobogatov, 1999, 2004].

- IUCN conservation status: Not assessed.
- Remark: Korniushev [2001] considered this species as a synonym of *Sph. corneum*.

73(173). *Sphaerium* (*Sphaerium*) *dybowski* Lindholm, 1909

[= *Sphaerium corneum* var. *ssorense* Dybowski, 1902, partim]

Sphaerium dybowski Lindholm, 1909: 82 (nom. nov. pro *Sphaerium westerlundi* sensu W. Dybowski, 1902, non Clessin, 1873).

- Type locality: Russia, south-eastern part of the Baikal Lake.
- Types: Not traced.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: South-eastern part of the Baikal Lake [Slugina & Starobogatov, 2004].
- Subregions: BL.
- Bionomics: Occurs at depths between 0 and 8 m; lives on sandy-mud bottoms [Slugina & Starobogatov, 1999, 2004].
- IUCN conservation status: Not assessed.
- Remark: Korniushev [2001] considered this species as a synonym of *Sph. corneum*.

73(174). *Sphaerium* (*Sphaerium*) *kozho*vi Starobogatov in Starobogatov et Korniushev, 1986 [1987]

*Sphaerium kozho*vi Starobogatov & Korniushev, 1986 [1987]: 38.

- Type locality: Russia, Republic of Buryatia, the Baikal Lake, Chivyrkuy Bay, transection Baklan–Kurbulik, depth 8 m.
- Types: ZIN, Nos. 1, 2. The type series includes the holotype and three paratypes.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The Baikal Lake [Slugina & Starobogatov, 2004].
- Subregions: BL.
- Bionomics: Occurs at depths between 0 and 8 m; lives on sandy bottoms [Slugina & Starobogatov, 1999, 2004].
- IUCN conservation status: Not assessed.
- Remark: Korniushev [2001] considered this species as a synonym of *Sph. corneum*.

**73(175). *Sphaerium* (*Sphaerium*)
levinodis Westerlund, 1876**

Sphaerium levinodis Westerlund, 1876: 67.

- Type locality: Russia, "in Sibiria prope Jenissei ad Sargutskoj (lat. 68°50′)".
- Types: Not traced. Possibly, in NMG.
- Global distribution: Endemic to Siberia.
- Distribution in the former USSR: The Western and Eastern Siberia, the Baikal Lake [Slugina *et al.*, 1994; Starobogatov *et al.*, 2004; Slugina & Starobogatov, 2004].
- Subregions: WS, ES, BL.
- Bionomics: Lives in lakes, on soft substrates [Starobogatov *et al.*, 2004]. In the Baikal Lake, it occurs at depths between 0 and 5 m [Slugina & Starobogatov, 2004].
- IUCN conservation status: Not assessed.
- Remark: Korniushev [2001] considered this species as a synonym of *Sph. corneum*.

**73(176). *Sphaerium* (*Sphaerium*)
mamillanum Westerlund, 1871**

[*Sphaerium mamillanum* var. *suecicum* Clessin in Westerlund, 1871]

Sphaerium corneum var. *mamillanum* Westerlund, 1871: 154.

- Type locality: Sweden, in several localities ("In Wesums mosse prov. Skåne..., in Quiellebäcken ad Göteborg prov. Westergötland..., ad Kloster prov. Dalarne"; Westerlund, 1871: 154).
- Syntypes: Three syntypes are in ZMB, No. 23458. Possibly, the syntypes are also kept in SMNH and NMG [see also Korniushev & Glaubrecht, 2001].
- Global distribution: Northern Europe and Siberia.
- Distribution in the former USSR: The European part of Russia, southern part of the Western Siberia [Korniushev, 1994; Andreev *et al.*, 2011].
- Subregions: NE, WS.
- Bionomics: Lives in lakes, ponds, small rivers and running-water ditches [Korniushev, 1994].
- IUCN conservation status: Not assessed.
- Remark: Korniushev [2001] considered this species as a synonym of *Sph. corneum*.

**73(177). *Sphaerium* (*Sphaerium*)
scaldianum (Normand, 1844)**

Cyclas scaldiana Normand, 1844: 5, figs. 1, 2.

- Type locality: France, the Escaut (= Scheldt) River near Valenciennes ("Habite l'Escaut canalisé, à Valenciennes").
- Syntypes: MCZ No. 19554.
- Global distribution: Europe and the Western Siberia [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: The European part of RAC, the Irtysh and Middle Ob' basins [Stadnichenko, 1984; Starobogatov *et al.*, 2004; Krasnogorova, 2011].
- Subregions: NE, SE, WS.
- Bionomics: Lives in rivers, lakes, and small waterbodies, either permanent or semi-permanent [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: The taxonomic status of this taxon is disputable. Korniushev [2002a] treated it as an intraspecific form of *Sphaerium corneum*, whereas Graf & Cummings [2013] synonymized *Sph. scaldiana* with *Sph. nucleus* (Studer, 1820).

**73(178). *Sphaerium* (*Sphaerium*)
westerlundi Clessin in Westerlund, 1873**

[= *Sphaerium corneum* var. *ssorense* Dybowski, 1902, partim]

Sphaerium westerlundi Westerlund, 1873: 508.

- Type locality: Sweden, Dalarne Province.
- Types: ZMB, No. 23457. The type series includes two syntypes.
- Global distribution: Northern Europe and Siberia.
- Distribution in the former USSR: Northern part of the European Russia, Siberia, the Baikal Lake, northeastern Asia eastwards to the Chukchi and Kamchatka peninsulars [Slugina *et al.*, 1994; Starobogatov *et al.*, 2004; Slugina & Starobogatov, 2004].
- Subregions: NE, WS, ES, BL, NF.
- Bionomics: Lives in lakes and slowly flowing rivers, on soft substrates [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Korniushev & Glaubrecht [2001]:

148] considered this species as a synonym of *Sph. corneum*; their opinion was based on “anatomical similarity to *S. corneum* and the transition of several morphometric indices”.

**74(179). *Sphaerium* (*Sphaerium*)
baicalense W. Dybowski, 1902**

Sphaerium baicalense W. Dybowski, 1902: 92.

- Type locality: The Baikal Lake, off mouths of rivers (“Baikal-See, an den Mündungen der Flüsse, in bedeutender Tiefe”; W. Dybowski, 1902: 92).
- Types: Unknown.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: Distributed throughout the Baikal Lake [Slugina & Starobogatov, 2004].
- Subregions: BL.
- Bionomics: Occurs at depths between 1.5 and 60 m, on sandy and sandy-mud bottoms [Slugina & Starobogatov, 2004].
- IUCN conservation status: LC (least concern).

**74(180). *Sphaerium* (*Sphaerium*)
marisminus (Starobogatov in
Starobogatov et Korniushev, 1986
[1987])**

Amesoda marisminus Starobogatov & Korniushev, 1986 [1987]: 36, fig. 18.

- Type locality: Russia, the Baikal Lake, Mukhor Bay, at depth 5-6 m.
- Types: ZIN, No. 1, 2 in systematic catalogue. The type series includes the holotype and a single paratype.
- Global distribution: Endemic to the Baikal.
- Distribution in the former USSR: Maloye More (a part of the Baikal Lake), in bays [Slugina & Starobogatov, 1999].
- Subregions: BL.
- Bionomics: Occurs at depths 5-6 m; on muddy sand [Slugina & Starobogatov, 1999].
- IUCN conservation status: Not assessed.
- Remark: Korniushev [2001] considered this species as a synonym of *Sph. baicalense*.

**Subgenus *Cyrenastrum*
Bourguignat, 1854**

Type species: *Cyclas solida* Normand, 1844 (OD)

Remark: The species placed herein to the subgenus *Cyrenastrum* are often classified within the (sub-)genus *Amesoda* Rafinesque, 1820 [Stadnichenko, 1984; Korniushev, 1996; Starobogatov *et al.*, 2004]. According to Korniushev [2001], *Amesoda* is distributed in North America only.

**75(181). *Sphaerium* (*Cyrenastrum*)
solidum (Normand, 1844)**

Cyclas solida Normand, 1844: 6, figs. 3, 4.

- Type locality: France, the Escaut (Scheldt) River near Valenciennes (“Habite l’Escaut canalisé, à Valenciennes”).
- Syntypes: MCZ No. 19556.
- Global distribution: Europe, the Western Siberia.
- Distribution in the former USSR: The European part of RAC (except extreme north and north-east), basins of the Ural and Irtysh rivers [Pirogov *et al.*, 1994; Starobogatov *et al.*, 2004; Krasnogorova, 2011].
- Subregions: NE, WS.
- Bionomics: Lives in rivers, on sandy bottoms [Starobogatov *et al.*, 2004].
- IUCN conservation status: NT (near threatened).

**75(182). *Sphaerium* (*Cyrenastrum*)
draparnaldii Clessin in Westerlund, 1873**

Sphaerium draparnaldii Westerlund, 1873: 512 (nom. nov. pro *Cyclas lacustris* Draparnaud, 1805, non O.F. Müller, 1774).

- Type locality: Sweden, Norway and Denmark.
- Types: Not traced, possibly in SMF.
- Global distribution: Europe, except its southern part.

- Distribution in the former USSR: The European part of RAC (except extreme north and north-east), the Ural River [Stadnichenko, 1984; Pirogov *et al.*, 1994; Starobogatov *et al.*, 2004].
- Subregions: NE, SE.
- Bionomics: Lives in large rivers [Stadnichenko, 1984; Korniushev, 1996].
- IUCN conservation status: Not assessed.
- Remark: Korniushev [1996] suggested that the taxonomic status of *Sph. draparnaldii* is unclear since specimens of this species (sensu Stadnichenko, 1984) may well be juveniles of another sphaeriid species, possibly belonging to the subgenus *Nucleocyclas*. Graf & Cummings [2013] considered this species as a synonym of *Sphaerium nucleus* (Studer, 1820).

**75(183). *Sphaerium* (*Cyrenastrum*)
galitzini Clessin, 1875**

Sphaerium galitzini Clessin, 1875a: 40-41, pl. 2, fig. 6.

- Type locality: Russia, mouth of the Oka River ("im Auswurfe der Oka ... nahe der Einmündung in die letztere zwischen Wladimir und Nischney-Nowgorod"; Clessin, 1875a: 36).
- Types: Not traced. Clessin's collection was in Stuttgart Museum, totally destroyed during 1939-1945 war [Dance, 1986].
- Global distribution: Eastern Europe.
- Distribution in the former USSR: The European part of RAC, except extreme north and north-east [Starobogatov *et al.*, 2004].
- Subregions: NE.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: DD (data deficient).
- Remark: Graf & Cummings [2013] considered this species as a synonym of *Sphaerium nucleus* (Studer, 1820). There is another spelling of the specific epithet: *galitzinianum* (as in caption to fig. 6 in Clessin, 1875a); we use here the original spelling.

**75(184). *Sphaerium* (*Cyrenastrum*)
subsolidum Clessin, 1888**

Sphaerium subsolidum Clessin, 1888: 339.

- Type locality: Sweden, Skåne Province, Alnarp, subfossil (approximately 55°39'25"N, 13°05'00"E).
- Types: Not traced. Clessin's collection was in Stuttgart Museum, totally destroyed during 1939-1945 war [Dance, 1986].
- Global distribution: Northern and Eastern Europe.
- Distribution in the former USSR: Baltic Sea basin: the Ladozhskoye Lake and freshwater parts of Finnish Gulf [Starobogatov *et al.*, 2004].
- Subregions: NE.
- Bionomics: Lives in large lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Korniushev [1996] reported that there are no substantial distinctions between *Sph. solidum* and *Sph. subsolidum*. He suggested that the latter may represent "an ecological race or a subspecies" of *Sph. solidum* [Korniushev, 1996: 81].

**76(185). *Sphaerium* (*Cyrenastrum*)
asiaticum (Martens, 1864)**

Cyclas asiatica Martens, 1864a: 349, fig. 5.

- Type locality: Russia, Omsk Region, bank of the Irtysh River near Omsk City ("am Ufer des Irtyshflusses bei Omsk").
- Lectotype: ZMB No. 102816 – fossil (subfossil?) specimen (designated by Korniushev & Glaubrecht, 2001).
- Global distribution: Siberia and adjacent areas.
- Distribution in the former USSR: Siberia eastward to the Kolyma River basin; the Pechora River basin [Korniushev, 2001].
- Subregions: NE, WS, ES.
- Bionomics: Lives in rivers and running lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: LC (least concern).
- Remark: Korniushev [1996] as well as Starobogatov *et al.* [2004] placed this species into the genus *Amesoda*. Korniushev & Glaubrecht [2001: 133] "found

the reason for its assignment to *Amesoda* insufficient". They hypothesized that *Sph. asiaticum* is a Siberian vicariant of *Sph. solidum*.

76(186). *Sphaerium* (*Cyrenastrum*) *caperatum* Westerlund, 1897

Sphaerium (*Cyclas*) *asiaticum* var. *caperatum* Westerlund, 1897b: 130.

- Type locality: Russia, Northern Siberia („Sibirien. Werchojansk... Mündung des Obj”; Westerlund, 1897b: 130). The lectotype was collected in the mouth of the Ob' River.
- Lectotype [Starobogatov & Streletzkaya, 1967]: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to northern Russia.
- Distribution in the former USSR: The Yana river basin [Westerlund, 1897b], basins of the Ob' (except Irtysh) and Pechora rivers [Starobogatov *et al.*, 2004].
- Subregions: NE, WS, ES.
- Bionomics: Lives in running lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Korniushev [2001] considered this species as a synonym of *Sph. asiaticum*.

76(187). *Sphaerium* (*Cyrenastrum*) *korotniewii* W. Dybowski, 1902

Sphaerium korotniewii W. Dybowski, 1902: 92.

- Type locality: Russia, south-eastern part of the Baikal Lake.
- Types: Unknown.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: In inner parts of bays and “sors” of the Baikal Lake [Slugina & Starobogatov, 1999].
- Subregions: BL.
- Bionomics: Occurs at depths between 0 and 3 m, on muddy sand substrates [Slugina & Starobogatov, 1999].
- IUCN conservation status: Not assessed.

76(188). *Sphaerium* (*Cyrenastrum*) *transversale* Westerlund, 1898

Sphaerium transversale Westerlund, 1898: 179-180.

- Type locality: Russia, the Lower Ob' Basin, the Puiko Lake.
- Lectotype [Starobogatov & Korniushev, 1986 (1987)]: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to northern Russia.
- Distribution in the former USSR: Basins of the Ob' (except Irtysh), Pechora, and Mezen' rivers [Starobogatov *et al.*, 2004]. There are specimens of this species (determined by Ya.I. Starobogatov) from the Yenisei River basin in the collection of ZIN.
- Subregions: NE, WS, ES.
- Bionomics: Lives in rivers and running lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Korniushev [2001] considered this species as a synonym of *Sph. asiaticum*.

Subgenus *Nucleocyclas* Alimov et Starobogatov, 1968

Type species: *Cyclas nucleus* Studer, 1820 (OD)

77(189). *Sphaerium* (*Nucleocyclas*) *nucleus* (Studer, 1820)

Cyclas nucleus Studer, 1820: 93.

- Type locality: Switzerland, Yverdon-les-Bains (“Gegend von Yverdon”).
- Lectotype [Forcart, 1957]: NMBE.
- Global distribution: Europe, the Western Siberia.
- Distribution in the former USSR: The European part of RAC, southern part of the Western Siberia [Starobogatov *et al.*, 2004; Krasnogorova, 2011].
- Subregions: NE, SE, WS.
- Bionomics: Lives in bogs, small streams and ditches in swamps, wet meadows [Stadnichenko, 1984; Korniushev, 1994].
- IUCN conservation status: Not assessed.

78(190). *Sphaerium (Nucleocyclus) ovale* (Férussac, 1807)

[= *Cyclas consobrina* Blainville, 1818; *Sphaerium levinodis* var. *radiatum* Westerlund, 1897]

Cyclas ovalis Férussac, 1807: 128.

- Type locality: Not stated (see Falkner, 2000).
- Lectotype: NHMV, No. 14860 (designated by Falkner, 2000).
- Global distribution: Northern Palearctic (Europe, Siberia).
- Distribution in the former USSR: The European part of RAC and the Western Siberia eastwards to the Yenisei river basin [Starobogatov *et al.*, 2004].
- Subregions: NE, SE, WS, ES.
- Bionomics: Lives in stagnant or semi-stagnant habitats of different type – slowly flowing rivers, oxbows, large lakes [Korniushin, 1996].
- IUCN conservation status: LC (least concern).

78(191). *Sphaerium (Nucleocyclus) falsinucleus* (Novikov in Starobogatov et Korniushe, 1986 [1987])

Amesoda falsinucleus Starobogatov & Korniushe, 1986 [1987]: 37.

- Type locality: Russia, Tomsk Region, the Ob' River near Parshino village.
- Types: ZIN, No. 1, 2 in systematic catalogue. The type series includes the holotype and 8 paratypes (separate valves).
- Global distribution: Endemic to the Western Siberia.
- Distribution in the former USSR: The middle Ob' River basin [Starobogatov *et al.*, 2004].
- Subregions: WS.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Korniushe [2001] considered this species as a synonym of *Sph. ovale*, whereas Graf & Cummings [2013] synonymize it with *Sph. corneum*.

Subgenus *Parasphaerium* Alimov et Starobogatov, 1968

Type species: *Sphaerium rectidens* Starobogatov et Streletzkaja, 1967 (OD)

79(192). *Sphaerium (Parasphaerium) nitidum* Clessin in Westerlund, 1877

[= *Sphaerium uintaense* Call, 1886; *Sphaerium walkeri* Sterki, 1901]

Sphaerium nitidum Westerlund, 1877: 66-67, pl., fig. 18.

- Type locality: Russia, Krasnoyarsk Territory, the Yenisei River near Dudinka ("Jenissei, Dudino ... (lat. 69°15') ... norr om Lusino ... (lat. 68°40')"; Westerlund, 1877: 67)". The lectotype was collected in Dudinka (Korniushin, 1996).
- Lectotype: SMNH (illustrated by Korniushin [1996]).
- Global distribution: Holarctic, at high latitudes [Graf & Cummings, 2013].
- Distribution in the former USSR: Europe and Siberia [Starobogatov *et al.*, 2004; Krasnogorova, 2011].
- Subregions: NE, WS, ES.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

79(193). *Sphaerium (Parasphaerium) rectidens* Starobogatov et Streletzkaja, 1967

Sphaerium rectidens Starobogatov & Streletzkaja, 1967: 245-246, fig. 42.

- Type locality: Russia, Republic of Yakutia (Sakha), the lower Kolyma River, the Levoe Topol'skoe lake.
- Types: ZIN, Nos. 1-7 in systematic catalogue. The type series includes the holotype and 8 paratypes.
- Global distribution: Northern Eurasia.
- Distribution in the former USSR: Northern Eurasia, Fennoscandia eastward to the Chukchi Peninsula and the Sakhalin Island [Ko-

rnishin, 1994; Prozorova *et al.*, 2004; Starobogatov *et al.*, 2004].

- Subregions: NE, WS, ES, NF, SF.
- Bionomics: Lives in small permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Kornishin [2001] considered this species as a synonym of *Sph. nitidum*.

Subgenus *Rivicoliana*

Servain, 1888

[= *Shadinicyclas* Starobogatov et Kornishin, 1986]

Type species: *Cyclas rivicola* Leach in Lamarck, 1818 (fixation of the type species not traced)

80(194). *Sphaerium (Rivicoliana) rivicola* (Leach in Lamarck, 1818)

[= *Cyclas rivicola* var. *sabulicola* Krynicki, 1837]

Cyclas rivicola Lamarck, 1818: 558.

- Type locality: Europe, in rivers (“Habite en Europe, dans les rivières”; Lamarck, 1818: 558).
- Types: MNHN. There are three syntypes in MNHN collection.
- Global distribution: Europe, the Western Siberia.
- Distribution in the former USSR: The European part of RAC, except northern latitudes, the Irtysh River basin [Stadnichenko, 1984; Starobogatov *et al.*, 2004].
- Subregions: NE, SE, WS.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: VU (vulnerable).

80(195). *Sphaerium (Rivicoliana) boettgerianum* Bourguignat in Servain, 1882

Sphaerium boettgerianum Servain, 1882: 18.

- Type locality: Poland, the Vistula River near Warsaw City.
- Types: Not traced.
- Global distribution: Eastern Europe.

- Distribution in the former USSR: The European part of RAC, except northern latitudes [Starobogatov *et al.*, 2004].
- Subregions: NE, SE.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Kornishin [2001] considered this species as a synonym of *Sph. rivicola*.

80(196). *Sphaerium (Rivicoliana) bourguignati* Lallement et Servain, 1869

Sphaerium bourguignati Lallement & Servain, 1869: 46-47.

- Type locality: Northern France, Picardy Region, Jaulgonne in the Aisne Departement.
- Types: Not traced.
- Global distribution: Europe.
- Distribution in the former USSR: The European part of RAC, except northern regions [Stadnichenko, 1984; Starobogatov *et al.*, 2004; Krasnogorova, 2011].
- Subregions: NE, SE.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Kornishin [2001] considered this species as a synonym of *Sph. rivicola*.

80(197). *Sphaerium (Rivicoliana) morini* Servain, 1882

Sphaerium morini Servain, 1882: 11-12.

- Type locality: Germany, vicinity of Frankfurt on Main, the Main River.
- Types: Not traced.
- Global distribution: Europe, except of its northern part [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: The European part of RAC, except northern regions [Starobogatov *et al.*, 2004].
- Subregions: NE, SE.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Kornishin [2001] considered this species as a synonym of *Sph. rivicola*.

Addition to the genus *Sphaerium*.
Bespalaya *et al.* [2015] reported one

more and still undescribed species of *Sphaerium* from the Vaigach Island, which is located on the continental shelf between the shallow Barents and Kara Seas. The molecular and morphological analyses have revealed its closest affinity to Nearctic species of the genus, particularly to *Sph. rhomboideum* (Say, 1822).

Tribe Musculiini Starobogatov in Stadnichenko, 1984

Genus *Musculium* Link, 1807

[= *Securilla* Drouët, 1855; *Morimusculium* Starobogatov, 1986; *Parvimusculium* Starobogatov et Korniushev, 1986]

Type species: *Tellina lacustris* O.F. Müller, 1774 (M)

Remark: Some authors (see, for example, Graf & Cummings [2013]) considered *Musculium* as a synonym of the genus *Sphaerium*. On the other hand, Korniushev [1996] and Starobogatov *et al.* [2004] separated the genus *Musculium* s. l. in a subfamily of its own, including two genera and not less than 20 species.

Subgenus *Musculium* s. str.

81(198). *Musculium* (*Musculium*) *lacustre* (O.F. Müller, 1774)

[= *Cyclas caliculata* Draparnaud, 1805; *Tellina tuberculata* Alten, 1812; *Tellina stagnicola* Shepard, 1825; *Cyclas jayensis* Prime, 1852; *Cyclas rosacea* Prime, 1852; *Sphaerium dingoli* Prime, 1862; *Sphaerium lenticula* Prime, 1862, non Gould, 1850; *Sphaerium ovale* Bourguignat, 1864, non Férussac, 1807; *Sphaerium hispanicum* Bourguignat, 1870; *Sphaerium compressum* Mousson, 1887, non Middendorff, 1851; *Sphaerium raymondi* Cooper, 1892; *Sphaerium maroccanum* Pallary, 1898; *Musculium winkleyi* Sterki, 1909; *Musculium pusillum* Sterki, 1910; *Musculium declive* Sterki, 1912; *Musculium rosaceum* var. *fuliginosum* Sterki, 1916]

Tellina lacustris O.F. Müller, 1774: 204.

- Type locality: Denmark, Fridrichsdal (a suburb of Copenhagen City).

- Types: The remaining O.F. Müller's types are kept in ZMC, but we failed to find the type material of *Tellina lacustris* there, and thus the types are apparently lost [see Nekhaev *et al.*, 2015 for details].

- Global distribution: Holarctic: Eurasia and North America [Graf & Cummings, 2013].

- Distribution in the former USSR: The European part of RAC, except northern latitudes, the Irtysh River basin [Starobogatov *et al.*, 2004; Krasnogorova, 2011].

- Subregions: NE, SE, WS.

- Bionomics: Lives in large rivers [Korniushev, 1996].

- IUCN conservation status: Not assessed.

81(199). *Musculium* (*Musculium*) *clessini* (Paulucci in Clessin, 1882)

Calyculina clessini Clessin, 1882a: 192.

- Type locality: Ukraine, Dnepropetrovsk City, approximately 43°28'00"N, 35°01'05"E (= "Ekaterinoslaw Rossiae"; Clessin, 1882a: 192).

- Types: Not traced.

- Global distribution: Southern part of Eastern Europe [Starobogatov *et al.*, 2004].

- Distribution in the former USSR: South of the European part of RAC and Central Asia [Izzatullaev, 2002; Starobogatov *et al.*, 2004]. Cheremnov [1973] and Krivosheina [1979a] mentioned this species from southern parts of Siberia (basins of the Upper Irtysh and Upper Yenisei rivers).

- Subregions: SE, CA, WS, ES.

- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].

- IUCN conservation status: Not assessed.

- Remark: Graf & Cummings [2013] considered this species as a synonym of *M. lacustre*.

81(200). *Musculium (Musculium) compressum* (Middendorff, 1851)

[= *Calyculina lacustris* var. *septentrionalis* Clessin in Westerlund, 1878; *Musculium lacustre* auct., non O.F. Müller, 1774]

Cyclas calyculata var. *compressa* Middendorff, 1851: 288, pl. 29, figs. 9-10.

- Type locality: The southern Kamchatka Peninsula.
- Types: Not traced (ZIN?).
- Global distribution: Endemic to Asiatic Russia [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: Siberia and the northern part of the Russian Far East [Starobogatov *et al.*, 2004].
- Subregions: WS, ES, NF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: LC (least concern).
- Remark: Graf & Cummings [2013] considered this species as a synonym of *M. lacustre*.

81(201). *Musculium (Musculium) creplini* (Dunker, 1845)

Cyclas creplini Dunker, 1845: 20.

- Type locality: Germany, vicinity of Cassel City ("in kleinen Lehmgruben bei Hohenkirschen, unfern Cassel"; Dunker, 1845: 20).
- Types: ZMB, No. 12662. The type series contains five syntypes.
- Global distribution: Palearctic [Korniushin, 1996].
- Distribution in the former USSR: Europe, Siberia, the Sakhalin Island [Prozorova *et al.*, 2004; Starobogatov *et al.*, 2004].
- Subregions: NE, SE, CA, WS, ES, SF.
- Bionomics: Lives in semi-permanent or, rarely, temporary waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *M. lacustre*.

81(202). *Musculium (Musculium) hungaricum* (Hazay, 1881)

Calyculina hungaricum Hazay, 1881: 95.

- Type locality: Hungary, Budapest City.

- Syntypes: ZMB No. 66346. The type series contains six syntypes.
- Global distribution: Southern Palearctic [Korniushin, 1996].
- Distribution in the former USSR: Western and southern regions of the European part of RAC, south of Siberia, Transcaucasia (Armenia), Central Asia [Cheremnov, 1973; Akramowski, 1976; Stadnichenko, 1984; Iz-zatullaev, 2002; Krasnogorova, 2011].
- Subregions: NE, SE, CT, CA, WS, ES.
- Bionomics: Lives in small and middle-sized permanent and semi-permanent habitats [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *M. lacustre*.

81(203). *Musculium (Musculium) johanseni* Cheremnov, 1972

Musculium johanseni Cheremnov, 1972: 1888, textfig.

- Type locality: Russia, Republic of Tuva, lake in floodland of the Tuba River, 6 km westward of Mayaki village (upper Yenisei basin).
- Holotype: Chair of Zoology, Abakan Pedagogical Institute, Russia.
- Global distribution: Endemic to Siberia [Korniushin, 1996].
- Distribution in the former USSR: Upper Yenisei River basin [Starobogatov *et al.*, 2004].
- Subregions: ES.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *M. lacustre*.

81(204). *Musculium (Musculium) mucronulatum* (Moquin-Tandon, 1855)

Cyclas ryckholtii var. *mucronulata* Moquin-Tandon, 1855: 595, pl. 53, fig. 42.

- Type locality: France, "près de Mézières" [Moquin-Tandon, 1855: 596] – most probably, it means vicinities of Charleville-Mézières, a city in Ardennes department.

- Types: Not traced.
- Global distribution: Europe [Korniushin, 1996].
- Distribution in the former USSR: South of the European part of RAC [Stadnichenko, 1984; Starobogatov *et al.*, 2004].
- Subregions: SE.
- Bionomics: Lives in small permanent habitats [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *M. lacustre*.

81(205). *Musculium (Musculium) ryckholtii* (Normand, 1844)

Cyclas ryckholtii Normand, 1844: 7, figs. 5, 6.

- Type locality: France, Nord-Pas-de-Calais, vicinities of Valenciennes ("Elle habite les eaux tranquilles des forêts de Raismes et de Vicoigne"; Normand, 1844: 7).
- Syntypes: MCZ No. 19560.
- Global distribution: Europe, Transcaucasia [Korniushin, 1996].
- Distribution in the former USSR: The Baltic Sea Basin [Starobogatov *et al.*, 2004], Armenia [Akramowski, 1976], Ukraine [Korniushin, 1996].
- Subregions: NE, SE, CT.
- Bionomics: Lives in small permanent habitats [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *M. lacustre*.

81(206). *Musculium (Musculium) steinii* (A. Schmidt, 1850)

Cyclas steinii A. Schmidt, 1850: 118-119.

- Type locality: Germany, Berlin City, the Weissensee Lake.
- Types: Not traced.
- Global distribution: North-west of Europe [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: The Baltic Sea Basin [Starobogatov *et al.*, 2004].
- Subregions: NE.
- Bionomics: Not studied. Starobogatov *et al.* [2004] gave no ecological information on this species.
- IUCN conservation status: Not assessed.

- Remark: Graf & Cummings [2013] considered this species as a synonym of *M. lacustre*.

81(207). *Musculium (Musculium) strictum* (Normand, 1854)

Sphaerium strictum Normand, 1854: 3.

- Type locality: France, Nord-Pas-de-Calais, vicinities of Valenciennes ("...les fossés des forêts de Raismes et de Vicoigne, et ceux des marais d'Hélesmes"; Normand, 1854: 3).
- Types: Not traced.
- Global distribution: Europe, Transcaucasia [Korniushin, 1996].
- Distribution in the former USSR: The Baltic Sea Basin, Armenia, Georgia [Akramowski, 1976; Stadnichenko, 1984; Starobogatov *et al.*, 2004].
- Subregions: NE, SE, CT.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *M. lacustre*.

81(208). *Musculium (Musculium) terverianum* (Dupuy, 1849)

Cyclas terveriana Dupuy, 1849: 1.

- Type locality: France, "les mares des environs d'Auch, à la Boubée et à la Hourre" [Dupuy, 1851-1852: 674].
- Types: Not traced.
- Global distribution: Europe [Korniushin, 1996].
- Distribution in the former USSR: The Baltic Sea Basin, Ukraine [Stadnichenko, 1984; Starobogatov *et al.*, 2004].
- Subregions: NE, SE.
- Bionomics: Lives in temporary habitats [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *M. lacustre*.

82(209). *Musculium (Musculium) amurense* Moskvicheva in Zatravkin et Moskvicheva, 1986

Musculium amurenensis Zatravkin & Moskvicheva, 1986: 616, textfig. (1-3).

- Type locality: Russia, the Khabarovsk Territory, small river in the Ussuri River basin in vicinities of Dormidontovka village (approximately 47°46'50"N, 134°53'15"E).
- Types: ZIN, Nos. 1-26 in systematic catalogue. The type series includes the holotype and 189 paratypes (including two separate valves).
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The middle and lower parts of the Amur basin, the Primorye Territory [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in stagnant permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] synonymized this species with *Musculium lacustre* but Korniushev [2001] suggested that it may have been a distinct species.

**82(210). *Musculium (Musculium) jurievi*
Zatravkin in Zatravkin et
Moskvicheva, 1986**

Musculium jurievi Zatravkin & Moskvicheva, 1986: 618, textfig. (13-15).

- Type locality: Russia, the Khabarovsk Territory, the Bolshoye Kizi Lake, 10-12 km from Maryino settlement.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Russian Far East [Korniushev, 1996].
- Distribution in the former USSR: The lower Amur basin [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] regarded this species as a synonym of *M. lacustre*.

**82(211). „*Musculium (Musculium)*
moussoni Starobogatov, 1996“**

Musculium moussoni "Starobogatov, 1996" – Starobogatov *et al.*, 2004: 56 (nom. nov. pro *Sphaerium compressum* Mousson, 1887, non Middendorff, 1851).

- Type locality: Russia, the Primorye Territory (?), the Mulki River (the Amur river basin).
- Types: Not traced.
- Global distribution: Endemic to the Russian Far East [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: The lower Amur basin [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in stagnant permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: This species name as attributed to Starobogatov, 1996 was published in Starobogatov *et al.* [2004]. To our best knowledge, this name was not proposed in any publication of Starobogatov in 1996. Publication of the name in Starobogatov *et al.* [2004] did not comply with the requirements of ICZN (primarily with Article 16) and therefore the name *Musculium moussoni* is nomen nudum and, thus, not available.

**83(212). *Musculium (Musculium)*
heterodon (Pilsbry, 1895)**

Sphaerium heterodon Pilsbry, 1895: 159, pl. 3, figs. 15-17.

- Type locality: Japan, "Kishiu, Hizen" [Pilsbry, 1895: 159].
- Types: Not traced.
- Global distribution: The Far East (Japan, the Sakhalin Island).
- Distribution in the former USSR: The southern Sakhalin [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] synonymized this species with *M. lacus-*

tre but Korniushev [2001] believed it is a distinct species.

83(213). *Musculium (Musculium) kafanovi* Starobogatov in Starobogatov et Korniushev, 1986 [1987]

Musculium kafanovi Starobogatov & Korniushev, 1986 [1987]: 39-40, fig. 19.

- Type locality: Russia, north of the Sakhalin Island, the Malaya Tymka River in vicinities of Tymovskoye settlement (approximately 50°51'N, 142°39'E).
- Types: ZIN, No. 1 and 2 in systematic catalogue. The type series includes the holotype and eight paratypes.
- Global distribution: Endemic to the Sakhalin.
- Distribution in the former USSR: Rivers of the central Sakhalin (the Tym River basin) [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Korniushev [2001] regarded this species as a synonym of *Musculium heterodon*.

83(214). *Musculium (Musculium) likharevi* Moskvicheva in Zatravkin et Moskvicheva, 1986

Musculium likharevi Zatravkin & Moskvicheva, 1986: 617-618, textfig. (4-6).

- Type locality: Russia, the Primorye Territory, the Razdol'naya (= Suifun) River basin near Ussuriysk City.
- Types: ZIN, Nos 1-8 in systematic catalogue. The type series includes the holotype and nearly 40 paratypes.
- Global distribution: Endemic to the Russian Far East [Korniushev, 1996].
- Distribution in the former USSR: The southern Primorye Territory [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Korniushev [2001] regarded this species as a synonym of *M. heterodon*.

84(215). *Musculium (Musculium) miyadai* (Mori, 1933)

Sphaerium miyadai Mori, 1933: 155, fig. 1D.

- Type locality: Twelve localities on the Iturup and Hokkaido; "Kimon-numa (the Etorohu Island, the Kurile Group)" marked as the "type locality", though the types were not neither designated nor mentioned.
- Types: Not traced.
- Global distribution: The Far East (Japan, the Kurile Islands).
- Distribution in the former USSR: The southern Kurile Islands including the Urup Island [Prozorova, 1996 (1997)a; Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: DD (data deficient).

84(216). *Musculium (Musculium) morii* Starobogatov et Budnikova, 1985

Musculium morii Starobogatov & Budnikova, 1985 [1986]: 96-97, fig. 2.

- Type locality: Russia, the Kurile Archipelago, the Kunashir Island, the Lagunnoye Lake (approximately 44°03' 33"N, 145°45' 38"E).
- Types: ZIN, Nos 1 and 2 in systematic catalogue. The type series includes the holotype and a single paratype.
- Global distribution: Endemic to the Kurile archipelago [Korniushev, 1996].
- Distribution in the former USSR: The southern Kurile Islands including the Urup Island [Prozorova, 1996 (1997)a; Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Korniushev [2001] regarded this species as a synonym of *Musculium heterodon*, whereas Graf & Cummings [2013] synonymized it with *M. miyadai*.

Subgenus *Paramusculium*
Alimov et Starobogatov, 1968

Type species: *Cyclas transversa* Say, 1829 (OD)

**85(217). *Musculium*
(*Paramusculium*) *inflatum*
(Middendorff, 1851)**

Cyclas calyculata forma *inflata* Middendorff, 1851: 287-288.

- Type locality: Situated somewhere in the steppe zone of the southern Siberia ("Südsibirischen Kirgisensteppe abbilden lassen"; Middendorff, 1851: 288). The lectotype of this species is labelled as "Barnaul" (the Altay Territory, Russia) [see Korniushev, 2001]. According to article 76.2 ICZN, "Barnaul" becomes the type locality of *M. inflatum*.
- Lectotype [Starobogatov & Streletskaya, 1967]: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to Siberia.
- Distribution in the former USSR: The Altay area and the Yenisei River basin [Starobogatov *et al.*, 2004].
- Subregions: WS, ES.
- Bionomics: Lives in rivers, on slow current [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Korniushev [2001] and Graf & Cummings [2013] considered this species as a synonym of *Sph. asiaticum*.

**86(218). *Musculium*
(*Paramusculium*) *limanicum*
(Moskvicheva in Zatravkin et
Moskvicheva, 1986)**

Sphaerinova limanica Zatravkin & Moskvicheva, 1986: 618-619, textfig. (10-12).

- Type locality: Russia, the Khabarovsk Territory, the Amur River near Nikolaevsk-na-Amure Town (approximately 53°07'N, 140°43'E).

- Types: ZIN, Nos. 1-3 in systematic catalogue. The type series includes the holotype and 141 paratypes [Zatravkin & Moskvicheva, 1986].
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: Basin of the Amur River (downstream of Bureya Ridge), including basin of the Ussuri River and the Amur liman [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lakes and limans [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

Subfamily Pisidiinae Gray, 1857

[= Neopisidiinae Korniushev, 1989]

Type genus: *Pisidium* C. Pfeiffer, 1821

Remark: The volume of the genus *Pisidium* differs in the Western European and Russian taxonomic frameworks. The European authors tend to accept this genus in the widest sense [Piechoczek, 1989; Falkner *et al.*, 2001; Glöer & Meier-Brook, 2003], whereas their Russian colleagues separated the small-sized species of this group (pea-clams) in a different family (or subfamily) Euglesidae Pirogov et Starobogatov, 1974 [Korniushev, 1996; Starobogatov *et al.*, 2004]. Here we follow the latter approach that corresponds to the most recent classification of bivalve families and subfamilies [Bieler *et al.*, 2010]. The genera of Pisidiidae sensu Korniushev, 1996 (*Europisidium*, *Neopisidium* and others) are conventionally ranked here as subgenera of the genus *Pisidium*.

Genus *Pisidium* C. Pfeiffer, 1821

[= *Pera* Jenyns, 1832; *Cordula* Leach, 1852; *Fluminina* Clessin in Westerlund, 1873; *Amnicana* Servain, 1888; *Tuvapisidium* Izzatullaev et

Starobogatov, 1986; *Ussuripisidium* Izzatullaev et Starobogatov, 1986; *Amuropisidium* Prozorova, 1995]

Type species: *Cyclas obliqua* Lamarck, 1818 [= *Tellina amnica* O.F. Müller, 1774] (SD Gray, 1847)

Subgenus *Pisidium* s. str.

87(219). *Pisidium* (*Pisidium*) *amnicum* (O.F. Müller, 1774)

[= *Tellina striata* Schröter, 1779; *Cyclas palustris* Draparnaud, 1805; *Cyclas obliquata* Lamarck, 1818; *Pisidium pfeifferi* Porro, 1838; *Pisidium grateloupianum* Normand, 1844; *Pera fluviatilis* Leach, 1852; *Pisidium sulcatum* Prime, 1862; *Pisidium burgundiacum* Prime, 1870; *Pisidium marteli* Pallary, 1927]

Tellina amnica O.F. Müller, 1774: 205.

- Type locality: Denmark, Fridrichsdal (a suburb of Copenhagen City).
- Types: ZMC, № BIV-661 in systematic catalogue.
- Global distribution: Widespread in Palearctic being distributed from Europe to the Amur Basin. Introduced to the Laurentian Great Lakes and Cairo. Possibly in other parts of Africa [Graf & Cummings, 2013].
- Distribution in the former USSR: Europe, Kazakhstan, Siberia, the Baikal and its vicinities, basin of the Amur River [Slugina *et al.*, 1994; Slugina & Starobogatov, 1999, 2004; Starobogatov *et al.*, 2004].
- Subregions: NE, SE, WS, ES, BL, SF.
- Bionomics: Lives in rivers and running lakes, on soft substrates [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

87(220). *Pisidium* (*Pisidium*) *inflatum* Megerle von Mühlfeld in Porro, 1838

Pisidium inflatum Porro, 1838: 121-122, pl. 2, fig. 13.

- Type locality: Italy, Lombardy, the Bevera River in Brianza area.

- Types: Not traced.
- Global distribution: Europe [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: The European part of RAC, except extreme north-east [Stadnichenko, 1984; Starobogatov *et al.*, 2004].
- Subregions: NE, SE.
- Bionomics: Lives in slowly flowing rivers, on soft substrates [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] regarded this species as a synonym of *P. amnicum*.

88(221). *Pisidium* (*Pisidium*) *amurense* Moskvicheva in Zatravkin, 1985

Pisidium amurense Zatravkin, 1985a: 61-62, textfig.

- Type locality: Russia, the Far East, the Primorye Territory (?), channel Piksa in 2 km from the mouth (basin of the Gassi Lake).
- Types: ZIN, Nos. 1-14, 17-55. The type series includes the holotype and more than two hundreds of paratypes.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Amur River Basin and the Sakhalin Island [Prozorova *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in rivers, on slow current [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

89(222). *Pisidium* (*Pisidium*) *baicalense* W. Dybowski, 1902

[= *Pisidium dubium* sensu Lindholm, 1909, non Say, 1816]

Pisidium baicalense W. Dybowski, 1902: 93.

- Type locality: Russia, the Baikal Lake, off mouth of the Selenga River.
- Types: Unknown.

- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The entire Baikal Lake [Slugina & Starobogatov, 1999].
- Subregions: BL.
- Bionomics: Occurs between 2 and 15 m of depth; on mud and sandy bottoms [Slugina & Starobogatov, 1999].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *Pisidium dilatatum* Westerlund, 1897.

**89(223). *Pisidium (Pisidium) decurtatum*
Lindholm, 1909**

[= *Pisidium baicalense* auct., non W. Dybowski, 1902]

Pisidium baicalense var. *decurtatum* Lindholm, 1909: 83, Taf. 2, fig. 43-44.

- Type locality: Russia, the Baikal Lake, delta of the Selenga River and Posol'skiy Sor.
- Syntypes: ZIN, Nos. 1, 3-4 in systematic catalogue. The type series includes 115 syntypes.
- Global distribution: Endemic to southern Siberia.
- Distribution in the former USSR: The Baikal Lake, the upper Yenisei basin (Tuva, the Azas Lake), the Bolin River (lower Amur basin) [Zatravkin, 1985a; Slugina *et al.*, 1994; Slugina & Starobogatov, 1999, 2004; Prozorova & Zasyapkina, 2008].
- Subregions: ES, BL, SF.
- Bionomics: Lives in rivers and lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] stated that *P. decurtatum* is a "sphaeriid species" (without argumentation).

**90(224). *Pisidium (Pisidium) orientale*
Prozorova, 1995**

Pisidium orientale Prozorova, 1995: 34-35, text-fig.

- Type locality: Russia, the Primorye

Territory, in the Spasovka River mouth (the Khanka Lake Basin).

- Holotype: ZIN, No. 1 in systematic catalogue. Paratypes are in the ZIN and IBSS collections [fide Prozorova, 1995].
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: Rivers of the Ussuri and Razdol'naya (= Suifun) basins [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

Addition to the subgenus *Pisidium* s. str. Korniushev [1996] mentioned one more species of *Pisidium*, *P. eterohuense* Mori, 1935, with the type locality situated in the Iturup Island (Kurile Archipelago). This species is not mentioned by Starobogatov *et al.* [2004] and Graf & Cummings [2013]. We failed to find any information on this species in the malacological literature available to us.

Subgenus *Europisidium*

Starobogatov in Stadnichenko, 1984

Type species: *Pisidium tenuilineatum* Stelfox, 1918 (OD)

Remark: Stadnichenko [1984] placed *Europisidium* into the subfamily Euglesinae.

**91(225). *Pisidium (Europisidium) tenuilineatum*
Stelfox, 1918**

Pisidium tenuilineatum Stelfox, 1918: 296-298, pl. 8, figs. 1, 4-13.

- Type locality: England, Buckinghamshire County, "Grand Junction Canal, near Marsworth Church, Bucks., and other places".

- Holotype: BMNH [fide Korniushev, 1996].
- Global distribution: Europe and northern Africa [Graf & Cummings, 2013].
- Distribution in the former USSR: The European part of RAC, except of the north [Starobogatov *et al.*, 2004].
- Subregions: NE.
- Bionomics: Lives in rivers and large lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

91(226). *Pisidium (Europisidium) alpinum* Odhner, 1938

Pisidium tenuilineatum f. *alpina* Odhner, 1938: 234, figs. 1-2, 5-8.

- Type locality: Slovenia, the Vipava (= Wip-pach) River near Dornberg (Monte Spino), 10 km E from Nova Gorica Town.
- Types: Not traced, possibly in SMNH.
- Global distribution: Western and Northern Europe [Korniushev, 1996].
- Distribution in the former USSR: Europe, south of the Western Siberia [Starobogatov *et al.*, 2004].
- Subregions: NE, SE, WS.
- Bionomics: Lives in rivers and lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered *P. alpinum* as a synonym of *Pisidium tenuilineatum*.

91(227). *Pisidium (Europisidium) stelfoxi* (Pirogov et Starobogatov in Timm, 1976)

Neopisidium stelfoxi Timm, 1976: 49-50, fig. 5.

- Type locality: Russia, the northern Caspian Sea (the Volga Delta), Kirovsky channel.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Western and Southern Europe [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: Estonia and south of the European Russia (the Volga delta) [Stadnichenko, 1984].

- Subregions: NE, SE.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Korniushev [1996], after examination of the specimens of this species from the Volga delta (presumably including the holotype), concluded that it may belong to *Pisidium moitessierianum* (individuals without umbonal folds).

**Subgenus *Kuiperipisidium*
Izzatullaev et Starobogatov, 1986**

Type species: *Odhneripisidium sogdianum* Izzatullaev et Starobogatov, 1986 (OD)

92(228). *Pisidium (Kuiperipisidium) sogdianum* (Izzatullaev et Starobogatov, 1986)

Odhneripisidium sogdianum Izzatullaev & Starobogatov, 1986: 69-70, fig. 18.

- Type locality: Uzbekistan, northern slopes of the Turkestan Ridge, Dzhizakh, Bakhmal, in a spring.
- Types: ZIN, No 1 and 2 in systematic catalogue; IZT. The type series consists of the holotype and 16 paratypes.
- Global distribution: Southern Europe, Central Asia.
- Distribution in the former USSR: Central Asia, possibly the northern Caucasus [Starobogatov *et al.*, 2004].
- Subregions: SE, CA.
- Bionomics: Lives in springs [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Kuiper [1962] identified specimens of this species from Southern Europe as *Pisidium annandalei* Prasad, 1925 described from India. Izzatullaev & Starobogatov [1986], judging from differences in the shell dentition, rejected this opinion.

**92(229). *Pisidium (Kuiperipisidium)*
issykkulense (Izzatullaev et
Starobogatov, 1986)**

Odhneripisidium issykkulense Izzatullaev & Starobogatov, 1986: 68-69, fig. 17.

- Type locality: Kyrgyzstan, the Issyk-Kul' Lake, Tonskiy Bay near Kutarga settlement.
- Types: ZIN, No. 1 and 2 in systematic catalogue; IZT. The type series includes the holotype and eight paratypes.
- Global distribution: Central Asia within boundaries of the former USSR.
- Distribution in the former USSR: The Issyk-Kul' Lake, the Hazarati-sho Ridge (Kirgizstan); floodplains of the Obi-Vazor and Zeravshan rivers in Tajikistan [Izzatullaev & Starobogatov, 1986].
- Subregions: CA.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as synonym of *P. annandalei*.

**92(230). *Pisidium (Kuiperipisidium)*
polytimeticum (Izzatullaev et
Starobogatov, 1986)**

Odhneripisidium polytimeticum Izzatullaev & Starobogatov, 1986: 66-67, fig. 15.

- Type locality: Uzbekistan, the Nuratin Ridge, Minishkor kishlak near Dzhush, in a spring.
- Types: ZIN, Nos. 1-3 in systematic catalogue; IZT. The type series includes the holotype and nine paratypes.
- Global distribution: South of Europe, Iran, Central Asia [Izzatullaev & Starobogatov, 1986].
- Distribution in the former USSR: Armenia and Central Asia [Izzatullaev & Starobogatov, 1986].
- Subregions: CT, CA.
- Bionomics: Lives in springs [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as synonym of *P. annandalei*.

**92(231). *Pisidium (Kuiperipisidium)*
terekense (Kazannikov in Izzatullaev et
Starobogatov, 1986)**

Odhneripisidium terekense Izzatullaev & Starobogatov, 1986: 67-68, fig. 16.

- Type locality: Russia, Republic of North Osetia, the Began Lake in vicinities of Kardzhin village.
- Types: ZIN, Nos. 1-4 in systematic catalogue; IZT. The type series includes the holotype and more than 100 paratypes.
- Global distribution: South of Europe, Middle East, the North Caucasus, Central Asia [Izzatullaev & Starobogatov, 1986].
- Distribution in the former USSR: The North Caucasus, Transcaucasia and Central Asia [Izzatullaev & Starobogatov, 1986].
- Subregions: CT, CA.
- Bionomics: Lives in springs; may occur in larger waterbodies near springs [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as synonym of *P. annandalei*.

**93(232). *Pisidium (Kuiperipisidium)*
khorensense (Izzatullaev et
Starobogatov, 1986)**

Odhneripisidium khorensense Izzatullaev & Starobogatov, 1986: 69-70, fig. 18.

- Type locality: Russia, the Khabarovsk Territory, the Ussuri River basin, the Khor River, Poleyaya Protoka channel.
- Holotype: ZIN, No 1 in systematic catalogue.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Ussuri River basin [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

Subgenus *Neopisidium*

Odhner, 1921

Type species: *Pisidium torquatum* Stelfox, 1918 (SD Habe, 1951)

**94(233). *Pisidium* (*Neopisidium*)
moitessierianum Paladilhe, 1866**

[= *Pisidium punctatum* Sterki, 1895; *Pisidium punctatum* var. *armatum* Sterki, 1905]

Pisidium moitessierianum Paladilhe, 1866: 172, pl. 13, figs. 11-17.

- Type locality: France, vicinity of Montpellier, irrigation channels (“fossé d’irrigation des prairies de Maurin, au-dessous de Montpellier”; Paladilhe, 1866: 173).
- Types: Not traced.
- Global distribution: Europe. Introduced to the Laurentian Great Lakes in North America [Graf & Cummings, 2013].
- Distribution in the former USSR: The European part of RAC, except of the north [Stadnichenko, 1984; Starobogatov *et al.*, 2004]. Krivosheina [1979a] recorded this species from the Upper Irtysh basin but its presence there needs to be checked.
- Subregions: NE, SE.
- Bionomics: Lives in rivers, on sandy substrates [Stadnichenko, 1984; Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

**94(234). *Pisidium* (*Neopisidium*)
torquatum Stelfox, 1918**

Pisidium torquatum Stelfox, 1918: 299.

- Type locality: Many localities in Britain and Ireland listed by Stelfox [1918].
- Types: Not traced.
- Global distribution: Europe [Korniushin, 1996].
- Distribution in the former USSR: The Eu-

ropean part of RAC [Stadnichenko, 1984; Starobogatov *et al.*, 2004].

- Subregions: NE, SE.
- Bionomics: Lives in springs; may occur in larger waterbodies near springs [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as synonym of *P. moitessierianum*.

**94(235). *Pisidium* (*Neopisidium*)
trigonum Bourguignat in Locard, 1893**

Pisidium trigonum Locard, 1893: 148-149.

- Type locality: Northern France, Jaulgonne in the Aisne Département, Picardy.
- Types: Not traced, probably in MNHN or in the Lyon Museum [fide Dance, 1986]. We failed to find the types in MNHN collection.
- Global distribution: Europe [Korniushin, 1996].
- Distribution in the former USSR: West and south of the European part of RAC [Stadnichenko, 1984; Starobogatov *et al.*, 2004].
- Subregions: NE, SE.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as synonym of *Pisidium moitessierianum*.

Subgenus *Odhneripisidium*

Kuiper, 1962

Type species: *Pisidium stewarti* Preston, 1909 (OD)

**95(236). *Pisidium* (*Odhneripisidium*)
stewarti Preston, 1909**

Pisidium stewarti Preston, 1909: 116, fig. 3.

- Type locality: Tibet, High Hill Gompa, Gyantse valley, in a small hill stream, 14500 feet.
- Types: Not traced. Possibly in BMNH, however the Preston’s types are dispersed among many museums in Europe and India [Dance, 1986].

- Global distribution: Central Asia and Tibet [Graf & Cummings, 2013].
- Distribution in the former USSR: Tajikistan and Kyrgyzstan, in lakes Suluk-tysai and Zorkul' (Pamir) and Son-Kul' [Izzatullaev & Starobogatov, 1986].
- Subregions: CA.
- Bionomics: Lives in large mountain lakes [Izzatullaev & Starobogatov, 1986].
- IUCN conservation status: DD (data deficient).

95(237). *Pisidium (Odhneripisidium) kungejense* Butenko et Starobogatov in Butenko, 1967

Pisidium kungejense Butenko, 1967: 209-210, fig. 1.

- Type locality: Southern Kazakhstan, Kungei Ala-Tau Ridge, mountain lake Kulsai, 2600 m above sea level.
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and eight paratypes.
- Global distribution: Endemic to Central Asia
- Distribution in the former USSR: Mountain areas of the Central Asia, probably in the Mountain Altay [Starobogatov *et al.*, 2004].
- Subregions: CA.
- Bionomics: Lives in mountain lakes [Butenko, 1967].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as synonym of *Pisidium stewarti*.

95(238). *Pisidium (Odhneripisidium) prashadi* Odhner, 1937

Pisidium prashadi Odhner, 1937: 117-123, text-figs. 1-10, 13-14.

- Type locality: China, Tibet, valley of the Deha-tehu River (source of the Yangtze River) ["Zentralasiens, in der Provinz Cham. Tal des Flusses Deha-tehu (Quellgebiet des Flusses Yang-tze-kiang), 12 300 Fuss über Meeresniveau, unter 33°N, 97°Ost"].
- Types: Possibly in SMNH. The species was described from collections of the Russian traveller P. Kozlov, and three paratypes

are kept in ZIN (Nos. 2 and 3 in systematic catalogue).

- Global distribution: Endemic to Central Asia
- Distribution in the former USSR: Mountain areas of Central Asia, including the Tenginskoye Lake in Altay [Starobogatov *et al.*, 2004].
- Subregions: CA.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as synonym of *P. stewarti*.

96(239). *Pisidium (Odhneripisidium) behningi* (Izzatullaev et Starobogatov, 1986)

Odhneripisidium behningi Izzatullaev & Starobogatov, 1986: 58. fig. 6.

- Type locality: Tajikistan, the Iskander-Kul' Lake, northern slope of the Hissar Ridge.
- Types: ZIN, Nos. 1 and 2; IZT. The type series includes the holotype and 32 paratypes.
- Global distribution: Endemic to Central Asia.
- Distribution in the former USSR: Type locality; the Son-Kul' Lake (Kyrgyzstan); the Zeravshan River basin [Izzatullaev & Starobogatov, 1986; Boimurov, 2004].
- Subregions: CA.
- Bionomics: Lives in mountain lakes and springs, on muddy bottoms [Izzatullaev & Starobogatov, 1986].
- IUCN conservation status: Not assessed.

97(240). *Pisidium (Odhneripisidium) chatyrkulense* (Izzatullaev et Starobogatov, 1986)

Odhneripisidium chatyrkulense Izzatullaev & Starobogatov, 1986: 57-58. fig. 5.

- Type locality: Kyrgyzstan, the Chatyr-Kul' Lake.

- Types: ZIN, Nos. 1-4. The type series included the holotype and 59 paratypes (actually 53 paratypes are presented now in the ZIN collection).
- Global distribution: Endemic to Central Asia (within the ex-USSR boundaries).
- Distribution in the former USSR: Type locality; Pamir (lake Karakul' and the Kara-dzhilga river), the Nuraginskyi Ridge (Uzbekistan) [Izzatullaev & Starobogatov, 1986].
- Subregions: CA.
- Bionomics: Lives in springs, pools associated with springs, shallow offshore zones of large lakes [Izzatullaev & Starobogatov, 1986].
- IUCN conservation status: Not assessed.

98(241). *Pisidium (Odhneripisidium) dancei* Kuiper, 1962

Pisidium dancei Kuiper, 1962: 11-14, figs. 1-4.

- Type locality: Iran, "Busetun (Bisout-oum) dans la province de Kermanshab".
- Types: MHNH.
- Global distribution: Middle East and Central Asia [Graf & Cummings, 2013].
- Distribution in the former USSR: Springs in Pamir, vicinities of Kulyab; (Tajikistan) springs on the shores of the Issyk-Kul' and Son-Kul' lakes in Kyrgyzstan [Izzatullaev & Starobogatov, 1986].
- Subregions: CA.
- Bionomics: Lives in springs [Izzatullaev & Starobogatov, 1986].
- IUCN conservation status: Not assessed.

99(242). *Pisidium (Odhneripisidium) gafurovi* (Izzatullaev et Starobogatov, 1986)

Odhneripisidium gafurovi Izzatullaev & Starobogatov, 1986: 59, fig. 7.

- Type locality: Tajikistan, the eastern

Pamir Mountains, the Suluktysai Lake, 9 km from Kyzyl-Rabat.

- Types: ZIN, Nos. 1 and 2 in systematic catalogue; IZT. The type series consists of the holotype, four intact shells and two separate valves of paratypes.
- Global distribution: Endemic to Central Asia.
- Distribution in the former USSR: Central Asia [Izzatullaev, 2002].
- Subregions: CA.
- Bionomics: Lives in lakes, on muddy substrates [Izzatullaev & Starobogatov, 1986].
- IUCN conservation status: Not assessed.

100(243). *Pisidium (Odhneripisidium) pamirensense* (Izzatullaev et Starobogatov, 1986)

Odhneripisidium pamirensense Izzatullaev & Starobogatov, 1986: 59-60, fig. 8.

- Type locality: Eastern Pamir (Tajikistan), water body in the valley of the Kara-Dzhilga River.
- Types: ZIN, Nos. 1 and 2 in systematic catalogue; IZT. The type series consists of the holotype and 43 shells of paratypes.
- Global distribution: Endemic to Central Asia.
- Distribution in the former USSR: The eastern Pamir Mountains [Izzatullaev & Starobogatov, 1986].
- Subregions: CA.
- Bionomics: Occurs in lakes, at 1-2 m of depth [Izzatullaev & Starobogatov, 1986].
- IUCN conservation status: Not assessed.

101(244). *Pisidium (Odhneripisidium) popovae* (Starobogatov et Streletzkaja, 1967)

Odhneripisidium popovae Starobogatov & Streletzkaja, 1967: 257, fig. 71.

- Type locality: Russia, Republic of Tuva, the Tere-Khol' Lake.
- Types: ZIN, Nos. 1–3 in systematic catalogue. The type series consists of the holotype and nearly two tens of intact shells and separate valves of paratypes.
- Global distribution: Southern part of the Eastern Siberia and, probably, northern Mongolia [Prozorova & Zasykina, 2010].
- Distribution in the former USSR: Republic of Tuva: upper reaches of the Yenisei River and the Ubsu-Nuur Lake basin [Starobogatov *et al.*, 2004; Prozorova & Zasykina, 2010].
- Subregions: ES.
- Bionomics: Occurs in small lotic waterbodies (springs) and lakes on sandy substrates [Prozorova & Zasykina, 2010].
- IUCN conservation status: Not assessed.

**101(245). *Pisidium* (*Odhneripisidium*)
terekholicum (Izzatullaev et
Starobogatov, 1986)**

Odhneripisidium terekholicum Izzatullaev & Starobogatov, 1986: 62–63, fig. 11.

- Type locality Russia, Republic of Tuva, the Tere-Khol' Lake (50°38' 15"N, 97°24' 45"E).
- Types: ZIN, Nos. 1 and 2 in systematic catalogue; IZT. The type series consists of the holotype and 16 paratypes presented by separate valves.
- Global distribution: Southern part of the Eastern Siberia and, probably, western Mongolia [Prozorova & Zasykina, 2010].
- Distribution in the former USSR: Ubsu-Nuur depression, upper courses of the Ob' River basin in the Mountain Altay [Prozorova & Zasykina, 2010].
- Subregions: ES.
- Bionomics: Lives in lakes, on sandy substrates [Prozorova & Zasykina, 2010].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as synonym of *P. popovae*.

**101(246). *Pisidium* (*Odhneripisidium*)
tuvaense (Izzatullaev et
Starobogatov, 1986)**

Odhneripisidium tuvaense Izzatullaev & Starobogatov, 1986: 63–64, fig. 13.

- Type locality Russia, Republic of Tuva, the Tere-Khol' Lake (50°38' 15"N, 97°24' 45"E).
- Types: ZIN, Nos. 1 and 2 in systematic catalogue; IZT. The type series consists of the holotype and 10 paratypes (intact shells and separate valves).
- Global distribution: Southern part of the Eastern Siberia and, probably, northern Mongolia [Prozorova & Zasykina, 2010].
- Distribution in the former USSR: Southern part of Tuva (the Tere-Khol' Lake) [Prozorova & Zasykina, 2010].
- Subregions: ES.
- Bionomics: Lives in lakes, on sandy substrates [Prozorova & Zasykina, 2010].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. popovae*.

**Subfamily Euglesinae Pirogov et
Starobogatov, 1974**

Type genus: *Euglesa* Leach in Jenyns, 1832

Remark: As a rule, all the species of Euglesinae are included in large and heterogeneous genus *Pisidium* s. l. [Piechocki, 1989; Falkner *et al.*, 2001; Glöer & Meier-Brook, 2003; Graf & Cummings, 2013]. The Russian authors [Korniushin, 1996; Starobogatov *et al.*, 2004] use much more detailed system of this group where a plethora of genera and subgenera of the smaller pea-clam species is distinguished (see Table 2). Euglesinae as a distinct subfamily has recently been accepted by Bieler *et al.* [2010] in their suprageneric classification of the Bivalvia families. Here, we provisionally place all the species of small pea-clams

in a single genus *Euglesa* s. l., retaining the genera by Korniushev [1996] and Starobogatov *et al.* [2004] as subgenera of the latter.

Tribe Euglesini Pirogov et
Starobogatov, 1974

Genus *Euglesa* Leach in
Jenyns, 1832

[= *Galileja* E.M. Costa, 1840; *Cycladina* Clessin, 1871 non Latreille, 1827 nec Cantraine, 1835 (both Mollusca); *Fossarina* Clessin in Westerlund, 1873 non Adams et Angas, 1863 (Gastropoda); *Rivulina* Clessin in Westerlund, 1873; *Casertiana* Servain, 1888; *Henslowiana* Servain, 1888; *Pusillana* Fagot, 1892; *Roseana* Fagot, 1892; *Cyclocalyx* Dall, 1903; *Cymatocyclas* Dall, 1903; *Tropidocyclas* Dall, 1903; *Pseudeupera* Germain, 1913; *Clessinia* Piaget, 1913, non Döring, 1874 (Gastropoda); *Fontinalina* Sterki, 1918; *Eupisidium* Odhner, 1921; *Speleopisidium* Zhadin, 1952; *Conventus* Pirogov et Starobogatov, 1974; *Arcteglesa* Pirogov et Starobogatov, 1974; *Tetragonocyclas* Pirogov et Starobogatov, 1974; *Hiberneuglesa* Starobogatov in Dolgin, 1983; *Pulchelleuglesa* Starobogatov in Dolgin, 1983; *Potamopisidium* Korniushev, 1991; *Pseudosphaerium* Korniushev, 1991; *Hinziana* Dolgin et Korniushev, 1994; *Baicalipisidium* Slugina, Starobogatov et Korniushev, 1994; *Amurohenslowiana* Korniushev, 1996; *Supiniana* Korniushev, 1996; *Kurilipisidium* Prozorova, 1996; *Amuriana* Prozorova, Starobogatov et Korniushev, 1996]

Type species: *Pisidium pusillum* Jenyns, 1832, non Gmelin, 1791 = *Euglesa henslowiana* Leach in Jenyns, 1832²²(M)

Subgenus *Euglesa* s. str.

102(247). *Euglesa* (*Euglesa*)
personata (Malm, 1855)

[= *Tellina henslowiana* Jenyns, 1832]

Pisidium personatum Malm, 1855: 107, fig.

²² *Euglesa henslowiana* Leach in Jenyns, 1832 = *Pisidium personatum* Malm, 1855 (see Falkner & Korniushev, 2000 for details).

- Type locality: Sweden, Gothenburg region, near Hofås.
- Types: SMF.
- Global distribution: Europe [Graf & Cummings, 2013], Northern Africa [Kuiper, 1966].
- Distribution in the former USSR: The European part of RAC [Stadnichenko, 1984; Starobogatov *et al.*, 2004].
- Subregions: NE, SE.
- Bionomics: Occurs in springs, spring bogs and wells [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

102(248). *Euglesa* (*Euglesa*) *eichwaldi*
Stadnichenko, 1983

Euglesa eichwaldi Stadnichenko, 1983: 25-26, fig. 2.

- Type locality: Russia, the Crimea Peninsula, Simeiz settlement, a brook with spring source near motorway Yalta-Simeiz.
- Holotype: ZIN, No 1 in systematic catalogue.
- Global distribution: Eastern Europe (south)
- Distribution in the former USSR: Western Ukraine, the Crimea peninsula (based on data from systematic catalogue of ZIN collection).
- Subregions: SE.
- Bionomics: Lives in springs, bogs and wells [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *Pisidium personatum*.

102(249). *Euglesa* (*Euglesa*)
latiumbonata Korniushev, 1991

Euglesa (*Cyclocalyx*) *latiumbonata* Korniushev, 1991: 20, fig. 1 (8-10).

- Type locality: Russia, Bryansk Region, Suzem District, floodplain of the Nerussa River in vicinity of Smelzh village (approximately 52°26' 40"N, 33°58' 15"E).
- Types: ZIN, Nos. 1 and 2 in systematic

catalogue. The type series includes the holotype and a single paratype.

- Global distribution: Eastern Europe (south)
- Distribution in the former USSR: South-western regions of the European part of RAC.
- Subregions: SE.
- Bionomics: Lives in spring bogs and wells [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. personatum*.

103(250). *Euglesa (Euglesa) casertana* (Poli, 1791)

[= *Tellina pusilla* Gmelin, 1791; *Cyclas fontinalis* Draparnaud, 1805; *Cyclas vitrea* Risso, 1826; *Pisidium australe* Philippi, 1836; *Pisidium cinereum* Alder, 1838; *Pisidium lumstenianum* Forbes, 1838; *Cyclas abdita* Haldeman, 1841; *Pisidium obtusale* Villa, 1841; *Cyclas minor* Adams in Mighels et Adams, 1842; *Pisidium roseum* Scholtz, 1843; *Pisidium jenynsii* Macgillivray, 1843; *Pisidium joannis* Macgillivray, 1843; *Cyclas lenticularis* Normand, 1844; *Pisidium calyculatum* Dupuy, 1849; *Pisidium iratianum* Dupuy, 1849; *Pisidium thermale* Dupuy, 1849; *Pisidium limosum* Gassies, 1849; *Pisidium sinuatum* Bourguignat, 1850; *Pisidium tenellum* Agassiz, 1850; *Pisidium arquatum* Prime, 1852; *Pisidium obscurum* Prime, 1852; *Pisidium regulare* Prime, 1852; *Pisidium rubellum* Prime, 1852; *Pisidium zonatum* Prime, 1852; *Pera pulchella* Leach, 1852; *Pisidium canariense* Shuttleworth, 1852; *Pisidium kurtzii* Prime, 1852; *Pisidium lenticulare* Dupuy, 1852; *Pisidium notatum* Prime, 1852; *Pisidium globulosum* Gassies, 1855; *Pisidium rotundum* de Cessac, 1855; *Pisidium noveboracense* Prime, 1858; *Pisidium retusum* Prime, 1860; *Pisidium occidentale* Prime, 1861; *Pisidium watsoni* Paiva, 1866; *Pisidium hydaspi-cola* Theobald, 1878; *Pisidium arcticum* Westerlund, 1883; *Pisidium loveni* Clessin, 1890; *Pisidium politum* Sterki, 1895; *Pisidium randolphii* Roper, 1896; *Pisidium trapezoideum* Sterki, 1896; *Pisidium roperi* Sterki, 1898; *Pisidium streator* Sterki, 1901; *Pisidium strengii* Sterki, 1902; *Pisidium ashmuni* Sterki, 1903; *Pisidium complanatum* Sterki, 1903; *Pisidium cuneiforme* Sterki, 1903; *Pisidium danielsi* Sterki, 1903; *Pisidium rowellii* Sterki, 1903; *Pisidium atlanticum* Sterki, 1905; *Pisidium abditum* var. *huachucanum* Pilsbry et Ferriss, 1906;

Pisidium neglectum var. *corpulentum* Sterki, 1906; *Pisidium noveboracense* var. *alabamense* Sterki, 1906; *Pisidium noveboracense* var. *expansus* Sterki, 1906; *Pisidium noveboracense* var. *fraternum* Sterki, 1906; *Pisidium noveboracense* var. *lineatum* Sterki, 1906; *Pisidium noveboracense* var. *proclive* Sterki, 1906; *Pisidium proximum* Sterki, 1906; *Pisidium subrotundum* Sterki, 1906; *Pisidium fragillimum* Sterki, 1907; *Pisidium friersoni* Sterki, 1907; *Pisidium noveboracense* var. *quadrulatum* Sterki, 1907; *Pisidium succineum* Sterki, 1907; *Pisidium levissimum* Sterki, 1907; *Pisidium neglectum* Sterki, 1907; *Pisidium planatum* Sterki, 1907; *Pisidium superius* Sterki, 1907; *Pisidium ruwenzoriense* Germain, 1911; *Pisidium atlasicum* Pallary, 1911; *Pisidium albidum* Sterki, 1911; *Pisidium dispar* Sterki, 1911; *Pisidium alleni* Sterki, 1912; *Pisidium columbianum* Sterki, 1913; *Pisidium furcatum* Sterki, 1913; *Pisidium furcatum* var. *rhombicum* Sterki, 1913; *Pisidium nevadense* Sterki, 1913; *Pisidium nevadense* var. *modicum* Sterki, 1913; *Pisidium abditum* var. *lacteam* Sterki, 1916; *Pisidium fabale* Sterki, 1916; *Pisidium hannai* Sterki, 1916; *Pisidium novaboracense* var. *elevatum* Sterki, 1916; *Pisidium politum* var. *decorum* Sterki, 1916; *Pisidium subrotundum* var. *canadense* Sterki, 1916; *Pisidium subrotundum* var. *olofi* Sterki, 1916; *Pisidium subrotundum* var. *pumilum* Sterki, 1916; *Pisidium trapezoideum* var. *pro-tensum* Sterki, 1916; *Pisidium griseolum* Sterki, 1922; *Pisidium orcasense* Sterki, 1922; *Pisidium paradoxum* Sterki, 1922; *Pisidium lucidum* Sterki, 1923; *Pisidium mirum* Sterki, 1923; *Pisidium maroccanum* Pallary, 1936; *Pisidium eduardi* Kuiper, 1953]

Cardium casertanum Poli, 1791: 65.

- Type locality: Italy, Sicily Island near Palermo [fide Westerlund, 1890].
- Types: Not traced.
- Global distribution: Cosmopolitan [Graf & Cummings, 2013].
- Distribution in the former USSR: South of the European part of RAC eastwards to the Ural River [Stadnichenko, 1984; Pirogov *et al.*, 1994; Starobogatov *et al.*, 2004].
- Subregions: SE.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: LC (least concern).

**103(251). *Euglesa (Euglesa)*
altiumbonata Starobogatov et
Budnikova, 1985**

Euglesa altiumbonata Starobogatov & Budnikova, 1985 (1986): 96-97, fig. 2.

- Type locality: Russia, the Kurile Islands, the Kunashir Island, the Lagunnoye Lake (approximately 44°03' 33"N, 145°45' 38"E).
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Kurile Archipelago.
- Distribution in the former USSR: The Kunashir Island [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *Pisidium casertanum*.

**103(252). *Euglesa (Euglesa)* *ambigua*
Starobogatov et Budnikova, 1985**

Euglesa ambigua Starobogatov & Budnikova, 1985 (1986): 107-108, fig. 11.

- Type locality: Russia, the Kurile Archipelago, the Kunashir Island, the Lagunnoye Lake (approximately 44°03' 33"N, 145°45' 38"E).
- Types: ZIN, No. 1 and 2 in systematic catalogue. The type series includes the holotype and a single paratype.
- Global distribution: Endemic to the Kurile Archipelago.
- Distribution in the former USSR: The Kunashir Island [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. casertanum*.

103(253). *Euglesa (Euglesa)* *buchtarmensis* Krivosheina, 1978

[= *Euglesa dymy* Stadnichenko, 1980]

Euglesa buchtarmensis Krivosheina, 1978: 1496-1497, textfig. (12).

- Type locality: Kazakhstan, East Kazakhstan Region, Glatkovsky Bay, Oktyabrsky area of the mountain-valley part of Bukhtarma Reservoir (Upper Irtysh basin).
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Europe, the Southern Siberia, Central Asia. There are samples of this species from Samarkand and the Bodensee Lake in Germany (identified by Izzatullaev and Starobogatov, respectively) in ZIN.
- Distribution in the former USSR: The European part of RAC, southern part of the Western Siberia [Starobogatov *et al.*, 2004], Uzbekistan (?).
- Subregions: NE, SE, WS, CA(?).
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. casertanum*.

**103(254). *Euglesa (Euglesa)* *crassicardo*
Krivosheina, 1976**

Euglesa crassicardo Krivosheina, 1976: 29, fig. 2(2).

- Type locality: Kazakhstan, East Kazakhstan Region, the Monastyrskoye Lake.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to Altay.
- Distribution in the former USSR: The southern Altay within boundaries of Kazakhstan [Starobogatov *et al.*, 2004].
- Subregions: WS
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. casertanum*.

**103(255). *Euglesa (Euglesa)* *crimeana*
Stadnichenko, 1980**

Euglesa crimeana Stadnichenko, 1980: 30.

- Type locality: Russia, the Crimea peninsula, Karani-Hoba cave.
- Types: ZIN, Nos. 1 and 2 in systematic

catalogue. The type series includes the lectotype and a paralectotype.

- Global distribution: South of Eastern Europe.
- Distribution in the former USSR: The Crimea Peninsula, the Carpathian Mountains. [Starobogatov *et al.*, 2004],
- Subregions: WS
- Bionomics: Lives in rivers and floodplain waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. casertanum*.

103(256). *Euglesa (Euglesa) curta* (Clessin, 1874)

Pisidium fossarinum var. *curtum* Clessin, 1874b: 34.

- Type locality: Germany, Bavaria.
- Types: Not traced. Clessin's collection was in Stuttgart Museum, totally destroyed during 1939-1945 war [Dance, 1986].
- Global distribution: Europe, Siberia and Central Asia [Korniushin, 1996].
- Distribution in the former USSR: The European part of RAC [Starobogatov *et al.*, 2004], north of the Eastern Siberia, Central Asia [Korniushin, 1996]
- Subregions: NE, SE, ES, CA.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. casertanum*.

103(257). *Euglesa (Euglesa) depressissima* Krivosheina, 1978

Euglesa depressissima Krivosheina, 1978: 1497-1498, textfig. (13).

- Type locality: Kazakhstan, East Kazakhstan Region, dam of the Bobrovka River at Bobrovka village (the upper Irtysh River)
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to Altay [Korniushin, 1996].
- Distribution in the former USSR: The southern Altay [Starobogatov *et al.*, 2004].

- Subregions: WS.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. casertanum*.

103(258). *Euglesa (Euglesa) elliptica* (Mori, 1938)

Pisidium ellipticum Mori, 1938b: 255, 259, 270, pl. 10, fig. 13.

- Type locality: Japan, Honshu Island, Nagano Prefecture, the Noga-Ike Lake, near the summit of Mt. Kisokoma.
- Holotype: Ôtsu Hydrobiological Station (nowadays – Center for Ecological Research, Kyoto University; fide Haszprunar [2014]).
- Global distribution: Japan, the Kurile Archipelago [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: The southern Kurile Islands (the Kunashir Island) [Prozorova, 1996 (1997)a].
- Subregions: SF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. casertanum*.

103(259). *Euglesa (Euglesa) hokkaidoensis* Starobogatov in Starobogatov, Prozorova, Bogatov et Sayenko, 2004

Euglesa hokkaidoensis Starobogatov *et al.*, 2004: 71-72, pl. 69, figs. 13-15 (nom. nov. pro *Pisidium humeriforme* Mori, 1938 non Stelfox, 1918)

- Type locality: ???
- Holotype: Not traced.
- Global distribution: Japan, the Kurile Archipelago [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: The southern Kurile Islands (the Iturup Island) [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in large lakes and lotic waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. casertanum*.

**103(260). *Euglesa (Euglesa) hoyeri*
(Clessin in Esmark et Hoyer, 1886)**

Pisidium hoyeri Esmark & Hoyer, 1886: 120.

- Type locality: Norway ("Tromsö, Renö").
- Types: Not traced.
- Global distribution: Europe.
- Distribution in the former USSR: Waterbodies of the Baltic Sea basin [Korniushin, 1996].
- Subregions: NE.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. casertanum*.

**103(261). *Euglesa (Euglesa) inflata*
(Mori, 1938)**

Pisidium cinereum inflatum Mori, 1938b: 256, 259, 272-273, pl. 11, fig. 19.

- Type locality: Japan, Honshu Island, Tadenno-Umio, near Nikko, Totigi-Ken.
- Holotype: Ôtsu Hydrobiological Station (nowadays – Center for Ecological Research, Kyoto University; fide Haszprunar [2014]).
- Global distribution: Japan, the Kurile Archipelago [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: The southern Kurile Islands (the Kunashir Island) [Prozorova, 1996(1997)a].
- Subregions: SF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. casertanum*.

**103(262). *Euglesa (Euglesa) intermedia*
(Gassies, 1855)**

[= *Pisidium ibericum* Clessin, 1873; *Pisidium helldreichi* Clessin, 1877; *Pisidium cedrorum* Clessin, 1877; *Euglesa solodovnikovii* Stadnichenko, 1983]

Pisidium intermedium Gassies, 1855: 338, pl. 1, fig. 4.

- Type locality: South-west France, Aquitaine, Lot-et-Garonne Department, waterbodies situated in vicinities of Saint-Ferréol and Agen.
- Syntypes: MNHN. There are 2 syntypes in MNHN.
- Global distribution: Europe and Central Asia [Korniushin, 1996].
- Distribution in the former USSR: Southern and Central Europe and Central Asia [Stadnichenko, 1984; Izzatullaev & Korniushin, 1993; Korniushin, 1996; Starobogatov *et al.*, 2004].
- Subregions: SE, CA.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. casertanum*.

**103(263). *Euglesa (Euglesa) irtyschensis*
Krivosheina, 1976**

Euglesa irtyschensis Krivosheina, 1976: 28-29, fig. 2(3).

- Type locality: Kazakhstan, East Kazakhstan Region, the Monastyrskoye Lake.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to Altay.
- Distribution in the former USSR: The southern Altay [Starobogatov *et al.*, 2004]. There is a sample of this species in the ZIN collection collected in the Kursha Bay of the Baltic Sea (identified by Ya.I. Starobogatov), however neither Korniushin [1996], nor Starobogatov *et al.* [2004] did mention the presence of *Eu. irtyschensis* in the Baltic Sea basin.
- Subregions: NE(?), WS.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. casertanum*.

**103(264). *Euglesa (Euglesa)*
jaudouiniana (Gassies, 1855)**

[= *Pisidium casertanum* var. *humiforme* Stelfox, 1918]

Pisidium jaudouinianum Gassies, 1855: 18-19, pl. 2, fig. 2.

- Type locality: South-west France, Aquitaine, Lot-et-Garonne Department, Garonne River near Agen.
- Types: MNHN. There are 3 syntypes in the type series.
- Global distribution: Europe and Central Asia [Korniushin, 1996].
- Distribution in the former USSR: South and middle of the European part of RAC and Central Asia [Izzatullaev & Korniushin, 1993; Korniushin, 1996; Starobogatov *et al.*, 2004].
- Subregions: SE, CA.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. casertanum*.

103(265). *Euglesa (Euglesa) klucharevae* Starobogatov et Budnikova, 1985

Euglesa klucharevae Starobogatov & Budnikova, 1985 (1986): 113-114, fig. 17.

- Type locality: Russia, the Kurile Archipelago, the Kunashir Island, the Lagunnoye Lake (approximately 44°03'33"N, 145°45'38"E).
- Holotype: ZIN, No 1 in systematic catalogue.
- Global distribution: Endemic to the Kurile Archipelago.
- Distribution in the former USSR: The Kunashir Island [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. casertanum*.

103(266). *Euglesa (Euglesa) koltschemensis* Zatravkin, 1987

Euglesa koltschemensis Zatravkin, 1987: 51-52, textfig (II).

- Type locality: Russia, the Khabarovsk Territory, Ul'cha District, a floodplain lake of the Amur channel Ukhta, left shore of the chan-

nel, downstream of Kol'chem village (approximately 52°13'00"N, 140°10'00"E).

- Holotype: ZIN, No 1 in systematic catalogue.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The lower Amur Basin [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. casertanum*.

103(267). *Euglesa (Euglesa) likharevi* (Korniushin, 1991)

Cingulipisidium (Potamopisidium) likharevi Korniushin, 1991: 17, fig. 1 (1-4).

- Type locality: Ukraine, Zhytomir Region, Ovruch District, a small lake westward of Slovechno settlement (approximately 51°23'00"N, 28°20'30"E).
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and two paratypes.
- Global distribution: The Eastern Europe [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: The European part of RAC [Korniushin, 1996].
- Subregions: NE, SE.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. casertanum*.

103(268). *Euglesa (Euglesa) miyadaii* Starobogatov in Starobogatov, Prozorova, Bogatov et Sayenko, 2004

Euglesa miyadaii Starobogatov *et al.*, 2004: 72, pl. 71, figs. 7-9 (nom. nov. pro *Pisidium ponderosum* Mori, 1938, non Stelfox, 1918).

- Type locality: ???
- Types: Not traced.
- Global distribution: Endemic to the Kurile Archipelago [Starobogatov *et al.*, 2004].

- Distribution in the former USSR: The Iturup Island (the South Kurile Islands) [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. casertanum*.

**103(269). *Euglesa (Euglesa) montana*
Krivosheina, 1976**

Euglesa montana Krivosheina, 1976: 30, fig. 2(4).

- Type locality: Eastern Kazakhstan, a channel of the Irtysh River near Ust'-Kamenogorsk City.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to Altay.
- Distribution in the former USSR: The south Altay within boundaries of Kazakhstan [Starobogatov *et al.*, 2004].
- Subregions: WS
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. casertanum*.

**103(270). *Euglesa (Euglesa) nikkoensis*
(Mori, 1938)**

Pisidium cinereum nikkoense Mori, 1938b: 256, 259, 272, pl. 10, figs. 14c, 16.

- Type locality: Japan, Honshu, Kotokunuma, near Nikko, Totigi-Ken.
- Holotype: Ôtsu Hydrobiological Station (nowadays – Center for Ecological Research, Kyoto University; fide Haszprunar [2014]).
- Global distribution: Japan, the Kurile Archipelago [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: The southern Kurile Islands (the Iturup and Kunashir Islands) [Prozorova, 1996 (1997)a].
- Subregions: SF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].

- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. casertanum*.

**103(271). *Euglesa (Euglesa) obensis*
Starobogatov, Anistratenko et Dolgin in
Anistratenko et Starobogatov, 1990
[1991]**

Euglesa obensis Anistratenko & Starobogatov, 1990 [1991]: 16-17, fig. 3.

- Type locality: Russia, Tyumen' Region, lake on the left bank of the Malaya Ob' River opposite the Kanevskaya Channel.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Europe, the Western Siberia [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: The European part of RAC, the Western Siberia [Starobogatov *et al.*, 2004].
- Subregions: NE, SE, WS.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. casertanum*.

**103(272). *Euglesa (Euglesa) obliquata*
(Clessin in Martens, 1874)**

[= *Pisidium hispanicum* Clessin, 1877; *Euglesa hissarica* Izzatullaev et Starobogatov in Izzatullaev, 1985]

Pisidium obliquatum Martens, 1874: 36-37, pl. 3, fig. 31.

- Type locality: Uzbekistan (?), the Zeravshan River valley ("aquas prope Djam in valle Sarafschan"; Martens, 1874: 36).
- Types: ZMB, No. 22489. The type series contains seven syntypes. Two other syntypes are kept in ZMMU [fide Korniushev & Glaubrecht, 2001]. One of the syntypes from ZMB collection was once selected by Kuiper to become the lectotype of *Pisidium obliquatum*, however Kuiper did not formally designate it [Korniushev & Glaubrecht, 2001].
- Global distribution: Eastern Europe and Central Asia.

- Distribution in the former USSR: The European part of RAC, mountain regions of Central Asia [Stadnichenko, 1984; Izzatullaev & Korniushev, 1993; Izzatullaev, 2002; Starobogatov *et al.*, 2004].
- Subregions: NE, SE, CA.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. casertanum*.

103(273). *Euglesa (Euglesa) platyponderosa* Starobogatov et Korniushev in Korniushev, 1991

Euglesa platyponderosa Korniushev, 1991: 20-21, fig. 1 (11-13).

- Type locality: Germany, the Bodensee Lake.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Europe [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: The European part of RAC [Starobogatov *et al.*, 2004].
- Subregions: NE.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. casertanum*.

103(274). *Euglesa (Euglesa) ponderosa* (Stelfox, 1918)

Pisidium casertanum var. *ponderosum* Stelfox, 1918: 294-295, pl. 7, figs. 31-34.

- Type locality: England, "Grand Junction Canal at Cowroast Lock, Dudswell, Herts., the Thames, the Barrow, Nore, and Suir in Ireland".
- Types: Not traced.
- Global distribution: Europe, the Western Siberia [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: The European part of RAC, southern part of the Western Siberia, Altay [Stadnichenko, 1984; Starobogatov *et al.*, 2004].
- Subregions: NE, SE, WS.

- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. casertanum*.

103(275). *Euglesa (Euglesa) rivularis* (Clessin, 1874)

Pisidium rivulare Clessin, 1874b: 30-31, pl. 3, figs. 7-11.

- Type locality: Germany, Bavaria.
- Types: SMF [Kantor *et al.*, 2010].
- Global distribution: Europe, the Western Siberia [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: The European part of RAC, southern part of the Western Siberia (Irtysh River basin) [Stadnichenko, 1984; Starobogatov *et al.*, 2004].
- Subregions: NE, SE, WS.
- Bionomics: Lives in rivers and floodplain waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. casertanum*.

103(276). *Euglesa (Euglesa) rotundovata* Krivosheina, 1976

Euglesa rotundovata Krivosheina, 1976: 27-28, fig. 2(1).

- Type locality: Kazakhstan, East Kazakhstan Region, the Monastyrskoye Lake.
- Holotype: ZIN, No 1 in systematic catalogue.
- Global distribution: Endemic to Altay.
- Distribution in the former USSR: The southern Altay within boundaries of Kazakhstan [Starobogatov *et al.*, 2004].
- Subregions: WS
- Bionomics: Lives in rivers and floodplain waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. casertanum*.

103(277). *Euglesa (Euglesa) steenbuchi* (Møller, 1842)

Cyclas steenbuchi Møller, 1842: 93.

- Type locality: West Greenland (not specified).
- Syntypes: Nine syntypes in ZMUC (No. BIV-023), six possible syntypes were kept in BMNH, subsequently lost [fide Schiøtte & Warén, 1992].
- Global distribution: North Holarctic [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: North of the European part of RAC and Siberia eastwards to Kamchatka [Korniushin, 1996].
- Subregions: NE, SE, WS.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. casertanum*. Some authors treated this taxon as a subspecies of *P. casertanum* [Schiøtte & Warén, 1992].

**103(278). *Euglesa (Euglesa) subcinerea*
Starobogatov et Budnikova, 1985**

Euglesa subcinerea Starobogatov & Budnikova, 1985 (1986): 111-112, fig. 15.

- Type locality: Russia, the Kurile Archipelago, the Kunashir Island, the Lagunnoye Lake (approximately 44°03'33"N, 145°45'38"E).
- Holotype: ZIN. No. 1 in systematic catalogue.
- Global distribution: Endemic to the Kurile Archipelago [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: The southern Kuriles including the Urup Island [Prozorova, 1996 (1997)a; Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. casertanum*.

**103(279). *Euglesa (Euglesa) subdepressa*
Starobogatov et
Budnikova, 1985**

Euglesa subdepressa Starobogatov & Budnikova, 1985 (1986): 108-109, fig. 12.

- Type locality: Russia, the Kurile Archipelago, the Kunashir Island, the Lagunnoye Lake (approximately 44°03'33"N, 145°45'38"E).
- Holotype: ZIN. No. 1 in systematic catalogue.
- Global distribution: Endemic to the Kurile Archipelago [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: The Kunashir Island [Prozorova, 1996 (1997)a; Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. casertanum*.

**103(280). *Euglesa (Euglesa) subfossarina*
Starobogatov et
Budnikova, 1985**

Euglesa subfossarina Starobogatov & Budnikova, 1985 (1986): 112-113, fig. 16.

- Type locality: Russia, the Kurile Archipelago, the Kunashir Island, the Lagunnoye Lake (approximately 44°03'33"N, 145°45'38"E).
- Holotype: ZIN. No. 1 in systematic catalogue.
- Global distribution: Endemic to the Kurile Archipelago [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: The Kunashir Island [Prozorova, 1996 (1997)a; Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. casertanum*.

**103(281). *Euglesa (Euglesa) subinflata*
(Mori, 1938)**

Pisidium cinereum subinflatum Mori, 1938b: 256, 259, 273-274, pl. 10, fig. 20.

- Type locality: Russia, the southern Sakhalin Island ("Siritori, Karafuto"; Mori, 1938b. Karafuto – a Japanese word for designation of the southern Sakhalin; Siritori – nowadays

the Makarova River). Approximately 48°37'40"N, 142°46'54"E).

- Holotype: Ôtsu Hydrobiological Station (nowadays – Center for Ecological Research, Kyoto University; fide Haszprunar [2014]).
- Global distribution: Endemic to the Sakhalin Island [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: The southern Sakhalin [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. casertanum*.

103(282). *Euglesa (Euglesa) subplanata* Starobogatov et Budnikova, 1985

Euglesa subplanata Starobogatov & Budnikova, 1985 (1986): 109-110, fig. 13.

- Type locality: Russia, the Kurile Archipelago, the Kunashir Island, the Lagunnoye Lake (approximately 44°03'33"N, 145°45'38"E).
- Holotype: ZIN. No. 1 in systematic catalogue.
- Global distribution: Endemic to the Kurile Archipelago [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: The Kunashir Island [Prozorova, 1996 (1997)a; Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. casertanum*.

103(283). *Euglesa (Euglesa) subponderosa* Krivosheina, 1976

Euglesa rotundovata Krivosheina, 1976: 30-31, fig. 2(6).

- Type locality: Type locality: Kazakhstan, East Kazakhstan Region, the Monastyrskoye Lake.
- Holotype: ZIN, No 1 in systematic catalogue.
- Global distribution: Europe and the southwest Siberia.

- Distribution in the former USSR: Europe, the Irtysh River basin [Korniushin, 1996].
- Subregions: NE, SE, WS.
- Bionomics: Lives in rivers and floodplain waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. casertanum*.

104(284). *Euglesa (Euglesa) cavatica* (Zhadin, 1952)

Pisidium cavaticum Zhadin, 1952: 338-339, fig. 310.

- Type locality: Russia, Krasnodar Region, a cave in ravine of upper reaches of the Khosta River.
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and two paratypes.
- Global distribution: Endemic to the Caucasus.
- Distribution in the former USSR: Type locality [Zhadin, 1952].
- Subregions: CT.
- Bionomics: Stygobiont species living in subterranean waterbodies [Zhadin, 1952].
- IUCN conservation status: Not assessed.

105(285). *Euglesa (Euglesa) granum* (Lindholm, 1909)

Pisidium granum Lindholm, 1909: 87.

- Type locality: Russia, the Baikal Lake, Dagarskaya Inlet, 10.5 m.
- Types: ZIN, Nos. 1–3 in systematic catalogue. The type series includes the lectotype and 80 paratypes.
- Global distribution: Endemic to the Baikal region.
- Distribution in the former USSR: The Baikal Lake [Slugina *et al.*, 1994; Slugina & Starobogatov, 1999, 2004], the Transbaikalia [Semernoy *et al.*, 2013].

- Subregions: ES, BL.
- Bionomics: Shallow water species inhabiting sandy and muddy substrates [Slugina & Starobogatov, 1999].
- IUCN conservation status: Not assessed.

106(286). *Euglesa (Euglesa) korotnevi* (Lindholm, 1909)

Pisidium korotnevi Lindholm, 1909: 85, Taf. 2, fig. 47-48.

- Type locality: Russia, the Baikal Lake, Listvennichnoye Settlement and Olkhon-skiye Vorota strait.
- Syntypes: ZIN, Nos. 1, 8 and 9 in systematic catalogue. There are 119 syntypes in the ZIN collection.
- Global distribution: Endemic to the Baikal Lake
- Distribution in the former USSR: Open part of the Baikal Lake [Slugina *et al.*, 1994; Slugina & Starobogatov, 1999, 2004].
- Subregions: BL.
- Bionomics: Occurs at depths between 1.5 and 60 m; on sandy and sandy-mud substrates [Slugina & Starobogatov, 1999].
- IUCN conservation status: Not assessed.

107(287). *Euglesa (Euglesa) ljevushkini* (Starobogatov, 1962)

Pisidium ljevushkini Starobogatov, 1962: 49-50, fig. 3.

- Type locality: Abkhazia, Tsebelda Cave (43°01'52.30" N 41°16'08.92" E).
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Caucasus.
- Distribution in the former USSR: Type locality [Starobogatov, 1962].
- Subregions: CT.
- Bionomics: Stygobiont species living

in subterranean waterbodies [Starobogatov, 1962].

- IUCN conservation status: Not assessed.

108(288). *Euglesa (Euglesa) minuta* (Kozhov, 1936)

Pisidium korotniewi var. *minutum* Kozhov, 1936: 87.

- Type locality: Russia, the Baikal Lake, Birkhin Bay.
- Syntypes: ZIN, Nos. 3 and 4 in systematic catalogue.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The Baikal Lake [Slugina & Starobogatov, 1999].
- Subregions: BL.
- Bionomics: Lives on sandy and sandy-mud substrates [Slugina & Starobogatov, 1999].
- IUCN conservation status: Not assessed.

109(289). *Euglesa (Euglesa) platyvalva* Slugina et Starobogatov in Slugina, Starobogatov et Korniushev, 1994

Euglesa platyvalva Slugina *et al.*, 1994: 139, fig. 15 A-C.

- Type locality: Russia, the Baikal Lake, Dagarskaya Inlet, 10.5 m.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Baikal Lake
- Distribution in the former USSR: Type locality [Slugina & Starobogatov, 1999].
- Subregions: BL.
- Bionomics: Lives on sandy substrates [Slugina & Starobogatov, 1999].
- IUCN conservation status: Not assessed.

**110(290). *Euglesa (Euglesa)*
subgranum Slugina et Starobogatov
in Slugina, Starobogatov et
Korniushin, 1994**

Euglesa subgranum Slugina et al., 1994: 138, fig. 14 G-I.

- Type locality: Russia, the Baikal Lake, Peschanaya Bay, 20 m.
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and eight paratypes.
- Global distribution: Endemic to the Baikal Lake
- Distribution in the former USSR: The open Baikal Lake [Slugina & Starobogatov, 1999].
- Subregions: BL.
- Bionomics: Lives on sandy-mud substrates [Slugina & Starobogatov, 1999].
- IUCN conservation status: Not assessed.

**111(291). *Euglesa (Euglesa)*
subterranea (Zhadin, 1932)**

Pisidium subterraneum Zhadin, 1932: 13, pl. 1, fig. 2.

- Type locality: Georgia, Tskhal-Tsiteli Cave near Kutaisi City (= "Rion-Höhle" sensu Zhadin, 1932). Approximately 42°15'06"N, 42°42'07"E.
- Syntypes: ZIN, Nos. 1–3 in systematic catalogue. The type series includes the holotype and eight paratypes.
- Global distribution: Endemic to the Transcaucasia.
- Distribution in the former USSR: Caves of the Transcaucasia [Zhadin, 1952].
- Subregions: CT.
- Bionomics: Lives in cavatic waterbodies [Zhadin, 1952].
- IUCN conservation status: Not assessed.

**112(292). *Euglesa (Euglesa)*
turkestanica Izzatullaev, 1974**

Euglesa turkestanica Izzatullaev, 1974: 1086–1087, textfig. (1).

- Type locality: Tajikistan, floodland of the Surkhob River near Alaka kishlak, vicinities of Soviet farm "Muminabad".
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to Central Asia.
- Distribution in the former USSR: Central Asia [Korniushin, 1996].
- Subregions: CA.
- Bionomics: Lives in floodplain waterbodies [Korniushin, 1996].
- IUCN conservation status: Not assessed.
- Remark: Korniushin [1996] places this species to the (sub-)genus *Roseana*.

**113(293). *Euglesa (Euglesa)*
zugmayeri (Weber, 1910)**

Pisidium zugmayeri Weber, 1910: 310.

- Type locality: India (?), Kashmir Region, the Walar Lake.
- Types: Not traced.
- Global distribution: Central Asia and Tibet [Graf & Cummings, 2013].
- Distribution in the former USSR: Central Asia [Korniushin, 1996].
- Subregions: CA.
- Bionomics: Lives in lakes [Zhadin, 1952].
- IUCN conservation status: DD (data deficient).

**Subgenus *Amureuglesa*
Korniushin, 1996**

Type species: *Euglesa khurbaense* Zatravkin, 1987 (OD)

**114(294). *Euglesa (Amureuglesa)*
khurbaensis Zatravkin, 1987**

Euglesa (Casertiana) khurbaensis Zatravkin, 1987: 49–51, textfig. (1).

- Type locality: Russia, the Khabarovsk Territory, Verkhnebureinsky District, first floodland lake of the Bureya River near Chekunda settlement (old settlement), approximately 50°52'N, 132°15'30"E.
- Types: ZIN, Nos. 1, 3–5 in systematic catalogue. The type series includes the holotype and 28 paratypes.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The lower Amur River basin [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

114(295). *Euglesa (Amureuglesa) kruglovi* Zatravkin, 1987

Euglesa kruglovi Zatravkin, 1987: 52, textfig (III).

- Type locality: Russia, the Khabarovsk Territory, Ul'cha District, a floodplain lake of the Amur channel Ukhta, left shore of the channel, up-stream of Kol'chem village (approximately 52°13'00"N, 140°10'00"E).
- Types: ZIN, No 1 and 2 in systematic catalogue. The type series includes the holotype and 16 paratypes.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The lower Amur Basin [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *Pisidium khurbaensis*.

Subgenus *Cingilipisidium* Pirogov et Starobogatov, 1974

[= *Costopisidium* Pirogov et Starobogatov, 1974]

Type species: *Pisidium nitidum* Jenyns, 1832 (OD)

Remark: According to Starobogatov *et al.* [2004], this (sub-)genus includes 13 species living in the former USSR (see below). Graf & Cummings [2013] considered all these species as synonymous with *Pisidium nitidum* (Jenyns, 1832) s. lato.

115(296). *Euglesa (Cingulipisidium) nitida* (Jenyns, 1832)

[= *Pisidium incertum* Nordman, 1854; *Pisidium contortum* Prime, 1858; *Pisidium pauperculum* Sterki, 1896; *Pisidium splendidulum* Sterki, 1896; *Pisidium pauperculum* var. *nylanderi* Sterki, 1898; *Pisidium handwerki* Sterki, 1899; *Pisidium tenuissimum* Sterki, 1901; *Pisidium minusculum* Sterki, 1906; *Pisidium globellum* Sterki, 1913; *Pisidium lermondi* Sterki, 1913; *Pisidium pusillum* Woodward, 1913, non Jenyns, 1832; *Pisidium latchfordi* Sterki, 1916; *Pisidium pauperculum* var. *crystalense* Sterki, 1916; *Pisidium splendidulum* var. *corneolum* Sterki, 1916; *Pisidium splendidulum* var. *miliastrum* Sterki, 1916; *Pisidium splendidulum* var. *novangliae* Sterki, 1916; *Pisidium limpidum* Sterki, 1922; *Pisidium prognathum* Sterki, 1922].

Pisidium nitidum Jenyns, 1832: 304–305, pl. 20, figs. 7–8.

- Type locality: England, Cambridge-shire.
- Types: Not traced.
- Global distribution: Holarctic [Graf & Cummings, 2013].
- Distribution in the former USSR: Palearctic part of RAC [Starobogatov *et al.*, 2004].
- Subregions: NE, SE, WS, ES, CA.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

115(297). *Euglesa (Cingulipisidium) cingulata* Anistratenko et Starobogatov, 1990 [1991]

Euglesa (Cingulipisidium) cingulata Anistratenko & Starobogatov, 1990 [1991]: 15–16, fig. 2.

- Type locality: Germany, Bavaria, the Bodensee Lake near Nonnenhorn (approximately 47°34'15"N, 09°36'35"E).
- Holotype: ZIN, No 1 in systematic catalogue.
- Global distribution: Europe and the Western Siberia [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: The European part of RAC and the Western Siberia [Starobogatov *et al.*, 2004].
- Subregions: NE, SE, WS.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

115(298). *Euglesa (Cingulipisidium) crassa* (Stelfox, 1918)

Pisidium nitidum var. *crassa* Stelfox, 1918: 295-296, pl. 7, figs. 5-8.

- Type locality: England, "Grand Junction Canal near Marsworth Church, Bucks".
- Types: Not traced.
- Global distribution: Europe and Siberia [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: North of the European part of RAC, Ukraine, the Ural River, Siberia [Stadnichenko, 1984; Pirogov *et al.*, 1994; Starobogatov *et al.*, 2004].
- Subregions: NE, SE, WS.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

115(299). *Euglesa (Cingulipisidium) depressinitida* Anistratenko et Starobogatov, 1990 [1991]

Euglesa (Cingulipisidium) depressinitida Anistratenko & Starobogatov, 1990[1991]: 14, fig. 1.

- Type locality: Ukraine, Cherkassk Region, a spring in the settlement Radivanovka (approximately 49°00'00"N, 31°52'20"E).
- Holotype: ZIN, No 1 in systematic catalogue.
- Global distribution: North-western Palearctic.
- Distribution in the former USSR: The European part of RAC and the Western Siberia [Starobogatov *et al.*, 2004].
- Subregions: NE, SE, WS.

- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

115(300). *Euglesa (Cingulipisidium) fedderseni* (Westerlund, 1890)

Pisidium nitidum var. *fedderseni* Westerlund, 1890: 24.

- Type locality: Iceland.
- Types: Not traced, possibly in NMG.
- Global distribution: Europe and Northern Asia [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: The European part of RAC, the Western Siberia, and Central Asia [Stadnichenko, 1984; Izzatullaev, 2002; Starobogatov *et al.*, 2004].
- Subregions: NE, SE, WS, CA.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

115(301). *Euglesa (Cingulipisidium) feroense* (Mörch in Korniuschin, 1991)

Cingulipisidium feroense Korniuschin, 1991: 21-22, fig. 1 (17-20).

- Type locality: Iceland, Fero.
- Holotype: ZIN, No 1 in systematic catalogue.
- Global distribution: North-western Palearctic.
- Distribution in the former USSR: The European part of RAC, the Western Siberia, Central Asia [Izzatullaev, 2002; Starobogatov *et al.*, 2004].
- Subregions: NE, SE, WS, CA.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

115(302). *Euglesa (Cingulipisidium) khuridinensis* Pirogov et Starobogatov in Stadnichenko, 1984

Euglesa (Cingulipisidium) khuridinensis Pirogov et Starobogatov in Stadnichenko, 1984: 255-256, fig. 82.

- Type locality: Russia, the Astrakhan' Region, Bol'shoy Karabulak bayou of the Volga Delta.
- Types: ZIN, Nos 1 and 2 in systematic

catalogue. The type series includes the holotype, seven intact shells and two separate valves of paratypes.

- Global distribution: South of Eastern Europe.
- Distribution in the former USSR: Western Ukraine, the Volga Delta [Stadnichenko, 1984].
- Subregions: SE.
- Bionomics: Lives in lakes and channels (bayous) [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

115(303). *Euglesa (Cingulipisidium) kozhovi*

(Starobogatov et Streletzkaja, 1967)

Galileja kozhovi Starobogatov & Streletzkaja, 1967: 254, fig. 64.

- Type locality: Russia, the Baikal Lake, Malyi Posol'skiy Sor.
- Types: ZIN, Nos. 1–3 in systematic catalogue. The type series includes the holotype and nine paratypes.
- Global distribution: Endemic to the Baikal Lake and its vicinities.
- Distribution in the former USSR: The Baikal Lake (in bays and “sors”) and its vicinities [Slugina & Starobogatov, 1999].
- Subregions: BL, ES.
- Bionomics: Occurs at depths between 0 and 5 m; on muddy sands [Slugina & Starobogatov, 1999].
- IUCN conservation status: Not assessed.

115(304). *Euglesa (Cingulipisidium) pulchricingulata* Starobogatov et Budnikova, 1985

Euglesa (Cingulipisidium) pulchricingulata Starobogatov & Budnikova, 1985 (1986): 101–102, fig. 6.

- Type locality: Russia, the Kurile Archipelago, the Kunashir Island, the Lagunnoye Lake (approximately 44°03'33"N, 145°45'38"E).
- Types: ZIN, Nos. 1–3 in systematic catalogue. The type series includes the holotype and two paratypes.
- Global distribution: Endemic to the Kurile Archipelago.
- Distribution in the former USSR: The south-

ern Kurile Archipelago including the Urup Island [Prozorova, 1996 (1997)b; Starobogatov *et al.*, 2004].

- Subregions: SF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

115(305). *Euglesa (Cingulipisidium) rotundicostata*

(Starobogatov et Streletzkaja, 1967)

Galileja rotundicostata Starobogatov & Streletzkaja, 1967: 253, fig. 62.

- Type locality: Russia, Republic of Yakutia (Sakha), the Kolyma River valley (lower part), channel of the small river Panteleikha.
- Types: ZIN, Nos. 1–3 in systematic catalogue. The type series includes the holotype and four paratypes.
- Global distribution: Endemic to the northern Siberia.
- Distribution in the former USSR: The Kolyma River basin [Starobogatov *et al.*, 2004].
- Subregions: ES.
- Bionomics: Lives in lakes and channels [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

115(306). *Euglesa (Cingulipisidium) shadini* (Johansen, 1937)

Pisidium (Eupisidium) shadini Johansen, 1937: 195–197, fig. 2.

- Type locality: Russia, Republic of Altay, the Srednee Mul'tinskoye Lake, the Mul'ta River valley (Katun' Mountain Range).
- Types: Not traced (probably lost).
- Global distribution: Endemic to the southwestern Siberia (Altay).
- Distribution in the former USSR: Altay Mts. [Starobogatov *et al.*, 2004].
- Subregions: WS.
- Bionomics: Lives in mountain lakes [Johansen, 1937].
- IUCN conservation status: Not assessed.

115(307). *Euglesa (Cingulipisidium) splendens* (Baudon, 1857)

Pisidium nitidum var. *splendens* Baudon, 1857: 25–26, pl. 1, fig. B.

- Type locality: France, a lake in Annecy (Haute-Savoie department).
- Types: Not traced. Kuiper [1987] states that Baudon's collection was totally destroyed during WWII.
- Global distribution: Europe and Siberia.
- Distribution in the former USSR: The European part of RAC and Siberia eastward to the basin of Yenisei River inclusive [Stadnichenko, 1984; Starobogatov *et al.*, 2004].
- Subregions: NE, SE, WS.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

115(308). *Euglesa (Cingulipisidium) tanuga* Timm, 1975

Euglesa tanuga Timm, 1975: 223, 225, fig. 8.

- Type locality: Estonia, the Võrtsjärv Lake.
- Types: Võrtsjärv Limnological Station. The type series includes the holotype and four paratypes.
- Global distribution: The Baltic Sea region.
- Distribution in the former USSR: The Lake Võrtsjärv [Timm, 1975].
- Subregions: NE.
- Bionomics: Occurs in littoral and profundal zones of the Lake Võrtsjärv, on muddy substrates [Timm, 1975].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. nitidum*. Starobogatov *et al.* [2004] remarked that this species is closely related to *Eu. shadini*. The specific epithet of this species is usually spelled as *tanugum*. This is wrong, since the name is based on the Estonian noun (without any gender) meaning "wearing a female cap, or kokoshnik" (Tarmo Timm, pers. comm.).

Addition to the subgenus *Cingulipisidium*. Two species mentioned earlier as belonging to this taxon, *Euglesa juliae* Stadnichenko, 1980 and *Eu. peipsi* Timm, 1976, were not included by Korniiushin [1996] in his comprehensive

monograph on Palearctic Pisidioidea and their reality should be proven. Starobogatov *et al.* [2004] did not list them in their annotated list of Euglesidae species.

Subgenus *Conventus* Pirogov et Starobogatov, 1974

[= *Baikalipisidium* Slugina et Starobogatov, 1994]

Type species: *Pisidium conventus* Clessin, 1877 (OD)

Remark: Slugina & Starobogatov [1999] and Starobogatov *et al.* [2004] accepted six valid species in this (sub-)genus, two of them, *Eu. conventus* and *Eu. raddei* are considered as valid by Graf & Cummings [2013].

116(309). *Euglesa (Conventus) conventa* (Clessin, 1877)

[= *Pisidium abyssorum* Sterki, 1898; *P. clessini* Surbeck, 1899; *P. imbecile* Sterki, 1900; *P. tornense* Odhner, 1908; *P. abortivum* Sterki, 1916; *P. abortivum* var. *exiguum* Sterki, 1916; *P. notophthalmi* Sterki, 1922; *P. hendersoni* Sterki, 1923]

Pisidium conventus Clessin, 1877b: 181-182, pl. 3, fig. 5.

- Type locality: Germany, Bavaria, the Starnberger See near Tutzing, at 50 m of depth (approximately 47°54'20" N 11°16'45" E).
- Types: Not traced. Clessin's collection was in Stuttgart Museum but totally destroyed during 1939-1945 war [Dance, 1986].
- Global distribution: Holarctic, at higher latitudes [Graf & Cummings, 2013].
- Distribution in the former USSR: The European part of RAC, Altay, Kazakhstan, the Novaya Zemlya, the Northern Siberia from the Yamal peninsula eastward to Kamchatka [Stadnichenko, 1984; Starobogatov *et al.*, 2004].
- Subregions: NE, SE, WS, ES, NF.
- Bionomics: Lives in oligotrophic lakes [Starobogatov *et al.*, 2004].

- IUCN conservation status: LC (least concern).

116(310). *Euglesa (Conventus) akkesiensis* (Mori, 1938)

Pisidium conventus akkesiense Mori, 1938b: 259, 274, pl. 11, fig. 18 a-d.

- Type locality: Japan, Hokkaido, Akkesi (approximately 43°02'10"N, 144°51'07"E).
- Types: Ôtsu Hydrobiological Station (nowadays – Center for Ecological Research, Kyoto University; fide Haszprunar [2014]).
- Global distribution: Japan, the Kurile Archipelago.
- Distribution in the former USSR: The southern Kurile Islands: the Iturup and Zelenyi [Prozorova, 1996 (1997)b].
- Subregions: SF.
- Bionomics: Lives in permanent stagnant waters [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *Pisidium conventus*.

116(311). *Euglesa (Conventus) iturupensis* (Prozorova, 1996)

Conventus iturupensis Prozorova, 1996 (1997)b: 43-44, fig. 1d, 2d.

- Type locality: Russia, the Kurile Archipelago, the Iturup Island (the southern Kuriles), a spring swamp near the Glush river (Slavyanskaya Bay).
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Kurile Archipelago.
- Distribution in the former USSR: The south and middle Kurile Islands [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in permanent stagnant waters [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. conventus*.

116(312). *Euglesa (Conventus) occulta* (Prozorova, 1996)

Conventus occultus Prozorova, 1996 (1997)b: 42-43, fig. 1c, 2c.

- Type locality: Russia, the Kurile Archipelago, the Zelenyi Island (the southern Kuriles), a spring swamp near Utinoye Lake.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Kurile Archipelago.
- Distribution in the former USSR: The southern Kurile Islands: the Iturup and Zelenyi [Prozorova, 1996 (1997)b].
- Subregions: SF.
- Bionomics: Lives in permanent stagnant waters [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. conventus*.

116(313). *Euglesa (Conventus) subconventa* (Starobogatov et Streletzkaja, 1967)

Neopisidium (?) subconventus Starobogatov & Streletzkaja, 1967: 255, fig. 66.

- Type locality: Russia, Republic of Yakutia (Sakha), Quaternary deposits on the left bank of the Allaikha River (Indigirka River basin).
- Types: ZIN, Nos. 1–3 in systematic catalogue. The type series includes the holotype (a separate valve) and 31 paratypes.
- Global distribution: Endemic to Siberia.
- Distribution in the former USSR: The Kolyma River basin and the Kotokel' Lake in the Transbaikalia [Starobogatov & Streletzkaja, 1967; Semernoy *et al.*, 2013].
- Subregions: ES.
- Bionomics: Lives in lakes [Semernoy *et al.*, 2013].
- IUCN conservation status: Not assessed.
- Remark: This species was described on the basis of materials collected from the Quaternary deposits, but the authors mentioned some locations of extant representatives of the taxon [Starobogatov & Streletzkaja, 1967]. Nevertheless, this taxon has not been included in subsequent catalogues and taxo-

nomic revisions [Starobogatov *et al.*, 2004; Kantor & Sysoev, 2005; Kantor *et al.*, 2010] except that of Korniushev [1996]. It is absent also in the Graf & Cummings [2013] database.

116(314). *Euglesa (Conventus) subtilis* (Prozorova, 1996)

Conventus subtilis Prozorova, 1996 (1997)b: 41, fig. 1b, 2b.

- Type locality: Russia, the Kurile Archipelago, the Zelenyi Island (the southern Kuriles), spring swamp near Utinoye Lake.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Kurile Archipelago.
- Distribution in the former USSR: The southern Kurile Islands: the Iturup and Zelenyi [Prozorova, 1996 (1997)b].
- Subregions: SF.
- Bionomics: Lives in permanent stagnant waters [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. conventus*.

116(315). *Euglesa (Conventus) urinator* (Clessin, 1887)

Pisidium urinator Clessin, 1877a: 70, pl. 8, figs. 16-18.

- Type locality: Switzerland, the Zürichsee Lake, between 28 and 50 m of depth.
- Types: Not traced. Clessin's collection was in Stuttgart Museum, totally destroyed during 1939-1945 war [Dance, 1986].
- Global distribution: Northern Eurasia.
- Distribution in the former USSR: All northern part of the RAC territory; Ukraine [Stadnichenko, 1984; Starobogatov *et al.*, 2004].
- Subregions: NE, SE, WS, ES, NF.
- Bionomics: Lives in oligotrophic lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. conventus*.

117(316). *Euglesa (Conventus) raddei* (W. Dybowski, 1902)

Pisidium raddei W. Dybowski, 1902: 95.

- Type locality: Russia, southern part of the Baikal Lake, 2–60 m.
- Types: Not traced.
- Global distribution: The Baikalian Region and the Khubsugul Lake (Mongolia).
- Distribution in the former USSR: Widespread in the Baikal Lake [Slugina & Starobogatov, 1999]; known also from waterbodies of the Baikalian region [Semernoy *et al.*, 2013].
- Subregions: ES, BL.
- Bionomics: Occurs between 5 and 60 m of depth; on sandy and silt bottoms [Slugina & Starobogatov, 1999].
- IUCN conservation status: Not assessed.

117(317). *Euglesa (Conventus) dybowskii* (Slugina et Starobogatov in Slugina, Starobogatov et Korniushev, 1994)

Conventus dybowskii Slugina *et al.*, 1994: 144-145, fig. 16 G-I.

- Type locality: Russia, the Baikal Lake, Peshanaya Bay, 20 m.
- Types: ZIN, Nos. 1–3 in systematic catalogue. The type series includes the holotype and 28 paratypes.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The entire Baikal Lake [Slugina & Starobogatov, 1999].
- Subregions: BL.
- Bionomics: Occurs at depths down to 50 m; on mud, sand, charophyte algae [Slugina & Starobogatov, 1999].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *Pisidium raddei*.

**117(318). *Euglesa (Conventus) lamuana*
(Slugina et Starobogatov in Slugina,
Starobogatov et Korniushev, 1994)**

Conventus lamuanus Slugina *et al.*, 1994: 144, fig. 16 D-F.

- Type locality: Russia, the Baikal Lake, Dagarskaya Inlet, 9 m.
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and a single paratype.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The species has been reported from several points (Dagarskaya Inlet, Peschanaya Bay, near Birkhin Cape) of the lake [Slugina & Starobogatov, 1999].
- Subregions: BL.
- Bionomics: Occurs at depths between 9 and 20 m; on sandy substrates [Slugina & Starobogatov, 1999].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. raddei*.

Subgenus *Cyclocalyx* Dall, 1903

[= *Hinziana* Dolgin et Korniushev, 1993]

Type species: *Pisidium scholtzii* Clessin, 1873 (OD)

**118(319). *Euglesa (Cyclocalyx)*
obtusale (Lamarck, 1818)**

[= *Cyclas ovalis* Nilsson, 1822, non Férussac, 1807; *Pisidium obtusalastrum* Woodward, 1921]

Cyclas obtusale Lamarck, 1818: 559.

- Type locality: France.
- Types: Not traced.
- Global distribution: Eurasia, from Europe to Kamchatka [Graf & Cummings, 2013].
- Distribution in the former USSR: The European part of RAC and Siberia, Central Asia [Stadnichenko, 1984; Izzatulayev, 2002; Starobogatov *et al.*, 2004].
- Subregions: NE, SE, WS, ES, CA, NF.

- Bionomics: Lives in small permanent and semi-permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: LC (least concern).

**118(320). *Euglesa (Cyclocalyx)*
angarensis Slugina et Starobogatov in
Slugina, Starobogatov et Korniushev,
1994**

Euglesa (Cyclocalyx) angarensis Slugina *et al.*, 1994: 135-136, fig. 13 J-L.

- Type locality: Russia, the Irkutsk Region, Irkutsk reservoir off Cheremshanaya valley, 25 m.
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and two paratypes.
- Global distribution: Endemic to Siberia.
- Distribution in the former USSR: Irkutsk Reservoir in the Eastern Siberia [Slugina & Starobogatov, 1999].
- Subregions: ES.
- Bionomics: Recorded in a large artificial reservoir, on pebbles [Slugina & Starobogatov, 1999].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *Pisidium obtusale*.

**118(321). *Euglesa (Cyclocalyx)*
chaunensis Prozorova, 1988**

Euglesa (Cyclocalyx) chaunensis Prozorova, 1988a: 1578-1579, fig. 2 (ж, з, и).

- Type locality: Russia, Chukchi Autonomous District, in a small unnamed floodland-thermokarst lake in 20-km vicinity of Chaun station of the Institute of Biological Problems of the North, Far Eastern Branch of the USSR Academy of Sciences.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Russian Far East (northern part).
- Distribution in the former USSR: The Chaun River Basin [Starobogatov *et al.*, 2004].

- Subregions: NF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. obtusale*.

**118(322). *Euglesa (Cyclocalyx) cor*
(Starobogatov et Streletzkaja, 1967)**

Galileja lapponica cor Starobogatov & Streletzkaja, 1967: 251, fig. 60.

- Type locality: Russia, Chukchi Autonomous District, Quaternary deposits of the river Mal'yi Anyui, 28 kilometers upstream of the Anyuisk Settlement.
- Holotype: ZIN, Nos. 1-6 in systematic catalogue. The type series includes the holotype and nearly 40 paratypes.
- Global distribution: Endemic to the Asiatic Russia (northern part).
- Distribution in the former USSR: Siberia and north of the Russian Far East including Kamchatka and the Baikal Lake [Slugina *et al.*, 1994; Starobogatov *et al.*, 2004; Slugina & Starobogatov, 2004].
- Subregions: ES, BL, NF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. obtusale*. Kuiper [1987] synonymized it with *P. obtusale lapponica* (Clessin).

**118(323). *Euglesa (Cyclocalyx) dubrueili*
(Baudon, 1872)**

Pisidium dubrueili Baudon, 1872: 30, pl. 3, figs 1-4.

- Type locality: France, Picardy Region, Oise Department, Saint-Félix (approximately 49°20'55"N, 02°17'11"E).
- Types: Not traced. Clessin's collection was in Stuttgart Museum, totally destroyed during 1939-1945 war [Dance, 1986].
- Global distribution: Europe.
- Distribution in the former USSR: West and south of the European part of RAC [Stadnichenko, 1984; Starobogatov *et al.*, 2004].
- Subregions: NE, SE.

- Bionomics: Lives in lakes and small permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. obtusale*.

**118(324). *Euglesa (Cyclocalyx) fragilis*
(Clessin in Westerlund, 1873)**

Pisidium obtusale ♂ *fragile* Westerlund, 1873: 548.

- Type locality: Sweden ("Blekinge vid Ronneby i ett skogskärr nära landsvägen till Langasjö"; Westerlund, 1873: 548).
- Types: Not traced, possibly in SMF.
- Global distribution: Northern and Eastern Europe.
- Distribution in the former USSR: Basins of the Baltic Sea and the Dnieper River [Stadnichenko, 1984; Starobogatov *et al.*, 2004].
- Subregions: NE, SE.
- Bionomics: Lives in small permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. obtusale*.

**118(325). *Euglesa (Cyclocalyx)*
lapponica (Clessin in Westerlund, 1873)**

Pisidium scholtzi ♂ *lapponicum* Westerlund, 1873: 540.

- Type locality: Sweden.
- Types: ZMB, No. 17691a and 17691b. The type series includes the lectotype and 10 paralectotypes.
- Global distribution: Northern Eurasia.
- Distribution in the former USSR: Northern part of the European Russia and Siberia eastward to the Lena River [Starobogatov *et al.*, 2004].
- Subregions: NE, WS, ES.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. obtusale*. Kuiper [1987: 150] believed it to represent "the climatic form or subspecies" of the latter.

118(326). *Euglesa (Cyclocalyx) magnifica* (Clessin in Westerlund, 1873)

Pisidium obtusale β *magnificum* Westerlund, 1873: 547-548.

- Type locality: Sweden ["vid Göteborg, i Upland vid Harg"; Westerlund, 1873: 548].
- Lectotype: ZMB, No. 23468 (designated by Korniushev & Glaubrecht [2001]). Paralectotypes are in NMG [fige Kuiper, 1987].
- Global distribution: Northern and Eastern Europe.
- Distribution in the former USSR: Basins of the Baltic Sea and the Dnieper River [Stadnichenko, 1984; Starobogatov *et al.*, 2004].
- Subregions: NE, SE.
- Bionomics: Lives in small permanent and semi-permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Korniushev & Glaubrecht [2001] treated *E. magnifica* to be identical with *Eu. globulare*, whereas Graf & Cummings [2013] considered it as a synonym of *P. obtusale*.

118(327). *Euglesa (Cyclocalyx) ovata* Prozorova, 1988

Euglesa (Cyclocalyx) ovata Prozorova, 1988a: 1579, fig. 3 (г, д, е).

- Type locality: Russia, Chukchi Autonomous District, in a small unnamed floodland-thermokarst lake in 20-km vicinity of Chaun station of the Institute of Biological Problems of the North, Far Eastern Branch of the USSR Academy of Sciences.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Russian Far East (northern part).
- Distribution in the former USSR: The Chaun River Basin [Starobogatov *et al.*, 2004].
- Subregions: NF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. obtusale*.

118(328). *Euglesa (Cyclocalyx) scholtzii* (Clessin, 1873)

Pisidium scholtzii Clessin, 1873a: 23-24, pl.1, fig. 1.

- Type locality: Poland, vicinities of Wrocław City ("Strassengraben bei Breslau"; Clessin, 1873a).
- Types: Not traced. Clessin's collection was in Stuttgart Museum but totally destroyed during 1939-1945 war [Dance, 1986].
- Global distribution: Europe and Siberia.
- Distribution in the former USSR: The European part of RAC and the Western Siberia [Stadnichenko, 1984; Starobogatov *et al.*, 2004].
- Subregions: NE, SE, WS.
- Bionomics: Lives in small running and stagnant permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. obtusale*.

118(329). *Euglesa (Cyclocalyx) solida* (Clessin in Westerlund, 1873)

Pisidium obtusale ϵ *solidum* Westerlund, 1873: 548.

- Type locality: Sweden, in different localities ("Fuirendal Skov, skogsdam vid Holte station, Ellemose vid Valdbygård, torfgräv i Porsmosen vid Sveibaek nära Silkeborg"; Westerlund, 1873: 548).
- Types: Not traced, possibly in SMF.
- Global distribution: The North and Eastern Europe.
- Distribution in the former USSR: The European part of RAC [Stadnichenko, 1984; Starobogatov *et al.*, 2004].
- Subregions: NE, SE.
- Bionomics: Lives in small permanent and semi-permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. obtusale*.

119(330). *Euglesa (Cyclocalyx) hinzi* (Kuiper, 1975)

Pisidium hinzi Kuiper, 1975: 27-31, textfigs. 1-6, 28, 30.

- Type locality: Norway, “Buetjörni (= Davggeluobal), 147 m NN, Flachsee (tiefste Stelle 9 m), Varangerhalbiusel im NO Norwegens”.
- Holotype: SMF No. 192849.
- Global distribution: Northern Eurasia, from Scandinavia to Kamchatka [Graf & Cummings, 2013].
- Distribution in the former USSR: North of the European part of RAC and Siberia eastward to Kamchatka [Starobogatov *et al.*, 2004].
- Subregions: NE, WS, ES, NF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

119(331). *Euglesa (Cyclocalyx) cyclocalyx* Starobogatov et Budnikova, 1985

Euglesa (Cyclocalyx) cyclocalyx Starobogatov & Budnikova, 1985 (1986): 97-99, fig. 3.

- Type locality: Russia, the Kurile Archipelago, the Kunashir Island, the Lagunnoye Lake (approximately 44°03'33"N, 145°45'38"E).
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and a single paratype.
- Global distribution: Endemic to the Kurile Archipelago.
- Distribution in the former USSR: The Southern Kurile Archipelago, including the Urup Island [Prozorova, 1996 (1997)b; Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *Pisidium hinzi*.

119(332). *Euglesa (Cyclocalyx) gibba* Prozorova, 1988

Euglesa (Cyclocalyx) gibba Prozorova, 1988a: 1579, fig. 3 a, b, v.

- Type locality: Russia, Chukchi Autonomous

District, in a small unnamed floodland-thermokarst lake in 20-km vicinity of Chaun station of the Institute of Biological Problems of the North, Far Eastern Branch of the USSR Academy of Sciences.

- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Russian Far East (northern part).
- Distribution in the former USSR: The Chaun River Basin [Starobogatov *et al.*, 2004].
- Subregions: NF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *Pisidium hinzi*.

119(333). *Euglesa (Cyclocalyx) globosa* Prozorova, 1988

Euglesa (Cyclocalyx) globosa Prozorova, 1988a: 1577-1578, fig. 2 г, д, е.

- Type locality: Russia, Chukchi Autonomous District, in a small unnamed floodland-thermokarst lake in 20-km vicinity of Chaun station of the Institute of Biological Problems of the North, Far Eastern Branch of the USSR Academy of Sciences.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Russian Far East (northern part).
- Distribution in the former USSR: The Chaun River Basin [Starobogatov *et al.*, 2004].
- Subregions: NF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *Pisidium hinzi*.

119(334). *Euglesa (Cyclocalyx) jacutica* (Starobogatov et Streletzkaja, 1967)

Galileja jacutica Starobogatov & Streletzkaja, 1967: 253-254, fig. 63.

- Type locality: Russia, Republic of Yakutia (Sakha), the Kolyma River valley (lower part), Viska Karetovskaya below the Proryv Lake.
- Types: ZIN, Nos. 1-4 in systematic catalogue. The type series includes the holotype and nine paratypes.
- Global distribution: Endemic to Siberia.
- Distribution in the former USSR: The Kolyma River basin [Starobogatov *et al.*, 2004]. There is a sample of this species in ZIN collected in the northern Baikal Region (identified by Ya.I. Starobogatov)
- Subregions: ES.
- Bionomics: Lives in lakes and river channels [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *Pisidium hinzi*. In this case, however, the name *Eu. hinzi* becomes a junior synonym of *Eu. jacutica*.

119(335). *Euglesa (Cyclocalyx) johanseni* Dolgin et Korniushev, 1994

Euglesa johanseni Dolgin & Korniushev, 1994: 12-13, fig. 1 r.

- Type locality: Russia, Tyumen Region, the Yamal Peninsula, lake system Yarro-To, a small lake.
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and three paratypes.
- Global distribution: Endemic to Siberia (northern part).
- Distribution in the former USSR: The northern Siberia, from the Yamal Peninsula to the Yana River basin.
- Subregions: WS, ES.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. hinzi*.

120(336). *Euglesa (Cyclocalyx) gurvichi* Izzatullaev et Starobogatov in Izzatullaev, 1985

Euglesa (Cyclocalyx) gurvichi Izzatullaev, 1985: 243-244, fig. (A).

- Type locality: Kyrgyzstan, the Baka-

lyk Lake in vicinities of Sary-Chelek Lake.

- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and a single paratype.
- Global distribution: Central Asia (within boundaries of the ex-USSR).
- Distribution in the former USSR: Mountain regions of Kyrgyzstan and Tajikistan.
- Subregions: CA.
- Bionomics: Lives in mountain lakes [Izzatullaev, 1985].
- IUCN conservation status: Not assessed.
- Remark: Korniushev [1996] stated that anatomically this species is identical to the European representatives of *Cyclocalyx*. However, the author did not synonymize *Eu. gurvichi* with any of the European species.

121(337). *Euglesa (Cyclocalyx) japonica* (Pilsbry et Hirase, 1908)

Pisidium japonicum Pilsbry & Hirase, 1908: 35, fig. 1.

- Type locality: Japan, Hokkaido Island, Akkeshi, Kushiro, Yesso.
- Syntypes: ANSP No. 94744.
- Global distribution: Endemic to the Far East.
- Distribution in the former USSR: The Kurile Islands [Prozorova, 1996 (1997)a].
- Subregions: SF.
- Bionomics: Not studied.
- IUCN conservation status: Not assessed.
- Remark: Kuiper [1987] synonymized this species with *Pisidium obtusale* but Korniushev [1996] accepted it as a good species.

122(338). *Euglesa (Cyclocalyx) mitchelli* (Prashad, 1925)

Pisidium mitchelli Prashad, 1925: 419-421, pl. 7, figs. 11, 11a, pl. 8, fig. 10.

- Type locality: India, the Manasbal Lake.
- Holotype: Zoological Survey of India, Calcutta, M 12533/2.
- Global distribution: Central Asia and Kashmir [Graf & Cummings, 2013].
- Distribution in the former USSR: Central Asia [Izzatullaev, 2002].
- Subregions: CA.
- Bionomics: Not studied.
- IUCN conservation status: Not assessed.
- Remark: Kuiper [1987] synonymized this species with *P. obtusale*.

Subgenus *Henslowiana*
Servain, 1888

[= *Arcteuglesa* Pirogov et Starobogatov, 1974; *Amurohenslowiana* Korniushev, 1996; *Supiniana* Korniushev, 1996]

Type species *Tellina henslowana* Leach in Sheppard, 1823 (SD Boettger, 1961)

123(339). *Euglesa (Henslowiana) henslowana* (Leach in Sheppard, 1823)

[= *Cyclas obtusalis* Nilsson, 1822, non Lamarck, 1818; *Pera appendiculata* Turton, 1831; *Pisidium bonnafouxianum* de Cessac, 1855; *Pisidium henslowianum* var. *pulchrum* Clessin, 1879; *Pisidium henslowianum* var. *solidum* Clessin, 1879].

Tellina henslowana Sheppard, 1823: 150-151.

- Type locality: England, county of Suffolk, stream at Holbrook.
- Types: Lost [fide Killeen, 1992].
- Global distribution: Native range from Europe to Kamchatka. Introduced to the Laurentian Great Lakes in North America [Graf & Cummings, 2013].
- Distribution in the former USSR: The European part of RAC and Siberia eastward to Kamchatka [Stadnichenko, 1984; Starobogatov *et al.*, 2004].
- Subregions: NE, SE, WS, ES, NF.
- Bionomics: Lives in rivers and per-

manent floodplain waterbodies [Starobogatov *et al.*, 2004].

- IUCN conservation status: LC (least concern).

123(340). *Euglesa (Henslowiana) czerskii* (Starobogatov et Streletskaia, 1967)

[= *Galileja henslowana karetovensis* Starobogatov et Streletskaia, 1967]

Galileja czerskii Starobogatov & Streletskaia, 1967: 248.

- Type locality: Russia, Republic of Yakutia (Sakha), channel of the Kolyma River near Nizhniye Kresty (nowadays Cherskiy) settlement (appr. 68°45'06"N, 161°19'47"E).
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and five paratypes.
- Global distribution: Endemic to Siberia.
- Distribution in the former USSR: The Eastern Siberia, the Baikal Lake, the Kolyma River basin [Slugina *et al.*, 1994; Starobogatov *et al.*, 2004; Slugina & Starobogatov, 2004].
- Subregions: ES, BL.
- Bionomics: Lives in permanent floodplain waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *Pisidium henslowana*.

123(341). *Euglesa (Henslowiana) dupuyana* (Normand, 1854)

Pisidium dupuyanum Normand, 1854: 5.

- Type locality: France, Valenciennes.
- Types: Not traced.
- Global distribution: Europe and the Western Siberia.
- Distribution in the former USSR: The European part of RAC [Stadnichenko, 1984; Starobogatov *et al.*, 2004], the Western Siberia [Korniushev, 1996].
- Subregions: NE, SE, WS.
- Bionomics: Lives in rivers and permanent floodplain waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. henslowiana*.

**123(342). *Euglesa (Henslowiana)*
ostroumovi Pirogov et
Starobogatov, 1974**

Euglesa (Henslowiana) ostroumovi Pirogov & Starobogatov, 1974: 332-333, fig. 2, 12.

- Type locality: Russia, Astrakhan' Region, Kamyziak channel (the Volga delta), offshore, near Kirovskiy settlement, depth 1.5 m (approximately 45°51'20"N, 48°07'54"E).
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Eastern Europe and the Western Siberia.
- Distribution in the former USSR: The European part of RAC and south of the Western Siberia [Stadnichenko, 1984; Starobogatov *et al.*, 2004].
- Subregions: NE, SE, WS.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. henslowiana*.

**122(343). *Euglesa (Henslowiana)*
polonica Anistratenko et
Starobogatov, 1990 [1991]**

Euglesa (Henslowiana) polonica Anistratenko & Starobogatov, 1990 [1991]: 18, fig. 4.

- Type locality: Poland, vicinities of Poznań City, powiat Szem-Mastovo, in a spring.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Eastern Europe and Siberia.
- Distribution in the former USSR: The European part of RAC and Siberia eastward to Kamchatka [Starobogatov *et al.*, 2004].
- Subregions: NE, SE, WS, ES, NF.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. henslowiana*.

**123(344). *Euglesa (Henslowiana)*
securridens Krivosheina, 1978**

Euglesa (Henslowiana) securridens Krivosheina, 1978: 1495, textfig. (10).

- Type locality: Eastern Kazakhstan, the Bukhtarma River mouth, mountain-valley part of Bukhtarma Water Reservoir.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to Siberia.
- Distribution in the former USSR: The upper Irtysh basin within boundaries of Kazakhstan [Starobogatov *et al.*, 2004].
- Subregions: WS.
- Bionomics: Lives in lakes and small rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. henslowiana*.

**123(345). *Euglesa (Henslowiana)*
subhenslowiana Krivosheina, 1978**

Euglesa (Henslowiana) subhenslowiana Krivosheina, 1978: 1495-1496, textfig. (11).

- Type locality: Eastern Kazakhstan, lake part (Kurchum area) of Bukhtarma Water Reservoir.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to Siberia.
- Distribution in the former USSR: The upper Irtysh basin within boundaries of Kazakhstan [Starobogatov *et al.*, 2004].
- Subregions: WS.
- Bionomics: Lives in lakes and small rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. henslowiana*.

**123(346). *Euglesa (Henslowiana)*
suecica (Clessin in Westerlund, 1873)**

Pisidium henslowianum β *suecicum* Westerlund, 1873: 536-537.

- Type locality: Sweden ("vid Göteborg i Qvillebäcken"; Westerlund, 1873: 537).
- Types: Not traced, possibly in SMF.
- Global distribution: Northern Eurasia.

- Distribution in the former USSR: The European part of RAC and Siberia eastward to Kamchatka [Starobogatov *et al.*, 2004].
- Subregions: NE, SE, WS, ES, NF.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. henslowiana*.

124(347). *Euglesa (Henslowiana) chankensis* (Likharev in Zhadin, 1952)

Pisidium (Eupisidium) chankense Zhadin, 1952: 331, fig. 300.

- Type locality: Russia, the Primorye Territory, the Khanka Lake, 2-5 m.
- Lectotype: ZIN, No. 5 in systematic catalogue [Prozorova *et al.*, 1996].
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Khanka Lake basin [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives on sandy-mud and sandy substrates [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

124(348). *Euglesa (Henslowiana) corbiculaeformis* (Korniushin, Moskvicheva et Starobogatov in Prozorova, Starobogatov et Korniushin, 1996)

Henslowiana corbiculaeformis Prozorova *et al.*, 1996: 1323, figs. 1 6, 2 (2).

- Type locality: Russia, Primorye Territory, the Amur River mouth opposite Pronche mines.
- Types: ZIN, Nos. 1, 2, 5-16 in systematic catalogue. The type series includes the holotype and nearly 70 paratypes (intact shells and separate valves).
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Ussuri River and, probably, the middle and lower parts of the Amur basin [Starobogatov *et al.*, 2004].

Ussuri River and, probably, the middle and lower parts of the Amur basin [Starobogatov *et al.*, 2004].

- Subregions: SF.
- Bionomics: Lives in rivers and running lakes, on sandy-pebble substrates with a touch of mud [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *Pisidium chankense*.

124(349). *Euglesa (Henslowiana) costifera* (Korniushin et Starobogatov in Prozorova, Starobogatov et Korniushin, 1996)

Henslowiana costifera Prozorova *et al.*, 1996: 1323-1324, figs. 1 r, 2(4).

- Type locality: Russia, Primorye Territory, the Amur River mouth opposite Pronche mines.
- Types: ZIN, Nos. 1-16 in systematic catalogue. The type series includes the holotype and 60 paratypes.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The middle and lower Amur basin including the Khanka Lake [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in rivers and large running lakes, on sandy-pebble substrates [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. chankense*.

124(350). *Euglesa (Henslowiana) falsicorbula* (Prozorova in Prozorova, Starobogatov et Korniushin, 1996)

Henslowiana falsicorbula Prozorova *et al.*, 1996: 1322-1323, figs. 1 a, 2 (1).

- Type locality: Russia, Primorye Territory, Ussuri River near Lesozavodsk Town (approximately 45°28'00"N, 133°23'00"E).
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Russian Far East.

- Distribution in the former USSR: The Ussuri River and, probably, middle and lower parts of the Amur basin [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in rivers and running lakes, on sandy-pebble substrates with a touch of mud [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. chan-kense*.

125(351). *Euglesa (Henslowiana) lilljeborgii* (Clessin in Esmark et Hoyer, 1886)

[= *Pisidium scutellatum* Sterki, 1896; *Pisidium lilljeborgi* f. *cristatum* Sterki, 1928]

Pisidium lilljeborgii Esmark & Hoyer, 1886: 119-120.

- Type locality: Northern Norway, in different localities ("Gåsö bei Grötö, Skotstinder bei Grötö, Trondenaes, Målselvdalen, Tromsö, Jarfjord").
- Types: Not traced.
- Global distribution: Holarctic, at higher latitudes and altitudes [Graf & Cummings, 2013].
- Distribution in the former USSR: Recorded from lakes of the northern Europe [Starobogatov *et al.*, 2004]; Armenia [Akramowski, 1976]; the northern Kurile Islands [Kuiper, 1998]. Possibly, the species is widespread in the northern part of RAC.
- Subregions: NE, CT, WS, ES, NF, SF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

125(352). *Euglesa (Henslowiana) elegantula* Starobogatov et Budnikova, 1985

Euglesa (Costopisidium) elegantula Starobogatov & Budnikova, 1985 (1986): 105. fig. 9.

- Type locality: Russia, the Kurile Archipelago,

the Kunashir Island, the Lagunnoye Lake (approximately 44°03'33"N, 145°45'38"E).

- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and a single paratype.
- Global distribution: Endemic to the Kurile Archipelago.
- Distribution in the former USSR: The southern Kurile Archipelago (the Kunashir Island) [Prozorova, 1996 (1997)b; Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *Pisidium lilljeborgi*.

125(353). *Euglesa (Henslowiana) formosa* Prozorova, 1988

Euglesa (Arcteuglesa) formosa Prozorova, 1988a: 1576-1577, fig. 1 r, d, e.

- Type locality: Russia, Chukchi Autonomous District, in a small unnamed floodland-thermokarst lake in 20-km vicinity of Chaun station of the Institute of Biological Problems of the North, Far Eastern Branch of the USSR Academy of Sciences.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Russian Far East (northern part).
- Distribution in the former USSR: The Chaun River Basin [Starobogatov *et al.*, 2004].
- Subregions: NF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. lilljeborgi*.

125(354). *Euglesa (Henslowiana) glaciata* Prozorova, 1988

Euglesa (Arcteuglesa) glaciata Prozorova, 1988a: 1577, fig. 2 a, b, v.

- Type locality: Russia, Chukchi Autonomous

District, in a small unnamed floodland-thermokarst lake in 20-km vicinity of Chaun station of the Institute of Biological Problems of the North, Far Eastern Branch of the USSR Academy of Sciences.

- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Russian Far East (northern part).
- Distribution in the former USSR: The Chaun River Basin [Starobogatov *et al.*, 2004].
- Subregions: NF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. lilljeborgi*.

125(355). *Euglesa (Henslowiana) izzatullaevi* Zatravkin, 1987

Euglesa (Arctoeuglesa) izzatullaevi Zatravkin, 1987: 52-53, textfig. (IV).

- Type locality: Russia, the Khabarovsk Territory, Verkhnebureinsky District, first floodland lake of the Bureya River near Chekunda settlement (old settlement), approximately 50°52'00"N, 132°15'30"E.
- Types: ZIN, Nos. 1 and 4 in systematic catalogue. The type series includes the holotype and 11 separate valves of paratypes.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The lower Amur basin [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. lilljeborgi*.

125(356). *Euglesa (Henslowiana) kunasiriensis* (Mori, 1938)

Pisidium pulchellum kunasiriense Mori, 1938b: 255, 259, 269, pl. 9, fig. 11 a-d.

- Type locality: Russia, the Kurile Archipelago, the Kunashir Island ("Kunasiri-Zima").

- Holotype: Ôtsu Hydrobiological Station (nowadays – Center for Ecological Research, Kyoto University; fide Haszprunar [2014]).
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Kurile Archipelago, the Kunashir Island [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *Pisidium lilljeborgi*.

125(357). *Euglesa (Henslowiana) kurilica* Starobogatov et Budnikova, 1985

Euglesa (Costopisidium) kurilica Starobogatov & Budnikova, 1985 (1986): 102-104, fig. 7.

- Type locality: Russia, the Kurile Archipelago, the Kunashir Island, the Lagunnoye Lake (approximately 44°03'33"N, 145°45'38"E).
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and a single paratype.
- Global distribution: Endemic to the Kurile Archipelago.
- Distribution in the former USSR: The southern Kurile Archipelago (Kunashir Island) [Prozorova, 1996 (1997)b; Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. lilljeborgi*.

125(358). *Euglesa (Henslowiana) kurodai* (Mori, 1938)

Pisidium kurodai Mori, 1938b: 255, 258, 262, pl. 7, fig. 4.

- Type locality: Japan (Toro-Numa, Hokkaido Island) and Russia, The Kurile Archipelago ("Etorohu-Zima" [= the Iturup Island]).
- Holotype: Ôtsu Hydrobiological Station (nowadays – Center for Ecological Research, Kyoto University; fide Haszprunar [2014]).

- Global distribution: The Far East.
- Distribution in the former USSR: The southern Kurile Archipelago (the Kunashir and Iturup) [Prozorova, 1996 (1997)a; Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. lilljeborgi*.

**125(359). *Euglesa (Henslowiana) morii*
Starobogatov et Budnikova, 1985**

Euglesa (Costopisidium) morii Starobogatov & Budnikova, 1985 (1986): 104-105, fig. 8.

- Type locality: Russia, the Kurile Archipelago, the Kunashir Island, the Lagunnoye Lake (approximately 44°03'33"N, 145°45'38"E).
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and a single paratype.
- Global distribution: Endemic to the Kurile Archipelago.
- Distribution in the former USSR: The southern Kurile Archipelago (the Kunashir Island) [Prozorova, 1996 (1997)b; Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. lilljeborgi*.

**125(360). *Euglesa (Henslowiana)*
nordenskioldi (Clessin in Westerlund,
1877)**

Pisidium nordenskioldi Westerlund, 1877: 68-69, pl., fig. 20.

- Type locality: Russia, the Krasnoyarsk Territory (northern part). The syntypes were collected in several points ("Jenissei, vid Dudino, (lat. 69°15'), Surgutskoj (lat. 62°50'), Worogowa Selo (lat. 69°50'); Westerlund, 1877: 69).
- Types: Not traced. Possibly, in NMG or SMNH.

- Global distribution: Endemic to Siberia.
- Distribution in the former USSR: Northern parts of the Western and Eastern Siberia [Korniushin, 1996; Dolgin, 2001].
- Subregions: WS, ES.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. lilljeborgi*.

**125(361). *Euglesa (Henslowiana) ruut*
Timm, 1975**

Euglesa ruut Timm, 1975: 225, 227, fig. 9.

- Type locality: Estonia, the Võrtsjärv Lake.
- Types: Võrtsjärv Limnological Station. The type series includes the holotype and two paratypes.
- Global distribution: Eastern Europe.
- Distribution in the former USSR: The European part of RAC [Stadnichenko, 1984; Pirogov *et al.*, 1994; Starobogatov *et al.*, 2004].
- Subregions: NE, SE.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. lilljeborgi*.

**125(362). *Euglesa (Henslowiana)*
semenkevitschi (Lindholm, 1909)**

Pisidium nordenskioldi var. *semenkevitschi* Lindholm, 1909: 86, Taf. 2, fig. 49-50.

- Type locality: Russia, the Baikal Lake, Angarskiy Sor.
- Lectotype: ZIN, No. 6 in systematic catalogue. There are 58 paralectotypes in ZIN collection (Nos. 1, 7-10).
- Global distribution: Endemic to the Baikal region.
- Distribution in the former USSR: The entire Baikal Lake [Slugina & Starobogatov, 1999] and Transbaikalia [Semernoy *et al.*, 2013].
- Subregions: ES, BL.
- Bionomics: Shallow water species, prefer

to inhabit sandy bottoms [Starobogatov *et al.*, 2004].

- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. lilljeborgi*.

125(363). *Euglesa (Henslowiana) sibirica* (Clessin in Westerlund, 1877)

Pisidium sibiricum Westerlund, 1877: 69, pl., fig. 21.

- Type locality: Russia, Krasnoyarsk Territory (northern part), Yenisei River near Vorogovo Settlement ("Jenissei, Worogowa Selo (lat. 60°50')"; Westerlund, 1877: 69).
- Types: Not traced. Possibly, in NMG or SMNH.
- Global distribution: Endemic to Siberia.
- Distribution in the former USSR: Northern part of the Western and Eastern Siberia [Korniushin, 1996; Starobogatov *et al.*, 2004].
- Subregions: WS, ES.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. lilljeborgi*.

125(364). *Euglesa (Henslowiana) uenoi* (Mori, 1938)

Pisidium uenoi Mori, 1938b: 258, 265, pl. 8, fig. 8.

- Type locality: Russia, the Kurile Archipelago, the Iturup Island (= "Etorohu-Zima").
- Holotype: Ôtsu Hydrobiological Station (nowadays – Center for Ecological Research, Kyoto University; fide Haszprunar [2014]).
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Kurile Archipelago, the Iturup Island [Prozorova, 1996 (1997)a].
- Subregions: SF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. lilljeborgi*.

126(365). *Euglesa (Henslowiana) supina* (A. Schmidt, 1850)

[= *Pisidium henslowianum* var. *inappendiculatum* Moquin-Tandon, 1855]

Pisidium supinum Schmidt, 1850: 119.

- Type locality: Germany, "Naumburg a.d.S., Panke bei Berlin".
- Types: Not traced.
- Global distribution: Native to Europe and Central Asia. Introduced to the Laurentian Great Lakes [Graf & Cummings, 2013].
- Distribution in the former USSR: The European part of RAC [Stadnichenko, 1984; Starobogatov *et al.*, 2004].
- Subregions: NE, SE.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: LC (least concern).

126(366). *Euglesa (Henslowiana) baudonii* (Clessin, 1873)

Pisidium baudonii Clessin, 1873a: 83-85 (nom. nov. pro *Pisidium henslowianum* sensu Baudon, 1857, non Leach in Sheppard, 1823).

- Type locality: France, Oise Departement, Mouy Town.
- Types: Not traced.
- Global distribution: Europe.
- Distribution in the former USSR: The European part of RAC [Starobogatov *et al.*, 2004].
- Subregions: NE, SE.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *Pisidium supinum*.

126(367). *Euglesa (Henslowiana) conica* (Baudon, 1857)

Pisidium conicum Baudon, 1857: 50-52, pl. 5, fig. B.

- Type locality: France, vicinities of Valenciennes and Troyes.

- Types: Not traced.
- Global distribution: Europe and Central Asia.
- Distribution in the former USSR: The Baltic Sea basin, Ukraine, and Central Asia [Stadnichenko, 1984; Izzatullaev, 2002; Starobogatov *et al.*, 2004].
- Subregions: NE, SE, CA.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. supinum*.

126(368). *Euglesa (Henslowiana) infirmicostata* Pirogov et Starobogatov, 1974

Euglesa (Costopisidium) infirmicostata Pirogov & Starobogatov, 1974: 330, fig. 2, 5.

- Type locality: Russia, Astrakhan' Region, the Volga River avandelta, offshore, Chernovoy Ochirkin Island.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Eastern Europe (south).
- Distribution in the former USSR: The Volga delta, the Teterev River in Ukraine [Stadnichenko, 1984; Starobogatov *et al.*, 2004].
- Subregions: SE.
- Bionomics: Lives in rivers and river channels [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. supinum*.

126(369). *Euglesa (Henslowiana) tenuicostulata* Krivosheina, 1978

Euglesa (Cymatocyclas) tenuicostulata Krivosheina, 1978: 1498, textfig. (14).

- Type locality: Kazakhstan, East Kazakhstan Region, Volchiy Cape, lake part of Bukhtarma Water Reservoir (Upper Irtysh basin).
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and a single paratype.

- Global distribution: Europe and the South Siberia.
- Distribution in the former USSR: The European part of RAC, southern part of the Western Siberia [Starobogatov *et al.*, 2004], the Balkhash Lake (ZIN collection; identified by A. Korniushev).
- Subregions: NE, SE, WS, CA.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. supinum*.

127(370). *Euglesa (Henslowiana) trigonoides* (W. Dybowski, 1902)

[= *Pisidium korotnevi* Kozhov, 1936, partim]

Pisidium trigonoides W. Dybowski, 1902: 95.

- Type locality: Russia, south-eastern part of the Baikal Lake.
- Lectotype: ZMB, No. 10823a (see Korniushev & Glaubrecht, 2001 for details).
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The entire Baikal Lake [Slugina & Starobogatov, 1999].
- Subregions: BL.
- Bionomics: Lives on sandy substrates [Slugina & Starobogatov, 1999].
- IUCN conservation status: Not assessed.

128(371). *Euglesa (Henslowiana) waldeni* (Kuiper, 1975)

Pisidium waldeni Kuiper, 1975: 31-36, textfigs. 13, 15-17, 19, 21-26, 30.

- Type locality: Northern Norway ("Buetjörni (= Davggeluobal), 147 m NN, Flachsee (tiefste Stelle 9 m), Varangerhalbiusel").
- Holotype: SMF No. 192851.
- Global distribution: Northern Eurasia.
- Distribution in the former USSR: The European part of RAC and Siberia [Stad-

nichenko, 1984; Dolgin, 2001; Starobogatov *et al.*, 2004].

- Subregions: NE, SE, WS, ES.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: LC (least concern).

Subgenus *Hiberneuglesa*
Starobogatov in Dolgin, 1983

Type species: *Pisidium hibernicum* Westerlund, 1894 (OD)

129(372). *Euglesa (Hiberneuglesa) hibernica* (Westerlund, 1894)

Pisidium (Fossarina) hibernicum Westerlund, 1894: 205.

- Type locality: Ireland, Cork County near Gleengariff village (approximately 51°45'00"N 09°33'17"E).
- Types: Not traced. Possibly, in NMG.
- Global distribution: Europe.
- Distribution in the former USSR: Central part of the Dnieper basin [Stadnichenko, 1984; Starobogatov *et al.*, 2004]. However, Korniushev [1996] stated that *Eu. hibernica* occurs in Scandinavia only (ignoring the fact that the type locality of it lies in Ireland).
- Subregions: NE, SE.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

129(373). *Euglesa (Hiberneuglesa) anjuica* Starobogatov et Korniushev, 1989

Euglesa (Hiberneuglesa) anjuica Starobogatov & Korniushev, 1989: 16. fig. 2 (3), 3 (u).

- Type locality: Russia, the Chukchi Peninsula, Quaternary deposits of the basin of the river Malyy Anyui, 28 km from Anyuisk settlement.
- Types: ZIN, Nos. 1 and 2 in systematic

catalogue. The type series includes the holotype and four paratypes (separate valves).

- Global distribution: Starobogatov *et al.* [2004] stated that this species is distributed in Europe, and Lyubarskaya *et al.* [2005] recorded it from Tatarstan Republic, south-east of the European Russia. However Korniushev [1996] mentioned that *Eu. anjuica* is known from the type locality only. There are no specimens of *Eu. anjuica* from Europe in ZIN. Thus, the range of this species as well as its presence in the recent malacofauna are still not clear.

- Distribution in the former USSR: See above.

- Subregions: NE (?), SE (?), ES.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *Pisidium hibernicum*.

129(374). *Euglesa (Hiberneuglesa) bodamica* Starobogatov et Korniushev, 1989

Euglesa (Hiberneuglesa) bodamica Starobogatov & Korniushev, 1989: 16, fig. 1 (6), 3 d.

- Type locality: Germany, Bavaria, the Bodensee [= Constance] Lake near Nonnenhorn (approximately 47°34'20"N, 09°36'30"E).
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Europe and Siberia.
- Distribution in the former USSR: North of the European part of RAC, the Western Siberia [Starobogatov *et al.*, 2004].
- Subregions: NE, WS.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. hibernicum*.

129(375). *Euglesa (Hiberneuglesa) kolhymensis* (Starobogatov et Streletskaia, 1967)

Odhnepisidium (?) *kolhymense* Starobogatov & Streletskaia, 1967: 256-257, fig. 70.

- Type locality: Russia, the Chukchi Penin-

sula, Quaternary deposits of the basin of the river Malyi Anyui, 28 km from Anyuisk settlement.

- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype (separate valve) and 9 paratypes (separate valves).
- Global distribution: Endemic to the Northern Siberia.
- Distribution in the former USSR: The Kolyma River basin [Starobogatov *et al.*, 2004].
- Subregions: ES.
- Bionomics: Lives in lakes and river channels [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. hibernicum*.

129(376). *Euglesa (Hiberneuglesa) kuiperi* (Starobogatov et Streletzkaja, 1967)

Galileja kuiperi Starobogatov & Streletzkaja, 1967: 256-257, fig. 70.

- Type locality: Russia, the Kamchatka Peninsula, lake 8 km northwestward from Achayvayam Settlement (approximately 61°01'40"N, 170°26'10"E).
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and a single paratype.
- Global distribution: Endemic to the Northern Siberia.
- Distribution in the former USSR: Waterbodies of the Koryak Upland [Starobogatov *et al.*, 2004].
- Subregions: ES, NF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. hibernicum*.

129(377). *Euglesa (Hiberneuglesa) lindholmi* (Starobogatov et Streletzkaja, 1967)

Odhneripisidium lindholmi Starobogatov & Streletzkaja, 1967: 256, fig. 69.

- Type locality: Russia, Republic of Yakutia

(Sakha), Quaternary deposits on left bank of the Allaikha River (Indigirka River basin).

- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype (a separate valve) and three separate valves of paratypes.
- Global distribution: Endemic to the Northern Siberia.
- Distribution in the former USSR: The Kolyma River basin [Starobogatov *et al.*, 2004].
- Subregions: ES.
- Bionomics: Lives in lakes and river channels [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. hibernicum*.

129(378). *Euglesa (Hiberneuglesa) normalis* (Stelfox, 1929)

Pisidium hibernicum var. *normalis* Stelfox, 1929: 9.

- Type locality: England, Warwickshire County, Windley Creek, Sutton Coldfield.
- Types: Not traced.
- Global distribution: Europe.
- Distribution in the former USSR: Basin of the Baltic Sea, the central Dnieper basin [Starobogatov *et al.*, 2004].
- Subregions: NE, SE.
- Bionomics: Lives in rivers and permanent floodplain waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. hibernicum*.

129(379). *Euglesa (Hiberneuglesa) parvula* (Clessin in Westerlund, 1873)

[= *Pisidium parvulum* var. *martensi* Clessin, 1873]

Pisidium parvulum Westerlund, 1873: 553.

- Type locality: Sweden, Ronneby (location of the lectotype).
- Types: ZIN, Nos. 1–7 in systematic catalogue. There are the lectotype and 21 paralectotypes in ZIN. Other parts of the type series (paralectotypes) are in SMF, ZMB, NMG, and SMNH collections [fide Kornushin & Glaubrecht. 2001].

- Global distribution: Europe and Siberia
- Distribution in the former USSR: The European part of RAC and the Western Siberia [Starobogatov *et al.*, 2004].
- Subregions: NE, SE, WS.
- Bionomics: Lives in rivers and permanent floodplain waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Korniushev & Glaubrecht [2001] as well as Graf & Cummings [2013] considered this species as a synonym of *P. hibernicum*.

129(380). *Euglesa (Hiberneuglesa) portentosa* (Stelfox in Ellis, 1940)

Pisidium hibernicum var. *portentosa* Ellis, 1940: 77.

- Type locality: England, County Dawn.
- Holotype: BMNH.
- Global distribution: Europe and Siberia
- Distribution in the former USSR: The European part of RAC and the Western Siberia [Starobogatov *et al.*, 2004].
- Subregions: NE, SE, WS.
- Bionomics: Lives in rivers and permanent floodplain waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. hibernicum*.

129(381). *Euglesa (Hiberneuglesa) subhibernica* Starobogatov et Korniushev, 1989

Euglesa (Hiberneuglesa) subhibernica Starobogatov & Korniushev: 1989: 15, fig. 1 4, 3, 6.

- Type locality: Sweden, Ronneby.
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and four paratypes.
- Global distribution: Europe and Siberia
- Distribution in the former USSR: North of the European part of RAC and the Western Siberia [Starobogatov *et al.*, 2004].
- Subregions: NE, WS.
- Bionomics: Lives in rivers and permanent

floodplain waterbodies [Starobogatov *et al.*, 2004].

- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. hibernicum*.

**Subgenus *Pseudeupera*
Germain, 1913**

Type species: *Pisidium landeroini* Germain, 1909 (OD)

130(382). *Euglesa (Pseudeupera) subtruncata* (Malm, 1855)

[= *Pisidium alticola* Suter, 1889; *P. landeroini* Germain, 1909; *P. marci* Sterki, 1909; *P. overi* Sterki, 1913; *P. apiculatum* Sterki, 1922; *Euglesa incrassata* Ellis, 1940]

Pisidium subtruncatum Malm, 1855: 92, fig.

- Type locality: Sweden, near Qvillebäcken (most probably, a pipe of the same name situated in Gothenburg City).
- Types: Not traced.
- Global distribution: Palearctic as well as western and central North America [Graf & Cummings, 2013].
- Distribution in the former USSR: Palearctic part of RAC [Starobogatov *et al.*, 2004].
- Subregions: NE, SE, WS, ES, CA.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

130(383). *Euglesa (Pseudeupera) alta* (Mori, 1938)

Pisidium subtruncatum altum Mori, 1938b: 255, 259, 269, pl. 9, fig. 12.

- Type locality: Japan, Hokkaido, the Akan Lake (approximately 43°27'06"N, 144°05'55"E).
- Holotype: Ôtsu Hydrobiological Station (nowadays – Center for Ecological Research, Kyoto University; fide Haszprunar [2014]).

- Global distribution: The Far East (Northern Japan, the Kurile Islands).
- Distribution in the former USSR: The southern Kurile Islands [Prozorova, 1996 (1997)a; Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *Pisidium subtruncatum*.

130(384). *Euglesa (Pseudeupera) altaica* (Krivosheina, 1979)

Neopisidium altaicum Krivosheina, 1979b: 603-604, textfig. (A).

- Type locality: Kazakhstan, Eastern Kazakhstan Region, vicinities of Leninogorsk City, Pennoye Bog.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: The Southern Siberia (Altay).
- Distribution in the former USSR: The Southern Altay [Starobogatov *et al.*, 2004].
- Subregions: WS.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. subtruncatum*.

130(385). *Euglesa (Pseudeupera) arcidens* Krivosheina, 1978

Euglesa (Pseudeupera) arcidens Krivosheina, 1978: 1492-1493, textfig. (6).

- Type locality: Kazakhstan, Eastern Kazakhstan Region, dam of the Bobrovka River at Bobrovka village.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Europe and the Western Siberia [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: The European part of the RAC, the Western Siberia [Starobogatov *et al.*, 2004].
- Subregions: NE, SE, WS.

- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. subtruncatum*.

130(386). *Euglesa (Pseudeupera) humerosa* Pirogov et Starobogatov in Timm, 1975

Euglesa humerosa Timm, 1975: 221, 223, fig. 7.

- Type locality: Russia, Astrakhan' Region, the Volga River delta near Baranovka village.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Europe [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: The European part of RAC [Stadnichenko, 1984; Starobogatov *et al.*, 2004].
- Subregions: NE, SE.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. subtruncatum*.

130(387). *Euglesa (Pseudeupera) humiliumbo* Krivosheina, 1978

Euglesa (Pseudeupera) humiliumbo Krivosheina, 1978: 1491-1492, textfig. (4).

- Type locality: Kazakhstan, Eastern Kazakhstan Region, dam of the Bobrovka River at Bobrovka village.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Europe and the Western Siberia [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: The European part of RAC, the Western Siberia [Starobogatov *et al.*, 2004].
- Subregions: NE, SE, WS.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. subtruncatum*.

130(388). *Euglesa (Pseudeupera) mucronata* (Clessin in Westerlund, 1877)

Pisidium mucronatum Westerlund, 1877: 71.

- Type locality: Russia, the Krasnoyarsk Territory, vicinities of Nizhny Inbatsk Settlement ("Jenissei, Dudino (lat. 69°15') samt Nischnij Inbatsk (63°50')"; Westerlund, 1877: 71].
- Types: Not traced, possibly in NMG or SMNH.
- Global distribution: Northern Asia.
- Distribution in the former USSR: The Western and Eastern Siberia, the Baikal Lake, the Kamchatka Peninsula [Slugina *et al.*, 1994; Starobogatov *et al.*, 2004; Slugina & Starobogatov, 2004].
- Subregions: WS, ES, BL, NF.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. subtruncatum*.

130(389). *Euglesa (Pseudeupera) ovatotrigona* (Krivosheina, 1979)

Neopisidium ovatotrigonum Krivosheina, 1979b: 604, textfig. (B).

- Type locality: Kazakhstan, Eastern Kazakhstan Region, vicinities of Leninogorsk City, Pennoye Bog.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Southwestern Siberia (Altay).
- Distribution in the former USSR: Type locality [Krivosheina, 1979].
- Subregions: WS.
- Bionomics: Registered in bogs [Krivosheina, 1979].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. subtruncatum*.

130(390). *Euglesa (Pseudeupera) pallida* (Gassies, 1855)

Pisidium pallidum Gassies, 1855: 116, pl. 1, fig. 10.

- Type locality: Southwestern France, "à Pourret et Saint-Marcel près d'Agen, au Sud".

- Syntypes: MNHN (2 syntypes), MCZ No. 19730.
- Global distribution: Europe, Northern and Central Asia.
- Distribution in the former USSR: The European part of RAC, south of the Western Siberia, Altay, Central Asia [Stadnichenko, 1984; Izzatullaev, 2002; Starobogatov *et al.*, 2004].
- Subregions: NE, SE, WS, CA.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. subtruncatum*.

130(391). *Euglesa (Pseudeupera) parallelodon* Krivosheina, 1978

Euglesa (Pseudeupera) parallelodon Krivosheina, 1978: 1494, textfig. (8).

- Type locality: Kazakhstan, Eastern Kazakhstan Region, dam of the Bobrovka River at Bobrovka village.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Europe, the Western Siberia.
- Distribution in the former USSR: The European part of RAC, south of the Western Siberia, Altay [Starobogatov *et al.*, 2004].
- Subregions: NE, SE, WS.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. subtruncatum*.

130(392). *Euglesa (Pseudeupera) pirogovi* Starobogatov in Stadnichenko, 1984

[= *Euglesa difficilis* Pirogov et Starobogatov in Timm, 1975, non Popova et Starobogatov in Popova, Devjatkin et Starobogatov, 1970; *Euglesa astrahanica* Pirogov et Starobogatov in Timm, 1984, nom. nov. pro *E. difficilis* Pirogov et Starobogatov in Timm, 1975].

Euglesa (Henslowiana) pirogovi Stadnichenko, 1984: 302, 305, fig. (nom. nov. pro *Euglesa difficilis*).

lis Pirogov et Starobogatov in Timm, 1975, non Popova et Starobogatov, 1970).

- Type locality: Russia, Astrakhan' Region, floodplain of the Volga delta in the Astrakhan' Nature Reserve.
- Holotype: Not traced (ZIN?).
- Global distribution: Europe, the Western Siberia.
- Distribution in the former USSR: The European part of RAC, south of the Western Siberia [Starobogatov *et al.*, 2004].
- Subregions: NE, SE, WS.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Two substituting names for *Euglesa difficilis* Pirogov et Starobogatov in Timm, 1975, non *Euglesa difficilis* Popova et Starobogatov in Popova, Devjatkin et Starobogatov, 1970 (a fossil species) were proposed in 1984. Both names were published in books with only year at the title page as the date. Nevertheless, the book of Stadnichenko (signed for the printing on 22.12.1983) seems to appear earlier than that of Timm (signed for the printing on 10.09.1984). Thus *Euglesa (Henslowiana) pirogovi* becomes a senior objective synonym of *Euglesa astrachanica*. Graf & Cummings [2013] considered this species (referred to as *Eu. astrachanica*) as a synonym of *Pisidium subtruncatum*.

130(393). *Euglesa (Pseudeupera) poltavica* (Korniushin, 1991)

Cingulipisidium (Potamopisidium) poltavicum Korniushin, 1991: 17-19, fig. 1 (5-7).

- Type locality: Ukraine, vicinities of Poltava City, the Vorskla River.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Eastern Europe.
- Distribution in the former USSR: Basin of the Dnieper River [Starobogatov *et al.*, 2004].
- Subregions: SE.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] consid-

ered this species as a synonym of *P. subtruncatum*.

130(394). *Euglesa (Pseudeupera) rotundotrigona* Krivosheina, 1978

Euglesa (Pseudeupera) rotundotrigona Krivosheina, 1978: 1492, textfig. (5).

- Type locality: Kazakhstan, Eastern Kazakhstan Region, dam of the Bobrovka River at Bobrovka village.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Europe, the Western Siberia.
- Distribution in the former USSR: The European part of RAC, south of the Western Siberia [Stadnichenko, 1984; Starobogatov *et al.*, 2004].
- Subregions: NE, SE, WS.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. subtruncatum*.

130(395). *Euglesa (Pseudeupera) starobogatovi* Krivosheina, 1978

Euglesa (Pseudeupera) starobogatovi Krivosheina, 1978: 1491, textfig. (3).

- Type locality: Kazakhstan, Eastern Kazakhstan Region, debris of the Ul'ba River near Ul'ba Perevalochnaya railway station.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Europe, the Western Siberia.
- Distribution in the former USSR: North of the European part of RAC, south of the Western Siberia [Krivosheina, 1978; Starobogatov *et al.*, 2004].
- Subregions: NE, WS.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. subtruncatum*.

**130(396). *Euglesa (Pseudeupera)*
subalta Starobogatov et
Budnikova, 1985**

Euglesa subalta Starobogatov & Budnikova, 1985 (1986): 105-107, fig. 10.

- Type locality: Russia, the Kurile Archipelago, the Kunashir Island, the Lagunnoye Lake (approximately 44°03'33"N, 145°45'38"E).
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Kurile Archipelago.
- Distribution in the former USSR: The Kunashir Island [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. subtruncatum*.

**130(397). *Euglesa (Pseudeupera)*
subcuneata Krivosheina, 1978**

Euglesa (Pseudeupera) subcuneata Krivosheina, 1978: 1494-1495, textfig. (9).

- Type locality: Kazakhstan, Eastern Kazakhstan Region, dam of the Bobrovka River at Bobrovka village.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Europe, the Western Siberia.
- Distribution in the former USSR: The European part of RAC, south of the Western Siberia [Stadnichenko, 1984; Pirogov *et al.*, 1994; Starobogatov *et al.*, 2004].
- Subregions: NE, SE, WS.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. subtruncatum*.

**130(398). *Euglesa (Pseudeupera)*
supiniformis Pirogov et
Starobogatov, 1974**

Euglesa (Cymatocyclas) supiniformis Pirogov & Starobogatov, 1974: 333-334, fig. 3, 1.

- Type locality: Russia, Astrakhan' Region, Bol'shoy Karabulak bayou in the Volga Delta.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the European Russia.
- Distribution in the former USSR: The Volga delta [Starobogatov *et al.*, 2004].
- Subregions: SE.
- Bionomics: Lives in lakes and river channels [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. subtruncatum*.

**130(399). *Euglesa (Pseudeupera)* *talievi*
(Starobogatov et Streletzkaja, 1967)**

Galileja talievi Starobogatov & Streletzkaja, 1967: 243, fig. 65.

- Type locality: Russia, the Baikal Lake, Malyi Posol'skiy Sor.
- Types: ZIN, Nos. 1-4 in systematic catalogue. The type series includes the holotype and four paratypes.
- Global distribution: Endemic to the Baikal Lake and its vicinities.
- Distribution in the former USSR: The Baikal Lake (in bays and "sors") and its vicinities [Slugina & Starobogatov, 1999].
- Subregions: BL, ES.
- Bionomics: Occurs at depths between 0 and 5 m; on muddy sands [Slugina & Starobogatov, 1999].
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. subtruncatum*.

**130(400). *Euglesa (Pseudeupera)*
tenuicardo Krivosheina, 1978**

Euglesa (Pseudeupera) tenuicardo Krivosheina, 1978: 1493-1494, textfig. (7).

- Type locality: Kazakhstan, Eastern Kazakhstan Region, dam of the Bobrovka River at Bobrovka village.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to Altay.

- Distribution in the former USSR: The Southern Altay [Starobogatov *et al.*, 2004].
- Subregions: WS.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. subtruncatum*.

130(401). *Euglesa (Pseudeupera) tenuisculpta* Pirogov et Starobogatov in Timm, 1975

Euglesa tenuisculpta Timm, 1975: 235, 237. fig. 15.

- Type locality: Russia, Astrakhan' Region, the Volga Delta, floodplain of the Bol'schoy Karabulak bayou.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: The Eastern Europe [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: The European part of RAC [Stadnichenko, 1984; Starobogatov *et al.*, 2004].
- Subregions: NE, SE.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. subtruncatum*.

130(402). *Euglesa (Pseudeupera) turanica* (Clessin in Martens, 1874)

Pisidium turanicum Martens, 1874: 38-39, Taf. 3, fig. 34.

- Type locality: Uzbekistan (?), Durmankul' Lake in the floodplain of the Zeravshan River.
- Types: ZMB, No. 22491. The type series contains a single syntype.
- Global distribution: Central Asia.
- Distribution in the former USSR: Central Asia [Izzatullaev, 2002].
- Subregions: CA.
- Bionomics: Lives in floodplain lakes [Martens, 1874].
- IUCN conservation status: Not assessed.

- Remark: Kuiper [1987] considered this species as a synonym of *Pisidium obtusale*. Korniushev [1996] placed *P. turanica* in the (sub-) genus *Cyclocalyx*.

130(403). *Euglesa (Pseudeupera) turgida* (Clessin in Westerlund, 1873)

Pisidium subtruncatum β *turgidum* Westerlund, 1873: 542

- Type locality: Sweden ("Dalarne i Husby-sjön vid Säther"; Westerlund, 1873: 542).
- Types: ZMB, Nos. 23464 and 24525. The type series contains the lectotype and 17 paralectotypes.
- Global distribution: The North and Eastern Europe.
- Distribution in the former USSR: The European part of RAC [Stadnichenko, 1984; Starobogatov *et al.*, 2004].
- Subregions: NE, SE.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. subtruncatum*.

130(404). *Euglesa (Pseudeupera) volgensis* Pirogov et Starobogatov in Timm, 1975

Euglesa volgensis Timm, 1975: 233-235, fig. 13-14.

- Type locality: Russia, Astrakhan' Region, the Volga delta near the village of Kirovskiy.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Eastern Europe, Siberia [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: The European part of RAC, the Western Siberia [Stadnichenko, 1984; Korniushev, 1996; Starobogatov *et al.*, 2004].
- Subregions: NE, SE, WS.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. subtruncatum*.

Subgenus *Pseudosphaerium*
Korniushin, 1990

Type species: *Pisidium milium* var. *pseudosphaerium* Favre, 1927 (OD)

131(405). *Euglesa* (*Pseudosphaerium*)
pseudosphaerium (Favre, 1927)

Pisidium milium var. *pseudosphaerium* Favre, 1927: 298.

- Type locality: Switzerland, “Bassin de Genève, marais de la Touvière, blättriger Torf”.
- Lectotype: MHNG [see illustration in Alder, 1993].
- Global distribution: Europe [Graf & Cummings, 2013].
- Distribution in the former USSR: Baltic Sea basin and the central part of the Dnieper River drainage [Stadnichenko, 1984; Starobogatov *et al.*, 2004].
- Subregions: NE, SE.
- Bionomics: Lives in small rivers and permanent waterbodies of the river plains [Stadnichenko, 1984; Starobogatov *et al.*, 2004].
- IUCN conservation status: LC (least concern).
- Remark: Welter-Schultes [2012] ascribed the authorship of this name to Ehrmann [1933].

131(406). *Euglesa* (*Pseudosphaerium*)
favrei (Kuiper, 1947)

Pisidium favrei Kuiper, 1947: 35-37.

- Type locality: The Netherlands, the Naarden Lake (= “Natuurmonument Naardermeer, Spookgat”).
- Holotype: Zoological Museum, Amsterdam, No. 2710a.
- Global distribution: Europe.
- Distribution in the former USSR: Ukraine [Korniushin, 1996]; possibly, in the Baltic Sea basin area within the Russian boundaries [Starobogatov *et al.*, 2004].
- Subregions: NE, SE.

- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Alder [1993] considered this species as a synonym of *Pisidium pseudosphaerium*.

Subgenus *Pulchelleuglesa*
Starobogatov in Dolgin, 1983

Type species: *Pisidium pulchellum* Jenyns, 1832 (OD)

132(407). *Euglesa* (*Pulchelleuglesa*)
pulchella (Jenyns, 1832)

[= *Galileja tenebrosa* Costa, 1839]

Pisidium pulchellum Jenyns, 1832: 306, pl. 21, fig. 1.

- Type locality: England, “throughout Cambridgeshire and likewise in other part of the country”.
- Types: Not traced.
- Global distribution: Europe, Siberia [Korniushin, 1996].
- Distribution in the former USSR: The European and Siberian parts of RAC eastward to the Kolyma River [Stadnichenko, 1984; Starobogatov *et al.*, 2004].
- Subregions: NE, SE, WS, ES.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

132(408). *Euglesa* (*Pulchelleuglesa*)
acuticostata Starobogatov et
Korniushin, 1989

Euglesa (*Hiberneuglesa*) *acuticostata* Starobogatov & Korniushin, 1989: 18, fig. 2, 1.

- Type locality: Germany, surroundings of Berlin, Eberswalde Town (52°50'00"N, 13°50'00"E).
- Types: ZIN, Nos. 1-3 in systematic catalogue. The type series includes the holotype and 16 paratypes.
- Global distribution: Europe, Siberia.

- Distribution in the former USSR: The northern and central regions of the European part of RAC, the Western Siberia [Starobogatov *et al.*, 2004].
- Subregions: NE, SE, WS.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *Pisidium pulchellum*.

Subgenus *Roseana* Fagot, 1892

Type species: *Pisidium roseum* Scholtz, 1843 (SD Boettger, 1961)

133(409). *Euglesa (Roseana) globularis* (Clessin in Westerlund, 1873)

Pisidium globulare Westerlund, 1873: 532-533.

- Type locality: Sweden, Säter (locality of the lectotype).
- Types: ZIN (lectotype, No. 1 in systematic catalogue; designated by Starobogatov, published in Korniushev [1998b]). Paralectotypes: ZMB (No. 23469), SMF (No. 154972), SMNH and, probably, NMG [see Korniushev & Glaubrecht, 2001 for details].
- Global distribution: Widespread in Palearctic, from Europe to the Western Siberia [Graf & Cummings, 2013].
- Distribution in the former USSR: The European and the Western Siberian parts of RAC [Stadnichenko, 1984; Starobogatov *et al.*, 2004].
- Subregions: NE, SE, WS.
- Bionomics: Lives in temporary waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

133(410). *Euglesa (Roseana) borealis* (Clessin in Westerlund, 1877)

Pisidium boreale Westerlund, 1877: 70-71, fig. 23.

- Type locality: Russia, northern part of the

Krasnoyarsk Territory, the Yenisei River north of Lusino settlement ["Jenissei, norr om Lusino (lat. 68°40'); see Westerlund, 1877: 71].

- Lectotype [fide Starobogatov & Streletskaya, 1967]: ZIN, No. 1 in systematic catalogue. Korniushev [1996] stated that types are kept in SMF. We found a single shell originated from the type locality and identified by Westerlund himself as belonging to *Pisidium boreale* in the ZIN collection, however, the catalogue does not give any indication of the lectotype status of this specimen.

- Global distribution: Northern Eurasia.
- Distribution in the former USSR: The European part of RAC, Siberia, Central Asia [Izzatullaev, 2002; Starobogatov *et al.*, 2004].
- Subregions: NE, SE, WS, ES, CA.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *Pisidium globulare*.

133(411). *Euglesa (Roseana) rosea* (Scholtz, 1843)

Pisidium roseum Scholtz, 1843: 140.

- Type locality: Poland, Silesia [fide Westerlund, 1890].
- Types: SMF.
- Global distribution: Europe.
- Distribution in the former USSR: The Baltic Sea basin and the central part of the Dnieper River drainage [Stadnichenko, 1984; Starobogatov *et al.*, 2004].
- Subregions: NE, SE.
- Bionomics: Lives in permanent and semi-permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *Pisidium casertanum*.

133(412). *Euglesa (Roseana) silesiaca* Starobogatov et Korniushev in Korniushev, 1991

[= ? *Pisidium fossarinum* Clessin in Westerlund, 1873 sensu Korniushev, 1990; *Pisidium acuminata*

tum Clessin in Westerlund, 1873 sensu Korniuschin, 1990]

Euglesa (Roseana) silesiaca Korniuschin, 1991: 21, fig. 1 (14-16).

- Type locality: Czechia, the Krkonoše Mountains [Kantor *et al.*, 2010].
- Types: Not traced.
- Global distribution: Europe.
- Distribution in the former USSR: The European part of RAC [Starobogatov *et al.*, 2004].
- Subregions: NE, SE.
- Bionomics: Lives in small waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *Pisidium globulare*.

Addition to the subgenus *Roseana*. One more species, *Eu. (R.) alexandri* Stadnichenko, 1980 has been mentioned in some works of the ex-USSR malacologists [Stadnichenko, 1984; Kantor & Sysoev, 2005]. However, this species was not listed by Korniuschin [1996] and Starobogatov *et al.* [2004] in their comprehensive lists of Palearctic Pisidioidea, and its reality is not completely proven.

Subgenus *Tetragonocyclas* Pirogov et Starobogatov, 1974

Type species: *Pisidium milium* Held, 1836 (OD)

134(413). *Euglesa (Tetragonocyclas) milium* (Held, 1836)

[= *Pisidium normandianum* Gassies, 1849; *Pisidium arcaeforme* Malm, 1855]

Pisidium milium Held, 1836: 281.

- Type locality: Germany, Bavaria (from the author's paper title).
- Types: SMF.
- Global distribution: Widespread in Eurasia, as well as in North America

west of the Great Lakes [Graf & Cummings, 2013].

- Distribution in the former USSR: Palearctic part of the RAC area [Starobogatov *et al.*, 2004].
- Subregions: NE, SE, WS, ES.
- Bionomics: Lives in lakes and river bays [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

134(414). *Euglesa (Tetragonocyclas) baudoniana* (de Cessac, 1855)

Pisidium baudonianum de Cessac, 1855: 74-75.

- Type locality: France, Creuse Department, "au Mouchetard, dans la pêcherie de la grand prairie du Château".
- Syntypes: MCZ No. 19926.
- Global distribution: Europe, Siberia.
- Distribution in the former USSR: The European and Siberian parts of RAC [Starobogatov *et al.*, 2004].
- Subregions: NE, SE, WS, ES.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *Pisidium milium*.

134(415). *Euglesa (Tetragonocyclas) quadrangula* Starobogatov et Budnikova, 1985

Euglesa quadrangula Starobogatov & Budnikova, 1985 (1986): 101, fig. 5.

- Type locality: Russia, the Kurile Archipelago, the Kunashir Island, the Lagunnoye Lake (approximately 44°03'33"N, 145°45'38"E).
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Kurile Archipelago.
- Distribution in the former USSR: The Kurile Islands [Prozorova, 1996(1997)a; Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].

- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. milium*.

134(416). *Euglesa (Tetragonocyclas) subtetragona* Starobogatov et Budnikova, 1985

Euglesa subtetragona Starobogatov & Budnikova, 1985 (1986): 99-100, fig. 4.

- Type locality: Russia, the Kurile Archipelago, the Kunashir Island, the Lagunnoye Lake (approximately 44°03'33"N, 145°45'38"E).
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The types series includes the holotype and a single paratype.
- Global distribution: Endemic to the Kurile Archipelago.
- Distribution in the former USSR: The southern Kurile Islands [Prozorova, 1996(1997)a; Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. milium*.

134(417). *Euglesa (Tetragonocyclas) tetragona* (Normand, 1854)

Pisidium tetragonum Normand, 1854: 5.

- Type locality: France, "Valenciennes, ... dans la forêt de Raismes".
- Syntypes: MCZ No. 19925.
- Global distribution: Europe, Siberia.
- Distribution in the former USSR: The European part of RAC, the Western Siberia [Starobogatov *et al.*, 2004].
- Subregions: NE, SE, WS.
- Bionomics: Lives in lakes and river bays [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *P. milium*.

Genus *Euglesa*
(subgenus *incertae sedis*)

Recently, Frolov [2010] described three

species of fingernail clams of the genus *Euglesa* from northern Russia. According to the author, many of their characters correspond to diagnosis of the subgenus *Casertiana*, but in some respect the three species seem to be closer to the subgenus *Roseana*. Thus, Frolov [2010] did not assign them to any subgenus definitely, and formally the three taxa should be regarded here as *incertae sedis*.

135(418). *Euglesa korniushini* Frolov, 2010

Euglesa korniushini Frolov, 2010: 394, fig. 2.

- Type locality: Russia, Murmansk Region, a swampy lake, 1 km W of Murmansk City (68°57.170'N, 33°59.185'E).
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and three paratypes.
- Global distribution: Endemic to the European Russia.
- Distribution in the former USSR: Northern part of the European Russia (Kola Peninsula) [Frolov, 2010].
- Subregions: NE.
- Bionomics: Lives in small swampy lakes [Frolov, 2010].
- IUCN conservation status: Not assessed.

136(419). *Euglesa lyudmilae* Frolov, 2010

Euglesa lyudmilae Frolov, 2010: 397, fig. 3.

- Type locality: Russia, Murmansk Region, a wet tussock area near reach of Venzin brook, 20 km S of Murmansk City (68°52.352'N, 32°52.449'E).
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and a single paratype.
- Global distribution: Endemic to the European Russia.
- Distribution in the former USSR:

Northern part of the European Russia (Kola Peninsula) [Frolov, 2010].

- Subregions: NE.
- Bionomics: Lives in minute swampy waterbodies [Frolov, 2010].
- IUCN conservation status: Not assessed.

**137(420). *Euglesa shcherbinai*
Frolov, 2010**

Euglesa shcherbinai Frolov, 2010: 399, fig. 4.

- Type locality: Russia, Murmansk Region, in a reach fed by two brooks, 30 km S of Murmansk City (68°47.898'N, 32°43.181'E).
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and five paratypes.
- Global distribution: Endemic to the European Russia.
- Distribution in the former USSR: Northern part of the European Russia (Kola Peninsula) [Frolov, 2010].
- Subregions: NE.
- Bionomics: Lives in brooks and small running lakes [Frolov, 2010].
- IUCN conservation status: Not assessed.

Tribe Lacustrinini Korniushev, 1989
Genus *Lacustrina* Sterki, 1916

Type species: *Pisidium idahoense* Roper, 1890 (OD)

**138(421). *Lacustrina dilatata*
(Westerlund, 1897)**

[= *Pisidium maculatum* W. Dybowski, 1902; *Pisidium subtilestriatum* Lindholm, 1909; *Pisidium baicalense* var. *complanatum* Lindholm, 1909; *Pisidium carelicum* Odhner, 1926]

Pisidium (*Fossarina*) *dilatatum* Westerlund, 1897b: 131.

- Type locality: Russia, Republic of Yakutia (Sakha), the Olenek River basin, “oberhalb der Alahis-Mündung”.

- Lectotype: ZIN, No. 1 in systematic catalogue [designated by Starobogatov & Streletzkaia, 1967].

- Global distribution: Widespread in North Eurasia, from North Europe to Kamchatka [Graf & Cummings, 2013].
- Distribution in the former USSR: The Northern part of the RAC area (except south of the West Siberia), including the Baikal Lake [Slugina & Starobogatov, 1999; Starobogatov *et al.*, 2004].

- Subregions: NE, WS, ES, BL, NF.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: LC (least concern).

**138(422). *Lacustrina chukcnehsis*
(Prozorova, 1988)**

Pisidium chukcnehsis Prozorova, 1988a: 1576, fig. 1 a-b.

- Type locality: Russia, Chukchi Autonomous District, in a small unnamed floodland-thermokarst lake in 20-km vicinity of Chaun station of the Institute of Biological Problems of the North, Far Eastern Branch of the USSR Academy of Sciences.

- Holotype: ZIN, No. 1 in systematic catalogue.

- Global distribution: Endemic to the Russian Far East (northern part).

- Distribution in the former USSR: The Chukchi and Kamchatka peninsulars [Starobogatov *et al.*, 2004].

- Subregions: NF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].

- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *Lacustrina dilatata*.

**138(423). *Lacustrina etorohuense*
(Mori, 1935)**

Pisidium amnicum etorohuense Mori, 1935: 194-195, fig. 1.

- Type locality: Russia, the Kurile Archipela-

go, the Iturup Island: Toro-Numa, Syana-Numa, Sibetori-Ko.

- Types: Not traced.
- Global distribution: Endemic to the Kurile Archipelago.
- Distribution in the former USSR: The Iturup Island, the Kurile Archipelago [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Graf & Cummings [2013] considered this species as a synonym of *L. dilatata*.

Order Myida Stoliczka, 1870

Superfamily Myoidea

Lamarck, 1809

Family Corbulidae Lamarck, 1818

(Les Corbulées Lamarck, 1818: 423, 466, 493)

[= Aloididae Thiele, 1934; Caryocorbulinae Vokes, 1945; Potamocorbulinae Habe, 1977]

Type genus: *Corbula* Bruguière, 1797

Subfamily Corbulinae

Lamarck, 1818

Genus *Potamocorbula* Habe, 1955

Type species: *Corbula amurensis* Schrenck, 1862 (OD)

139(424). *Potamocorbula amurensis* (Schrenck, 1862)

[= *Corbula amplexa* Adams, 1862; *Corbula vladivostokensis* Bartsch, 1922; *Corbula frequens* Yokoyama, 1922; *Corbula pustulosa* Yokoyama, 1922; *Corbula sematensis* Yokoyama, 1922; *Potamocorbula amurensis takatuayamaensis* Ando, 1965]

Corbula amurensis Schrenck, 1862: 412.

- Type locality: Russia, the northern Japan Sea, Tatar Strait, Chikhacheva Bay.
- Types: Not traced.
- Global distribution: Seas of the northern Far East [Scarlato, 1981].
- Distribution in the former USSR: River estuaries of the Japan and southern Okhotsk seas (Peter the Great Bay, Chikhacheva Bay, Amur estuary, Tugur Bay), the brackish lake Lebyazhye on the southern Sakhalin [Scarlato, 1981; Zatravkin & Bogatov, 1987]. It is considered to be among the 100 World's worst invasive alien species²³.
- Subregions: SF.
- Bionomics: Brackishwater species, lives in lakes and river estuaries [Scarlato, 1981; Zatravkin, Bogatov, 1987].
- IUCN conservation status: Not assessed.

²³ See Global Invasive Species Database: <http://www.issg.org/database/species/search.asp?st=100ss>.

Class Gastropoda Cuvier, 1795
Subclass Neritimorpha Koken, 1896²⁴

Superfamily Neritoidea
Rafinesque, 1815

Family Neritidae Rafinesque, 1815

(Neritidae Rafinesque, 1815: 144)

Type genus: *Nerita* Linnaeus, 1758

This ecologically heterogeneous family embraces marine, brackish- and fresh-water species distributed among three recent subfamilies [Bouchet & Rocroi, 2005]. The freshwater representatives of Neritidae are not numerous, being restricted to a few genera, mostly of tropical distribution [Starobogatov, 1970; Banareescu, 1990]. The global diversity of Neritidae in the freshwaters has been estimated recently to about 110 species [Strong *et al.*, 2008]. The inland waters of the RAC area are inhabited by at least six neritid species belonging to a single genus *Theodoxus* Montfort, 1810. The most important taxonomic works on fresh- and brackishwater Palearctic Neritidae are those by Anistratenko *et al.* [1999], Anistratenko & Anistratenko [2001], Bunje & Lindberg [2007], Zettler [2008], and Mezhzherin *et al.* [2011].

²⁴ Higher taxa of Gastropoda are given here in accordance with WoRMS database (<http://www.marinespecies.org/>) – “a global standard for marine molluscan taxonomy” [Rosenberg, 2014: 309]. This classification is derived from “the classification scheme as much as possible from Bouchet & Rocroi [2005, and references therein], with Linnean ranks added” (<http://www.marinespecies.org/aphia.php?p=taxdetails&id=101>)

Subfamily Neritinae Poey, 1852

[= Catillinae Gray, 1868; Orthopomatini Gray, 1868; Stenopomatini Gray, 1868; Septariini Jousseaume, 1894]

(Neritinae Poey, 1852: 87)

Type genus: *Neritina* Lamarck, 1816

Tribe Theodoxini Bandel, 2001²⁵

(Theodoxinae Bandel, 2001: 70)

Type genus: *Theodoxus* Montfort, 1810

Genus *Theodoxus* Montfort, 1810

[= *Neritarius* Foriep, 1806, partim; *Laphrostoma* Rafinesque, 1815; *Neritina* Lamarck, 1816, partim; *Elea* Fitzinger, 1833; *Chernites* Gistel, 1848; *Neritella* H. et A. Adams, 1854; *Vitta* H. et A. Adams, 1854; *Neritoglobus* Kobelt, 1871; *Neritoconus* Kobelt, 1871; *Theodoxia* Bourguignat, 1877]

Type species: *Theodoxus lutetianus* Monfort, 1810 (= *Nerita fluviatilis* Linnaeus, 1758) (OD)

Remark: Different authors' views on species composition of the *Theodoxus* snails in the RAC waterbodies are rather dissimilar (summarized in Table 10), the taxonomic opinions based on genetic data [Bunje & Lindberg, 2007; Mezhzherin *et al.*, 2011] often contradict those derived from morphological analysis [Zhadin, 1952; Anistratenko *et al.*, 1999; Anistratenko & Anistratenko, 2001]. Here we follow mainly the results obtained by Mezhzherin *et al.* [2011] in their revision of the Ukrainian species of *Theodoxus* made by using of both

²⁵ Bandel [2008] subsequently elevated the rank of this taxon up to family.

Table 10. Different views on the species content of the genus *Theodoxus* in the RAC waterbodies.

Zhadin [1952]	Starobogatov <i>et al.</i> [2004]	Mezzherin <i>et al.</i> [2011]*	Welter-Schultes [2012]
<i>Theodoxus fluviatilis</i> (L., 1758)	<i>Th. fluviatilis</i> <i>Th. danasteri</i> Lindholm, 1908 <i>Th. euxinus</i> (Clessin, 1885) <i>Th. sarmaticus</i> (Lindholm, 1901) <i>Th. velox</i> Anistratenko, 1999	<i>Theodoxus fluviatilis</i> s. lato	<i>Theodoxus fluviatilis</i> s. lato <i>Th. brauneri</i> (Lindholm, 1908) <i>Th. euxinus</i>
<i>Th. transversalis</i> (Pfeiffer, 1828)	—	—	<i>Th. transversalis</i>
<i>Th. danubialis</i> (Pfeiffer, 1828)	—	<i>Th. danubialis</i>	<i>Th. danubialis</i>
<i>Th. pallasi</i> Lindholm, 1924	—**	—	<i>Th. pallasi</i>
<i>Th. schultzei</i> (Grimm, 1877)	—**	—	—
—	<i>Th. astrachanicus</i> Starobogatov, 1994	<i>Th. astrachanicus</i>	—
<i>Th. subthermalis</i> Issel, 1865	<i>Th. subthermalis</i>	—	—

*These authors provide information only for Ukraine.

**Caspian forms were not treated by Starobogatov *et al.* [2004]

allozyme and morphological data. The Aralo-Caspian species of the genus were not considered by Mezhzhherin *et al.* [2011] though their presence in Ukraine and other countries of south Eastern Europe is mentioned by other authors [Welter-Schultes, 2012; Georgiev & Hubenov, 2013].

Subgenus *Theodoxus* s. str.

1(1). *Theodoxus* (*Theodoxus*) *fluviatilis* (Linnaeus, 1758)

[= *Nerita lacustris* Linnaeus, 1758; *Nerita littoralis* Linnaeus, 1758; *Nerita cardinalis* Bolten, 1798; *Theodoxus lutetianus* Monfort, 1810; *Nerita fontinalis* Brard, 1815; *Neritina halophyla* Klett, 1828; *Neritina fluviatilis* var. *communis*

Menke, 1828; *Neritina fluviatilis* var. *minor* Menke, 1828; *Neritina trifasciata* Menke, 1828; *Neritina rhodocolpa* De Cristofori & Jan, 1832; *Neritina thermalis* Boubée, 1833; *Neritina variabilis* Hécart, 1833; *Neritina perreri* Steintz in Porro, 1839; *Nerita zebrina* Récluz, 1841; *Nerita dendritica* A. et J.B. Villa, 1841; *Nerita intexta* A. et J.B. Villa, 1841; *Nerita parreysii* A. et J.B. Villa, 1841; *Nerita ticinensis* A. et J.B. Villa, 1841; *Nerita mittreana* Récluz, 1842; *Neritina balthica* Beck, 1847; *Neritina bourguignati* Récluz, 1852; *Neritina europaea* Leach, 1852; *Neritina fluviatilis* var. *dilatata* Moquin-Tandon, 1855; *Neritina doriae* Issel, 1863; *Neritina fluviatilis* var. *reynesianae* Dubreuil, 1869; *Theodoxia penchinati* Bourguignat, 1870; *Neritina fluviatilis* var. *spirata* Westerlund, 1873; *Neritina atropurpurea* Martens, 1879; *Neritina orsinii* Martens, 1879; *Neritina pustulata* Martens, 1879; *Neritina fluviatilis* var. *boettgeri* Westerlund, 1885; *Neritina fluviatilis* var. *sarmatica* Lindholm, 1901; *Neriti-*

na brauneri Lindholm, 1908; *Neritina brauneri* f. *lacrymans* Lindholm, 1908; *Neritina brauneri* f. *alboguttata* Lindholm, 1908; *Neritina brauneri* f. *pulcherrima* Lindholm, 1908; *Neritina danubialis* var. *danasteri* Lindholm, 1908: 214-215; *Theodoxus dniestrovienensis* Put', 1972; *Theodoxus velox* V. Anistratenko, 1999]

Nerita fluviatilis Linnaeus, 1758: 777.

- Type locality: Europe [Linnaeus, 1758: 777]. Bandel [2001] supposed that the genuine type locality of the species is the Main River in south Germany, whereas Glöer [2002a] gives vicinities of Uppsala (Sweden) as the type locality, with reference to Linnaeus' earlier work, "Fauna Suecica" [Linnaeus, 1746].
- Lectotype: LSL No. 566 [designated by Anistratenko, 2005].
- Global distribution: Europe, Western Asia, Northern Africa [Anistratenko, 2005; Glöer & Pešič, 2015].
- Distribution in the former USSR: The European part of RAC, in the basins of Baltic and Azov-Black Seas; limans of the Sea of Azov [Anistratenko & Anistratenko, 2001; Anistratenko *et al.*, 2011]; Odessa Bay of the Black Sea [Butenko, 2001]
- Subregions: NE, SE.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004] and limans of seas at salinity up to 5–7‰ [Anistratenko *et al.*, 2011]. Brackishwater populations of the Baltic Sea are sometimes separated as a distinct subspecies *Th. fluviatilis littoralis* (L., 1758) [Glöer, 2002a].
- IUCN conservation status: LC (least concern).
- Remark: Mezherin *et al.* [2011] listed three species accepted previously as valid in the Russian literature as synonyms of *Th. fluviatilis*: *Th. danasteri* (Ldh.), *Th. sarmaticus* (Ldh.), and *Th. velox* V. Anistratenko, 1999. Identity of *Th. velox* and *Th. fluviatilis* was earlier clarified by Bunje & Lindberg [2007].

1(2). *Theodoxus (Theodoxus) euxinus* (Clessin, 1886)

Neritina euxina Clessin, 1886: 55.

- Type locality: Romania, "Mangalia, au der Küste des schwarzen Meeres, nördlich von Varna".
- Types: Not traced. Clessin's collection was in Stuttgart Museum, totally destroyed during 1939-1945 war [Dance, 1986].
- Global distribution: The western Black Sea Region [Welter-Schultes, 2012]; Greece mainland and Samothraki Island [Bank, 2006].
- Distribution in the former USSR: The Black Sea maritime zone of Ukraine (limans, bays and lower parts of rivers), recently recorded in the cooling pond of Khmelnytsky NPP [Anistratenko & Anistratenko, 2001; Butenko, 2001; Silayeva *et al.*, 2010; Son, 2010].
- Subregions: SE.
- Bionomics: Lives in fresh and brackish waterbodies (lower parts of large rivers, limans). The species is able to invade cooling ponds of power stations and artificial channels [Anistratenko & Anistratenko, 2001; Son, 2010].
- IUCN conservation status: Not assessed.
- Remark: Mezherin *et al.* [2011] proposed to synonymize *Th. euxinus* with *Th. fluviatilis* s. l., but Welter-Schultes [2012] still regarded it as a valid species distributed in the Black Sea region.

2(3). *Theodoxus (Theodoxus) astrachanicus* Starobogatov in Starobogatov, Filchakov, Antonova et Pirogov, 1994

Theodoxus astrachanicus Starobogatov *et al.*, 1994: 8-9, fig. 1 (1, 2).

- Type locality: Russia, Astrakhan' Region, the Volga Delta, southern end of Barskaya Kosa Island, 1 m.
- Holotype: ZIN.
- Global distribution: South of Eastern Europe [Anistratenko & Anistratenko, 2001].
- Distribution in the former USSR: Riv-

ers of the Azov Sea basin, the lower Volga (the delta and the Saratov and Volgograd Reservoirs), the Azov Sea limans; possibly in eastern Ukraine waters [Anistratenko & Anistratenko, 2001; Anistratenko *et al.*, 2011; Zinchenko & Kurina, 2011].

- Subregions: SE.
- Bionomics: Lives in rivers, artificial reservoirs on solid substrates [Anistratenko & Anistratenko, 2001]. In the Azov Sea it occurs in some limans, where it lives on sandy bottoms and among seagrass [Anistratenko *et al.*, 2011].
- IUCN conservation status: Not assessed.
- Remark: Bank [2014] considered this species as a synonym of *Th. danubialis*. Validity of *Th. astrachanicus* was corroborated by the results obtained by Mezhzherin *et al.* [2011] by means of analysis of allozyme and morphological data.

3(4). *Theodoxus (Theodoxus) danubialis* (C. Pfeiffer, 1828)

[= *Nerita stragulata* C. Pfeiffer, 1828; *Nerita serratilinea* Jan, 1830; *Nerita gardensis* A. et J.B. Villa, 1841; *Neritina chrysostoma* Küster, 1845; *Neritina carinata* Schmidt, 1847; *Neritina gangrenosa* Schmidt, 1847; *Neritina danubialis* var. *maxima* Parreys, 1850; *Neritina benacensis* Récluz, 1850; *Neritina serratilinea* var. *strongulata* Strobel, 1853; *Neritina hellenica* var. *constricta* Cejza von Bukowski, 1895; *Theodoxus serratiniformis* Geyer, 1914]

Nerita danubialis C. Pfeiffer, 1828: 48, Taf. VIII, fig. 17, 18.

- Type locality: Austria, the Danube River near Vienna.
- Types: Not traced, possibly lost.
- Global distribution: The Southern Europe (north of Italy, the Danube basin) [Fehér *et al.*, 2009].
- Distribution in the former USSR: The Danube drainage basin within boundaries of Ukraine [Mezhzherin *et al.*, 2011].

- Subregions: SE.
- Bionomics: Inhabits lotic habitats with stony substrates [Glöer, 2002a].
- IUCN conservation status: Not assessed.
- Remark: There was a long discussion concerning applicability of the taxonomic name *Th. danubialis* to some species of *Theodoxus* living in Ukraine. Zhadin [1933, 1952] and Ehrmann [1933] included this species in the fauna of ex-USSR, whereas Anistratenko & Anistratenko [2001] stated that this species was restricted in its distribution to the middle part of the Danube Basin and, thus, is absent in the Ukrainian waterbodies. Fehér *et al.* [2009] also questioned the correctness of all previous records of *Th. danubialis* from Ukraine and the Caspian Sea. Nevertheless, recently Mezhzherin *et al.* [2011] used this name again for designation of a *Theodoxus* species found in the waters of Ukraine. We follow here this designation provisionally. If Anistratenko & Anistratenko [2001] and Fehér *et al.* [2009] were right, and the “true” *Th. danubialis* does not occur within RAC territory, the oldest available name for designation of the Ukrainian species distinct from *Th. fluviatilis* s. l. and *Th. astrachanicus* would be *Th. danasteri* (Lindholm, 1908) [see Anistratenko & Anistratenko, 2001].

4(5). *Theodoxus (Theodoxus) pallasii* (Lindholm, 1924)

[= *Nerita pupa* Pallas, 1771, non Linnaeus, 1758; *Neritina liturata* Eichwald, 1838, non Schultze, 1826; *Neritina schirazensis* var. *major* Issel, 1865; *Theodoxus pallasii* var. *aralensis* Sidorov, 1929]

Neritina pallasii Lindholm, 1924c: 34 (nom. nov. pro *Neritina liturata* Eichwald, 1838, non Schultze, 1826).

- Type locality: Russia, Daghestan Republic.

- Lectotype: ZIN, No. 54547/63 in systematic catalogue [Starobogatov *et al.*, 1994].
- Global distribution: Southern Europe (the Ponto-Caspian Basin). Outside the former USSR territory, it was recorded from Bulgaria (subfossil) [Georgiev & Hubenov, 2007] and Romania [Grossu, 1986]. Introduced to coastal waters of the Baltic Sea [MacIsaac *et al.*, 2001; Bij de Vaate, 2002]. Records of *Th. pallasii* from waterbodies of Turkey probably belong to another species of the genus [Yildirim *et al.*, 2006]. Recently, Glöer & Pešić [2012] mentioned it from Iran.
- Distribution in the former USSR: The Caspian and Aral seas [Logvinenko & Starobogatov, 1968; Starobogatov, 1974], Armenia [Akramowski, 1976], the Ural River [Pirogov *et al.*, 1994]. In the Aral Sea, the species has disappeared during the 1980s as the result of the salinity increase [Andreeva & Andreev, 2003]. Records of *Th. pallasii* from the lower Volga basin and waterbodies of Moldova belong, most probably, to other species of the genus [Son, 2007]. Golikov & Starobogatov [1972] recorded it also in the Sea of Azov (Taganrog Bay), though subsequent authors [Anisratenko *et al.*, 2011] did not include *Th. pallasii* in the list of species of this waterbody.
- Subregions: SE, CS.
- Bionomics: Inhabits seas and large lakes with low salinity, also occurs in limans and estuaries [Logvinenko & Starobogatov, 1968; Golikov & Starobogatov, 1972; Starobogatov, 1974].
- IUCN conservation status: Not assessed.

5(6). *Theodoxus (Theodoxus) schultzei* (Grimm, 1877)

Neritina schultzei Grimm, 1877: 77-78, pl. 7, fig. 5, pl. 8, fig. 16.

- Type locality: Caspian Sea, in two localities: 43°17'N, 01°03'E, 40 fathoms, and 42°48'N, 01°22'E, 48 fathoms.
- Syntype: ZIN, No. 5 in systematic catalogue. The type material was not used by Zettler [2007], who recently published the redescription of *Th. schultzei*.
- Global distribution: Caspian endemic [Zettler, 2007].
- Distribution in the former USSR: Middle and southern Caspian Sea [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs at depths between 15 and 100 m [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.
- Remark: During the expedition to the Caspian Sea by Grimm, the longitude was calculated from Baku, situated approximately at 50°E. Therefore the correct longitude of the mentioned in the type locality stations should be approximately 51°00'E.

6(7). *Theodoxus (Theodoxus) subthermalis* Bourguignat in Issel, 1865

Theodoxus fluviatilis var. *subthermalis* Issel, 1865: 22-23.

- Type locality: Not stated (the syntypes were collected from the Paleostomi Lake, Georgia).
- Syntypes: MHNG, Bourguignat collection, No. 11737 [Sitnikova *et al.*, 2012].
- Global distribution: South Europe, the Caucasus, Iran and, possibly, Turkey [Sitnikova *et al.*, 2012].
- Distribution in the former USSR: Usually defined as “the Caucasus (Transcaucasia) and the eastern coast of the Black and Azov seas”, but Sitnikova *et al.* [2012: 89], having examined the syntypes, suggested that “specimens regar-

ded as *Th. subthermalis* found along eastern coast of the Black and Azov seas should be described as a new species, whereas the validity of *Th. subthermalis* and its actual range require additional studies. It can appear that true *Th. subthermalis* is a local endemic to the western maritime Georgia”.

- Subregions: SE (?), CT.
- Bionomics: Lives in rivers and lakes [Anistratenko *et al.*, 1999; Starobogatov *et al.*, 2004].
- IUCN conservation status: LC (least concern).
- Remark: Bank [2006] considered *Th. subthermalis* as a subspecies of *Th. fluviatilis*.

Addition to the genus *Theodoxus*. Zhadin [1952] and other authors recorded *Theodoxus transversalis* (C. Pfeiffer, 1828) for Ukraine. Nevertheless, the range of this species is probably restricted to the middle Danube basin, and no specimens collected from the territory of the former USSR are known [Anistratenko *et al.*, 1999; Fehér *et al.*, 2012]. Starobogatov [1994c] added three more species of *Theodoxus* to the malacofauna of the Caspian Sea not mentioned earlier by Logvinenko & Starobogatov [1968]: *Th. nalivekini* Kolesnikov²⁶ – “endemic to the Middle-South Caspian Sea upper sublittoral province”; *Th. zhukovi* Kolesnikov – Middle and Southern Caspian Sea between 25 and 80 m; *Th. gailardi* Tadj.-Pour. – “endemic to the South Caspian Sea middle sublittoral prov-

ince”. We failed to obtain more information on these taxa and their status still remains obscure. Bogutskaya *et al.* [2013] did not cite the three species in their comprehensive list of species of the Caspian malacofauna. Besides, several nominal species of the genus can be found in the Ponto-Caspian basin in subfossil state. These are *Th. zhukovi* in the Aral Sea [Starobogatov, 1974], *Th. milachevitchi* Golikov et Starobogatov, 1966, and *Th. pilidei lamelliformis* Milachevitch, 1912 in the Black Sea [Golikov & Starobogatov, 1972]. *Th. prevostianus* (C. Pfeiffer, 1828), an extant and critically endangered species, was found in the Lower Pleistocene deposits of south-west Ukraine [Fehér *et al.*, 2009].

Subclass Caenogastropoda Cox, 1960

Superfamily Viviparoidea Gray, 1847

Family Viviparidae Gray, 1847

(Viviparidae Gray, 1847: 155)

Type genus: *Viviparus* Linnaeus, 1758

A species rich group of exclusively freshwater snails characterized by nearly worldwide distribution, high taxonomic diversity and very old (Cretaceous) geological age [Starobogatov, 1970, 1985]. The global diversity of viviparid snails is estimated to about 125–150 species [Strong *et al.*, 2008]. Viviparid snails of the ex-USSR territory belong to two large groups of genera usually treated as subfamilies, Viviparinae and Bellamyinae Rohrbach, 1937 [Starobogatov, 1970; Bouchet & Rocroi, 2005] though some authors follow a more detailed classification with three or four separate families accepted [Sitnikova & Staroboga-

²⁶ In 1950, Martinson described a new species *Theodoxus nalivekini* Mart. from the Neogene deposits of Eastern Siberia [Martinson, 1961] – most probably a junior homonym of *Th. nalivekini* Kolesnikov.

tov, 1982; Kruglov & Pavlyuchenkova, 1995; Starobogatov *et al.*, 2004]: Viviparidae s.str., Bellamyidae, and Amuropaludinidae Kruglov et Pavlyuchenkova, 1995. Taxonomic works on Palearctic Viviparidae are very numerous; the most significant of them are those by Starobogatov [1985], Chernogorenko [1988], Falniowski [1989], Falniowski *et al.* [1996, 1998], Anistratenko & Anistratenko [2001], Glöer & Georgiev [2014]. Species of the family inhabiting the Far Eastern waterbodies of Russia are reviewed in Moskvicheva [1979], Bogatov & Zatravkin [1990].

Subfamily Viviparinae Gray, 1847

Genus *Viviparus* Montfort, 1810

[= *Paludina* Lamarck, 1812; *Vivipara* Sowerby, 1813; *Viviparella* Rafinesque, 1815; *Paludinum* Jurine, 1817; *Henterum* Hübner in Menke, 1845; *Acerosiana* Bourguignat, 1880; *Duboisiana* Bourguignat, 1880; *Fasciatiana* Bourguignat, 1880; *Gallandiana* Bourguignat, 1880; *Sphaeridiana* Bourguignat, 1880; *Albisiana* Bourguignat, 1884; *Callina* Hannibal, 1912; *Balkanpaludina* Starobogatov, 1985; *Hazaypaludina* Chernogorenko et Starobogatov, 1987]

Type species: *Helix viviparus* Linnaeus, 1758 (tautonymy).

Subgenus *Viviparus* s. str.

7(8). *Viviparus (Viviparus) viviparus* (Linnaeus, 1758)

[= *Nerita fasciata* O.F. Müller, 1774, partim; *Viviparus fluviorum* Montfort, 1810; *Cyclostoma achatinum* Lamarck, 1812; *Paludina linnaei* Beck, 1847; *Paludina efasciata* Pickering, 1847; *Viviparus vulgaris* Gray, 1852; *Paludina duboisiana* Mousson, 1863; *Vivipara subfasciata* Bourguignat, 1870; *Vivipara subfasciata* var. *sequanica* Bourguignat, 1870; *Paludina okaensis* Clessin, 1875; *Vivipara forbesi* Bourguignat, 1880; *Vivipara nevillei* Bourguignat, 1880; *Vivipara imperialis* Bourguignat, 1884; *Vivipara penthica* var. *albisiana* Servain, 1884; *Vivipara*

bourguignati Servain, 1884; *Vivipara paeteliana* Servain, 1884; *Vivipara penthica* Servain, 1884; *Vivipara strongyla* Servain, 1884; *Paludina duboisiana* var. *concis* Westerlund, 1886; *Paludina penthica* var. *porphyrea* Westerlund, 1886; *Viviparus fluvialis* Schlessch, 1939]²⁷

Helix vivipara Linnaeus, 1758: 772.

- Type locality: Europe (? Sweden).
- Lectotype (ICZN Opinion 573, 1959): LSL, No. 603. The shell of lectotype was depicted by Anistratenko & Anistratenko [2001: 121].
- Global distribution: Europe except for extreme north and south, western Transcaucasia [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: The European part of RAC except of extreme north [Anistratenko & Anistratenko, 2001; Starobogatov *et al.*, 2004]; in the 1990s was introduced into the Novosibirsk Reservoir, the Western Siberia [Andreev *et al.*, 2008].
- Subregions: NE, SE, CT, WS.
- Bionomics: Lives in rivers, lakes and large artificial reservoirs [Levina, 1992; Anistratenko & Anistratenko, 2001; Starobogatov *et al.*, 2004].
- IUCN conservation status: LC (least concern).
- Remark: Before 1959 the taxonomic names *Viviparus viviparus* and *V. connectus* (Millet, 1813) have been sometimes used in reverse sense [e.g. Zilch 1955: *V. connectus* = *V. viviparus*, *V. viviparus* = *V. fasciatus*], thus many old citations in literature cannot be trusted [Glöer, 2002a].

²⁷ It is by no means the full list of synonyms of *V. viviparus*. A number of nominal species attributed to the genus *Viviparus* are present in the old literature (especially paleontological), and a special inquiry is needed to reveal their true identity.

**7(9). *Viviparus (Viviparus) vistulae*
(Kobelt, 1907)**

Vivipara fasciata vistulae Kobelt, 1907: 29.

- Type locality: Poland, the Vistula River near Grudziń City [approximately 53°29'N; 18°44'E].
- Lectotype: SMF 47828 [Zilch, 1955].
- Global distribution: Eastern Europe [Chernogorenko & Starobogatov, 1987a; Chernogorenko, 1988; Falniowski, 1989].
- Distribution in the former USSR: Basin of the Baltic Sea: the Neman and Vistula rivers, Kursh Bay [Starobogatov *et al.*, 2004].
- Subregions: NE.
- Bionomics: Lives in rivers and lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Falniowski [1989] treated this species as an intraspecific form *Viviparus viviparus* f. *vistulae*.

**8(10). *Viviparus (Viviparus)*
ater (De Cristofori et Jan, 1832)**

[= *Paludina crassa* A. et J.B. Villa, 1841; *Vivipara acerosa* Bourguignat, 1862; *Vivipara ambli* Bourguignat, 1870; *Vivipara penchinati* Bourguignat, 1870; *Vivipara aristidis* Bourguignat, 1880; *Vivipara letourneuxi* Bourguignat, 1880; *Vivipara taciti* Bourguignat, 1880; *Vivipara tanoussi* Bourguignat, 1880; *Vivipara thiesseana* Bourguignat, 1880; *Paludina mamillata* var. *hazayi* Westerlund, 1886; *Vivipara danubialis* var. *banatica* Kobelt, 1909; *Vivipara mamillata* var. *carlovacensis* Kobelt, 1909; *Vivipara pyramidalis* var. *erjavecii* Kobelt, 1909; *Vivipara danubialis* var. *kormosi* Kobelt, 1909; *Vivipara pyramidalis* var. *montovana* Kobelt, 1909; *Vivipara danubialis* var. *rumaenica* Kobelt, 1909]

Paludina atra De Cristofori & Jan, 1832: 3.

- Type locality: Not stated (Italia superioris – from the publication's title).
- Types: Not traced.
- Global distribution: The Eastern and Southern Europe.
- Distribution in the former USSR: The European Russia (southern part) and Ukraine (basins of the Danube, Dnieper and Dniester rivers, now through the

entire Dnieper River and basin of the Zapadnaya Dvina River, vicinities of Togliatti and Pyatigorsk cities [Chernogorenko, 1988; Anistratenko & Anistratenko, 2001; Starobogatov *et al.*, 2004].

- Subregions: SE.
- Bionomics: Lives in rivers and lakes [Anistratenko & Anistratenko, 2001; Starobogatov *et al.*, 2004].
- IUCN conservation status: LC (least concern).
- Remark: According to P. Glöer's opinion (pers. comm.), the "true" *V. ater* is distributed in the South Alps only, and all the records from the ex-USSR territory belong, in reality, to another species of this genus, possibly to *V. acerosus* (Bourgignat, 1862). In the Russian literature, the latter species is considered to be a junior synonym of *V. ater* [Chernogorenko, 1988]. However, European malacologists [Falniowski *et al.*, 1998; Falkner *et al.*, 2001; Glöer, 2002a; Glöer & Georgiev, 2014] regarded it as a distinct species.

**9(11). *Viviparus (Viviparus) costae*
(Heldreich in Mousson, 1863)**

Paludina costae Mousson, 1863: 18.

- Type locality: Turkey, vicinity of Istanbul (= "environs de Constantinople", Bourguignat, 1880).
- Types: Not traced, possibly in Zürich Zoological Museum [fide Dance, 1986].
- Global distribution: Asia Minor, the Transcaucasia [Bourguignat, 1880; Starobogatov *et al.*, 2004].
- Distribution in the former USSR: Armenia, Western Georgia [Bourguignat, 1880; Chernogorenko, 1988].
- Subregions: CT.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004]. In Turkey, this species has been recorded from large lakes

[Bourguignat, 1880; Öktener, 2004; Şahin & Yildirim, 2007].

- IUCN conservation status: LC (least concern).
- Remark: Schütt [1965] considered this taxon as a subspecies of *Viviparus viviparus*.

10(12). *Viviparus (Viviparus) sphaeridus* (Bourguignat, 1880)

[= *Vivipara strongyla* Bourguignat, 1880; *Vivipara neptun* Clessin, 1887]

Vivipara sphaeridia Bourguignat, 1880: 47-48.

- Type locality: “Bourguignat does not mention a locality in his original description. In his oeuvres publication from 1891 in the register (p. 254), he mentioned the locality „Valachie” for *sphaeridia*; going to the collection, MHNG 4861 is recorded from “Giurgewo”, and thus from what at his time could be considered the “Valachie” [Glöer & Georgiev, 2014: 97]. Most probably, the type locality of this species should be referred to as “Giurgewo (= Giurgiu, Romania)” (the habitat of the syntype).
- Syntype: MHNG No. 4861 [fide Glöer & Georgiev, 2014].
- Global distribution: Southern parts of the Central and Eastern Europe, Asia Minor [Chernogorenko, 1988; Glöer & Georgiev, 2014].
- Distribution in the former USSR: Basins of the Danube, Dnieper and Dniester rivers, now through the entire Dnieper and the basin of the Zapadnaya Dvina River [Anistratenko & Anistratenko, 2001; Starobogatov *et al.*, 2004].
- Subregions: SE.
- Bionomics: Lives in rivers and lakes, including such large ones as the Danube River [Anistratenko & Anistratenko, 2001; Glöer & Georgiev, 2014].

Subgenus *Contectiana*

Bourguignat, 1880

[= *Lacustriniana* Bourguignat, 1880; *Kobeltipaludina* Chernogorenko et Starobogatov, 1987]

Type species: *Cyclostoma contectum* Millet, 1813 (fixation of the type species not traced)

Remark: Eight species of *Contectiana* distinguished by the Russian malacologists [Chernogorenko & Starobogatov, 1987a; Chernogorenko, 1988] correspond to a single species *Viviparus contectus* s. l. accepted by European authors [Glöer, 2002a; Welter-Schultes, 2012] (see Fig. 1). The validity of these eight “minor” species needs a special revision.

11(13). *Viviparus (Contectiana) contectus* (Millet, 1813)

[= *Nerita fasciata* Müller, 1774, partim; *Paludina crystallina* Gray, 1821; *Paludina inflata* A et J.B. Villa, 1841; *Vivipara lacustris* Beck, 1847]

Cyclostoma contectum Millet, 1813: 5-7.

- Type locality: France, Maine-et-Loire department (“La Mayenne, etc. A Angers: les fossés de Tournemine; ceux de Reculée”; Millet, 1813: 7).
- Types: Not traced. Millet’s collection in the Museum of Natural Science in Angers (France) evidently does not contain any type materials of freshwater species [see Glöer & Meier-Brook, 2008 for details].
- Global distribution: Europe, except its northern and southern regions [Welter-Schultes, 2012].
- Distribution in the former USSR: Waterbodies of the Baltic Sea Basin and upper-middle parts of the Dnieper Basin [Anistratenko & Anistratenko, 2001; Starobogatov *et al.*, 2004].
- Subregions: NE, SE.
- Bionomics: Lives in lakes, large wa-

ter reservoirs and small permanent water-bodies [Anistratenko & Anistratenko, 2001; Starobogatov *et al.*, 2004].

- IUCN conservation status: LC (least concern).
- Remark: Before 1959 the taxonomic names *Viviparus viviparus* and *V. contectus* (Millet, 1813) have been sometimes used in reverse sense [e.g. Zilch 1955: *V. contectus* = *V. viviparus*, *V. viviparus* = *V. fasciatus*], thus many old citations in the literature cannot be trusted [Glöer, 2002a].

11(14). *Viviparus (Contectiana) fennicus* (Kobelt, 1909)

Vivipara fennica Kobelt, 1909a: 9, pl. 394, fig. 2265-2267.

- Type locality: Russia, Gulf of Finland of the Baltic Sea near Lakhta village (nowadays, a district of Sankt-Petersburg City) ["Finnischer Meerbusen beim Dorfe Lachta (Gouv. St. Petersburg)", see Zilch, 1955: 51].
- Lectotype: SMF 47879 [Zilch, 1955].
- Global distribution: The Eastern Europe [Chernogorenko & Starobogatov, 1987a; Chernogorenko, 1988].
- Distribution in the former USSR: North of the European part of Russia: lakes of the Baltic Sea Basin, upper basin of the Volga River (the Pleshchevo Lake, Yaroslavl' Region), freshwater parts of Gulf of Finland, and in the Shatsk Lakes, Western Ukraine [Anistratenko & Anistratenko, 2001; Starobogatov *et al.*, 2004]. Possibly, endemic to the ex-USSR territory.
- Subregions: NE, SE.
- Bionomics: Inhabits lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

11(15). *Viviparus (Contectiana) kormosi* (Kobelt, 1909)

Vivipara contecta kormosi Kobelt, 1909b: 315-316, pl. 62, fig. 12.

- Type locality: Hungary, Soto [= "Soto in Ungarn"; Kobelt, 1909b: 316].
- Lectotype: SMF 48413 [Zilch, 1955].

- Global distribution: The Eastern Europe [Chernogorenko & Starobogatov, 1987a; Chernogorenko, 1988].
- Distribution in the former USSR: The Baltic Sea Basin, the middle Danube River basin [Starobogatov *et al.*, 2004], the Shatsk Lakes in Western Ukraine [Anistratenko & Anistratenko, 2001].
- Subregions: NE, SE.
- Bionomics: Inhabits lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: European malacologists generally regard *Viviparus kormosi* as a synonym of *V. contectus* s. l. [Bank, 2014].

11(16). *Viviparus (Contectiana) ladogensis* (Chernogorenko et Starobogatov, 1987)

Contectiana ladogensis Chernogorenko & Starobogatov, 1987a: 147.

- Type locality: Russia, Republic of Karelia, northern part of the Ladoga Lake (the NW European part of Russia).
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and a single paratype.
- Global distribution: The Eastern Europe [Chernogorenko & Starobogatov, 1987a].
- Distribution in the former USSR: The Ladoga Lake [Starobogatov *et al.*, 2004].
- Subregions: NE.
- Bionomics: Described from a large lake [Chernogorenko & Starobogatov, 1987a].
- IUCN conservation status: Not assessed.
- Remark: European malacologists generally regard *Viviparus ladogensis* as a synonym of *V. contectus* s. lato [Bank, 2014].

11(17). *Viviparus (Contectiana) listeri* (Forbes et Hanley, 1849)

[= *Vivipara communis* Moquin-Tandon, 1855; *Paludina moquini* Roumeguere, 1858; *Vivipara vera* Frauenfeldt, 1862; *Vivipara brachya* Bourguignat, 1880; *Vivipara carniolica* Bourguignat, 1880; *Vivipara isseli* Bourguignat, 1880; *Vivipara minutula* Bourguignat, 1880; *Vivipara paludosa* Bourguignat, 1880; *Vivipara taurica* Bourguignat, 1880; *Vivipara contecta* var. *russiensis* Milashevitch, 1881; *Vivipara ranarum* Servain, 1884; *Vivipara contecta* var. *rossica* Westerlund, 1886; *Paludina con-*

tecta var. *gallensteini* Kobelt, 1893; *Vivipara connecta* var. *corcyrensis* Kobelt, 1909; *Vivipara connecta* var. *croatica* Kobelt, 1909]

Paludina listeri Forbes & Hanley, 1849 in 1849-1850: pl. 71, fig. 16; 1850: 8-11.

- Type locality: Britain (Forbes & Hanley [1849] quote nearly 10 localities of the species situated in southern England chiefly).
- Types: Not traced.
- Global distribution: Europe, except extreme south and north, the Western Siberia [Anistratenko & Anistratenko, 2001; Starobogatov *et al.*, 2004].
- Distribution in the former USSR: The European part of Russia, Ukraine, the Ural River, south of the Western Siberia westwards of the Ob' River [Pirogov *et al.*, 1994; Anistratenko & Anistratenko, 2001; Vinarski *et al.*, 2007].
- Subregions: NE, SE, WS.
- Bionomics: Lives in lakes and small permanent waterbodies [Anistratenko & Anistratenko, 2001].
- IUCN conservation status: Not assessed.
- Remark: European malacologists generally regard *Viviparus listeri* as a synonym of *V. connectus* s. lato [Bank, 2014].

11(18). *Viviparus (Contectiana) turritus* (Kobelt, 1909)

Vivipara connecta turrita Kobelt, 1909a: 8, pl. 394, fig. 2263.

- Type locality: Germany, Mecklenburg-Vorpommern, the Tollense Lake (approximately 53°30'46"N; 13°12'40"E).
- Holotype: SMF No. 48309 [Zilch, 1955].
- Global distribution: The Central and Eastern Europe [Chernogorenko & Starobogatov, 1987a].
- Distribution in the former USSR: Lakes of the Baltic Sea basin, the Shatsk Lakes in Western Ukraine [Anistratenko & Anistratenko, 2001; Starobogatov *et al.*, 2004].
- Subregions: NE, SE.
- Bionomics: Lives in lakes [Anistratenko & Anistratenko, 2001].
- IUCN conservation status: Not assessed.
- Remark: The shell of *Contectiana turrita* illustrated by Chernogorenko [1988: 652, fig. 4 B] looks quite different from the shell of

holotype portrayed by Zilch [1955, Taf. 3, fig. 1]. It raises a question about true identity of *C. turrita* sensu Chernogorenko, 1988. European malacologists generally regarded *C. turrita* as a synonym of *Viviparus connectus* s. lato [Bank, 2014].

11(19). *Viviparus (Contectiana) zebra* (Steinz in Kobelt, 1877)

Paludina zebra Kobelt, 1877: 74, pl. 138, fig. 1370.

- Type locality: Turkey, Istanbul (Kobelt [1877] quotes the type locality as "Constantinople").
- Lectotype: SMF No. 26555 [Zilch, 1955, as "Typus"]
- Global distribution: Asia Minor and the Western Transcaucasia [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: Vicinities of Batumi Town, Georgia [Chernogorenko, 1988].
- Subregions: CT.
- Bionomics: Unknown, possibly it inhabits large lakes.
- IUCN conservation status: Not assessed.

**Subfamily Bellamyinae
Rohrbach, 1937**

[= Amuropaludinidae Kruglov et Pavlyuchenkova, 1995]²⁸

**Genus *Amuropaludina*
Moskvicheva, 1979**

Type species: *Paludina praerosa* Gerstfeldt, 1859 (OD)

²⁸ Bouchet & Rocroi [2005] quote Starobogatov, Prozorova, Bogatov and Saenko [2004] as authors of the family name Amuropaludinidae, with remarks that it is not available under ICZN Article 16.1. However, this family was for the first time established by Kruglov and Pavlyuchenkova in a short article published in 1995 [Kruglov & Pavlyuchenkova, 1995]. The paper contains both morphological diagnosis and indication of the type genus *Amuropaludina* and the taxonomic name is clearly indicated as a new one. Thus it is available under ICZN rules with authorship Kruglov et Pavlyuchenkova, 1995.

**12(20). *Amuropaludina praerosa*
(Gerstfeldt, 1859)**

[= *Vivipara elophila* Bourguignat, 1860]

Paludina praerosa Gerstfeldt, 1859: 509-510, pl. 9, figs. 6a, 7.

- Type locality: Russia, the Far East region, middle part of the Amur River basin (the lectotype sampling site).
- Lectotype: ZIN, № 205 in systematic catalogue [Moskvicheva, 1979].
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Amur River basin, excluding upper part of the Zeya and Amgun' drainage basins [Bogatov & Zatravkin, 1990; Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in rivers and running lakes [Bogatov & Zatravkin, 1990; Starobogatov *et al.*, 2004].
- IUCN conservation status: LC (least concern).

**13(21). *Amuropaludina chloantha*
(Bourguignat, 1860)**

Vivipara chloantha Bourguignat, 1860a: 534, pl. 24, figs. 5-7.

- Type locality: Russia, the Far East region, different tributaries of the middle Amur River ("habite divers affluents de l'Amour moyen"; Bourguignat, 1860a: 534).
- Syntype: MHNG, Bourguignat collection, No. 4734 [Sitnikova *et al.*, 2012].
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Amur River basin, excluding upper part of the Zeya basin [Sitnikova *et al.*, 2012].
- Subregions: SF.
- Bionomics: Lives in rivers and running lakes [Bogatov & Zatravkin, 1990; Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

**14(22). *Amuropaludina pachya*
(Bourguignat, 1860)**

Vivipara pachya Bourguignat, 1860a: 532-533, pl. 24, figs. 1-2.

- Type locality: Russia, the Far East region, the Amur River ("Le flueve Amour"; Bourguignat, 1860a: 534).
- Syntype: MHNG, Bourguignat collection, No. 4741 [Sitnikova *et al.*, 2012].
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Amur basin, excluding upper part of the Zeya and Amgun' river basins [Bogatov & Zatravkin, 1990; Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in rivers and running lakes [Bogatov & Zatravkin, 1990; Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

**Genus *Cipangopaludina*
Hannibal, 1912**

[= *Ussuripaludina* Zatravkin et Bogatov, 1987]

Type species: *Paludina malleata* Reeve, 1863 (OD)

**15(23). *Cipangopaludina kurilensis*
Starobogatov in Moskvicheva, 1979**

[= *Viviparus malleatus* auct., non *Paludina malleata* Reeve, 1863]

Cipangopaludina kurilensis Moskvicheva, 1979: 91.

- Type locality: Russia, the Kurile Archipelago, the Kunashir Island [Bogatov & Zatravkin, 1990]. The handwritten catalogue of ZIN collection contains indication that the lectotype was collected in the Furukamatsu Lake.
- Lectotype: ZIN, No. 1 in systematic catalogue [Bogatov & Zatravkin, 1990].
- Global distribution: The Far East. Re-

corded from Japan and Russia [Bogatov & Zatravkin, 1990; Starobogatov *et al.*, 2004].

- Distribution in the former USSR: The southern Kurile Islands, the southern and central Sakhalin [Prozorova, 1996 [1997]a; Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in rivers and slowly running rivers [Bogatov & Zatravkin, 1990; Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

16(24). *Cipangopaludina sujfunensis* Moskviceva, 1979

Cipangopaludina sujfunensis Moskviceva, 1979: 89-90, fig. 3.

- Type locality: Russia, the Primorye Region, the Soldatskoye Lake near Ussuriysk Town in the basin of the Razdol'naya (= Sujfun) River (approximately 43°46'38"N; 131°56'12"E).
- Types: ZIN Nos. 1–5 in systematic catalogue. The type series includes the holotype and 33 paratypes.
- Global distribution: Endemic to the Russian Far East
- Distribution in the former USSR: Basins of rivers of the southern Primorye Territory, except the Amur River basin [Moskviceva, 1979; Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in floodplain lakes and river inlets [Bogatov & Zatravkin, 1990].
- IUCN conservation status: Not assessed.

17(25). *Cipangopaludina ussuriensis* (Gerstfeldt, 1859)

Paludina ussuriensis Gerstfeldt, 1859: 507-508, pl. 9, figs. 1-4.

- Type locality: Russia, the Primorye Territory, the Amur River basin, lakes near the Ussuri River mouth (locality of the lectotype). According to the original description, the species inhabits lakes of the middle and lower parts of the Amur River basin ("In den Seen, die mit dem mittleren und unteren Amur in Verbindung stehen, namentlich häufig aber in den Lachen an der Ussuri-Mündung"; Gerstfeldt, 1859: 508).

• Lectotype: ZIN, No. 135 in systematic catalogue.

• Global distribution: Endemic to the Russian Far East

• Distribution in the former USSR: The Amur basin, excluding upper and central parts of the Zeya and Bureya river basins [Starobogatov *et al.*, 2004].

• Subregions: SF.

• Bionomics: Lives in river inlets and shallow floodplain lakes at depths down to 1.5 m [Bogatov & Zatravkin, 1990].

• IUCN conservation status: LC (least concern).

18(26). *Cipangopaludina zejaensis* Moskviceva, 1979

Cipangopaludina zejaensis Moskviceva, 1979: 89, fig. 2.

• Type locality: Russia, the Amur Region, the Orlinoe Lake, 120 km from mouth of the Arga River (upper Zeya basin).

• Types: ZIN, Nos. 1–16 in systematic catalogue. The type series includes the holotype and > 200 paratypes.

• Global distribution: Endemic to the Russian Far East

• Distribution in the former USSR: Upper and central parts of the Zeya and Bureya river basins, the middle Amur and Ussuri river basins [Moskviceva, 1979; Starobogatov *et al.*, 2004].

• Subregions: SF.

- Bionomics: Lives in floodplain lakes [Bogatov & Zatravkin, 1990].
- IUCN conservation status: LC (least concern).

Superfamily Cerithioidea

Fleming, 1822

Family Melanopsidae

H. et A. Adams, 1854

[= Stomatopsinae Stache, 1889; Amphimelaninae P. Fischer et Crosse, 1891; Fagotiinae Starobogatov, 1992]

(Melanopsinae H. et A. Adams, 1854: 309)

Type genus: *Melanopsis* Férussac, 1807

A relatively small gastropod family with about 50 species, most of which are distributed in southern Europe, Northern Africa and some parts of Middle East [Starobogatov, 1970; Banareescu, 1990]. Three other species are endemics of the southern Pacific region [Strong *et al.*, 2008]. The most recent taxonomic works on melanopsid snails of the European part of RAC and adjacent countries include those by Anistratenko & Anistratenko [2001], Glöer [2002a], Heller *et al.* [2005], Smoleń & Falniowski [2009], and Garbar *et al.* [2012].

Genus *Melanopsis* Férussac, 1807

[= *Lyrcaea* H. et A. Adams, 1854; *Macrospira* Sandberger, 1872, non Swainson, 1840; *Melanoptychia* Neumayr, 1880; *Buccinoidiana* Bourguignat, 1884; *Cariosiana* Bourguignat, 1884; *Couphiana* Bourguignat, 1884; *Dufouriana* Bourguignat, 1884; *Eumorphiana* Bourguignat, 1884; *Graellsiana* Bourguignat, 1884; *Letourneuxiana* Bourguignat, 1884 (p. 8) non Bourguignat, 1884 (p. 32); *Lorcaniana* Bourguignat, 1884; *Maresiana* Bourguignat, 1884; *Mingreliciana* Bourguignat, 1884; *Myosotidiana* Bourguignat, 1884; *Nodosiana* Bourguignat, 1884; *Parreysiana* Bourguignat, 1884; *Pechaudiana* Bourguignat, 1884; *Praemorsiana* Bourguignat, 1884; *Scalarians*

Bourguignat, 1884; *Seignettiana* Bourguignat, 1884; *Sesteriana* Bourguignat, 1884]

Type species: *Melanopsis costata* Olivier, 1804 (SD Gray, 1847)²⁹

Subgenus *Melanopsis* s. str.

Remark: Current taxonomy of the genus *Melanopsis* is extremely confusing due to high degree of conchological variation in these snails. The traditional approach is to unite all or almost all species with smooth and unsculptured shells into a polymorphic and widely distributed species *M. praemorsus* (L., 1758) s. l. [Zhadin, 1952; Welter-Shultes, 2012]. Sometimes it is ranked as a superspecies [Glaubrecht, 1993, 2000]. Other authors [Heller *et al.*, 2005; Glöer & Pešić, 2012] separated distinct species out from this enormously variable taxon. The most extreme approach to the systematization of the genus was realized on the basis of the comparatorial method [Izzatullaev & Starobogatov, 1984; Starobogatov *et al.*, 1992] with more than 12 nominal species accepted in the ex-USSR malacofauna. At present, we cannot determine definitely how many valid species of the genus live within the RAC boundaries. Given that many “comparatory-based” species of the allied genera *Microcolpia* and *Fagotia* after thorough study of their morphological and genetic variation were proved to be invalid [Reischütz, 1994; Garbar *et al.*, 2012], it is most probably that many of these alleged species of

²⁹ *Buccinum praerosum* Linnaeus, 1767, is generally cited (e.g., by Cossmann, Wenz, etc.) as the type species, but it was included by Férussac only with doubts in *Melanopsis*. Only *Melania buccinoidea* and *M. costata* were originally included species [Rocroi, in litt.]

Melanopsis are destined to become synonymized. On the other hand, some of these species are different enough to be proposed to be placed in separate subgenera [Starobogatov *et al.*, 1992] that may serve as an indirect indication of their valid species status. We, however, agree with Izzatullaev & Starobogatov [1984] that the “true” *M. praemorsus* s. str. does not occur in the RAC area being restricted to the Western Mediterranean region [see also Glöer & Pešić, 2012].

19(27). *Melanopsis (Melanopsis) buccinoides* (Olivier, 1801)

[= *Melanopsis ferussaci* Roth, 1839; *Melanopsis wagneri* Roth, 1839; *Melanopsis callichroa* Bourguignat, 1884; *Melanopsis olivieri* Bourguignat, 1884; *Melanopsis sesteri* Bourguignat, 1884, partim; *Melanopsis astropaliae* Gambetta, 1929]³⁰.

Melania buccinoidea Olivier, 1801: 297, Atlas pl. 17, fig. 8.

- Type locality: Islands of the Greek Archipelago, the Crete Island, and Syria. The possible syntypes were collected in Tripoli, Lebanon [Heller *et al.*, 2005].
- Types: Ten probable syntypes are in MNHN [Tillier & Mordan, 1983].
- Global distribution: The Mediterra-

³⁰ It is by no means the complete synonymy of *M. buccinoides*. Perhaps, much more nominal taxa of *Melanopsis* of species and variety rank described during the nineteenth century (see the list of these taxa in Germain [1921]) that were treated as synonyms of *M. praemorsa* are, in fact, synonymous with *M. buccinoides*. A special inquiry is needed to ascertain the true identity of all these obscure taxa that were proliferated by members of the “Nouvelle École”. Despite obvious difficulties of such a study, it is desirable as it was recently proposed to restore many taxonomic names of Bourguignat and his followers as valid [Izzatullaev & Starobogatov, 1984; Heller *et al.*, 2005].

nean region and Asia Minor, including Algeria, Greece, Iraq, Israel, Jordan, Lebanon, Syria, Turkey [Bourguignat, 1884; Heller *et al.*, 2005; Bank, 2014], and the north Black Sea coast [Izzatullaev & Starobogatov, 1984].

- Distribution in the former USSR: Western Georgia [Izzatullaev & Starobogatov, 1984].
- Subregions: CT.
- Bionomics: Inhabits “a wide variety of aquatic habitats that range from small trickles to springs and streams, where it lives on stones, sometimes also in silty mud” [Heller *et al.*, 2005: 235].
- IUCN conservation status: LC (least concern).

19(28). *Melanopsis (Melanopsis) laevigata* Lamarck, 1816

[= *Melanopsis ascania* Bourguignat, 1880]

Melanopsis laevigata Lamarck, 1816: 12, pl. 458, fig. 8.

- Type locality: Not stated.
- Syntypes: MHNG.
- Global distribution: Mediterranean region, including Algeria, Greece, Italia, Lybanon, Morocco, Syria, Turkey [Bourguignat, 1884].
- Distribution in the former USSR: The Western Georgia [Izzatullaev & Starobogatov, 1984].
- Subregions: CT.
- Bionomics: Lives in lotic habitats: small rivers and brooks [Izzatullaev & Starobogatov, 1984; Starobogatov *et al.*, 1992].
- IUCN conservation status: Not assessed.
- Remark: Germain [1921] considered *M. laevigata* as a synonym of *M. buccinoidea*.

19(29). *Melanopsis (Melanopsis) mingrelica* Bayer in Mousson, 1863

Melanopsis mingrelica Mousson, 1863: 411-412.

- Type locality: Georgia, Region of Mingrelia, vicinities of Poti Town [“de l’intérieur de la Mingrélie ..., puis de Rédutkaleh”].
- Types: MNHN [fide Germain, 1936].
- Global distribution: The Transcaucasia.

- Distribution in the former USSR: The Western Georgia [Izzatullaev & Starobogatov, 1984].
- Subregions: CT.
- Bionomics: Lives in lotic habitats: small rivers and brooks [Izzatullaev & Starobogatov, 1984; Starobogatov *et al.*, 1992].
- IUCN conservation status: Not assessed.

Addition to the subgenus *Melanopsis*. One more species of this subgenus was mentioned by Russian authors as inhabiting the Western Georgia – *M. minutula* Bourguignat, 1884 [Starobogatov *et al.*, 1992; Kantor & Sysoev, 2005]. We exclude this taxon from our catalogue due to a statement by Sitnikova *et al.* [2012: 94] that “specimens from vicinities of Kutaisi, initially identified by Rosen and Lindholm as *Melanopsis minutula* and stored in ZIN, were subsequently re-identified by Z. Izzatullaev as *Melanopsis buccinoidea* (Olivier, 1801)... There are no other published data on records of *M. minutula* in the waterbodies of Georgia”.

Subgenus *Canthidomus* Swainson, 1840

[= *Belusiana* Bourguignat, 1884; *Charpentieriana* Bourguignat, 1884; *Costaliana* Bourguignat, 1884; *Lortetiana* Bourguignat, 1884; *Olivierana* Bourguignat, 1884; *Saulcyana* Bourguignat, 1884]

Type species: *Melanopsis costata* A. Férussac, 1823 (M)³¹

Remark: Two groups of species were listed by Starobogatov *et al.* [1992] as

³¹ Swainson [1840] cited *Melanopsis costata* sensu Férussac, 1823 and G.B. Sowerby I, 1824 as the type species of *Canthidomus*. It is not clear, if it is identical with *M. costata* Olivier, 1804. Possibly, the subgenera *Melanopsis* s. str. and *Canthidomus* share the same type species and thus are synonymous (as it is accepted, for instance, in WoRMS database).

belonging to this subgenus. The first one comprises three species inhabiting the Western Georgia, whereas six other ones are recorded from Central Asia (Turkmenistan). Validity of all these species needs further investigation, though the zoogeographical evidence [Izzatullaev & Starobogatov, 1984] indicates that at least several of such “minor” taxa may represent independent phylogenetic lineages.

20(30). *Melanopsis (Canthidomus) variabilis* (v. d. Busch in Philippi, 1847)

Melania (Melanopsis) variabilis Philippi, 1847: 175, pl. IV, fig. 7, 8, 10.

- Type locality: Southern Iran, vicinity of Shiraz City (“Schiraz et Persepolis Persiae”).
- Types: Not traced, possibly in ZMB [fide Dance, 1986].
- Global distribution: The Eastern Mediterranean region and Asia Minor, including Azerbaijan, Iran, Lebanon, and Syria [Brot, 1874; Bourguignat, 1884; Westerlund, 1886; Starobogatov *et al.*, 1992].
- Distribution in the former USSR: Small rivers flowing to the Kura River from the Lesser Caucasus (Kazakh district of Azerbaijan) [Starobogatov *et al.*, 1992]
- Subregions: CT.
- Bionomics: Lives in small rivers [Starobogatov *et al.*, 1992].
- IUCN conservation status: Not assessed.
- Remark: Possibly, it is identical with snails recorded from Iran under the names *M. variabilis* and *M. buccinoidea variabilis* [Glöer & Pešić, 2012]. Glöer and Pešić [2012], however, preferred to cite this species as *Melanopsis* sp. being unable to resolve its actual taxonomic identity.

**20(31). *Melanopsis (Canthidomus)*
denegabilis Férussac in Pallary, 1939**

Melanopsis denegabilis Pallary, 1939: 85-86, text-fig. 11, pl. 6, figs. 9-13.

- Type locality: Many localities situated in the Middle East. According to Pallary [1939], "la localité originale n'est pas connue. La seule provenance indiquée est la Mésopotamie. ... Cette espèce est très commune au Levant. ... En Iraq, ... à Rahalya Springs, à Kani Sepi et à Karsi".
- Types: MNHN [fide Germain, 1936].
- Global distribution: The Transcaucasia.
- Distribution in the former USSR: Small rivers flowing to the Kura River from the Lesser Caucasus (Kazakh district of Azerbaijan) [Starobogatov *et al.*, 1992].
- Subregions: CT.
- Bionomics: Lives in lotic habitats: small rivers and brooks [Starobogatov *et al.*, 1992].
- IUCN conservation status: DD (data deficient).
- Remark: Heller *et al.* [2005: 234] stated that Pallary's "figures of *M. denegabilis* are all within the range of *M. buccinoidea*, hence we consider *denegabilis* a synonym of *buccinoidea*".

**20(32). *Melanopsis (Canthidomus)*
prophetarum Bourguignat
in Locard, 1883**

Melanopsis prophetarum Locard, 1883: 265-266, pl. XXIII, figs. 52-55.

- Type locality: Israel (Palestine), the spring of Eliseus near Jericho Town, vicinities of Beyrouth, and Lake of Antioch (= the Amik Lake) in Hatay Province of Turkey.
- Types: Not traced, possibly in MHNG.
- Global distribution: The Near East, Transcaucasia.
- Distribution in the former USSR: Small rivers flowing to the Kura River from the Lesser Caucasus (Kazakh district of Azerbaijan) [Starobogatov *et al.*, 1992].
- Subregions: CT.
- Bionomics: Lives in lotic habitats: small rivers, springs and brooks [Bourguignat, 1884; Starobogatov *et al.*, 1992].
- IUCN conservation status: Not assessed.

- Remark: Dautzenberg [1894] regarded *Melanopsis prophetarum* as a synonym of *M. brevis* Mousson, 1863. Heller *et al.* [2005] ascribe the authorship of this species to Pallary [1939]. "*M. prophetarum* described by Pallary (1939) (BMNH 1901.11.26.88-92) does not differ from typical *M. buccinoidea* from the Jordan Valley ... and thus we consider *M. prophetarum* a synonym of *M. buccinoidea*" [Heller *et al.*, 2005: 234]. It is unclear if *M. prophetarum* sensu Pallary, 1939 is equal to *M. prophetarum* sensu Bourguignat (in Locard, 1883).

**21(33). *Melanopsis (Canthidomus)*
turkmenica Izzatullaev et
Starobogatov, 1984**

Melanopsis turkmenica Izzatullaev & Starobogatov, 1984: 1478-1479, fig. 1, 10.

- Type locality: Turkmenistan, Zakaspiysk Region (= "Zakaspijskaya Oblast"; Izzatullaev & Starobogatov, 1984: 1478).
- Types: ZIN, Nos. 1-9 in systematic catalogue. The type series includes the holotype and 77 paratypes.
- Global distribution: Endemic to Turkmenistan.
- Distribution in the former USSR: Turkmenistan, waterbodies of the Kopet Dag mountain range [Izzatullaev & Starobogatov, 1984].
- Subregions: CA.
- Bionomics: Lives in small rivers and brooks [Izzatullaev & Starobogatov, 1984].
- IUCN conservation status: DD (data deficient).
- Remark: Possibly, it is identical with some species of *Melanopsis* described from Iran.

**21(34). *Melanopsis (Canthidomus)*
ashkhabadensis Izzatullaev et
Starobogatov, 1984**

Melanopsis ashkhabadensis Izzatullaev & Starobogatov, 1984: 1480, fig. 1 14, 3 8.

- Type locality: Turkmenistan, Ashkhabad

City, rapid mountain springs – Feryuza, Guli, etc.

- Types: ZIN, Nos. 1–15 in systematic catalogue. The type series contains the holotype and more than 150 paratypes.
- Global distribution: Endemic to Turkmenistan.
- Distribution in the former USSR: Turkmenistan, waterbodies of the Kopet Dag mountain range [Izzatullaev & Starobogatov, 1984].
- Subregions: CA.
- Bionomics: Lives in small rivers and brooks [Izzatullaev & Starobogatov, 1984].
- IUCN conservation status: Not assessed.

21(35). *Melanopsis (Canthidomus) roseni* Izzatullaev et Starobogatov, 1984

Melanopsis roseni Izzatullaev & Starobogatov, 1984: 1479, fig. 1, 11.

- Type locality: Turkmenistan, Zakaspiysk Region (= “Zakaspijskaya Oblast’; Izzatullaev & Starobogatov [1984]).
- Types: ZIN, Nos. 1–15 in systematic catalogue. The type series contains the holotype and more than 150 paratypes.
- Global distribution: Endemic to Turkmenistan.
- Distribution in the former USSR: Turkmenistan, waterbodies of the Kopet Dag mountain range [Izzatullaev & Starobogatov, 1984].
- Subregions: CA.
- Bionomics: Lives in small rivers and brooks [Izzatullaev & Starobogatov, 1984].
- IUCN conservation status: Not assessed.

21(36). *Melanopsis (Canthidomus) starostini* Izzatullaev et Starobogatov, 1984

Melanopsis starostini Izzatullaev & Starobogatov, 1984: 1480, fig. 1(13), 3, 7.

- Type locality: Turkmenistan, the Central Kopet Dag, Germab Settlement (approximately 38°00′53″N; 57°44′27″E).
- Types: ZIN, Nos. 1–20 in systematic catalogue. The type series contains the holotype and more than 200 paratypes.
- Global distribution: Endemic to Turkmenistan.

- Distribution in the former USSR: Turkmenistan, waterbodies of the Kopet Dag mountain range [Izzatullaev & Starobogatov, 1984].
- Subregions: CA.
- Bionomics: Lives in small rivers and brooks [Izzatullaev & Starobogatov, 1984].
- IUCN conservation status: Not assessed.

21(37). *Melanopsis (Canthidomus) transcaspica* Izzatullaev et Starobogatov, 1984

Melanopsis transcaspica Izzatullaev & Starobogatov, 1984: 1480, fig. 1(9).

- Type locality: Turkmenistan, Ashkhabad Region, Gyaure stream in the collective farm “Imeni 1 Maya”.
- Types: ZIN, Nos. 1–8 in systematic catalogue. The type series contains the holotype and 67 paratypes.
- Global distribution: Endemic to Turkmenistan.
- Distribution in the former USSR: Turkmenistan, waterbodies of the Kopet Dag mountain range [Izzatullaev & Starobogatov, 1984].
- Subregions: CA.
- Bionomics: Lives in small rivers and brooks [Izzatullaev & Starobogatov, 1984].
- IUCN conservation status: Not assessed.

21(38). *Melanopsis (Canthidomus) zarudnyi* Izzatullaev et Starobogatov, 1984

Melanopsis zarudnyi Izzatullaev & Starobogatov, 1984: 1479–1480, fig. 1, 12; 3, 6.

- Type locality: Turkmenistan, the “Golden” spring near Ashkhabad City.
- Types: ZIN, Nos. 1–7 in systematic catalogue. The type series contains the holotype and 22 paratypes.
- Global distribution: Endemic to Turkmenistan.
- Distribution in the former USSR: Turkmenistan, waterbodies of the Kopet Dag mountain range [Izzatullaev & Starobogatov, 1984].
- Subregions: CA.
- Bionomics: Lives in small rivers and brooks [Izzatullaev & Starobogatov, 1984].
- IUCN conservation status: Not assessed.

Genus *Fagotia* Bourguignat, 1884

Type species: *Melanopsis esperi* A. Férussac, 1823 (SD Westerlund, 1902)

Remark: Some recent authors considered *Fagotia* as a synonym of *Esperiana* Bourguignat, 1877 [Falkner *et al.*, 2001; Glöer, 2002a; Sitnikova *et al.*, 2012], although it was treated as an acceptable generic name having priority before *Esperiana* by Grossu [1993], Anistratenko & Anistratenko [2001], Starobogatov *et al.* [2004], and Smoleń & Falniowski [2009]. The nomenclatorial aspects of the “*Esperiana* vs. *Fagotia*” problem were reviewed in Sitnikova *et al.* [2012]. Starobogatov *et al.* [1992] treated *Microcolpia* Bourguignat, 1884 as a separate genus within the family, but this opinion has gained no support in the most recent research based on both morphological and genetic data [Smoleń & Falniowski, 2009; Garbar *et al.*, 2012]. Smoleń & Falniowski [2009] proposed to synonymize *Fagotia* with *Melanopsis* Férussac, 1807, but this solution was based on the study of the single species for one molecular marker (COI) and should be considered as a preliminary one.

Subgenus *Fagotia* s. str.

[= *Hemisinus* Swainson, 1840, partim; *Esperiana* Bourguignat, 1870, nomen oblitum; *Acroxiana* Bourguignat, 1884; *Letourneuxiana* Bourguignat, 1884 (p. 32), non Bourguignat, 1880 nec Bourguignat, 1884 (p. 8) nec Locard, 1890; *Locardiana* Bourguignat, 1884; *Pseudhemisinus* G. Nevill, 1885; *Dneprifagotia* Starobogatov, Alexenko et Levina, 1992]

22(39). *Fagotia (Fagotia) esperi* (A. Férussac, 1823)

[= *Melanopsis decussata* A. Férussac, 1823; *Melanopsis pardalis* Menke, 1830; *Melanopsis picta* Menke, 1830; *Melanopsis lurida* Brot, 1874;

Melanopsis maculata Brot, 1874; *Melanopsis subtilis* Brot, 1874; *Melanopsis turgida* Brot, 1874; *Melanopsis gallandi* Locard, 1883; *Fagotia acroxia* Bourguignat, 1884; *Fagotia anatolica* Bourguignat, 1884; *Fagotia anceyana* Bourguignat, 1884; *Fagotia ascania* Bourguignat, 1884; *Fagotia berlani* Bourguignat, 1884; *Fagotia danubialis* Bourguignat, 1884; *Fagotia grvida* Bourguignat, 1884; *Fagotia letourneuxi* Bourguignat, 1884; *Fagotia locardiana* Bourguignat, 1884; *Fagotia nocturna* Bourguignat, 1884; *Fagotia pfeifferi* Bourguignat, 1884; *Fagotia pusilla* Bourguignat, 1884; *Fagotia rossmaessleri* Bourguignat, 1884; *Fagotia saint-simonis* Bourguignat, 1884; *Fagotia servainiana* Bourguignat, 1884; *Fagotia stenostoma* Bourguignat, 1884; *Fagotia dneprensis* Starobogatov, Alexenko et Levina, 1992]

Melanopsis esperi A. Férussac, 1823: 160.

- Type locality: Slovenia, the Ljubljana River near Ljubljana City.
- Types: MNHN. The type series consists of 4 syntypes.
- Global distribution: The south-eastern Europe and north-west of Turkey [Welter-Schultes, 2012].
- Distribution in the former USSR: Waterbodies of south-eastern Ukraine and Moldavia [Korniushev & Lyashenko, 2004; Garbar *et al.*, 2012; Welter-Schultes, 2012].
- Subregions: SE.
- Bionomics: Lives in rivers and lakes, on stones, submerged roots or on mud at river margins [Welter-Schultes, 2012].
- IUCN conservation status: LC (least concern).
- Remark: Three “comparatory-based” species of *Fagotia* s. str. were distinguished by Starobogatov *et al.* [1992] in the fauna of Ukraine: *F. danubialis* Bourguignat, 1884, *F. dneprensis* Starobogatov, Alexenko et Levina, 1992, and *F. berlani* Bourguignat, 1884. Simultaneously, the species *F. esperi* s. str. was declared to be absent in the waterbodies of the ex-USSR. The authors based their opinion on the results of conchological

analysis obtained by means of the comparatorial method. Recently, Ukrainian malacologists have returned to the „broad” concept of species in Melanopsidae considering the three “minor” species as full synonyms of *F. esperi* s. l. [Korniushin & Lyashenko, 2004; Garbar *et al.*, 2012]. This was based on the fact that these three taxa were proved to be indistinguishable by morphological, karyological and genetic (allozyme) traits [Pershko, 2011; Garbar *et al.*, 2012].

Subgenus *Microcolpia* Bourguignat, 1884

[= *Hemisinus* Swainson, 1840, partim; *Aciculariana* Bourguignat, 1884; *Potamactebiana* Bourguignat, 1884; *Praeclariana* Bourguignat, 1884; *Pyramidaliana* Bourguignat, 1884; *Servainiana* Bourguignat, 1884; *Villeserriana* Bourguignat, 1884]

Type species: *Melanopsis acicularis* A. Férussac, 1823 (SD Wenz, 1939)

Remark: Starobogatov *et al.* [1992] as well as some European authors [Welter-Schultes, 2012] considered *Microcolpia* as a separate genus within Melanopsidae.

23(40). *Fagotia (Microcolpia) acicularis* (A. Férussac, 1823)

[= *Melanopsis daudebartii* Prevost, 1821 auct., partim; *Melanopsis cornea* C. Pfeiffer, 1828; *Melanopsis leMBERGENSIS* Menke, 1830; *Melanopsis pyramidalis* Menke, 1830; *Melanopsis aciculella* Schmidt, 1847; *Melanopsis potamactebia* Bourguignat, 1870; *Hemisinus thermalis* Brot, 1868; *Hemisinus glinensis* Brot, 1874; *Microcolpia canaliculata* Bourguignat, 1884; *Microcolpia coutagneana* Bourguignat, 1884; *Microcolpia gallandi* Bourguignat, 1884; *Microcolpia hagenmuelleriana* Bourguignat, 1884; *Microcolpia le-tourneuxi* Bourguignat, 1884; *Microcolpia letourneuxi* var. *minor* Bourguignat, 1884; *Microcolpia mabilliana* Bourguignat, 1884; *Microcolpia pachystoma* Bourguignat, 1884; *Microcolpia peracuta* Bourguignat, 1884; *Microcolpia praeclara* Bourguignat, 1884; *Microcolpia pyramidalis*

Bourguignat, 1884; *Microcolpia rochebruniana* Bourguignat, 1884; *Microcolpia servaini* Bourguignat, 1884; *Microcolpia stossichiana* Bourguignat, 1884; *Microcolpia inconspicua* Starobogatov in Starobogatov, Alexenko et Levina, 1992; *Microcolpia schileykoi* Starobogatov in Starobogatov, Alexenko et Levina, 1992; *Microcolpia ucrainica* Starobogatov, Alexenko et Levina, 1992].

Melanopsis acicularis A. Férussac, 1823: 160.

- Type locality: Three localities of this species were listed in the original description: 1) Slovenia, the Ljubljana River near Ljubljana City; 2) thermal sources of Weslau near Wien (= Bad Vöslau; see Reischütz, 1994); 3) The Danube River near “Wissegrad and Bude” (nowadays in Budapest, Hungary).

- Types: MNHN. There are 5 syntypes in the type series.

- Global distribution: The western Black Sea region, including north-west of Turkey [Welter-Schultes, 2012].

- Distribution in the former USSR: Waterbodies of south-eastern Ukraine and Moldavia [Korniushin & Lyashenko, 2004; Garbar *et al.*, 2012; Welter-Schultes, 2012].

- Subregions: SE.

- Bionomics: Lives in rivers and creeks, at stones, submerged roots or on mud [Welter-Schultes, 2012].

- IUCN conservation status: LC (least concern).

- Remark: Most European taxonomists [Falkner *et al.*, 2001; Glöer, 2002a; Welter-Schultes, 2012] regarded *F. acicularis* as a subspecies or a full synonym of *F. daudebartii* (Prevost, 1821). The most peculiar taxonomic approach to this species was developed by Starobogatov *et al.* [1992]. By using the comparatorial method, the authors proposed to split *F. acicularia* s. l. into a series of separate species, three of which were thought to be presented in the RAC malacofauna:

Microcolpia canaliculata Bourguignat, 1884, *M. potamactebia* (Bourguignat, 1870), and *M. ucrainica* Starobogatov, Alexenko et Levina, 1992. This approach has met strong criticism [Reischütz, 1994]. Recently, Ukrainian malacologists have returned to the “broad” concept of species in Melanopsidae considering the three alleged species as full synonyms of *F. acicularis* s. l. [Korniushin & Lyashenko, 2004; Garbar *et al.*, 2012]. This was based on the fact that these three taxa were proved to be indistinguishable by morphological, karyological and genetic (allozyme) traits [Persheko, 2011; Garbar *et al.*, 2012].

Family Semisulcospiridae Morrison, 1952

[= Ceriphasiinae Gill, 1863; Jugidae Starobogatov, Prozorova, Bogatov et Sayenko, 2004]

(Semisulcospirinae Morrison, 1952: 8)

Type genus: *Semisulcospira* O. Boettger, 1886

The range of this relatively small (almost 50 species) family embraces waterbodies of Eastern Asia (China, Japan, the Far East of Russia, Vietnam) and western regions of North America. The taxa currently placed in Semisulcospiridae were previously united in Pleuroceridae s. l. [i.e. Bouchet & Rocroi, 2005], but recent studies have demonstrated that Asian and western North American semisulcospirids form a clade that is morphologically distinct from eastern North American forms (i.e. Pleuroceridae s. str) and a separate family was established [Strong & Köhler, 2009; Strong *et al.*, 2011]. The representatives of the family in the RAC waterbodies were classified within the genus *Semisulcospira* [Zhadin, 1952] or as members of the genus *Juga* H. et A. Adams, 1854

[Bogatov & Zatravkin, 1990]. In 2004, a new generic name *Parajuga* Starobogatov et Prozorova, 2003 appeared in Starobogatov *et al.* [2004]. Nevertheless, the description of the taxon was not published prior to the publication of the mentioned work (L.A. Prozorova, pers. comm.). According to articles 16.1 and 16.2 of ICZN the name is not available, since it was not explicitly indicated as intentionally new and the type species was not mentioned. We follow here the opinion of Rasshepkina [2009], who returned to use of the generic name *Juga* for Russia's semisulcospirids.

Genus *Juga* H. et A. Adams, 1854

[= *Parajuga* Starobogatov, Prozorova, Bogatov et Sayenko, 2004 (not available)]

Type species: *Melania silicula* Gould, 1847 (SD H.B. Baker, 1963)

Remark. Bogatov & Zatravkin [1990] placed all species of *Juga* from the Russian Far East into the subgenus *Hua* Chen, 1943. According to Rasshepkina [2009], this subgenus does not include species from the Russian malacofauna. Rasshepkina [2009] did not define the subgeneric position of these species.

24(41). *Juga amgunica* Moskvicheva in Zatravkin, 1986

Juga (Hua) amgunica Zatravkin, 1986: 35, fig. 1 (7), 2 (7).

- Type locality: Russia, the Khabarovsk Territory, mouth of the Nimelen River (the Amgun' River basin), approximately 52°26'06"N; 136°35'17"E.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Far East of Russia, basins of the Amgun'

and Tugur rivers in the Khabarovsk Territory [Bogatov & Zatravkin, 1990; Starobogatov *et al.*, 2004].

- Subregions: SF.
- Bionomics: Lives in rivers and lakes, on sandy-mud substrates [Bogatov & Zatravkin, 1990].
- IUCN conservation status: Not assessed.

**25(42). *Juga amurensis*
(Gerstfeldt, 1859)**

[= *Semisulcospira cancellata* sensu Zhadin, 1952, partim, non Benson, 1833]

Melania amurensis Gerstfeldt, 1859: 512-514, figs. 14-24.

- Type locality: Russia, the Amur River ("im Amur, im mittleren Laufe und einem Theile des unteren dieses Stromes"; Gerstfeldt, 1859: 514).
- Lectotype: ZIN, No. 1 in systematic catalogue [fide Bogatov & Zatravkin, 1990].
- Global distribution: The Far East, including northern China, Korea, Russia [Soh, 1962; Bogatov & Zatravkin, 1990, Blair *et al.*, 1999].
- Distribution in the former USSR: The Far East of Russia, basin of the Amgun' and Tugur rivers in the Khabarovsk Territory [Bogatov & Zatravkin, 1990; Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in rivers and lakes, on sandy-mud substrates [Bogatov & Zatravkin, 1990].
- IUCN conservation status: Not assessed.

**26(43). *Juga buettneri* (Ehrmann in
Büttner et Ehrmann, 1927)**

Melania buettneri Büttner & Ehrmann, 1927: 246-247.

- Type locality: Russia, the Primorye

Territory, the Ussuri River in vicinity of Spassk-Dal'ny Town ("Spasskoje").

- Types: Not traced. According to Dance [1986], Ehrmann collection is housed in SMF.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Amur River below the Bureinskiy Ridge [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in rivers and flowing parts of lakes, on muddy substrates [Bogatov & Zatravkin, 1990].
- IUCN conservation status: Not assessed.

27(44). *Juga calculus* (Reeve, 1859)

[= *Melania amurensis* Zhadin, 1933, partim, non Gerstfeldt, 1859; *Semisulcospira laevigata* Zhadin, 1952, non Lamarck, 1815; *Parajuga subcalculus* Prozorova et Starobogatov in Starobogatov, Prozorova, Bogatov et Sayenko, 2004 (non available)]

Melania calculus Reeve, 1859: pl. 17, sp. 117.

- Type locality: "North China".
- Types: Not traced. Reeve's collection was auctioned in 1864-1866 and thereby dispersed among private owners [Dance, 1986].
- Global distribution: The Far East.
- Distribution in the former USSR: The Southern Primorye Territory, rivers and lakes of basins of Amur and Ussuri bays of the Japan Sea [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in rivers and lakes, on sandy-mud substrates [Bogatov & Zatravkin, 1990].
- IUCN conservation status: Not assessed.
- Remark: According to Starobogatov *et al.* [2004], the taxonomic name *Juga calculus* used by Zatravkin [1986] and Zatravkin & Bogatov [1990] was ap-

plied to a species not identical with *Melania calculus* Reeve. The authors provided a substitute name, *Parajuga subcalculus* Prozorova et Starobogatov, 2004 for *Juga calculus* sensu Zatravkin, 1986. Nevertheless, the description of this species was not published prior to the publication of the mentioned work (L.A. Prozorova, pers. comm.). According to article 16.1 of ICZN this name is not available, since it was not explicitly indicated as intentionally new and the type material was not mentioned.

**28(45). *Juga chankensis*
Moskvicheva in Zatravkin, 1986**

Juga (Hua) chankensis Zatravkin, 1986: 33, 34, fig. 1, 5; 2, 5.

- Type locality: Russia, the middle Amur river (without exact indication of the habitat).
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The entire Amur basin (except of the Amgun' River and upper reaches of the Zeya and Bureya Rivers), the Khanka Lake [Bogatov & Zatravkin, 1990; Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in rivers and lakes, on sandy-mud substrates [Bogatov & Zatravkin, 1990].
- IUCN conservation status: Not assessed.

**29(46). *Juga czerskii* Moskvicheva in
Zatravkin, 1986**

Juga (Hua) czerskii Zatravkin, 1986: 34, 35, fig. 1, 6; 2, 6.

- Type locality: Russia, the Primorye Territory, valley of the Odarka River, the Khanka Lake basin.

- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Ussuri basin, the Amur basin (from the Bureinskiy Ridge to Bogorodskoe village) [Bogatov & Zatravkin, 1990; Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in rivers and floodplain channels on sandy-mud bottoms [Bogatov & Zatravkin, 1990].
- IUCN conservation status: Not assessed.

30(47). *Juga extensa* (Martens, 1905)

[= *Melania amurensis* Zhadin, 1933, partim, non Gerstfeldt, 1859; *Semisulcospira laevigata* Zhadin, 1952, non Lamarck, 1815; *Parajuga subextensa* Prozorova et Starobogatov in Starobogatov, Prozorova, Bogatov et Sayenko, 2004 (non available)]

Melania extensa Martens, 1905: 45-46, Taf. 1, fig. 15, 16.

- Type locality: Korea (several localities of the species are given in the original description).
- Types: Not traced; possibly, in ZMB [see Dance, 1986].
- Global distribution: The Far East.
- Distribution in the former USSR: The southern Primorye Territory, basins of the rivers inflowing to Amur and Ussuri bays of the Japan Sea [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in rivers and lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: According to Starobogatov *et al.* [2004], the taxonomic name *J. extensa* used by Zatravkin [1986] and Zatravkin & Bogatov [1990] was ap-

plied to a species not identical with *Melania extensa* Martens. The authors provided a substitute name, *Parajuga subextensa* Prozorova et Starobogatov, 2004 for *J. extensa* sensu Zatravkin, 1986. Nevertheless, the description of this species was not published prior to the publication of the mentioned work (L.A. Prozorova, pers. comm.). According to article 16.1 of ICZN this name is not available, since it was not explicitly indicated as intentionally new and the type material was not mentioned.

**31(48). *Juga heukelomiana*
(Reeve, 1859)**

[= *Semisulcospira cancellata* sensu Zhadin, 1952, partim, non Benson, 1833]

Melania heukelomiana Reeve, 1859: pl. 17, sp. 123.

- Type locality: Not known to the species' author.
- Types: Not traced. Reeve's collection was auctioned in 1864–1866 and thereby dispersed among private owners [Dance, 1986].
- Global distribution: Possibly endemic to the Russian Far East.
- Distribution in the former USSR: The entire Amur basin [Bogatov & Zatravkin, 1990; Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in rivers and large lakes, on sandy, clay, muddy or stone substrates [Bogatov & Zatravkin, 1990; Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

**32(49). *Juga nodosa*
(Westerlund, 1897)**

[= *Melania amurensis* var. *laevigata* Gerstfeldt, 1859, non *Melania laevigata* Lamarck, 1815; *Melania amurensis* sensu Zhadin, 1952, partim, non Gerstfeldt, 1859]

Baicalia (*Maackia*) *nodosa* Westerlund, 1897b: 128.

- Type locality: The Russian Far East, the Argun' River ("Sibirien. Fluss Argunj"; Westerlund, 1897b: 128).
- Types: Not traced. We failed to find the Westerlund's types in the parts of his collection housed now in NMG, ZIN, and SMNH [Vinarski *et al.*, 2013b].
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The entire Amur basin except for the Amgun' River and upper reaches of the Zeya River drainage [Bogatov & Zatravkin, 1990; Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in rivers and lakes, on sandy and muddy substrates [Bogatov & Zatravkin, 1990].
- IUCN conservation status: Not assessed.

**33(50). *Juga starobogatovi* Zatravkin
et Moskvicheva in Zatravkin, 1986**

[= *Parajuga popovae* Prozorova et Starobogatov in Starobogatov, Prozorova, Bogatov et Sayenko, 2004 (non available)]

Juga (*Hua*) *starobogatovi* Zatravkin, 1986: 36–37.

- Type locality: Russia, the Khabarovsk Territory (northern part), the Tugur River (without exact localization).
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: Type locality [Bogatov & Zatravkin, 1990].
- Subregions: SF.
- Bionomics: Lives in slowly flowing rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: The binomen *Juga starobo-*

gatovi Zatravkin et Moskvicheva is a junior homonym of *J. starobogatovi* Popova, 1981 (a fossil species). Starobogatov *et al.* [2004] provided the substitute name, *Parajuga popovae* Prozorova et Starobogatov, 2004 for *Juga starobogatovi* sensu Zatravkin, 1986. Nevertheless, the description of this species was not published prior to the publication of the mentioned work (L.A. Prozorova, pers. comm.). According to article 16.1 of ICZN this name is not available, since it was not explicitly indicated as intentionally new and the type material was not mentioned.

34(51). *Juga tegulata* (Martens, 1905)

[= *Melania amurensis* Zhadin, 1933, partim, non Gerstfeldt, 1859; *Semisulcospira laevigata* Zhadin, 1952, non Lamarck, 1815; *Parajuga subtegulata* Prozorova et Starobogatov in Starobogatov, Prozorova, Bogatov et Sayenko, 2004 (non available)]

Melania tegulata Martens, 1905: 32–33, Taf. 1, fig. 17, 18.

- Type locality: Korea (“Chiksan, nördlich von Chhönan. Provinz Chhungch-höngdo”; Martens, 1905: 33).
- Types. Not traced; possibly, in ZMB (see Dance, 1986).
- Global distribution: The Far East.
- Distribution in the former USSR: The southern Primorye Territory (basins of the rivers inflowing to Amur and Ussuri bays of the Japan Sea) [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: According to Starobogatov *et al.* [2004], the taxonomic name *Juga tegulata* used by Zatravkin [1986] and Zatravkin & Bogatov [1990] was applied to a species not identical with *Mel-*

ania tegulata Martens. The authors provided the substitute name, *Parajuga subtegulata* Prozorova et Starobogatov, 2004 for *Juga tegulata* sensu Zatravkin, 1986. Nevertheless, the description of this species was not published prior to the publication of the mentioned work (L.A. Prozorova, pers. comm.). According to article 16.1 of ICZN this name is not available, since it was not explicitly indicated as intentionally new and the type material was not mentioned.

35(52). *Juga tugurensis* Moskvicheva in Zatravkin, 1986

Juga (Hua) tugurensis Zatravkin, 1986: 36, fig. 1, 11.

- Type locality: Russia, the Khabarovsk Territory, the Tugur River, 35 km upstream from the mouth, near the Eldan mound in vicinity of Tugur settlement.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The northern Khabarovsk Territory, the Tugur River basin [Bogatov & Zatravkin, 1990; Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in rivers on sand-and-pebble bottoms [Bogatov & Zatravkin, 1990].
- IUCN conservation status: Not assessed.

Addition to the genus *Juga*. In 2004, three more new species names of “*Parajuga*” attributed to the authorship of Prozorova and Starobogatov have appeared in Starobogatov *et al.* [2004: 281–282]. Nevertheless, the descriptions of these species were not published prior to the publication of the mentioned work (L.A. Prozorova, personal communica-

tion). According to article 16.1 of ICZN all the names are not available, since these were not explicitly indicated as intentionally new and the type material was not mentioned. These species are *Parajuga arsenievi* "Prozorova et Starobogatov, 2004", *P. sihotealinica* "Prozorova et Starobogatov, 2004", and *P. zerkalnensis* "Prozorova et Starobogatov, 2004". Due to the absence of the proper descriptions, it is still impossible to judge on their validity.

Family Thiaridae Gill, 1871

[= Melaniidae Children, 1823; Hemisininae P. Fischer et Crosse, 1891; Melanoididae Ihering, 1909; Pyrguliferidae Delpy, 1941; Aylacostomatinae Parodiz, 1969; Pachymelaniidae Bandel et Kowalke, 1999]

(Tiarinae Gill, 1871: 8)

Type genus: *Thiara* Röding, 1798

The range of the family comprises mostly south regions of Palearctic and the tropical continents [Starobogatov, 1970]. Its overall diversity is about 135 species [Strong *et al.*, 2008]. Two genera of Thiaridae are represented in the RAC malacofauna, one of them, *Thiara* Röding, 1798, is invasive.

Genus *Melanoides* Olivier, 1804

[= *Pirenopsis* Brot, 1870; *Striatella* Brot, 1870; *Horea* Bourguignat, 1888; *Micronyassa* Bourguignat, 1889; *Nyassella* Bourguignat, 1889; 1889; *Nyassia* Bourguignat, 1889; *Nyassomelania* Bourguignat, 1889; *Eumelania* Rovereto, 1899; *Pallarya* P. Hesse, 1916]

Type species: *Melanoides fasciolata* Olivier, 1804 (M)

36(53). *Melanoides kainarensis*

Starobogatov et Izzatullaev, 1980

Melanoides kainarensis Starobogatov & Izzatullaev, 1980: 26-28, fig. 2 1, 2 8.

• Type locality: Turkmenistan, Chardzhou Region, the Kugitang Ridge, thermal spring Khodzha-Kainar.

• Holotype: ZIN, No. 1 in systematic catalogue. Three paratypes are housed in IZT under No. 1 in systematic catalogue [D. Palatov, pers. comm.]

• Global distribution: Endemic to Central Asia.

• Distribution in the former USSR: Turkmenistan (Chardzhou Region) and Uzbekistan (Samarkand Region) [Starobogatov *et al.*, 2004].

• Subregions: CA.

• Bionomics: Lives in thermal springs [Starobogatov *et al.*, 2004].

• IUCN conservation status: Not assessed.

37(54). *Melanoides pamiricus* Lindholm, 1930

Melanoides tuberculatus pamiricus Lindholm, 1930: 69, figs. 1, 2.

• Type locality: Tajikistan, upper reaches of the Shakh dara River, hot spring Dzhaushangoz.

• Types: Probably lost [Starobogatov & Izzatullaev, 1980].

• Global distribution: Endemic to Central Asia.

• Distribution in the former USSR: The Pamir Mountains (southeastern Tajikistan) [Starobogatov *et al.*, 2004].

• Subregions: CA.

• Bionomics: Lives in thermal springs [Starobogatov *et al.*, 2004].

• IUCN conservation status: DD (data deficient).

38(55). *Melanoides shahdaraensis* Starobogatov et Izzatullaev, 1980

Melanoides shahdaraensis Starobogatov & Izzatullaev, 1980: 29-30, fig. 2 7, 13.

• Type locality: Tajikistan, upper reach-

es of the Shakhdara River, hot spring Dzhaushangoz.

- Holotype: ZIN, No. 1 in systematic catalogue. 20 paratypes are housed in IZT under Nos. 1 and 2 in systematic catalogue [D. Palatov, pers. comm.]
- Global distribution: Endemic to Central Asia.
- Distribution in the former USSR: Type locality [Starobogatov & Izzatullaev, 1980].
- Subregions: CA.
- Bionomics: Lives in thermal springs [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

**39(56). *Melanoides tuberculata*
(O.F. Müller, 1774)**

[= *Turritella turricula* Link, 1807]

Nerita tuberculata O.F. Müller, 1774: 191.

- Type locality: Coromandel Coast of the Indian Subcontinent (= “In littore Coromandel”; O.F. Müller, 1774: 191).
- Syntypes: ZMUC, Nos. GAS-297 and GAS-298. There are 16 syntypes in the ZMUC collection.
- Global distribution: Africa to SE Asia, introduced to Australia, North America, Europe and Azores [Glaubrecht, 2000; Son, 2007; Welter-Schultes, 2012].
- Distribution in the former USSR: Recorded as a non-indigenous species in the Yuzhnyi Bug River basin [Son, 2007] and in the Western Siberia [Sharapova, 2008].
- Subregions: SE, WS (invasive).
- Bionomics: In Europe, the species is frequent in botanical gardens and aquaria, also in artificially warmed up waters [Welter-Schultes, 2012].
- IUCN conservation status: Not assessed.
- Remark: Many authors [Zhadin, 1952;

Glöer, 2002a] used spelling *Melanoides tuberculatus* to designate this species. However, as mentioned by Welter-Schultes [2012], the generic name *Melanoides* is of feminine gender, thus, the proper spelling should be *M. tuberculata*.

Genus *Thiara* Röding, 1798

[= *Melania* Lamarck, 1799; *Melacantha* Swainson, 1840]

Type species: *Helix amarula* Linnaeus, 1758 (SD Herrmannsen, 1849)

**40(57). *Thiara granifera*
(Lamarck, 1822)**

Melania granifera Lamarck, 1822: 167.

- Type locality: Timor Island.
- Types: Not traced, possibly in MHNG.
- Global distribution: The native range of this species covers many countries of East Asia and Pacific Islands. Introduced to many countries of Africa, Central and South America [Madhyastha & Dutta, 2012]. As a consequence of aquarium trade *Th. granifera* may be found also in South Europe though it is hardly able to form sustainable populations there.
- Distribution in the former USSR: Recorded as a non-indigenous species in the mouth of the Molochnaya River, Zaporozhye Region, South Ukraine [Anistratenko *et al.*, 2011].
- Subregions: SE.
- Bionomics: In its native range, the species inhabits rivers (including tidal areas) and lakes, and a wide variety of anthropogenic habitats including pools, and canals [Madhyastha & Dutta, 2012]. In Europe, the species may be found in botanical gardens and aquaria, also in artificially warmed up waters.
- IUCN conservation status: LC (least concern).

- Remark: This species is sometimes placed into the genus *Tarebia* H. et A. Adams, 1854 [Madhyastha & Dutta, 2012].

Clade Littorinimorpha Golikov et Starobogatov, 1975

Superfamily Risssooidea Gray, 1847 Family Amnicolidae Tryon, 1863

[= Liogyrinae Pilsbry, 1916; Parabithynellinae Radoman, 1976; Kolhymamnicolidae Starobogatov, 1983; Erhaiini Davis et Kuo, 1985; Pseudo-bythinellini Davis et Chen, 1992; Terrestribithynellidae Sitnikova, Starobogatov et Anistratenko, 1992]

(Amnicolidae Tryon, 1863a: 452)

Type genus: *Amnicola* Gould et Halde-
man, 1840

The species of this small family are distributed in the North Hemisphere waterbodies, including North America, Europe and the Far East. Its taxonomic diversity has recently been estimated about 150-200 species [Strong *et al.*, 2008], but this estimate corresponds to Amnicolidae sensu Bouchet & Rocroi [2005] (i.e. including Baicaliidae as a subfamily and the genus *Bythinella* Moquin-Tandon, 1855). Without Baicaliidae and *Bythinella* this number may be significantly less than 100 species. The most comprehensive revision of the volume of Amnicolidae and its relationships with other taxa of hydrobioid snails based on molecular data is that by Wilke *et al.* [2013].

Genus *Akiyoshia* Kuroda et Habe, 1954

Type species: *Akiyoshia uenoi* Kuroda et Habe, 1954 (OD)

Remark: Bouchet [2014] placed this genus into the family Hydrobiidae Stimpson, 1865. Starobogatov *et al.* [2004]

considered it to be a member of the family Kolhymamnicolidae.

41(58). *Akiyoshia sachalinensis* Zatravkin et Bogatov, 1988

Akiyoshia sachalinensis Zatravkin & Bogatov, 1988: 129, textfig. (7).

- Type locality: Russia, the southern Sakhalin Island, near Yablochnyi settlement (approximately 47°07'30"N; 142°04'00"E).
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: Southern part of the Sakhalin Island [Bogatov & Zatravkin, 1990].
- Subregions: SF.
- Bionomics: Unknown [Bogatov & Zatravkin, 1990].
- IUCN conservation status: Not assessed.

Genus *Kolhymamnicola* Starobogatov et Budnikova, 1976

Type species: *Amnicola kolhymensis* Starobogatov et Streletzkaja, 1967 (OD)

42(59). *Kolhymamnicola kolhymensis* (Starobogatov et Streletzkaja, 1967)

Amnicola kolhymensis Starobogatov & Streletzkaja, 1967: 228-229, fig. 12.

- Type locality: Russia, Republic of Yakutia (Sakha), floodplain of the Koly-
ma River near Karetovo settlement (ap-
proximately 68°48'30"N; 161°20'30"E).
- Types: ZIN, Nos. 1–11 in systematic
catalogue. The type series includes the
holotype and 21 paratypes.
- Global distribution: Endemic to north-
eastern Asia.
- Distribution in the former USSR: North of the Eastern Siberia from the

lower Lena basin eastward to the Kamchatka and Chukchi peninsulars [Dolgin, 2001; Sitnikova *et al.*, 2010].

- Subregions: ES, NF.
- Bionomics: Lives in small permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

**43(60). *Kolhymamnicola miyadii*
(Habe, 1942)**

Amnicola miyadii Habe, 1942: 25, 27, figs. 1, 2.

- Type locality: Russia, Shumshu (= Simusyu-tô) Island of the northern Kurile Islands. According to Sitnikova *et al.* [2010], the type locality is the Bol'shoie lake in Shumshu Island.
- Types: Not traced.
- Global distribution: Endemic to north-eastern Asia.
- Distribution in the former USSR: The northern Kurile Islands, the Kamchatka Peninsula [Prozorova, 1998a; Sitnikova *et al.*, 2010].
- Subregions: NF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

**44(61). *Kolhymamnicola ochotica*
Zatravkin et Bogatov, 1988**

Kolhymamnicola ochotica Zatravkin & Bogatov, 1988: 128, textfig. (5).

- Type locality: Russia, the Khabarovsk Territory, Okhotsk District, the Bol'shoie Ueginskoye Lake.
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and two paratypes.
- Global distribution: Endemic to north-eastern Asia.
- Distribution in the former USSR: The Okhota River basin [Bogatov & Zatravkin, 1990].

- Subregions: SF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

**45(62). *Kolhymamnicola wasiliewae* Zatravkin
et Bogatov, 1988**

Kolhymamnicola wasiliewae Zatravkin & Bogatov, 1988: 127-128, textfig. (3, 4).

- Type locality: Russia, the Khabarovsk Territory, a small inlet on the river Bolin (tributary of the lower Amur River) near Amursk city (approximately 50°13'N; 136°53'E).
- Types: ZIN, Nos. 1–3 in systematic catalogue. The type series includes the holotype and about 150 paratypes.
- Global distribution: Endemic to north-eastern Asia.
- Distribution in the former USSR: The Amur and Vitim river basins, the Sakhalin Island [Sitnikova *et al.*, 2010].
- Subregions: ES, SF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: DD (data deficient).

**Genus *Marstoniopsis* van Regteren
Altena, 1936**

[= *Paludestrina* d'Orbigny, 1840, partim; *Paludinella* Pfeiffer, 1841, partim; *Bythinella* Moquin-Tandon, 1855, partim]

Type species: *Hydrobia steinii* Martens, 1858 (OD)

**46(63). *Marstoniopsis scholtzi*
(Schmidt, 1856)**

[= *Paludestrina taylori* E.A. Smith, 1901; *Amnicola pallida* Krauspe, 1936]

Hydrobia scholtzi Schmidt, 1856: 158.

- Type locality: Poland, vicinities of Wrocław and Jutrzyzna towns (“sumpfigen Wiesengräben zwischen Breslau und Marienau”; Schmidt, 1856: 158).
- Types: Not traced.
- Global distribution: The Western and Central Europe, the Baltic Sea basin [Glöer, 2002a; Anderson, 2005].
- Distribution in the former USSR: The Baltic Sea basin, upper part of the Volga basin [Starobogatov *et al.*, 2004].
- Subregions: NE.
- Bionomics: Lives in rivers on slow stream and in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Some recent authors (for example, Welter-Schultes [2012]) consider *M. scholtzii* as a junior synonym of *Marstoniopsis insubrica* (Küster, 1853) described from vicinities of Lugano, Switzerland

**47(64). *Marstoniopsis steinii*
(von Martens, 1858)**

Hydrobia steinii von Martens, 1858: 183, Taf. V, fig. 5

- Type locality: Germany, the Lake Tegel between Berlin and Spandau (nowadays in Berlin). This lake is now called Plötzensee (Ch. Zorn, pers. comm.).
- Types: ZMB, No. 19578. The type series contains three syntypes.
- Global distribution: The Central and Eastern Europe [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: The Baltic Sea basin, upper part of the Volga basin [Starobogatov *et al.*, 2004], the Zapadnyi Bug River [Anistratenko & Stadnichenko, 1994].
- Subregions: NE, SE.
- Bionomics: Lives in rivers on slow stream and in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: The western European authors regard this species as a junior synonym of *M. scholtzii* [Glöer, 2002a].

Family Bythinellidae Kobelt, 1878

(Bythinellinae Kobelt, 1878: 131)

Type genus: *Bythinella* Moquin-Tandon, 1855

Remark: Traditionally, the genus *Bythinella* was included either into family Hydrobiidae s. lato [Glöer, 2002a] or Amnicolidae [Anistratenko & Stadnichenko, 1994; Bouchet & Rocroi, 2005]. Recently, Wilke *et al.* [2013] have shown it should constitute a family of its own. Overall range of this genus covers south Europe and Asia Minor.

**Genus *Bythinella*
Moquin-Tandon, 1855**

[=*Paludinella* Pfeiffer, 1841, partim; *Microna* Fraeunfeld, 1863; *Hungarica* Clessin, 1890; *Lemanica* Clessin, 1890; *Rubiginosana* Fagot, 1892; *Brachypyrigula* Poliński, 1929; *Pyrgobythinella* Germain, 1931]

Type species: *Bulimus viridis* Poiret, 1801 (SD, ICZN Opinion 2161, 2006)

**48(65). *Bythinella adsharica*
Lindholm, 1913**

Bythinella adsharica Lindholm, 1913: 67.

- Type locality: Georgia, vicinities of Batum Town, a spring near river Adsharis-Zchali at its entrance to Tscho-roch.
- Types: Not traced. Possibly, in ZIN.
- Global distribution: The Transcaucasia and Asia Minor [Shütt & Şeşen, 1993; D. Palatov, pers. comm.]
- Distribution in the former USSR: Georgia (Adzharia) [Zhadin, 1952].
- Subregions: CT.
- Bionomics: Lives in small springs (D. Palatov, pers. comm.).
- IUCN conservation status: EN (endangered).
- Remark: Shütt & Şeşen [1993] proposed to place this species into the ge-

nus *Belgrandiella* A.J. Wagner, 1928. However, anatomically *B. adsharica* does not correspond with the diagnosis of the genus *Belgrandiella* (D. Palatov, pers. comm.).

**49(66). *Bythinella austriaca*
(Frauenfeld, 1857)**

Paludinella austriaca Frauenfeld, 1857: 574, fig. 2.

- Type locality: Austria, Dornbach springs near Vienna.
- Syntypes: NHMV. There are several tens of syntypes in NHMV, eight of them separated in a small tube and marked “orig[inal] ex[emplars]” from Frauenfeld collection. Possibly, these shells should be considered as “true” syntypes.
- Global distribution: The Central and Eastern Europe eastwards to the Western Ukraine [Anistratenko & Stadnichenko, 1994; Glöer, 2002a]
- Distribution in the former USSR: The Carpathian Mountains, Ukraine [Anistratenko & Stadnichenko, 1994].
- Subregions: SE.
- Bionomics: Lives in springs and brooks [Anistratenko & Stadnichenko, 1994].
- IUCN conservation status: LC (least concern).
- Remark: According to Glöer [2002a], there are four subspecies of *B. austriaca* in Central Europe. It is not clear which one is found in the RAC territory.

**50(67). *Bythinella hungarica*
Hazay, 1881**

Bythinella hungarica Hazay, 1881: 93, pl. 14, fig. 1.

- Type locality: Hungary, Budapest, St. Margaret Island.
- Types: Not traced. Possibly, in ZMB or in NHMV.
- Global distribution: Hungary and the

Western Ukraine [Anistratenko & Stadnichenko, 1994; Glöer, 2002a]

- Distribution in the former USSR: The Carpathian Mountains, Ukraine [Anistratenko & Stadnichenko, 1994].
- Subregions: SE.
- Bionomics: Lives in springs and brooks [Anistratenko & Stadnichenko, 1994].
- IUCN conservation status: Not assessed.

Family Baicaliidae P. Fischer, 1885

[= Limnoreidae B. Dybowski, 1911; Conobaicaliidae B. Dybowski et Grochmalicki, 1914; Liobaicaliinae B. Dybowski et Grochmalicki, 1914; Turribaicaliinae B. Dybowski et Grochmalicki, 1917]

(Baicaliidae P. Fischer, 1885: 724)

Type genus: *Baicalia* Martens, 1876

Recent representatives of Baicaliidae inhabit the Baikal Lake and the Angara River [Sitnikova *et al.*, 2004] though formerly (in Neogene and, probably, even in the upper Cretaceous) they were distributed in south Siberia, Mongolia and north-western China [Martinson, 1961; Popova, 1981]. About 40 species and eight genera are currently included in the family [Sitnikova *et al.*, 2004]. Bouchet & Rocroi [2005], following molecular phylogenetic data presented by Szarowska & Wilke [2004], proposed to consider this taxon as a subfamily of Amnicolidae s. l. According to T.Ya. Sitnikova (personal communication, 06.10.2014), the Russia's leading expert in Baicalian gastropods, the reducing of the taxonomic rank of Baicaliidae is not wholly justified. Wilke *et al.* [2013] revealed that baicaliid snails form a separate clade sister to a geographically widespread group including European (genus *Marstoniopsis*), South Asian (genus

Erhaia Davis et Kuo in Davis, Kuo, Hoagland, Chen, Yang et Chen, 1985) and even Nearctic (genus *Amnicola*) genera of amnicolids. Since there are no objective guidelines for assigning taxonomic rank of higher taxa, it gives a reason to retain the family rank for Baicaliidae. The divergence event separating Amnicolidae and Baicaliidae clades occurred probably about 70 millions years ago [Sitnikova *et al.*, 2010].

The data on Baicaliidae taxonomy, distribution and bionomics given below are taken mostly from the annotated catalogue compiled by Sitnikova *et al.* [2004] and therefore we do not provide references (except of cases where sources other than Sitnikova *et al.* [2004] were used). The most important sources of information on recent Baicaliidae are Lindholm [1909], Kozhov [1936], Sitnikova [1991], and Sitnikova *et al.* [2004].

Genus *Baicalia* Martens, 1876

[= *Ligea* W. Dybowski, 1875, non Illiger, 1801 (Insecta) nec Cory, 1884 (Aves), partim; *Limnorea* W. Dybowski, 1875, non Goldfuss, 1826 (Porifera) nec Agassiz, 1846 (Cnidaria); *Trachybaicalia* Martens, 1876]

Type species: *Ligea carinata* W. Dybowski, 1875 (SD Dall, 1877)

51(68). *Baicalia carinata* (W. Dybowski, 1875)

Ligea carinata W. Dybowski, 1875: 45, Taf. IV, Fig. 1, Taf. VI, Fig. 7, a–d.

- Type locality: Originally “Baikal, 300–350 m” = Kultuk (SW coast of the southern Baikal, 51°43′12″N; 103°40′51″E) (restricted by Sitnikova *et al.*, 2004).
- Global distribution: Endemic to the Baikal Lake.
- Subregions: BL.

- IUCN conservation status: Not assessed.
- Remark: This species includes three subspecies.

51(68a). *Baicalia carinata carinata* (W. Dybowski, 1875)

[= *Trachybaicalia carinata martensiana* subvar. *elencha* B. Dybowski et Grochmalicki, 1914; *Trachybaicalia carinata martensiana* subvar. *orthos* B. Dybowski et Grochmalicki, 1914]

- Syntypes: ZIN.
- Distribution in the former USSR: The southern and central-east Baikal.
- Bionomics: Inhabits sandy and sandy-mud substrates between 50 and 100 m of depth.

51(68b). *Baicalia carinata fuchsiana* (B. Dybowski et Grochmalicki, 1915)

Trachybaicalia carinata var. *fuchsiana* B. Dybowski & Grochmalicki, 1915a: 299, pl. 2, fig. 5 a–d.

- Type locality: Not stated (the Baikal Lake – from title).
- Types: Not traced.
- Distribution in the former USSR: The southern Baikal.
- Bionomics: Inhabits sandy substrates between 12 and 20 m of depth.

51(68c). *Baicalia carinata hoernesiana* (B. Dybowski et Grochmalicki, 1915)

[= *Baicalia carinata carinata* sensu Kozhov, 1936, non W. Dybowski, 1875, partim]

Trachybaicalia carinata var. *hoernesiana* B. Dybowski & Grochmalicki, 1915a: 295–296, pl. 2, fig. 4 a–b

- Type locality: The Baikal Lake.
- Syntypes: ZIN.
- Distribution in the former USSR: The northern Baikal and Maloye More Strait.
- Bionomics: Inhabits sandy substrates

with admixture of pebbles and detritus between 10 and 100 m of depth.

**52(69). *Baicalia carinatocostata*
(W. Dybowski, 1875)**

[= *Trachybaicalia bittneri* subvar. *clara* B. Dybowski et Grochmalicki, 1914; *Trachybaicalia bittneri* subvar. *micronella* B. Dybowski et Grochmalicki, 1914; *Trachybaicalia bittneri* subvar. *opaca* B. Dybowski et Grochmalicki, 1914; *Trachybaicalia bittneri* subvar. *pyramidalis* B. Dybowski et Grochmalicki, 1914; *Trachybaicalia carinato-costata credneri* subvar. *inflatella* B. Dybowski et Grochmalicki, 1914; *Trachybaicalia carinato-costata sandbergeri* B. Dybowski et Grochmalicki, 1914; *Trachybaicalia carinato-costata moussoni* B. Dybowski et Grochmalicki, 1914]

Ligea carinato-costata W. Dybowski, 1875: 46, pl. 3, figs. 24-26, pl. 6, fig. 8.

- Type locality: Originally “the Baikal, 300-350 m” = Kultuk (SW coast of the southern Baikal) [fide Sitnikova *et al.*, 2004].
- Syntypes: ZIN.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The entire Baikal Lake.
- Subregions: BL.
- Bionomics: Lives on sandy and sandy-mud substrates with admixture of detritus, between 10 and 100 m of depth.
- IUCN conservation status: Not assessed.

**53(70). *Baicalia dybowskiana*
(Lindholm, 1909)**

Baicalia (*Trachybaicalia*) *dybowskiana* Lindholm, 1909: 71, textfig. 3.

- Type locality: Lindholm [1909] listed five localities of this species in the Baikal Lake. According to Sitnikova *et al.* [2004], the type locality is “Berhin” (western coast of the central Baikal).
- Global distribution: Endemic to the Baikal Lake.

- Subregions: BL.
- IUCN conservation status: DD (data deficient).
- Remark: The species includes two subspecies.

**53(70a). *Baicalia dybowskiana*
dybowskiana (Lindholm, 1909)**

[= *Trachybaicalia dybowskiana lindholmi* B. Dybowski et Grochmalicki, 1914]

- Syntypes: ZIN.
- Distribution in the former USSR: The Baikal Lake.
- Bionomics: Inhabits sandy and sandy-rock substrates between 3 and 80 m of depth.

**53(70b). *Baicalia dybowskiana*
carinatoides Kozhov, 1936**

Baicalia (*Baicalia*) *dybowskiana* var. *carinatoides* Kozhov, 1936: 120, pl. 4, fig. 12.

- Type locality: The eastern Baikal Lake, Chivyrkuy Bay.
- Types: Lost.
- Distribution in the former USSR: Type locality only.
- Bionomics: Inhabits sandy and muddy substrates between 1.5 and 2 m of depth.

**54(71). *Baicalia rugosa*
(Lindholm, 1909)**

[= *Trachybaicalia carinata* var. *martensiana* subvar. *rudis* B. Dybowski et Grochmalicki, 1914]

Baicalia (*Trachybaicalia*) *carinata* forma *rugosa* Lindholm, 1909: 69.

- Type locality: Originally “the Baikal, 300-350 m” = Kultuk (SW coast of the southern Baikal) [fide Sitnikova *et al.*, 2004].
- Syntypes: ZIN.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: Southern and central parts of the Baikal Lake.

- Subregions: BL.
- Bionomics: Lives on sandy and sandy-mud substrates between 3 and 40 m of depth.
- IUCN conservation status: Not assessed.

**55(72). *Baicalia turriiformis*
(W. Dybowski, 1875)**

Ligea turriiformis W. Dybowski, 1875: 50-51, pl. 3, figs. 4-7; pl. 6, fig. 9 a-d.

- Type locality: Russia, Republic of Buryatia, the Baikal Lake, Svyatoi Nos Peninsula.
- Syntypes: ZIN.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: Northern and central parts of the Baikal Lake.
- Subregions: BL.
- Bionomics: Lives on rocky substrates (exceptionally on sandy bottoms) between 10 and 40 m of depth (according to W. Dybowski [1875], the species may reach 350 m of depth).
- IUCN conservation status: Not assessed.

**Genus *Godlewskia* Crosse et
Fischer, 1887**

[= *Leucosia* W. Dybowski, 1875, non Weber, 1795 (Crustacea), nec Leach, 1817 (Crustacea), nec Rambur, 1866 (Lepidoptera), partim; *Baicalia* Martens, 1876, partim; *Gerstfeldtia* Clessin, 1880 non Sabussow, 1911 (Turbellaria)]

Type species: *Leucosia godlewskii* W. Dybowski, 1875 (OD)

**56(73). *Godlewskia godlewskii*
(W. Dybowski, 1875)**

[= *Gerstfeldtia godlewskii antoninae* B. Dybowski et Grochmalicki, 1913; *Gerstfeldtia godlewskii constantinae* B. Dybowski et Grochmalicki, 1913; *Gerstfeldtia godlewskii felixi* B. Dybowski et Grochmalicki, 1913; *Gerstfeldtia godlewskii hen-*

rici B. Dybowski et Grochmalicki, 1913; *Gerstfeldtia godlewskii kasimirae* B. Dybowski et Grochmalicki, 1913; *Gerstfeldtia godlewskii ladislavi* B. Dybowski et Grochmalicki, 1913; *Gerstfeldtia godlewskii medialis* B. Dybowski et Grochmalicki, 1913; *Gerstfeldtia godlewskii parvula* B. Dybowski et Grochmalicki, 1913; *Gerstfeldtia godlewskii stanislavi* B. Dybowski et Grochmalicki, 1913; *Gerstfeldtia godlewskii victori* B. Dybowski et Grochmalicki, 1913]

Leucosia godlewskii W. Dybowski, 1875: 40-41, pl. 3, figs. 10-14, pl. 6, fig. 2a-d.

- Type locality: Not stated in the original description. According to Sitnikova *et al.* [2004], the type locality is Kultuk (SW coast of the southern Baikal).
- Global distribution: Endemic to the Baikal Lake.
- Subregions: BL.
- IUCN conservation status: Not assessed.
- Remark: The species includes two subspecies. Possibly, some of 10 infraspecific forms described by Dybowski & Grochmalicki [1913] may appear to be separate species and subspecies differing in the shell size and the whorl convexity. The subspecies *Godlewskia godlewskii speciosa* (Kozhov, 1936) may thus appear to be a junior synonym of one of these varieties [Sitnikova *et al.*, 2004].

**56(73a). *Godlewskia godlewskii*
godlewskii (W. Dybowski, 1875)**

- Syntypes: ZIN.
- Distribution in the former USSR: Southern and central parts of the Baikal Lake.
- Bionomics: Inhabits sandy and sandy-mud substrates between 7 and 250 m of depth.

**56(73b). *Godlewskia godlewskii*
speciosa (Kozhov, 1936)**

Baicalia (*Gerstfeldtia*) *godlewskii* var. *speciosa* Kozhov, 1936: 114, 310.

- Syntypes: ZIN.

- Distribution in the former USSR: The northern Baikal and Maloye More Strait.
- Bionomics: Inhabits dense sandy-mud substrates between 10 and 250 m of depth.

**57(74). *Godlewskia bacilliformis*
(Kozhov, 1936)**

Baicalia (*Gerstfeldtia*) *bacilliformis* Kozhov, 1936: 110, 310, pl. 3, figs. 31-33.

- Type locality: The Baikal Lake near village Sukhaya, 39 m (eastern coast of the southern Baikal).
- Syntypes: ZIN.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: Type locality, Barguzin Bay, Maloye More Strait [Kozhov, 1936].
- Subregions: BL.
- Bionomics: Lives on sandy and sandy-mud substrates between 20 and 100 m of depth.
- IUCN conservation status: Not assessed.

**58(75). *Godlewskia columella*
(Lindholm, 1909)**

[= *Gerstfeldtia columella* var. *rufula* B. Dybowski et Grochmalicki, 1913; *Gerstfeldtia columella* var. *spicata* B. Dybowski et Grochmalicki, 1913; *Gerstfeldtia columella* var. *tumida* B. Dybowski et Grochmalicki, 1913; *Gerstfeldtia columella* var. *typica* B. Dybowski et Grochmalicki, 1913]

Baicalia (*Gerstfeldtia*) *columella* Lindholm, 1909: 67, pl. 1, figs. 46-48.

- Type locality: The south Baikal Lake, western coast off Baranchik Cape (eastern coast of the southern Baikal).
- Syntypes: ZIN.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The southern and central Baikal.
- Subregions: BL.

- Bionomics: Lives on rocks and stones between 7 and 45 m of depth.
- IUCN conservation status: Not assessed.

**59(76). *Godlewskia pulchella*
(W. Dybowski, 1875)**

[= *Gerstfeldtia pulchella columnalis* B. Dybowski et Grochmalicki, 1913; *Gerstfeldtia pulchella conoidalis* B. Dybowski et Grochmalicki, 1913; *Gerstfeldtia pulchella fuscata* B. Dybowski et Grochmalicki, 1913]

Leucosia godlewskii var. *pulchella* W. Dybowski, 1875: 41, pl. 3, figs. 15-19.

- Type locality: Not stated in the original description. According to Sitnikova *et al.* [2004], the type locality is Kultuk (SW coast of the southern Baikal).
- Global distribution: Endemic to the Baikal Lake.
- Subregions: BL.
- IUCN conservation status: DD (data deficient).
- Remark: The species includes two subspecies.

**59(76a). *Godlewskia pulchella*
pulchella (W. Dybowski, 1875)**

- Syntypes: ZIN.
- Distribution in the former USSR: Southern and central parts of the Baikal Lake.
- Bionomics: Inhabits sandy and sandy-mud substrates between 4 and 200 m of depth.

**59(76b). *Godlewskia pulchella*
intermedia (Kozhov, 1936)**

Baicalia (*Gerstfeldtia*) *pulchella* var. *intermedia* Kozhov, 1936: 115-116, 311, pl. 4, figs. 37-40.

- Types: Not traced.
- Distribution in the former USSR: The northern Baikal and Maloye More Strait.
- Bionomics: Inhabits sandy and sandy-

mud substrates between 10 and 180 m of depth.

**60(77). *Godlewskia wrzesniowskii*
(W. Dybowski, 1875)**

Ligea wrzesniowskii W. Dybowski, 1875: 47, pl. 3, figs. 44-46, pl. 6, fig. 14.

- Type locality: Not stated in the original description. According to Sitnikova *et al.* [2004], the type locality is Kultuk (SW coast of the southern Baikal).
- Global distribution: Endemic to the Baikal Lake.
- Subregions: BL.
- IUCN conservation status: DD (data deficient).
- Remark: The species includes three subspecies.

60(77a). *Godlewskia wrzesniowskii wrzesniowskii* (W. Dybowski, 1875)

- Syntypes: ZIN.
- Distribution in the former USSR: Southern and central parts of the Baikal Lake.
- Bionomics: Inhabits sandy substrates between 15 and 120 m of depth.

60(77b). *Godlewskia wrzesniowskii olchonensis* (Kozhov, 1936)

Baicalia (Gerstfeldtia) wrzesniowskii var. *olchonensis* Kozhov, 1936: 108-109, 310, pl. 3, figs. 29-30.

- Type locality: The Baikal Lake, Olkhonskiye Vorota Strait (the border between the central and northern Baikal).
- Syntypes: ZIN.
- Distribution in the former USSR: Type locality and Barguzin Bay.
- Bionomics: Inhabits sandy substrates between 20 and 40 m of depth.

60(77c). *Godlewskia wrzesniowskii profunda* (Lindholm, 1924)

Baicalia (Baicalia) herderiana profunda Lindholm, 1924a: 23.

- Type locality: The northern Baikal Lake, Tukalaragda Cape.
- Syntypes: ZIN.
- Distribution in the former USSR: Type locality and Ayaya Bay [Kozhov, 1936].
- Bionomics: Inhabits sandy substrates between 15 and 25 m of depth.

Genus *Korotnewia* Kozhov, 1936

[= *Baicalia* Martens, 1876, partim; *Godlewskia* Crosse et Fisher, 1887, partim]

Type species: *Baicalia (Godlewskia) korotnevi* Lindholm, 1909 (OD)

**61(78). *Korotnewia korotnevi*
(Lindholm, 1909)**

Baicalia (Godlewskia) korotnevi Lindholm, 1909: 65, pl. 1, figs. 22-24.

- Type locality: The northern Baikal Lake, Dagarskaya Bay.
- Global distribution: Endemic to the Baikal Lake.
- Subregions: BL.
- IUCN conservation status: LC (least concern).
- Remark: The species includes three subspecies.

61(78a). *Korotnewia korotnevi korotnevi* (Lindholm, 1909)

- Syntypes: ANSP, ZIN.
- Distribution in the former USSR: The entire Baikal Lake except of bays of the Maloye More Strait and Selenga shallow water zone.
- Bionomics: Inhabits sandy-mud substrates with admixture of detritus between 10 and 120 m of depth.

61(78b). *Korotnewia korotnevi gracilis* (Kozhov, 1936)

Baicalia (Korotnewia) korotnewi var. *gracilis* Kozhov, 1936: 78, 82-83, 308, pl. 5, figs. 31-33.

- Type locality: The Baikal Lake, Maloye Olkhonskiye Vorota Strait.

- Syntypes: ZIN.
- Distribution in the former USSR: Maloye More and Malye Olkhonskiye Vorta straits.
- Bionomics: Inhabits sandy-mud substrates with admixture of detritus between 2 and 20 m of depth.

61(78c). *Korotnewia korotnevi selengensis* (Kozhov, 1936)

Baicalia (*Korotnewia*) *korotnevi* var. *selengensis* Kozhov, 1936: 78, 83-84, 308, pl. 5, figs. 40-42; pl. 8, fig. 9.

- Type locality: The central Baikal Lake, Posol'skiy Sor Bay.
- Types: Not traced.
- Distribution in the former USSR: The Baikal Lake off the Selenga River mouth, Posolskiy Sor.
- Bionomics: Inhabits sandy-mud substrates with admixture of detritus between 10 and 120 m of depth.

62(79). *Korotnewia angigyra* (Lindholm, 1909)

Baicalia (*Godlewskia*) *angigyra* Lindholm, 1909: 64, pl. 1, figs. 56-58.

- Type locality: The northern Baikal Lake, Boguchanskaya Bay.
- Syntypes: ZIN.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The northern Baikal and Maloye More Strait.
- Subregions: BL.
- Bionomics: Lives on rocks and stones between 7 and 45 m of depth.
- IUCN conservation status: Not assessed.

63(80). *Korotnewia semenkewitschi* (Lindholm, 1909)

Baicalia (*Parabaicalia*) *semenkewitschi* Lindholm, 1909: 54; pl. 1, figs. 30, 31.

- Type locality: Lindholm [1909] listed

several localities of this species in the Baikal Lake. According to Sitnikova *et al.* [2004], the type locality is "Berhin" (western coast of the central Baikal).

- Global distribution: Endemic to the Baikal Lake.
- Subregions: BL.
- IUCN conservation status: DD (data deficient).
- Remark: The species includes two subspecies.

63(80a). *Korotnewia semenkewitschi semenkewitschi* (Lindholm, 1909)

- Syntypes: ZIN.
- Distribution in the former USSR: The northern and central Baikal.
- Bionomics: Inhabits sandy-mud substrates with admixture of detritus between 3-4 and 100 m of depth.

63(80b). *Korotnewia semenkewitschi nitida* (Kozhov, 1936)

Baicalia (*Korotnewia*) *semenkewitschi* forma *nitida* Kozhov, 1936: 79, 80.

- Types: Not traced.
- Distribution in the former USSR: The southern Baikal.
- Bionomics: Inhabits sandy-mud substrates with admixture of detritus between 2 and 70 m of depth.

Genus *Liobaicalia* Martens, 1876

[= *Leucosia* W. Dybowski, 1875, non Weber, 1795 (Crustacea), nec Leach, 1817 (Crustacea), nec Rambur, 1866 (Lepidoptera), partim]

Type species: *Leucosia stiedae* W. Dybowski, 1875 (SD Dall, 1877)

64(81). *Liobaicalia stiedae* (W. Dybowski, 1875)

Leucosia stiedae W. Dybowski, 1875: 38, pl. 3, figs. 20-23; pl. 6, fig. 1, pl. 7, figs. 9-10.

- Type locality: Not stated in the original description. According to Sitnikova

et al. [2004], the type locality is Kultuk (SW coast of the southern Baikal).

- Syntypes: ZIN.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The southern and central Baikal.
- Subregions: BL.
- Bionomics: Lives on sandy and sandy-mud substrates between 15 and 120 m of depth (sometimes it reaches 300 m).
- IUCN conservation status: Not assessed.
- Remark: Sitnikova [1991] suggested that *Liobaicalia stiedae polita* Dybowski et Grochmalicki, 1920 is a synonym of *L. s. stiedae*; *L. s. hispida* var. *polita* Dybowski et Grochmalicki, 1920 should be considered as a subspecies; while *L. stiedae parvula* var. *polita* Dybowski et Grochmalicki, 1920 should be a separate species, although still there are no proofs for that [Sitnikova *et al.*, 2004].

Genus *Maackia* Clessin, 1880

[= *Hydrobia* Hartmann, 1821, partim; *Ligea* W. Dybowski, 1875, non Illiger, 1801 (Insecta), nec Cory, 1884 (Aves), partim]

Type species: *Ligea costata* W. Dybowski, 1875 (SD Westerlund, 1880)

Subgenus *Maackia* s. str.

65(82). *Maackia (Maackia) costata* (W. Dybowski, 1875)

Ligea costata W. Dybowski, 1875: 46-47, pl. 3, figs. 34-37; pl. 6, fig. 12 a-d.

- Type locality: Not stated in the original description. According to Sitnikova *et al.* [2004], the type locality is Kultuk (SW coast of the southern Baikal).
- Syntypes: ZIN.
- Global distribution: Endemic to the Baikal Lake.

- Distribution in the former USSR: The southern and central Baikal Lake.
- Subregions: BL.
- Bionomics: Lives on rocks or sandy substrates between 2 and 100 m of depth (sometimes it reaches 300 m).
- IUCN conservation status: Not assessed.

Subgenus *Eubaicalia* Lindholm, 1924

Type species: *Hydrobia angarensis* Gerstfeldt, 1859 (OD)

66(83). *Maackia (Eubaicalia) angarensis* (Gerstfeldt, 1859)

Hydrobia angarensis Gerstfeldt, 1859: 511, figs. 12-13.

- Type locality: Russia, Irkutsk Region, the Baikal Lake and the Angara River near Irkutsk City.
- Syntypes: ZIN.
- Global distribution: Endemic to the Angara River and the Baikal Lake.
- Distribution in the former USSR: The Angara River and SW littoral of the Baikal Lake in the area of the Angara headwaters.
- Subregions: ES, BL.
- Bionomics: Lives on rocky substrates between 1 and 20 m of depth.
- IUCN conservation status: DD (data deficient).

67(84). *Maackia (Eubaicalia) bythiniopsis* (Lindholm, 1909)

Baikalia (Baikalia) bythiniopsis Lindholm, 1909: 45, pl. 1, figs. 1-4.

- Type locality: Lindholm [1909] listed several localities of this species in the Baikal Lake. According to Sitnikova *et al.* [2004], the type locality is "Baranchuk" (western coast of the southern Baikal).
- Syntypes: ZIN.

- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The entire Baikal Lake.
- Subregions: BL.
- Bionomics: Lives on rocky substrates between 1 and 20 m of depth.
- IUCN conservation status: Not assessed.

68(85). *Maackia (Eubaicalia) herderiana* (Lindholm, 1909)

Baicalia (Baicalia) herderiana Lindholm, 1909: 47, pl. 1, figs. 11-14.

- Type locality: Lindholm [1909] listed several localities of this species in the Baikal Lake. According to Sitnikova *et al.* [2004], the type locality is “Baranchuk, Listvennichnoye” (western coast of the southern Baikal).
- Global distribution: Endemic to the Baikal Lake.
- Subregions: BL.
- IUCN conservation status: LC (least concern).
- Remark: The species includes three subspecies. Starobogatov *et al.* [2004] regarded *M. herderiana* as a subspecies of *M. raphidia* (Bourguignat, 1860).

68(85a). *Maackia (Eubaicalia) herderiana herderiana* (Lindholm, 1909)

- Syntypes: ZIN.
- Distribution in the former USSR: The southern and central Baikal Lake.
- Bionomics: Inhabits rocky substrates between 1 and 10 m of depth.

68(85b). *Maackia (Eubaicalia) herderiana parvula* (Kozhov, 1936)

Baicalia (Eubaicalia) herderiana var. *parvula* Kozhov, 1936: 57, 60, 307, pl. 3, fig. 14.

- Type locality: The Baikal Lake, shallow zone off Selenga river.

- Syntypes: ZIN.
- Distribution in the former USSR: The southern and central Baikal Lake.
- Bionomics: Inhabits sandy-mud substrates between 2 and 20 m of depth.

68(85c). *Maackia (Eubaicalia) herderiana semicostulata* (Lindholm, 1924)

Baicalia (Baicalia) angarensis semicostulata Lindholm, 1924a: 22.

- Type locality: Kultuk (SW coast of the southern Baikal).
- Syntypes: ZIN.
- Distribution in the former USSR: The southern Baikal Lake.
- Bionomics: Inhabits rocky and stony substrates between 10 and 30 m of depth.

69(86). *Maackia (Eubaicalia) pusilla* (Lindholm, 1909)

Baicalia (Baicalia) pusilla Lindholm, 1909: 49, pl. 1, figs. 49-51.

- Type locality: Lindholm [1909] listed several localities of this species in the Baikal Lake. According to Sitnikova *et al.* [2004], the type locality covers Haransa and Kurma bays in Maloye More Strait.
- Syntypes: ZIN.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: Maloye More and Bol'shoy Ushkaniy Island.
- Subregions: BL.
- Bionomics: Lives on rocky substrates between 5 and 20 m of depth.
- IUCN conservation status: Not assessed.

70(87). *Maackia (Eubaicalia) raphidia* (Bourguignat, 1860)

Bithynia raphidia Bourguignat, 1860a: 537, pl. 23, figs. 20, 21.

- Type locality: The Baikal Lake.

- Types: Not traced. Not mentioned by Sitnikova *et al.* [2012] in their examination of the Bourguignat's syntypes (MHNG).
- Global distribution: Endemic to the Eastern Siberia.
- Distribution in the former USSR: Though the type locality of this species is the Baikal Lake, its reliable findings are known from the Angara River only [Starobogatov *et al.*, 2004]. *M. raphidia* is absent in the check-list of the Baikalian gastropods [Sitnikova *et al.*, 2004].
- Subregions: ES.
- Bionomics: Lives on stony substrates [Starobogatov *et al.*, 2014].
- IUCN conservation status: Not assessed.

71(88). *Maackia (Eubaicalia) umbilicifera* (Starostin, 1926)

Baikalia (Eubaicalia) umbilicifera Starostin, 1926: 23, fig. 23.

- Type locality: The Baikal Lake, near Bol'shoy Ushkaniy Island.
- Holotype: ZMMU.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: Type locality only.
- Subregions: BL.
- Bionomics: The only known specimen of this species was found on sandy substrate (10 m of depth).
- IUCN conservation status: Not assessed.

72(89). *Maackia (Eubaicalia) variesculpta* (Lindholm, 1909)

Baikalia (Baikalia) variesculpta Lindholm, 1909: 48, pl. 3, figs. 5-10.

- Type locality: The Baikal Lake, Maloye More Strait.
- Syntypes: ZIN.
- Global distribution: Endemic to the Baikal Lake.

- Distribution in the former USSR: The northern and central Baikal Lake.
- Subregions: BL.
- Bionomics: Inhabits rocky substrates between 1 and 20 m of depth.
- IUCN conservation status: Not assessed.

73(90). *Maackia (Eubaicalia) werestschagini* (Kozhov, 1936)

Baikalia (Eubaicalia) werestschagini Kozhov, 1936: 55, 63-64, 307, pl. 3, figs. 41-42.

- Type locality: The Baikal Lake, Maloye More Strait.
- Syntypes: ZIN.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: Maloye More Strait.
- Subregions: BL.
- Bionomics: Inhabits rocky substrates between 2 and 3 m of depth.
- IUCN conservation status: Not assessed.

**Genus *Parabaikalia*
Lindholm, 1909**

[= *Leucosia* W. Dybowski, 1875, non Weber, 1795 (Crustacea), nec Leach, 1817 (Crustacea), nec Rambur, 1866 (Lepidoptera), partim; *Baikalia* Martens, 1876, partim]

Type species: *Leucosia florii* W. Dybowski, 1875 (OD)

74(91). *Parabaikalia florii* (W. Dybowski, 1875)

Leucosia florii W. Dybowski, 1875: 39, pl. 3, figs. 1-3; pl. 6, fig. 3a-d; pl. 7, fig. 8.

- Type locality: Not stated in the original description. According to Sitnikova *et al.* [2004], the type locality is Kultuk (SW coast of the southern Baikal).
- Syntypes: ZIN.
- Global distribution: Endemic to the Baikal Lake.

- Distribution in the former USSR: The southern and central Baikal (sometimes is found also in the northern part of the lake).
- Subregions: BL.
- Bionomics: Lives on sandy substrates between 5 and 100 m of depth.
- IUCN conservation status: DD (data deficient).

**75(92). *Parabaikalia dubiosa*
(Kozhov, 1936)**

Baikalia (Parabaikalia) elata var. *dubiosa* Kozhov, 1936: 76-77, 307, pl. 5, fig. 10, 11.

- Type locality: Kozhov [1936] listed several localities of this taxon in the northern part of the Baikal. According to Sitnikova *et al.* [2004], the type locality is Chivyrkuy Bay (the northern Baikal Lake).
- Syntypes: ZIN.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The northern Baikal Lake: Boguchanskaya and Chivyrkuy bays.
- Subregions: BL.
- Bionomics: Lives on sandy-mud substrates with admixture of detritus between 4 and 20 m of depth.
- IUCN conservation status: Not assessed.

**76(93). *Parabaikalia elata*
(W. Dybowski, 1875)**

Leucosia angarensis var. *elata* W. Dybowski, 1875: 43-45, pl. 4, figs. 18-25, pl. 6, fig. 5a-d.

- Type locality: Originally stated as "Baikal Lake, 10 m". According to Sitnikova *et al.* [2004], the type locality is Kultuk (SW coast of the southern Baikal).
- Syntypes: ZIN.
- Global distribution: Endemic to the Baikal Lake.

- Distribution in the former USSR: The southern and central Baikal Lake.
- Subregions: BL.
- Bionomics: Lives on sandy-mud substrates with admixture of detritus between 4 and 20 m of depth (sometimes reaches 120 m).
- IUCN conservation status: DD (data deficient).

**77(94). *Parabaikalia kobeltiana*
(Lindholm, 1909)**

Baikalia (Parabaikalia) kobeltiana Lindholm, 1909: 51, text-figure 1.

- Type locality: Russia, the Baikal Lake, Maloye More Strait.
- Syntypes: ZIN.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: Western coast of the southern and central Baikal Lake.
- Subregions: BL.
- Bionomics: Lives on sandy substrates with admixture of detritus between 2 and 30 m of depth.
- IUCN conservation status: Not assessed.

**78(95). *Parabaikalia milaschewitschi*
(Lindholm, 1909)**

[= *Baikalia florii* sensu Milaschewitsch, non Dybowski, 1875 in Korotnev, 1901, partim]

Baikalia (Parabaikalia) milaschewitschi Lindholm, 1909: 51, text-figure 2.

- Type locality: Bezymyannaya Bay near Goryachinsk settlement (eastern coast of the central Baikal Lake).
- Syntypes: ZIN.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: Found in different localities scattered throughout the Baikal Lake.
- Subregions: BL.

- Bionomics: Lives on sandy substrates (usually with admixture of detritus) between 3-4 and 120 m of depth.
- IUCN conservation status: Not assessed.

**79(96). *Parabaikalia oviformis*
(W. Dybowski, 1875)**

[= *Baikalia florii* sensu Milaschewitsch, non Dybowski, 1875 in Korotnev, 1901, partim]

Leucosia oviformis W. Dybowski, 1875: 42, pl. 3, figs. 8-9.

- Type locality: Not stated in the original description. According to Sitnikova *et al.* [2004], the type locality is Kultuk (SW coast of the southern Baikal).
- Syntypes: ZIN.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The Baikal Lake.
- Subregions: BL.
- Bionomics: Lives on sandy substrates (sometimes with admixture of detritus) between 3-4 and 120 m of depth.
- IUCN conservation status: Not assessed.

**Genus *Pseudobaikalia*
Lindholm, 1909**

[= *Leucosia* W. Dybowski, 1875, non Weber, 1795 (Crustacea), nec Leach, 1817 (Crustacea), nec Rambur, 1866 (Lepidoptera), partim; *Ligea* W. Dybowski, 1875, non Illiger, 1801 (Insecta) nec Cory, 1884 (Aves), partim; *Baikalia* Martens, 1876, partim]

Type species: *Baikalia jentteriana* Lindholm, 1909 (OD)

Subgenus *Pseudobaikalia* s. str.

**80(97). *Pseudobaikalia*
(*Pseudobaikalia*) *jentteriana*
(Lindholm, 1909)**

Baikalia (Pseudobaikalia) jentteriana Lindholm, 1909: 55, pl. 1, figs. 35-3.

- Type locality: Lindholm [1909] listed several localities of this species in the Baikal. According to Sitnikova *et al.* [2004], the type locality covers Haransa and Kurma bays in Maloye More Strait.
- Syntypes: ZIN.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The northern Baikal and Maloye More Strait.
- Subregions: BL.
- Bionomics: Lives on sandy and sandy-mud substrates (usually with admixture of detritus) between 15 and 100 m of depth.
- IUCN conservation status: DD (data deficient).

**81(98). *Pseudobaikalia*
(*Pseudobaikalia*) *cancellata*
(Lindholm, 1909)**

Baikalia (Pseudobaikalia) cancellata Lindholm, 1909: 59, pl. 1, figs. 33-34.

- Type locality: Russia, the Baikal Lake, Dagarskaya Bay.
- Syntypes: ZIN.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: Type locality only.
- Subregions: BL.
- Bionomics: The species was found on muddy substrates at 19 and 98 m of depth.
- IUCN conservation status: DD (data deficient).

**82(99). *Pseudobaikalia*
(*Pseudobaikalia*) *contabulata*
(W. Dybowski, 1875)**

Ligea contabulata W. Dybowski, 1875: 47-48, pl. 3, figs. 38-43; pl. 6, fig. 13a-d.

- Type locality: Originally stated as "the Baikal Lake, 300-350 m". According to Sitnikova *et al.* [2004], the type locality

is Kultuk (SW coast of the southern Baikal).

- Syntypes: Zoological Museum of Lvov University [fide Kantor *et al.*, 2010].
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The entire Baikal Lake.
- Subregions: BL.
- Bionomics: Lives on sandy-mud substrates between 10 and 200 m of depth.
- IUCN conservation status: Not assessed.

**83(100). *Pseudobaikalia*
(*Pseudobaikalia*) *elegantula*
(Lindholm, 1909)**

Baikalia (*Pseudobaikalia*) *elegantula* Lindholm, 1909: 57, pl. 1, figs. 41-42.

- Type locality: Russia, the Baikal Lake, Maloye More Strait, off Kurma bay.
- Syntypes: Zoological Museum of Lvov University [fide Kantor *et al.*, 2010].
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: Maloye More Strait and (rarely) the northern Baikal Lake.
- Subregions: BL.
- Bionomics: Lives on stony substrates between 1.5 and 15 m of depth.
- IUCN conservation status: Not assessed.

**84(101). *Pseudobaikalia*
(*Pseudobaikalia*) *zachwatkini*
(Kozhov, 1936)**

[= *Baikalia contabulata semilaevis* Lindholm, 1924]

Baikalia (*Pseudobaikalia*) *zachwatkini* Kozhov, 1936: 86, pl. 3, fig. 43-48; pl. 12, fig. 6-7.

- Type locality: Russia, Irkutsk Region, Bol'shiye Koty settlement (western coast of the southern Baikal Lake).

- Syntypes: ZIN.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The entire Baikal Lake.
- Subregions: BL.
- Bionomics: Inhabits sandy-rock and sandy-mud substrates between 2 and 100 m of depth.
- IUCN conservation status: DD (data deficient).

**Subgenus *Microbaicalia*
Kozhov, 1936**

Type species: *Leucosia angarensis* var. *pulla* W. Dybowski, 1875 (OD)

**85(102). *Pseudobaikalia*
(*Microbaicalia*) *pulla*
(W. Dybowski, 1875)**

Leucosia angarensis var. *pulla* Dybowski, 1875: 44-45, pl. 4, fig. 26 – 34, pl. 6, fig. 6 a-d.

- Type locality: Originally stated as “the Baikal Lake, 300 m”. According to Sitnikova *et al.* [2004], the type locality is Kultuk (SW coast of the southern Baikal).
- Global distribution: Endemic to the Baikal Lake.
- Subregions: BL.
- IUCN conservation status: Not assessed.
- Remark: The species includes two subspecies.

**85(102a). *Pseudobaikalia*
(*Microbaicalia*) *pulla pulla*
(W. Dybowski, 1875)**

- Syntypes: ZIN.
- Distribution in the former USSR: The southern and central Baikal.
- Bionomics: Inhabits sandy and sandy-mud substrates (sometimes with admixture of pebble and detritus) between 15 and 120 m of depth.

**85(102b). *Pseudobaikalia*
(*Microbaicalia*) *pulla tenuicosta*
(Lindholm, 1909)**

Baikalia (*Pseudobaikalia*) *tenuicosta* Lindholm, 1909: 58, pl. 2, figs. 38-40.

- Type locality: Russia, Berkhin (western coast of the central Baikal Lake).
- Syntypes: ZIN.
- Distribution in the former USSR: The northern and central Baikal.
- Bionomics: Inhabits sandy and sandy-mud substrates (sometimes with admixture of pebble and detritus) between 15 and 200 m of depth.

**86(103). *Pseudobaikalia*
(*Microbaicalia*) *subcylindrica*
(Lindholm, 1909)**

Baikalia (*Pseudobaikalia*) *subcylindrica* Lindholm, 1909: 56, pl. 1, figs. 43-45.

- Type locality: Russia, Berkhin (western coast of the central Baikal Lake).
- Syntypes: ZIN.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: Type locality only.
- Subregions: BL.
- Bionomics: Inhabits sandy-rock and sandy-mud substrates between 2 and 100 m of depth.
- IUCN conservation status: DD (data deficient).

**Genus *Teratobaikalia*
Lindholm, 1909**

[= *Ligea* W. Dybowski, 1875, non Illiger, 1801 (Insecta), nec Cory, 1884 (Aves), partim; *Baicalia* Martens, 1876, partim; *Dybowskia* Dall, 1877, partim]

Type species: *Baikalia* (*Teratobaikalia*) *macrostoma* Lindholm, 1909 (OD)

Subgenus *Teratobaikalia* s. str.

**87(104). *Teratobaikalia*
(*Teratobaikalia*) *macrostoma*
(Lindholm, 1909)**

[= *Baicalia* (*Teratobaicalia*) *macrostoma* f. *lyogyra* Lindholm, 1924]

Baikalia (*Teratobaikalia*) *macrostoma* Lindholm, 1909: 43, pl. 1, figs. 25-29.

- Type locality: Russia, the Baikal Lake, Maloye More Strait.
- Syntypes: ZIN.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The northern and central Baikal Lake, Maloye More Strait.
- Subregions: BL.
- Bionomics: Inhabits rocky substrates between 1 and 40 m of depth.
- IUCN conservation status: Not assessed.

**Subgenus *Trichiobaikalia*
Lindholm, 1909**

Type species: *Ligea duthiersii* W. Dybowski, 1875 (OD)

**88(105). *Teratobaikalia*
(*Trichiobaikalia*) *duthiersii*
(W. Dybowski, 1875)**

Ligea duthiersii W. Dybowski, 1875: 48-49, pl. 3, figs. 30-33, pl. 6, fig. 11a-d.

- Type locality: Originally stated as “the Baikal Lake, 300–350 m”. According to Sitnikova *et al.* [2004], the type locality is Kultuk (SW coast of the southern Baikal).
- Global distribution: Endemic to the Baikal Lake and the Angara River.
- Subregions: ES, BL.
- IUCN conservation status: DD (data deficient).
- Remark: The species includes three subspecies.

**88(105a). *Teratobaikalia*
(*Trichiobaikalia*) *duthiersii duthiersii*
(W. Dybowski, 1875)**

- Syntypes: ZIN.
- Distribution in the former USSR: The southern and central Baikal Lake; the Angara River down to Irkutsk [Sitnikova *et al.*, 2004; Starobogatov *et al.*, 2004].
- Bionomics: Inhabits sandy and sandy-mud substrates between 15 and 50 m of depth.

**88(105b). *Teratobaikalia*
(*Trichiobaikalia*) *duthiersii*
angarensis (B. Dybowski, 1913)**

Baikalia (*Trichiobaikalia*) *duthiersii* var. *angarensis* B. Dybowski, 1913: 211, pl. 5, fig. 31a.

- Type locality: Russia, Irkutsk Region, the Angara River.
- Types: Not traced.
- Distribution in the former USSR: Endemic to the Angara River.
- Bionomics: Inhabits sandy and sandy-mud substrates between 15 and 50 m of depth.

**88(105c). *Teratobaikalia*
(*Trichiobaikalia*) *duthiersii*
pachypleura (Lindholm, 1924)**

Baikalia (*Trichiobaikalia*) *duthiersii* var. *pachypleura* Lindholm, 1924a: 24.

- Type locality: Kultuk (south-western coast of the southern Baikal Lake).
- Syntypes: ZIN.
- Distribution in the former USSR: Endemic to the Baikal Lake.
- Bionomics: Inhabits sandy and sandy-mud substrates between 15 and 50 m of depth.

**89(106). *Teratobaikalia*
(*Trichiobaikalia*) *ciliata*
(W. Dybowski, 1875)**

[= *Dybowskia ciliata* var. *angarensis* B. Dybowski

et Grochmalicki, 1923; *Dybowskia ciliata* var. *major* B. Dybowski et Grochmalicki, 1923; *Dybowskia ciliata* var. *minor* B. Dybowski et Grochmalicki, 1923; *Dybowskia ciliata* var. *pulla* B. Dybowski et Grochmalicki, 1923; *Dybowskia ciliata* var. *typica* B. Dybowski et Grochmalicki, 1923]

Ligea ciliata W. Dybowski, 1875: 49, Taf. 3, fig. 27-29, Taf. 4, fig. 10.

- Type locality: Kultuk (SW coast of the southern Baikal) [fide Sitnikova *et al.*, 2004].
- Syntypes: ZIN.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The Baikal Lake (open littoral region), the Angara River down to Irkutsk [Sitnikova *et al.*, 2004; Starobogatov *et al.*, 2004].
- Subregions: ES, BL.
- Bionomics: Inhabits sandy and rocky substrates between 2 and 100 m of depth.
- IUCN conservation status: Not assessed.
- Remark: This highly variable species may consist of two separate species and several subspecies, inhabiting different biotopes. It means that some of the varieties described by B. Dybowski and Grochmalicki [1923] may appear to be valid taxa [Sitnikova *et al.*, 2004].

**Subgenus *Baikaliella*
Lindholm, 1909**

Type species: *Baikalia* (*Baikaliella*) *nana* Lindholm, 1909 (OD)

**90(107). *Teratobaikalia* (*Baikaliella*)
nana (Lindholm, 1909)**

Baikalia (*Baikaliella*) *nana* Lindholm, 1909: 44, pl. 1, figs. 52-55.

- Type locality: Maloye More Strait and Boguchanskaya Bay (the northern Baikal Lake).

- Lectotype: ZIN (see Beckman & Starobogatov, 1975).
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The Baikal Lake (open part).
- Subregions: BL.
- Bionomics: Inhabits sandy and sandy-mud substrates between 10 and 120 m of depth.
- IUCN conservation status: DD (data deficient).

91(108). *Teratobaikalia (Baikaliella) clandestina* (Beckman et Starobogatov, 1975)

Baicalia (Baikaliella) clandestina Beckman & Starobogatov, 1975: 97, fig. 2A.

- Type locality: Russia, the southern Baikal Lake near Slyudyanka settlement (approximately 51°39'30"N; 103°44'00"E), 240 m.
- Holotype: ZIN.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: Type locality only.
- Subregions: BL.
- Bionomics: Deep-water species; the data on preferred substrates are absent.
- IUCN conservation status: Not assessed.

92(109). *Teratobaikalia (Baikaliella) humerosa* (Beckman et Starobogatov, 1975)

Baicalia (Baikaliella) humerosa Beckman & Starobogatov, 1975: 97, fig. 2D.

- Type locality: Russia, the north-eastern Baikal Lake near the Yazovka River.
- Holotype: ZIN.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: Known from the type locality and from Chivyrkuy Bay.

- Subregions: BL.
- Bionomics: Inhabits sandy-mud substrates between 20 and 30 m of depth.
- IUCN conservation status: Not assessed.

93(110). *Teratobaikalia (Baikaliella) producta* (Kozhov, 1936)

Baicalia (Baikaliella) nana var. *producta* Kozhov, 1936: 97, pl. 5, figs. 48-49.

- Type locality: Russia, north-eastern coast of the northern Baikal Lake, Ayaya Bay.
- Lectotype: ZIN [fide Sitnikova *et al.*, 2004].
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: Known from the type locality and from Maloye More Strait.
- Subregions: BL.
- Bionomics: Inhabits sandy substrates between 13 and 50–100 m of depth.
- IUCN conservation status: Not assessed.

Addition to the family Baicaliidae:

The genus *Pyrgobaicalia* Starobogatov 1972 described from Central Asia (Tajikistan) was originally (but provisionally) assigned to the family Baicaliidae, though its actual taxonomic position is still unclear (T. Sitnikova, pers. comm.).

**Genus *Pyrgobaicalia*
Starobogatov 1972**

Type species: *Pyrgobaicalia aenigma* Starobogatov, 1972 (OD)

**94(111). *Pyrgobaicalia aenigma*
Starobogatov, 1972**

Pyrgobaicalia aenigma Starobogatov, 1972a: 169-170, fig. 6.

- Type locality: Tajikistan, Gorno-Bada-

khshan Autonomous Region, the Dunkulduk Lake (probably carried out from a nearby spring).

- Holotype: ZIN.
- Global distribution: Endemic to Tajikistan [Starobogatov, 1972].
- Distribution in the former USSR: Type locality [Starobogatov, 1972].
- Subregions: CA.
- Bionomics: Unknown.
- IUCN conservation status: Not assessed.

Family Bithyniidae Gray, 1857

[= Bulimidae Hannibal, 1912; Fossarulinae Wenz, 1926]

(Bithyniidae Gray in Turton, 1857: 24)

Type genus: *Bithynia* Leach in Abel, 1818

Several tens of species distributed in Europe, Asia, Northern Africa, and Australia are included into this family. The European representatives usually are classified within a single genus *Bithynia* with two subgenera [Falkner *et al.*, 2001], and recently Glöer & Pešić [2006] described a new genus, *Pseudobithynia*, accepted by European taxonomists. In the ex-USSR, a more detailed system of *Bithynia* s. lato has been adopted [Anistratenko & Stadnichenko, 1994; Beriozkina *et al.*, 1995]. According to Beriozkina *et al.* [1995], there are five genera of Bithyniidae in the Eastern European waterbodies only (Table 11). This system has not been supported by malacologists of Western Europe [Falkner *et al.*, 2001; Glöer, 2002a; Welter-Schultes, 2012]. Here we give an “intermediate” system of European bithyniid snails retaining the five genera delineated by Beriozkina *et al.* [1995] but list them provisionally as subgenera. A further

molecular study is needed to see whether these taxa have any phylogenetic significance. The Far-Eastern and East Siberian species of the family are placed in the subfamily Mysorellinae Annandale, 1920 (= Parafossarulinae Starobogatov, 1983) [Zatravkin *et al.*, 1989].

The most important recent works dealing with taxonomy, morphology, and distribution of Bithyniidae are those by Falniowski [1989], Zatravkin *et al.* [1989], Anistratenko & Stadnichenko [1994], Beriozkina *et al.* [1995], Ponder [2003], Glöer & Pešić [2006].

Subfamily Bithyniinae Gray, 1857

Genus *Bithynia*

Leach in Abel, 1818

[= *Helix* Linnaeus, 1758, partim; *Nerita* Linnaeus, 1758, partim; *Turbo* Linnaeus, 1758, partim; *Bulimus* Scopoli, 1777, partim; *Cyclostoma* Lamarck, 1799, partim; *Paludina* Lamarck, 1812, partim; *Bythinia* Stein, 1850; *Elona* Moquin-Tandon, 1855, non H. et A. Adams, 1855; *Bithynia* Gray, 1857; *Grayana* De Betta, 1870; *Tentaculatia* Servain, 1888; *Milletelona* Beriozkina et Starobogatov in Anistratenko et Stadnichenko, 1995]

Type species: *Helix tentaculata* Linnaeus, 1758 (SD Hermannsen, 1846)

Subgenus *Bithynia* s. str.

95(112). *Bithynia* (*Bithynia*) *tentaculata* (Linnaeus, 1758)

[= *Nerita jaculator* O.F. Müller, 1774; *Turbo nucleus* Da Costa, 1778; *Cyclostoma impurum* Draparnaud, 1801, partim; *Turbo janitor* Vallot, 1801; *Nerita jaculatrix* Schrank, 1803; *Bithynia tentaculata* var. *excavata* Jeffreys, 1862; *Bithynia tentaculata* var. *gigas* Mörch, 1864; *Bithynia tentaculata* var. *bottnica* Anderson in Clessin, 1878; *Bithynia sebetina* Blanc, 1884]

Helix tentaculata Linnaeus, 1758: 774.

Table 11. Taxonomy of European bithyniid snails according to the Western European [Falkner *et al.*, 2001] and Russian [Starobogatov *et al.*, 2004] systems.

Falkner <i>et al.</i> [2001]			Starobogatov <i>et al.</i> [2004]		
Genus	Subgenus	Species	Genus	Subgenus	Species
<i>Bithynia</i>	<i>Bithynia</i> s. str.	<i>B. tentaculata</i> (L., 1758)	<i>Bithynia</i>	<i>Bithynia</i> s. str.	<i>B. tentaculata</i> <i>B. curta</i> Garnier in Picard, 1840 <i>B. producta</i> Moquin-Tandon, 1855
				<i>Milletelona</i> Beriozkina et Starobogatov, 1995	<i>B. decipiens</i> (Millet, 1843)
	<i>Codiella</i> Locard, 1894	<i>B. leachii</i> (Sheppard, 1823)	<i>Digyracidum</i> Locard, 1882	–	<i>D. bourguignati</i> (Paladilhe, 1869) <i>D. starobogatovi</i> Andreeva et Lazutkina, 2014*
			<i>Codiella</i>	–	<i>C. leachii</i> <i>C. kickxii</i> (Westendorp, 1835)
			<i>Opisthorcho-phorus</i> Beriozkina, Levina et Starobogatov, 1995	–	<i>O. abakumovae</i> Andreeva et Starobogatov, 2001 <i>O. baudonianus</i> (Gassies, 1859) <i>O. hispanicus</i> (Servain, 1880) <i>O. troschelii</i> (Paasch, 1842) <i>O. valvatoides</i> Beriozkina et Starobogatov, 1995
			<i>Paraelona</i> Beriozkina et Starobogatov, 1995	–	<i>P. boissieri</i> <i>P. fausseki</i> Beriozkina et Starobogatov, 1995 <i>P. majewsky</i> (Frauenfeld, 1862) <i>P. milachevitchi</i> Beriozkina et Starobogatov, 1995 <i>P. socialis</i> (Westerlund, 1886)
		<i>B. italica</i> (Paulucci, 1880)	–	–	–

*The species not mentioned by Starobogatov *et al.* [2004].

- Type locality: Europe, in stagnant waters (“Habitat in Europae stagnis”; Linnaeus, 1758: 774).
- Probable syntypes: UUZM Nos. 1174 a-c [Wallin, 2001].
- Global distribution: Europe to the Western Siberia and Kashmir; introduced to North America [Welter-Schultes, 2012]; North Africa [Van Damme, 1984].
- Distribution in the former USSR: The entire European part of RAC except extreme north-east, the Western Siberia, the Ural River [Starobogatov & Zatravkin, 1987; Pirogov *et al.*, 1994; Starobogatov *et al.*, 2004; Vinarski *et al.*, 2007].

- Subregions: NE, SE, WS.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: LC (least concern).

95(113). *Bithynia* (*Bithynia*) *curta* (Garnier in Picard, 1840)

[= *Cyclostoma impurum* Draparnaud, 1801, partim; *Paludina impura* var. *ventricosa* Menke, 1830; *Bithynia codia* Bourguignat, 1862]

Paludina impura var. *curta* Picard, 1840: 304.

- Type locality: Not stated in the original description, however, the paper was devoted to mollusks of the Somme Department, France.

- Types: Not traced.
- Global distribution: Europe and the Western Siberia.
- Distribution in the former USSR: The European part of RAC, south of the Western Siberia [Starobogatov *et al.*, 2004; Vinarski *et al.*, 2007].
- Subregions: NE, SE, WS.
- Bionomics: Lives in rivers and lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Western European malacologists generally regarded *Bithynia curta* as a synonym of *B. tentaculata* [Falniowski, 1989]. Glöer [2002a] mentioned it as *B. tentaculata* f. *codia*.

95(114). *Bithynia (Bithynia) decipiens* (Millet, 1843)

Paludina decipiens Millet, 1843: pl. 63, fig. 2.

- Type locality: France, Maine-et-Loire Department.
- Types: Not traced.
- Global distribution: Europe and the Western Siberia.
- Distribution in the former USSR: The European part of RAC, south of the Western Siberia [Starobogatov *et al.*, 2004; Vinarski *et al.*, 2007].
- Subregions: NE, SE, WS.
- Bionomics: Lives in rivers and lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Western European malacologists generally regarded *Bithynia decipiens* as a synonym of *B. tentaculata* [Falniowski, 1989].

95(115). *Bithynia (Bithynia) producta* Moquin-Tandon, 1855

[= *Paludina impura* var. *producta* Menke, 1830, nomen nudum]

Bithynia tentaculata var. *producta* Moquin-Tandon, 1855: 528, pl. 39, fig. 41.

- Type locality: France, Agen (Reyniès).
- Types: Not traced.
- Global distribution: Europe and the Western Siberia.
- Distribution in the former USSR: The Eu-

ropean part of RAC, south of the Western Siberia [Starobogatov *et al.*, 2004; Lazutkina *et al.*, 2012].

- Subregions: NE, SE, WS.
- Bionomics: Lives in rivers and lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Western European malacologists generally regarded *Bithynia producta* as a synonym of *B. tentaculata* [Falniowski, 1989]. Glöer [2002a] mentioned it as *Bithynia tentaculata* f. *producta*.

Subgenus *Codiella* Monterosato in Locard, 1894

[= *Leachiana* Servain, 1888]

Type species: *Turbo leachii* Sheppard, 1823 (M)

96(116). *Bithynia (Codiella) leachii* (Sheppard, 1823)

[= *Cyclostoma simile* Draparnaud, 1805; *Paludina ventricosa* Brown, 1827; *Paludina acuta* Fleming, 1828; *Paludina viridis* Turton, 1831; *P. michaudii* Duval, 1845]

Turbo leachii Sheppard, 1823: 152.

- Type locality: England ("Found sparingly in Campsey Mere, and Holbrook stream and mill-pond"; Sheppard, 1823: 153).
- Types: Lost [fide Killeen, 1992].
- Global distribution: Europe to the Western Siberia and Kashmir; introduced to North America [Welter-Schultes, 2012].
- Distribution in the former USSR: The European part of RAC (within borders of the Baltic Sea basin) [Starobogatov & Zatravkin, 1987; Starobogatov *et al.*, 2004].
- Subregions: NE.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: LC (least concern).

**96(117). *Bithynia (Codiella) kickxii*
(Westendorp, 1835)**

[= *Bithynia celtica* Paladilhe, 1870]

Paludina kickxii Westendorp, 1835: 337.

- Type locality: Belgium ("Brabant et de la province d'Anvers"; Westendorp, 1835: 337).
- Types: Not traced.
- Global distribution: The Western Europe (north) and the Baltic Sea basin [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: The European part of RAC (within boundaries of the Baltic Sea basin) [Starobogatov *et al.*, 2004].
- Subregions: NE.
- Bionomics: Lives in rivers and lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Western European malacologists generally regarded *Bithynia kickxii* as a synonym or variety of *B. leachii* [Westerlund, 1886; Falniowski, 1989].

Subgenus *Digyracidum* Locard, 1882

[= *Digyreidum* Westerlund, 1886]

Type species: *Bythinia bourguignati* Paladilhe, 1869 (M)

Remark: Both nominal species of the (sub-)genus *Digyracidum* registered in the RAC waterbodies [Lazutkina *et al.*, 2014] correspond to the diagnosis of the species *B. tentaculata* s. l. accepted in the Western European literature [Glöer, 2002a; Welter-Schultes, 2012].

**(118). *Bithynia (Digyracidum)*
bourguignati (Paladilhe, 1869)**

[= *Bithynia potamica* Locard, 1893]

Bythinia bourguignati Paladilhe, 1869: 225-227, pl. 19, figs. 1-3.

- Type locality: France, "dans les basins du jardin Picos, près de Perpignan (Pyrénées Orientales)" [Paladilhe, 1869: 226-227].
- Types: Not traced.
- Global distribution: Europe and the Western Siberia [Starobogatov *et al.*, 2004; Lazutkina *et al.*, 2014].

- Distribution in the former USSR: The European part of the RAC, the Western Siberia [Starobogatov *et al.*, 2004; Lazutkina *et al.*, 2014].

- Subregions: NE, SE, WS.
- Bionomics: Lives in rivers and lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: European malacologists regarded *B. bourguignati* as a full synonym of *B. tentaculata* [Falkner *et al.*, 2002].

**(119). *Bithynia (Digyracidum)*
starobogatovi (Lazutkina et Andreeva in
Lazutkina, Andreeva et Andreev, 2014)**

Digyracidum starobogatovi Lazutkina *et al.*, 2014: 19, fig. 1 D-F; 2 B-C, G; 3 C.

- Type locality: Russia, Tyumen' Region, Tobol'sk City, a lake in the floodplain of the Irtysh River (58°12'10"N; 68°14'47"E).
- Types: ZIN, Nos. 1/507-2010 and 2/507-2010 in systematic catalogue.
- Global distribution: Endemic to Russia [Lazutkina *et al.*, 2014].
- Distribution in the former USSR: The Western Siberia, the Urals, and the Pechora River basin [Lazutkina *et al.*, 2014].
- Subregions: NE, WS.
- Bionomics: Lives in small rivers and floodplain lakes [Lazutkina *et al.*, 2014].
- IUCN conservation status: Not assessed.

**Subgenus *Opistorchophorus*
Beriozkina, Levina et Starobogatov
in Anistratenko et
Stadnichenko, 1995**

Type species: *Paludina troschelii* Paasch, 1842 (OD)

**97(120). *Bithynia (Opistorchophorus)*
troschelii (Paasch, 1842)**

[= *Paludina similis* Turton, 1831, non Draparnaud, 1805; *Paludina inflata* Hansen, 1845, non Villa et Villa, 1841, partim; *Paludina transsilvanica* Bielz, 1853; *Bithynia ventricosa* Turton, 1857, partim].

Paludina troscheli Paasch, 1842: 300-301, text-figs a-d.

- Type locality: Germany, Berlin, in lakes (the lectotype locality; see Glöer, 2002b).
- Lectotype: SMF 4063/1 (designated by Glöer [2002b] but see criticism of Falkner [2003]).
- Global distribution: Europe and the Western Siberia.
- Distribution in the former USSR: The entire European part of RAC except extreme north, the Western Siberia [Starobogatov & Zatravkin, 1987; Starobogatov *et al.*, 2004; Vinarski *et al.*, 2007].
- Subregions: NE, SE, WS.
- Bionomics: Lives in temporary waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Some European authors [Falkner, 2003; Welter-Schultes, 2012] preferred to use the name *Bithynia transsilvanica* (Bielz) for designation of this species because the name *B. troschelii* can possibly not be used for it [see arguments in Falkner, 2003].

97(121). *Bithynia (Opistorchophorus) abakumovae* (Andreeva et Starobogatov, 2001)

Opistorchophorus abakumovae Andreeva & Starobogatov, 2001: 77-78, fig. 1.

- Type locality: Russia, Omsk Region, Tara district, the Krivoye Lake near Atak village (56°46'15"N; 74°37'00"E).
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and five paratypes.
- Global distribution: Endemic to Russia [Lazutkina *et al.*, 2014].
- Distribution in the former USSR: The Western Siberia, the southern Urals, probably northern Kazakhstan [Andreeva & Starobogatov, 2001; Starobogatov *et al.*, 2004].
- Subregions: WS.
- Bionomics: Lives in temporary and semi-

permanent waterbodies [Starobogatov *et al.*, 2004].

- IUCN conservation status: Not assessed.
- Remark: *B. abakumovae* corresponds to the diagnosis of *B. troschelii* s. l. as it is accepted in the Western European literature [Glöer, 2002a].

97(122). *Bithynia (Opistorchophorus) baudoniana* (Gassies, 1859)

[= *Bithynia proxima* Frauenfeld, 1862; *Bithynia blanci* Locard, 1894]

Bithynia baudoniana Gassies, 1859: 289-290.

- Type locality: France, "les fossés de la grande Lande voisine des prés salés, au Teich".
- Types: Not traced.
- Global distribution: Europe and the Western Siberia.
- Distribution in the former USSR: The European part of RAC, south of the Western Siberia [Starobogatov *et al.*, 2004; Vinarski *et al.*, 2007].
- Subregions: NE, SE, WS.
- Bionomics: Lives in temporary waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: *B. baudoniana* corresponds to the diagnosis of *B. troschelii* s. l. as it is accepted in the Western European literature [Glöer, 2002a].

97(123). *Bithynia (Opistorchophorus) hispanica* (Servain, 1880)

[= *Paludina inflata* Hansen, 1845, non Villa et Villa, 1841, partim]

Bythinia hispanica Servain, 1880: 147.

- Type locality: Spain, "les fossés de la grande Lande voisine des prés salés, au Teich".
- Types: Servain's collection has been merged with the collection of Bourguignat (G. Falkner, pers. comm.). Possibly, types are either in MNHN or in NHMG.
- Global distribution: Europe and the Western Siberia.

- Distribution in the former USSR: The European part of RAC (except of north), south of the Western Siberia [Starobogatov *et al.*, 2004], Irkutsk Region (the Eastern Siberia) [Russinek *et al.*, 2012]. However, records of this species from the Western Siberia are regarded as doubtful [Lazutkina *et al.*, 2014].
- Subregions: SE, ?WS, ES
- Bionomics: Lives in temporary waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: *Bithynia hispanica* corresponds to the diagnosis of *B. troschellii* s. l. as it is accepted in the Western European literature [Glöer, 2002a].

97(124). *Bithynia (Opistorchophorus) valvatoides* (Beriozkina et Starobogatov in Beriozkina, Levina et Starobogatov, 1995)

Opistorchophorus valvatoides Beriozkina *et al.*, 1995: 34-35, fig. 11, 4F.

- Type locality: Russia, Saratov Region, Balashov District, Sergievka settlement (51°36'20"N; 44°03'15"E).
- Types: In spite of the authors' statement [Beriozkina *et al.*, 1995], there are no type specimens in the ZIN collection, and their current whereabouts is unknown.
- Global distribution: Endemic to the European Russia.
- Distribution in the former USSR: The European part of the RAC area (except of north). Records of this species from the southern part of the Western Siberia are doubtful, and it is not included in the lists of the Western Siberian bithyniids [Vinarski *et al.*, 2007; Lazutkina *et al.*, 2014].
- Subregions: SE
- Bionomics: Lives in temporary waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: *B. valvatoides* corresponds to the diagnosis of *B. troschellii* s. l. as it is accepted in the Western European literature [Glöer, 2002a].

Subgenus *Paraelona* Beriozkina et Starobogatov in Anistratenko et Stadnichenko, 1995

Type species: *Paludina boissieri* Charpentier in Küster, 1852 (designated here)

Remark: The group of bithyniid species separated by Beriozkina *et al.* [1995] under the generic name *Paraelona* had *Bithynia majewsky* Frauenfeld, 1862 as its type species. However, as Glöer & Maassen [2009] demonstrated, this species was described on the basis of a single specimen that is nothing but a juvenile specimen of *B. tentaculata*. The inspection of this specimen made by one of us (M.V.) in April of 2015 in NHMV allowed to agree with this statement. In this situation, according to the ICZN article 70.3, the new type species for this genus should be designated, and we choose *Paludina boissieri* Charpentier in Küster, 1852 as the type species for the genus *Paraelona*. Western European malacologists considered species of the (sub-)genus *Paraelona* as belonging to the subgenus *Codiella* [Falkner *et al.*, 2001]. Two out of six species originally included into *Paraelona*, *P. boissieri* and *P. hellenica* (Kobelt, 1892) are accepted as valid by Western European authors, too [Falkner *et al.*, 2001; Glöer *et al.*, 2010]. The taxonomic status of other species needs to be resolved in future.

98(125). *Bithynia (Paraelona) boissieri* (Charpentier in Küster, 1852)

[= *Bythinia ilysaeca* Locard, 1894; *Bythinia sphaerica* Bourguignat in Locard, 1894]

Paludina boissieri Küster, 1852: 35-36, pl. 7, figs. 30-32.

- Type locality: Italy, vicinities of Rome.
- Types: Not traced.
- Global distribution: France and, per-

haps, southern Italy [Welter-Schultes, 2012]; south-eastern part of Europe [Beriozkina *et al.*, 1995].

- Distribution in the former USSR: Southern parts of Ukraine and the European Russia [Beriozkina *et al.*, 1995; Starobogatov *et al.*, 2004]
- Subregions: SE.
- Bionomics: Lives in permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: DD (data deficient).

99(126). *Bithynia (Praelona) hellenica* (Kobelt, 1892)

[= *Praelona majewsky* Beriozkina *et al.*, 1995, non Frauenfeld, 1862]

Bythinia orsinii var. ? *hellenica* Kobelt, 1892: 67, Taf. CXXXVII, fig. 860.

- Type locality: Greece, Lepanto (= Nafpaktis Town).
- Syntypes: SMF [see Glöer *et al.*, 2010].
- Global distribution: Greece [Glöer *et al.*, 2010]; southeastern part of Europe [Anistratenko & Stadnichenko, 1995].
- Distribution in the former USSR: Southern parts of Ukraine and the European Russia eastward to the Volga delta [Anistratenko & Stadnichenko, 1995; Starobogatov *et al.*, 2004]
- Subregions: SE.
- Bionomics: Lives in semipermanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: DD (data deficient).
- Remark: The species was registered for the first time in the RAC waterbodies by Anistratenko & Stadnichenko [1995]. Later on Beriozkina *et al.* [1995] replaced this name with presumably older one, *Praelona majewsky*. Since it has been established that the latter species name is a junior objective synonym of *Bithynia tentaculata* [Glöer & Maas-

sen, 2009], there is a reason to return to the name *Bithynia (Praelona) hellenica*.

99(127). *Bithynia (Praelona) fausseki* (Beriozkina et Starobogatov in Anistratenko & Stadnichenko, 1995)

Praelona fausseki Beriozkina et Starobogatov in Anistratenko & Stadnichenko, 1994 [1995]: 152, 153, fig. 130.

- Type locality: Russia, the Northern Caucasus, the Kuma River.
- Types: In spite of the authors' statement [Beriozkina *et al.*, 1995], there are no type specimens in the ZIN collection, and their current whereabouts is unknown.
- Global distribution: Endemic to the Eastern Europe.
- Distribution in the former USSR: The Northern Caucasus and Ciscaucasia [Beriozkina *et al.*, 1995; Starobogatov *et al.*, 2004].
- Subregions: SE.
- Bionomics: Lives in temporary waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

99(128). *Bithynia (Praelona) milachevitchi* (Beriozkina et Starobogatov in Anistratenko et Stadnichenko, 1995)

Praelona milachevitchi Beriozkina et Starobogatov in Anistratenko & Stadnichenko, 1994 [1995]: 151-152, fig. 129.

- Type locality: Ukraine, Kherson Region, Balki village, the Konka River (one of branches in the delta of the Dnieper River).
- Types: ZIN, Nos. 1-3 in systematic catalogue. The type series includes the holotype and three paratypes.
- Global distribution: Endemic to the ex-USSR.
- Distribution in the former USSR: South of the European Russia and the Western Siberia [Beriozkina *et al.*, 1995; Andreeva & Abakumova, 2003; Starobogatov *et al.*, 2004].
- Subregions: SE, WS.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

**99(129). *Bithynia (Parelona) socialis*
(Westerlund, 1886)**

[= ? *Digyreidum renei* Letourneux, 1887]

Bythinia socialis Westerlund, 1886: 19.

- Type locality: Italy, Sicily, the Oreto River near Palermo City.
- Types: The type series consists of 7 syntypes: 6 of them are housed in NMG (No. 4341), and a single specimen in SMNH (No. 13:104; see Vinarski *et al.*, 2013b).
- Global distribution: The South Europe and the Western Siberia.
- Distribution in the former USSR: South of the European Russia and the Western Siberia [Beriozkina *et al.*, 1995; Andreeva & Abakumova, 2003; Starobogatov *et al.*, 2004].
- Subregions: SE, WS.
- Bionomics: Lives in temporary waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

**Subfamily Mysorellinae
Annandale, 1920**

[= Parafossarulinae Starobogatov in Starobogatov et Sitnikova, 1983]

Type genus: *Mysorella* Godwin-Austen, 1919

**Genus *Alocinma* Annandale et
Prashad, 1919**

Type species: *Amnicola sistanica* Annandale et Prashad, 1919 (OD)

Remark: Glöer & Pešić [2012] placed the type species of the genus, *Amnicola sistanica*, into the genus *Bithynia*.

**100(130). *Alocinma caspica*
(Westerlund, 1902)**

Bythinia (Digycidum) servainiana var. *caspica* Westerlund, 1902: 45.

- Type locality: “Kaspisches Meer an der Ostseite” (eastern part of the Caspian Sea) [Westerlund, 1902: 45]. Berioz-

kina *et al.* [1995] contend that this taxon was described from the vicinity of Krasnovodsk (Turkmenia).

- Types: There is a single specimen of *Bythinia (Digycidum) servainiana* var. *caspica* in NMG (No. 4312). It was illustrated by Beriozkina *et al.* [1995, fig. 5 F], who stated that it is the “holotype”, however, according to article 73.1.2 ICZN, such statement is defensible only if it is “stated or implied in the original publication” that the original description was based on a single specimen. Actually, the original description text [Westerlund, 1902: 45] neither states nor implies that the taxon name was based on a single specimen. Besides, it is labeled as “Mare Casp[icum] australe” (southern Sea of Caspian) that does not coincide exactly with the locus typicus declared by Westerlund [1902]. It is obvious, though, that Krasnovodsk is situated in approximately south-eastern corner of this large lake, and, thus, there is no formal objection to consider this specimen to origin from the type locality. Thus, the nomenclatorial status of this specimen is unclear [Vinarski *et al.*, 2013b].

- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: probably lives in waterbodies of Bol'shoy Balkhan (Turkmenistan) [Starobogatov *et al.*, 2004].
- Subregions: CS.
- Bionomics: Brackishwater species.
- IUCN conservation status: Not assessed.

**Genus *Boreoelona* Starobogatov et
Streletzkaja, 1967**

Type species: *Bithynia contortrix* Lindholm, 1909 (OD)

**101(131). *Boreoelona caerulans*
(Westerlund, 1896)**

Bithynia (Elona) caerulans Westerlund, 1896: 197.

- Type locality: “Dshungarei. Nördliches Ufer von Balchasch nahe Ajagus” (Dzungaria, northern shore of the Balkhash Lake near Ajagus”) [Westerlund, 1896: 197]. Nowadays this area belongs to Southern Kazakhstan.
- Global distribution: Endemic to Central Asia (within the ex-USSR boundaries).
- Subregions: CA.
- IUCN conservation status: Not assessed.
- Remark: The species includes two subspecies.

101(131a). *Boreoelona caerulans caerulans* (Westerlund, 1896)

- Types: According to the hand-written catalogue of ZIN collection, it contains 5 specimens of *B. caerulans* from the type locality determined by Westerlund himself. However, we failed to find these specimens in the ZIN type collection. There is a single specimen labeled as “Stadt Zepsamus” (unknown locality) in NMG (No. 4358).
- Distribution in the former USSR: The Balkhash Lake [Zhadin, 1952].
- Bionomics: Brackishwater species.

101(131b). *Boreoelona caerulans moltschanovi* (Lindholm, 1915)

Bythinia moltschanovi Lindholm, 1915: 344-345.

- Type locality: Uzbekistan, “Beim See Karateren” (the Amu-Darya Delta)
- Syntypes: ZIN, No. 1 in systematic catalogue. The type series includes two syntypes.
- Distribution in the former USSR: Type locality [Zhadin, 1952; Izzatullaev, 1982].

- Bionomics: Unknown.

**102(132). *Boreoelona contortrix*
(Lindholm, 1909)**

Bithynia contortrix Lindholm, 1909: 30, pl. 1, fig. 61, 62.

- Type locality: Russia, Angarskiy sor of the Baikal Lake.
- Lectotype: ZIN No. 1 in systematic catalogue (see Starobogatov & Streletskaja, 1967).
- Global distribution: Endemic to Northern Asia.
- Distribution in the former USSR: Siberia, the Amur River basin and the Primorye Region (except of north) [Dolgin, 2001; Starobogatov *et al.*, 2004].
- Subregions: WS, ES, SF.
- Bionomics: Lives in permanent and semipermanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

**103(133). *Boreoelona ehrmanni*
Prozorova et Starobogatov, 1991**

Boreoelona ehrmanni Prozorova & Starobogatov, 1991: 137, fig. 1.

- Type locality: Russia, the Khabarovsk Territory, a lake near railway station Khabarovsk-2 (48°25'35"N; 135°08'00"E).
- Holotype: ZIN No. 1 in systematic catalogue.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: Basin of the Amur and the south Primorye Territory [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in temporary waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

**104(134). *Boreoelona lindholmiana*
(Starobogatov et Streletzkaia, 1967)**

Bithynia lindholmiana Starobogatov & Streletzkaia, 1967: 227-228, fig. 11.

- Type locality: Kazakhstan, Semipalatinsk Region, waterbodies near the Kos-Kul' Lake.
- Types: ZIN Nos. 1-4 in systematic catalogue. The type series includes the holotype and 27 paratypes.
- Global distribution: Endemic to Altay.
- Distribution in the former USSR: The south Altay area [Starobogatov & Streletzkaia, 1967].
- Subregions: WS.
- Bionomics: Lives in lakes and backwaters of rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

**105(135). *Boreoelona sibirica*
(Westerlund, 1886)**

[= *Bithynia inflata* Westerlund, 1876, non Hansen, 1845]

Bythinia troscheli var. *sibirica* Westerlund, 1886: 18.

- Type locality: Siberia. As the original description was based on the reexamination of *Bithynia inflata* sensu Westerlund, 1876, the type locality of *B. troscheli* var. *sibirica* probably should be cited as "Jenissei, Worogova Selo, ... (60 50)" (Yenisei river, Vorogova village).
- Types: Determination of the type locality and the content of the type series of *B. troscheli* var. *sibirica* is difficult. Westerlund [1886] introduced this taxonomic name for designation of *Bithynia inflata* Hansen, 1845 sensu Westerlund, 1876 (non Villa et Villa, 1841) collected in "Jenissei, Worogowa Selo" [Westerlund, 1877: 64]. Starobogatov & Stre-

letzkaia [1967] considered this locality as the locus typicus of *B. sibirica*. Lazutkina *et al.* [2009] could not locate the current position of specimens of *B. sibirica* collected in Worogowa and considered two specimens from "Kungur, Siberia" housed in SMNH (No. 6150) as the syntypes (actually, there is one more specimen from Kungur in NMG, No. 4337). Formally, its sampling site corresponds to the type locality stated in the original description [Westerlund, 1886: "Sibirien", but actually these specimens were received by Westerlund between 1896 and 1898 [Lazutkina *et al.*, 2009] and could not have been used for description of *B. troscheli* var. *sibirica* [Vinarski *et al.*, 2013b].

- Global distribution: Endemic to Asiatic Russia.
- Distribution in the former USSR: The Urals, Siberia, northern part of the Russian Far East eastwards to the Kamchatka Peninsula [Lazutkina *et al.*, 2009].
- Subregions: WS, ES, NF.
- Bionomics: Lives in lakes and small permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Lazutkina *et al.* [2009] supposed that this species should, perhaps, be classified within the genus *Opisthochophorus*.

**106(136). *Boreoelona ussuriensis*
(Ehrmann in Büttner et
Ehrmann, 1927)**

Bithynia ussuriensis Büttner & Ehrmann, 1927: 242-244, pl. 12, fig. 3.

- Type locality: Russia, the Primorye Territory, the Ussuri River near Spasskoye Settlement.

- Types: Possibly, in SMF [fide Dance, 1986].
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Amur Basin and Primorye (except the north) [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in temporary waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

Genus *Digoniostoma*
Annandale, 1920

Type species: *Paludina cerameopoma* Benson, 1830 (OD)

107(137). *Digoniostoma kashmirensis* (Nevill, 1885)

Bithynia tentaculata var. *kashmirensis* Nevill, 1885: 39.

- Type locality: India, Kashmir, Sri Nagar.
- Types: Zoological Survey of India, No. 2236 [fide Subba Rao, 1989].
- Global distribution: India and Central Asia.
- Distribution in the former USSR: Central part of the Amu-Darya River basin [Izzatullaev, 1982; Starobogatov & Zatravkin, 1987].
- Subregions: CA.
- Bionomics: In India it is common in rice fields [Subba Rao, 1989].
- IUCN conservation status: Not assessed.
- Remark: The original description does not contain either diagnosis or description. Therefore the name is *nomen nudum*. We were not able to trace where the name was validated. Subba Rao [1989] regarded this taxon as a subspecies of *B. tentaculata*.

108(138). *Digoniostoma oxiana* Izzatullaev, 1982

Digoniostoma oxiana Izzatullaev, 1982: 337-338, textfig. (B).

- Type locality: Turkmenistan, deposits of the Amu-Darya River near settlement Kerkichi.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to Central Asia.
- Distribution in the former USSR: Southeastern parts of Tajikistan and Turkmenistan [Izzatullaev, 1982; Starobogatov & Zatravkin, 1987].
- Subregions: CA.
- Bionomics: Unknown.
- IUCN conservation status: DD (data deficient).

Genus *Gabbiella*
Mandahl-Barth, 1968

Type species: *Bithynia stanleyi* var. *humerosa* Martens, 1879 (OD)

109(139). *Gabbiella araxena* Akramowski, 1970

Gabbiella araxena Akramowski, 1970: 255.

- Type locality: Armenia, the Araks River basin.
- Types: ZIN, Nos. 1-3 in systematic catalogue. The type series includes the holotype and 10 paratypes.
- Global distribution: Endemic to the Transcaucasia.
- Distribution in the former USSR: Basins of the Araks and Kura River basins [Akramowski, 1976; Starobogatov & Zatravkin, 1987].
- Subregions: CT.
- Bionomics: Recorded in lakes [Akramowski, 1976].
- IUCN conservation status: DD (data deficient).

**110(140). *Gabbiella cyrea*
Starobogatov in Starobogatov et
Zatravkin, 1987**

Gabbiella cyrea Starobogatov & Zatravkin, 1987: 151.

- Type locality: Azerbaijan, the Soyukhbulag River (a left tributary of the Kura River).
- Types: ZIN, Nos. 1, 2 in systematic catalogue. The type series includes the holotype and 11 paratypes.
- Global distribution: Endemic to the Transcaucasia.
- Distribution in the former USSR: Type locality [Starobogatov & Zatravkin, 1987].
- Bionomics: Unknown.
- Subregions: CT.
- IUCN conservation status: Not assessed.

**Genus *Parafossarulus*
Annandale, 1924**

Type species: *Paludina striatula* Benson, 1842 (OD)

111(141). *Parafossarulus manchouricus* (Gerstfeldt in Bourguignat, 1860)

[= *Bithynia striatula* Zhadin, 1952, non Benson, 1842]

Bythinia manchourica Bourguignat, 1860a: 535, pl. 24, figs. 11-13.

- Type locality: Russia, the Amur River and some other rivers in the southern Siberia ("le fleuve Amour et divers cours d'eau de la Sibérie méridionale"; Bourguignat, 1860a: 535).
- Types: Not traced.
- Global distribution: The Far East (China, Japan, Korea, Russia).
- Distribution in the former USSR: Lower and middle parts of the Amur Basin,

including the Ussuri River basin [Prozorova *et al.*, 2014].

- Subregions: SF.
- Bionomics: Lives in lakes and rivers.
- IUCN conservation status: Not assessed.

**112(142). *Parafossarulus spiridonovi*
Zatravkin et Starobogatov in
Zatravkin, Doygalev et
Starobogatov, 1989**

Parafossarulus spiridonovi Zatravkin *et al.*, 1989: 77-78, fig. 3.

- Type locality: Russia, the Khabarovsk Territory, Jewish Autonomous District, basin of the Bidzhan River near Kirovo village (approximately 47°51'00"N; 123°02'00"E).
- Types: ZIN, Nos. 1-8 in systematic catalogue. The type series consists of the holotype and 36 paratypes.
- Global distribution: The Far East of Russia, possibly North China.
- Distribution in the former USSR: Middle and lower parts of the Amur Basin, including the Amur Liman [Bogatov & Zatravkin, 1990].
- Subregions: SF.
- Bionomics: Lives in channels and floodplain waterbodies [Bogatov & Zatravkin, 1990].
- IUCN conservation status: Not assessed.

Addition to the genus *Parafossarulus*: One more species of this genus, *P. sungariensis* Moskvicheva in Starobogatov et Zatravkin, 1987, was included into keybooks and check-lists of the RAC malacofauna [Bogatov & Zatravkin, 1990; Kantor & Sysoev, 2005]. However, all reliable findings of *P. sungariensis* were made in waterbodies of China [Prozorova *et al.*, 2014], and thus we did not include it in this catalogue.

Family Cochliopidae Tryon, 1866

(Cochliopinae Tryon, 1866: 156)

Type genus: *Cochliopa* Stimpson, 1856

The family with nearly 250 species [Strong *et al.*, 2008] distributed in Americas, Europe, Central Asia and Australasia [Starobogatov, 1970]. It includes three subfamilies [Bouchet & Rocroi, 2005], one of them is represented in the RAC malacofauna.

**Subfamily Littoridininae
Thiele, 1928**

[= Catillinae Gray, 1868; Orthopomatini Gray, 1868; Stenopomatini Gray, 1868; Septariini Jousseaume, 1894; Pseudocampiidae Sitnikova et Starobogatov, 1983]

(Littoridineae Thiele, 1928: 372, 378)

Type genus: *Littoridina* Souleyet, 1852

**Genus *Kainarella*
Starobogatov, 1972**

Type species: *Kainarella minima* Starobogatov, 1972 (OD)

**113(143). *Kainarella minima*
Starobogatov, 1972**

Kainarella minima Starobogatov, 1972: 168, fig. 4.

- Type locality: Turkmenistan, Charsanginsk District, hot spring Khodzha-Kaynar.
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series consists of the holotype and 13 paratypes.
- Global distribution: Endemic to Central Asia.
- Distribution in the former USSR: Type locality [Starobogatov, 1972].
- Subregions: CA.
- Bionomics: Lives in hot springs.
- IUCN conservation status: Not assessed.

**114(144). *Kainarella likharevi*
Izzatullaev, 1979**

Kainarella likharevi Izzatullaev, 1979: 629, fig. A, a-b.

- Type locality: Tajikistan, Asht District, bank deposits of the Syr-Darya River, 9 kilometers from Bulak village.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to Central Asia.
- Distribution in the former USSR: Type locality [Izzatullaev, 1979].
- Subregions: CA.
- Bionomics: Unknown.
- IUCN conservation status: Not assessed.

**Genus *Nurekia* Izzatullaev,
Sitnikova et Starobogatov, 1985**

Type species: *Nurekia triculiformis* Izzatullaev, Sitnikova et Starobogatov, 1985 (OD)

**115(145). *Nurekia triculiformis*
Izzatullaev, Sitnikova et
Starobogatov, 1985**

Nurekia triculiformis Izzatullaev *et al.*, 1985: 59, fig. 3, 3.

- Type locality: South Tajikistan, southern spurs of the Vakhsh Ridge, Dangarinsk district, vicinities of Alimtay village, southward from Nurek water reservoir, a rotten aryk.
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series consists of the holotype and nearly 70 paratypes.
- Global distribution: Endemic to Central Asia.
- Distribution in the former USSR: Type locality [Izzatullaev *et al.*, 1985].
- Subregions: CA.
- Bionomics: Unknown.

- IUCN conservation status: DD (data deficient).

**Genus *Pseudocaspia*
Starobogatov, 1972**

Type species: *Caspia issykkulensis* Clessin, 1894 (OD)

Remark: Bouchet & Rocroi [2005] placed this genus (as part of Pseudocaspidae Starobogatov) into the family Hydrobiidae s.l.

**116(146). *Pseudocaspia issykkulensis*
(Clessin, 1894)**

Caspia issykkulensis Clessin, 1894: 66.

- Type locality: Kyrgyzstan, the Issyk-Kul' Lake.
- Types: Not traced. Clessin's collection was in Stuttgart Museum but totally destroyed during 1939-1945 war [Dance, 1986].
- Global distribution: Endemic to Central Asia.
- Distribution in the former USSR: The Issyk-Kul' Lake [Zhadin, 1952].
- Subregions: CA.
- Bionomics: Lives in a large saltish lake.
- IUCN conservation status: Not assessed.

**117(147). *Pseudocaspia* (?)
kainarensis Starobogatov, 1972**

Pseudocaspia (?) *kainarensis* Starobogatov, 1972: 167, fig. 3.

- Type locality: Turkmenistan, Chars-hanginsk district, hot spring Khodzha-Kaynar.
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series consists of the holotype and five paratypes.
- Global distribution: Endemic to Central Asia.

- Distribution in the former USSR: Type locality [Starobogatov, 1972].
- Subregions: CA.
- Bionomics: Lives in hot springs.
- IUCN conservation status: Not assessed.

**118(148). *Pseudocaspia ljevushkini*
Starobogatov, 1972**

Pseudocaspia ljevushkini Starobogatov, 1972: 166, fig. 1.

- Type locality: Turkmenistan, Chars-hanginsk district, the Kaptar-Khana Cave, underground brackishwater pond.
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series consists of the holotype and 10 paratypes.
- Global distribution: Endemic to Central Asia.
- Distribution in the former USSR: Turkmenia [Starobogatov, 1972].
- Subregions: CA.
- Bionomics: Lives in underground (cavatic) waterbodies.
- IUCN conservation status: Not assessed.

**119(149). *Pseudocaspia narzikulovi*
(Izzatullaev, 1972)**

Pseudamnicola narzikulovi Izzatullaev, 1972: 45-46, fig. 1(2).

- Type locality: Tajikistan, nature reserve "Tigrovaya Balka", bank deposits of the Vaksh River.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to Central Asia.
- Distribution in the former USSR: Tajikistan [Izzatullaev, 1972].
- Subregions: CA.
- Bionomics: Unknown.
- IUCN conservation status: Not assessed.

**120(150). *Pseudocaspia rosae*
Izzatullaev, 1979**

Pseudocaspia rosae Izzatullaev, 1979: 630, fig. Б, а, б, в.

- Type locality: Tajikistan, Kulyab Region, Dzharbulak village, bank deposits of an aryk.
- Holotype: Was kept in ZIN under No. 1 in systematic catalogue. Now it is lost.
- Global distribution: Endemic to Central Asia.
- Distribution in the former USSR: Type locality [Izzatullaev, 1979].
- Subregions: CA.
- Bionomics: Unknown.
- IUCN conservation status: Not assessed.

**121(151). *Pseudocaspia starostini*
Starobogatov, 1972**

Pseudocaspia starostini Starobogatov, 1972: 166-167, fig. 2.

- Type locality: Turkmenistan, Charsanginsk District, hot spring Khodzha-Kaynar.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to Central Asia.
- Distribution in the former USSR: Type locality [Starobogatov, 1972].
- Subregions: CA.
- Bionomics: Lives in hot springs.
- IUCN conservation status: Not assessed.

**122(152). *Pseudocaspia tadjikistanica*
(Izzatullaev, 1972)**

Pseudamnicola tadjikistanica Izzatullaev, 1972: 44, fig. 1(1 a-6).

- Type locality: Tajikistan, nature reserve "Tigrovaya Balka", bank deposits of the Vaksh River.
- Holotype: ZIN, No. 1 in systematic catalogue.

- Global distribution: Endemic to Central Asia.
- Distribution in the former USSR: Tadzhikistan.
- Subregions: CA.
- Bionomics: Unknown.
- IUCN conservation status: Not assessed.

**Family Hydrobiidae
Stimpson, 1865**

(Hydrobiinae Stimpson, 1865: 4)

Type genus: *Hydrobia* Hartmann, 1821

This hyper-diverse family with rather complicated taxonomic structure was estimated to include about 1250 species and several tens of genera in the freshwaters [Starobogatov, 1970; Radoman, 1983; Strong *et al.*, 2008], not counting taxa that belong to marine fauna. The phylogenetic relationships of hydrobiid subfamilies and genera are not completely resolved yet. Some authors proposed to split the Hydrobiidae s. l. into a series of separate families [Radoman, 1973, 1983; Starobogatov & Sitnikova, 1983], but recently Bouchet & Rocroi [2005] have treated the family in the widest sense, with seven subfamilies [see also Wilke *et al.*, 2013]. Overall distribution of Hydrobiidae s. l. covers Western Palearctic, eastern Nearctic, northern Neotropic, and South Africa [Wilke *et al.*, 2013]. In the RAC continental waters, hydrobiid snails are restricted mostly to Central Asia, the Caucasus and the Black Sea region. The most important recent works dealing with Hydrobiidae taxonomy, morphology, and distribution are those by Radoman [1973, 1983], Starobogatov & Sitnikova [1983], Kabat & Hershler [1993], Wilke *et al.* [2001, 2013].

Subfamily Belgrandiinae

Di Stefani, 1877

[= Horatiini D.W. Taylor, 1966; Belgrandiellinae Radoman, 1973; Graecoanatolicinae Radoman, 1973; Lithoglyphulidae Radoman, 1973; Orientaliidae Radoman, 1973; Pseudohoratiinae Radoman, 1973; Sadlerianinae Radoman, 1973; Orientalinidae Radoman, 1978; Dabrianidae Starobogatov, 1983; Istriidae Starobogatov, 1983; Kireliinae Starobogatov, 1983; Lanzaiidae Starobogatov, 1983; Tanousiidae Starobogatov, 1983; Bucharamnicolinae Izzatullaev, Sitnikova et Starobogatov, 1985; Martensamnicolinae Izzatullaev, Sitnikova et Starobogatov, 1985; Turkmenamnicolinae Izzatullaev, Sitnikova et Starobogatov, 1985]

(Belgrandiae Di Stefani, 1877: 323)

Type genus: *Belgrandia* Bourguignat, 1869

Remark: A molecular phylogenetic study by Wilke *et al.* [2013] has shown that Belgrandiinae is not monophyletic and should, perhaps, be split into two subfamilies: Belgrandiinae s. str., and Horatiinae D.W. Taylor, 1966.

Genus *Andrusovia* Brusina in
Westerlund, 1903

Type species: *Andrusovia dybowskii* Brusina in Westerlund, 1903 (OD)

**123(153). *Andrusovia dybowskii*
Brusina in Westerlund, 1903**

Andrusovia dybowskii Westerlund, 1903: 89.

- Type locality: The Caspian Sea (probably southern part), no precise data.
- Types: Not traced.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: The middle and southern Caspian Sea [Starobogatov, 2000].
- Subregions: CS.
- Bionomics: Occurs at depths between 34 and 115 m [Starobogatov, 2000].

- IUCN conservation status: Not assessed.

**124(154). *Andrusovia andrusovi*
Starobogatov, 2000**

Andrusovia andrusovi Starobogatov, 2000: 39, 41, fig. 1B.

- Type locality: Eastern part of the South Caspian Sea, 39°05'N, 52°35'E, 39 m.
- Holotype: ZIN.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: The middle and southern Caspian Sea [Starobogatov, 2000].
- Subregions: CS.
- Bionomics: Occurs at depths between 21 and 115 m [Starobogatov, 2000].
- IUCN conservation status: Not assessed.

**125(155). *Andrusovia brusinai*
Starobogatov, 2000**

Andrusovia brusinai Starobogatov, 2000: 41, fig. 1C.

- Type locality: Eastern part of the Middle Caspian Sea, 42°42.5'N, 51°32.5'E, 80 m.
- Holotype: ZIN.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: The middle and southern Caspian Sea [Starobogatov, 2000].
- Subregions: CS.
- Bionomics: Occurs at depths between 47 and 311 m [Starobogatov, 2000].
- IUCN conservation status: Not assessed.

**126(156). *Andrusovia marina*
(Logvinenko et Starobogatov, 1968)**

Horatia marina Logvinenko & Starobogatov, 1968: 382, fig. 367 (18).

- Type locality: Northern slope of the

middle Caspian Basin, 43°32.5'N, 49°17.5'E, 60 m.

- Holotype: ZIN.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: The middle and southern Caspian Sea [Starobogatov, 2000].
- Subregions: CS.
- Bionomics: Occurs at depths between 21 and 406 m [Starobogatov, 2000].
- IUCN conservation status: Not assessed.

Genus *Belgrandiella*

A.J. Wagner, 1928

[= *Frauenfeldia* Hazay, 1883, non Egger, 1863 (Diptera); *Microna* Clessin, 1880, non Frauenfeld, 1863; *Microsalpinx* Kuščer, 1932]

Type species: *Paladilhia* (*Belgrandiella*) *kusceri* A. J. Wagner, 1914 (OD)

127(157). *Belgrandiella abchasica* Starobogatov, 1962

Belgrandiella abchasica Starobogatov, 1962: 48, fig. 1 E.

- Type locality: Abkhazia, Nizhne-Shakurskaya Cave (42°16'19.62"N; 42°44'1.63"E).
- Holotype: ZIN.
- Global distribution: Endemic to the Caucasus.
- Distribution in the former USSR: Caves of Abkhazia.
- Subregions: CS.
- Bionomics: Cavatic species found in underground waterbodies.
- IUCN conservation status: Not assessed.

128(158). *Belgrandiella caucasica* Starobogatov, 1962

Belgrandiella caucasica Starobogatov, 1962: 48, fig. 1 D.

- Type locality: Russia, Krasnodar Re-

gion, Sochi district, Krasnoaleksandrovskaya Cave (44°00'55.3"N 39°21'49.8"E).

- Holotype: ZIN.
- Global distribution: Endemic to the Caucasus.
- Distribution in the former USSR: Caves of the Caucasus.
- Subregions: CS.
- Bionomics: Cavatic species found in underground waterbodies.
- IUCN conservation status: Not assessed.

Genus *Bucharamnicola* Izzatullaev, Sitnikova et Starobogatov, 1985

Type species: *Pseudamnicola bucharica* Zhadin, 1952 (OD)

129(159). *Bucharamnicola bucharica* (Zhadin, 1952)

Pseudamnicola bucharica Zhadin, 1952: 233-234, fig. 162.

- Type locality: Tajikistan, springs of the Hissar Ridge.
- Types: ZIN (?).
- Global distribution: Endemic to Central Asia.
- Distribution in the former USSR: The Pamir Mountains, springs of the Hissar Ridge [Izzatullaev *et al.*, 1985].
- Subregions: CA.
- Bionomics: Lives in mountain springs.
- IUCN conservation status: Not assessed.

Genus *Geyeria* A.J. Wagner, 1914

Type species: *Geyeria plagiostoma* A. J. Wagner, 1914 (OD)

130(160). *Geyeria horatieformis* Starobogatov, 1962

Geyeria horatieformis Starobogatov, 1962: 49, fig. 1, 3.

- Type locality: Abkhazia, Nizhne-Shakurskaya Cave (42°16'19.62"N; 42°44'1.63"E).
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and two paratypes.
- Global distribution: Endemic to the Caucasus.
- Distribution in the former USSR: Cavitic waterbodies of the Caucasus.
- Subregions: CT.
- Bionomics: Lives in underground waterbodies.
- IUCN conservation status: Not assessed.

**131(161). *Geyeria valvataeformis*
Starobogatov, 1962**

Geyeria valvataeformis Starobogatov, 1962: 48-49, fig. 1, ж.

- Type locality: Russia, Krasnodar Region, Sochi district, Krasnoaleksandrovs-kaya Cave (44°00'55.3"N 39°21'49.8"E).
- Types: ZIN, Nos. 1, 2 in systematic catalogue. The type series includes the holotype and a single paratype.
- Global distribution: Endemic to the Caucasus.
- Distribution in the former USSR: Cavitic waterbodies of the Caucasus.
- Subregions: CT.
- Bionomics: Lives in underground waterbodies.
- IUCN conservation status: Not assessed.

Genus *Martensamnicola*
Izzatullaev, Sitnikova et
Starobogatov, 1985

Type species: *Hydrobia brevicula* Martens, 1874 (OD)

**132(162). *Martensamnicola brevicula*
(Martens, 1874)**

Hydrobia (Amnicola) brevicula Martens, 1874: 30-31, pl. 2, fig. 28.

- Type locality: Uzbekistan, a puddle near Samarkand fortress.
- Syntype: ZMB, No. 22484.
- Global distribution: Endemic to Central Asia.
- Distribution in the former USSR: Republics of Central Asia (particularly Tajikistan) [Izzatullaev *et al.*, 1985].
- Subregions: CA.
- Bionomics: Lives in springs [Izzatullaev *et al.*, 1985].
- IUCN conservation status: Not assessed.

**133(163). *Martensamnicola hissarica*
(Zhadin, 1950)**

Amnicola hissarica Zhadin, 1950: 62, fig. 1.

- Type locality: Tajikistan, a spring in Gazhni ravine in the Hissar Ridge, 32 km north of Dushanbe, 1200 m above sea level.
- Types: ZIN (?).
- Global distribution: Endemic to Central Asia.
- Distribution in the former USSR: Mountain regions of Uzbekistan and Tajikistan [Izzatullaev *et al.*, 1985].
- Subregions: CA.
- Bionomics: Lives in springs [Izzatullaev *et al.*, 1985].
- IUCN conservation status: Not assessed.

134(164). *Martensamnicola kazakhstanica* Izzatullaev, Sitnikova et Starobogatov, 1985

Martensamnicola kazakhstanica Izzatullaev *et al.*, 1985: 55-56, fig. 3 (1).

- Type locality: Kazakhstan, Chimkent Region, a spring near Vannovka village.
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and three paratypes.
- Global distribution: Endemic to southern Kazakhstan.

- Distribution in the former USSR: Type locality [Izzatullaev *et al.*, 1985].
- Subregions: CA.
- Bionomics: Lives in springs [Izzatullaev *et al.*, 1985].
- IUCN conservation status: Not assessed.

Genus *Motsametia* Vinarski,
Palatov et Glöer, 2014

Type species: *Horatia borutzkii* Zhadin, 1932 (OD)

135(165). *Motsametia borutzkii*
(Zhadin, 1932)

Horatia borutzkii Zhadin, 1932: 12-13, pl. 1, fig. 1.

- Type locality: Georgia, Tskhal-Tsiteli Cave near Kutaisi City, 43°01.796'N 41°20.034'E [see Vinarski *et al.*, 2014].
- Type series: Lost [Vinarski *et al.*, 2014].
- Global distribution: Endemic to Georgia.
- Distribution in the former USSR: Type locality [Vinarski *et al.*, 2014].
- Subregions: CT.
- Bionomics: Rheophilic species found in underground brooks and springs [Vinarski *et al.*, 2014].
- IUCN conservation status: Not assessed.

Genus *Paladilhiosis*
Pavlović, 1913

Type species: *Paladilhia robiciiana* Clessin, 1882

136(166). *Paladilhiosis aculeus*
Starobogatov, 1962

Paladilhiosis aculeus Starobogatov, 1962: 47, fig. 2, r.

- Type locality: Abkhazia, Nizhne-Shakuranskaya Cave (42°16'19.62"N, 42°44'1.63"E).

- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and a single paratype.
- Global distribution: Endemic to the Caucasus.
- Distribution in the former USSR: Type locality [Starobogatov, 1962].
- Subregions: CT.
- Bionomics: Lives in underground waterbodies.
- IUCN conservation status: Not assessed.

137(167). *Paladilhiosis carpathica*
(L. Soós, 1940)

Paladilhia carpathica L. Soós, 1940: 142.

- Type locality: Ukraine, Ivano-Frankovsk Region, vicinity of Hoverla Mt., Carpathian Mts.
- Holotype: Was in the National Hungarian Museum, Budapest, Soós malacological collection was destroyed during WWII (Z. Feher, pers. comm.).
- Global distribution: The Western Ukraine and Romania [Anistratenko & Stadnichenko, 1995; Szarowska, 2006].
- Distribution in the former USSR: Type locality [Anistratenko & Stadnichenko, 1995].
- Subregions: SE.
- Bionomics: Lives in underground (cavatic) waterbodies [Anistratenko & Stadnichenko, 1995].
- IUCN conservation status: Not assessed.

138(168). *Paladilhiosis orientalis*
Starobogatov, 1962

Paladilhiosis orientalis Starobogatov, 1962: 46-47, fig. 2, d.

- Type locality: Russia, Krasnodar Region, Sochi district, Krasnoaleksandrovs-kaya Cave (44°00'55.3"N 39°21'49.8"E).
- Types: ZIN, Nos. 1, 2 in systematic catalogue. The type series includes the holotype and a single paratype.

- Global distribution: Endemic to the the Caucasus.
- Distribution in the former USSR: Type locality [Starobogatov, 1962].
- Subregions: CT.
- Bionomics: Lives in underground waterbodies.
- IUCN conservation status: Not assessed.

**139(169). *Paladilhiopsis pulcherrima*
Starobogatov, 1962**

Paladilhiopsis pulcherrima Starobogatov, 1962: 46, fig. 2, a, 6.

- Type locality: Russia, Krasnodar Region, Sochi district, Krasnoaleksandrovskaya Cave (44°00'55.3"N 39°21'49.8"E).
- Types: ZIN, Nos. 1, 2 in systematic catalogue. The type series includes the holotype and six paratypes.
- Global distribution: Endemic to the Caucasus.
- Distribution in the former USSR: Type locality [Starobogatov, 1962].
- Subregions: CT.
- Bionomics: Lives in underground waterbodies.
- IUCN conservation status: Not assessed.

**140(170). *Paladilhiopsis schakuranica*
Starobogatov, 1962**

Paladilhiopsis schakuranica Starobogatov, 1962: 47, fig. 2, ж.

- Type locality: Abkhazia, Nizhne-Shakuranskaya Cave (42°16'19.62"N; 42°44'1.63"E).
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Caucasus.
- Distribution in the former USSR: Type locality [Starobogatov, 1962].
- Subregions: CT.
- Bionomics: Lives in underground waterbodies.

- IUCN conservation status: DD (data deficient).

**141(171). *Paladilhiopsis shadini*
Starobogatov, 1962**

Paladilhiopsis shadini Starobogatov, 1962: 45-46, fig. 2, б.

- Type locality: Abkhazia, Tsebeldinskaya Cave, 43°1'52.30"N; 41°16'8.92"E.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Caucasus.
- Distribution in the former USSR: Type locality [Starobogatov, 1962].
- Subregions: CT.
- Bionomics: Lives in underground waterbodies.
- IUCN conservation status: Not assessed.

**142(172). *Paladilhiopsis subovata*
Starobogatov, 1962**

Paladilhiopsis subovata Starobogatov, 1962: 46, fig. 2, e.

- Type locality: Russia, Krasnodar Region, Sochi district, Krasnoaleksandrovskaya Cave.
- Types: ZIN, Nos. 1, 2 in systematic catalogue. The type series includes the holotype and a single paratype.
- Global distribution: Endemic to the Caucasus.
- Distribution in the former USSR: Type locality [Starobogatov, 1962].
- Subregions: CT.
- Bionomics: Lives in underground waterbodies.
- IUCN conservation status: DD (data deficient).

**Genus *Pontohoratia* Vinarski,
Palatov et Glöer, 2014**

Type species: *Horatia birsteini* Starobogatov, 1962

**143(173). *Pontohoratia birsteini*
(Starobogatov, 1962)**

[= *Horatia l'jovushkini* Starobogatov, 1962; *Horatia sokolovi* Starobogatov, 1962]

Horatia birsteini Starobogatov, 1962: 42, fig. 1, a.

- Type locality: Abkhazia, Tsebel-dinskaya Cave, 43°01'52.30"N; 41°16'8.92"E.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Caucasus.
- Distribution in the former USSR: Abkhazia, Tsebel-dinskaya and Nizhne-shakuranskaya caves [Vinarski *et al.*, 2014].
- Subregions: CT.
- Bionomics: Lives in underground waterbodies.
- IUCN conservation status: Not assessed.

**144(174). *Pontohoratia smyri*
Vinarski, Palatov et Glöer, 2014**

Pontohoratia smyri Vinarski *et al.*, 2014: 2247, fig. 5 B, 7 D.

- Type locality: Abkhazia, the Anatolia Lake in Novoafonskaya Cave, 43°05'28.16"N; 40°48'32.41"E.
- Types: ZIN, Nos. 1 and 2 in systematic catalogue; Museum of Siberian Aquatic Molluscs, Omsk State Pedagogical University, Omsk (MSAM), No. 07-033. The type series includes the holotype, seven paratypes in ZIN, and 25 paratypes in MSAM.
- Global distribution: Endemic to the Caucasus.
- Distribution in the former USSR: Abkhazia, the type locality and the closest vicinities of the Novoafonskaya Cave (floodplain of the Psyrtskha River) [Vinarski *et al.*, 2014].
- Subregions: CT.

- Bionomics: Lives in underground waterbodies [Vinarski *et al.*, 2014].
- IUCN conservation status: Not assessed.

**Genus *Sogdamnicola* Izzatullaev,
Sitnikova et Starobogatov in
Izzatullaev, 1984**

Type species: *Hydrobia pallida* Martens, 1874 (OD)

**145(175). *Sogdamnicola pallida*
(Martens, 1874)**

Hydrobia (Amnicola) pallida Martens, 1874: 31-32, pl. 2, fig. 27.

- Type locality: Uzbekistan, Zeravshan valley, a little pond in the garden in Urgun. The original label is "Urgut-Turkest[an]".
- Types: ZMB, No. 22486. The type series contains 13 syntypes.
- Global distribution: Endemic to Central Asia.
- Distribution in the former USSR: Republics of Central Asia [Zhadin, 1952].
- Subregions: CA.
- Bionomics: Lives in springs [Zhadin, 1952].
- IUCN conservation status: Not assessed.

**146(176). *Sogdamnicola shadini*
Izzatullaev, 1984**

Sogdamnicola shadini Izzatullaev, 1984b: 173, textfig. a, b.

- Type locality: Uzbekistan, vicinity of Samarkand City, Urgut settlement, a spring (approximately 39°25'15"N; 67°14'30"E).
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and 12 paratypes.
- Global distribution: Endemic to Central Asia.

- Distribution in the former USSR: Republics of Central Asia [Izzatullaev, 1984b].
- Subregions: CA.
- Bionomics: Lives in springs [Izzatullaev, 1984b].
- IUCN conservation status: Not assessed.

Genus *Tadzhikamnicola*
Izzatullaev, 2004

Type species: *Pseudamnicola pavlovskii* Izzatullaev, 1973 (OD)

147(177). *Tadzhikamnicola pavlovskii* (Izzatullaev, 1973)

Pseudamnicola pavlovskii Izzatullaev, 1973b: 76-77, fig. 1 A.

- Type locality: Tajikistan, Kulyab Region, flood plain of the Surkhob River, vicinities of the soviet farm "Muminabad".
- Types: ZIN, Nos. 1–3 in systematic catalogue. The type series includes the holotype and 12 paratypes.
- Global distribution: Endemic to Central Asia.
- Distribution in the former USSR: Tajikistan [Izzatullaev, 2004].
- Subregions: CA.
- Bionomics: Lives in springs [Izzatullaev, 2004].
- IUCN conservation status: Not assessed.

148(178). *Tadzhikamnicola likharevi* (Izzatullaev, 1973)

Pseudamnicola likharevi Izzatullaev, 1973b: 77, fig. 1B.

- Type locality: Tajikistan, Kulyab Region, flood plain of the Surkhob River, vicinities of the soviet farm "Muminabad".
- Types: ZIN, Nos. 1–3 in systematic

catalogue. The type series includes the holotype and 15 paratypes.

- Global distribution: Endemic to Central Asia.
- Distribution in the former USSR: Tajikistan [Izzatullaev, 2004].
- Subregions: CA.
- Bionomics: Lives in springs [Izzatullaev, 2004].
- IUCN conservation status: Not assessed.

Genus *Turkmenamnicola*
Izzatullaev, Sitnikova et
Starobogatov, 1985

Type species: *Pseudamnicola lindholmi* Zhadin, 1952 (OD)

149(179). *Turkmenamnicola lindholmi* (Zhadin, 1952)

Pseudamnicola lindholmi Zhadin, 1952: 231-232, fig. 162.

- Type locality: Turkmenistan, Shar-Arab spring near Kushka Town (nowadays Serhetabat).
- Types: ZIN, Nos. 1–3 in systematic catalogue. The type series includes the holotype and 29 paratypes.
- Global distribution: Endemic to Central Asia.
- Distribution in the former USSR: Type locality [Izzatullaev *et al.*, 1985].
- Subregions: CA.
- Bionomics: Lives in springs [Izzatullaev *et al.*, 1985].
- IUCN conservation status: Not assessed.

150(180). *Turkmenamnicola raddei* (Boettger, 1889)

Pseudamnicola raddei Boettger, 1889: 970, pl. 2, fig. 6 a-c.

- Type locality: Turkmenistan, vicinities of Khodzha-Kala village.

- Types: Lectotype SMF No. 4160, paralectotypes SMF Nos. 4161/1, 93402/4.
- Global distribution: Endemic to Central Asia.
- Distribution in the former USSR: Turkmenistan [Zhadin, 1952].
- Subregions: CA.
- Bionomics: Lives in springs [Izzatullaev *et al.*, 1985].
- IUCN conservation status: Not assessed.

151(181). *Turkmenamnicola smaragdovae*
(Abrikosov et Tsvetkov, 1945)

Pseudamnicola smaragdovae Abrikosov & Tsvetkov, 1945: 207-209, fig. 1.

- Type locality: Turkmenistan, sources of the Sekiz-yab River near Germab (Mikhailovskoe) village, south of Geok-tepe (Gökdepe) Town.
- Types: The holotype was mentioned in the original description (as “type”) but without any distinguishing characters. The ZMMU collection contains 9 specimens from the type series (out of 44 originally mentioned), and there is no indication of the type status on the label. Therefore, we cannot exclude that one of them is in fact the holotype, though there is no possibility to identify it as such.
- Global distribution: Endemic to Central Asia.
- Distribution in the former USSR: Turkmenistan [Zhadin, 1952].
- Subregions: CA.
- Bionomics: Lives in springs [Zhadin, 1952].
- IUCN conservation status: Not assessed.

Genus *Valvatamnicola*
Izzatullaev, Sitnikova et
Starobogatov in Izzatullaev, 1984
Type species: *Pseudamnicola archangelskii* Zhadin, 1952 (OD)

152(182). *Valvatamnicola archangelskii* (Zhadin, 1952)

Pseudamnicola archangelskii Zhadin, 1952: 232-233, fig. 161.

- Type locality: Uzbekistan, the Alai Mountains, spring at the road from Voza-dil village to Shakhmardan village.
- Types: ZIN, No. 1 in systematic catalogue. There are five syntypes in ZIN.
- Global distribution: Endemic to Central Asia.
- Distribution in the former USSR: Type locality [Zhadin, 1952].
- Subregions: CA.
- Bionomics: Lives in springs [Zhadin, 1952].
- IUCN conservation status: Not assessed.

153(183). *Valvatamnicola schahimardanica* Izzatullaev, 1984

Valvatamnicola schahimardanica Izzatullaev, 1984b: 174, textfig. B.

- Type locality: Uzbekistan, Fergana Region, spring between Shahimardan and Vuadil’ villages.
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and two paratypes.
- Global distribution: Endemic to Central Asia.
- Distribution in the former USSR: Type locality [Izzatullaev, 1984b].
- Subregions: CA.
- Bionomics: Lives in springs [Izzatullaev, 1984b].
- IUCN conservation status: Not assessed.

Addition to the subfamily Belgrandiinae. Recently, a new genus of Hydrobiidae s.l., *Chirgisia* Glöer, Boeters et Pešić, 2014, was described from Kyrgyzstan [Glöer *et al.*, 2014]. Though the authors did not assign it formally to any

of the subfamilies of Hydrobiidae, *Chirgisia* is compared in its differential diagnosis with other genera of Central Asian Belgrandiinae (*Martensamnicola*, *Sogdamnicola* etc.). Thus, most probably, the new genus should be included into this subfamily.

Genus *Chirgisia* Glöer, Boeters et Pešić, 2014

Type species: *Chirgisia alaarchaensis* Glöer, Boeters et Pešić, 2014 (OD)

154(184). *Chirgisia alaarchaensis* Glöer, Boeters et Pešić, 2014

Chirgisia alaarchaensis Glöer et al., 2014: 77, figs. 10-18.

- Type locality: Kyrgyzstan, the Ala Archa Nature Park, rheocrenic spring, 42°36.203'N, 74°28.959'E, 2,118 m a.s.l.
- Types: ZMH, Nos. 79677 and 79678. The type series includes the holotype and 10 paratypes.
- Global distribution: Endemic to Central Asia.
- Distribution in the former USSR: Type locality [Glöer et al., 2014].
- Subregions: CA.
- Bionomics: Lives in springs [Glöer et al., 2014].
- IUCN conservation status: Not assessed.

Subfamily Pseudamnicolinae Radoman, 1977

(Pseudamnicolinae Radoman, 1977: 212)

Type genus: *Pseudamnicola* Paulucci, 1878

Remark: The taxonomic validity of this subfamily was questioned by Bouchet & Rocroi [2005], but recently Wilke et al.

[2013] brought molecular evidence for its separateness within Hydrobiidae s. l.

Genus *Pseudamnicola*

Paulucci, 1878

Type species: *Paludina macrostoma* Küster, 1852 (SD Wagner, 1927)

155(185). *Pseudamnicola brusiniana* (Clessin et W. Dybowski in W. Dybowski, 1888)

[= *Lithoglyphus caspius* "Kryn." sensu Grimm, 1876, partim; *Zagrabica sphaerion* "Mouss." Lindholm, 1924]

Zagrabica brusiniana W. Dybowski, 1888: 52-53, pl. 2, fig. 7.

- Type locality: Caspian Sea.
- Types: Not traced.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: The southern and middle Caspian sea [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs at depths between 0 and 200 m [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.

156(186). *Pseudamnicola depressispira* Logvinenko et Starobogatov, 1968

Pseudamnicola depressispira Logvinenko & Starobogatov, 1968: 381, fig. 367 (14).

- Type locality: Western part of the southern Caspian Sea, northward of Kuraginsky Kamen' Island, 81 m.
- Types: Not traced, possibly in ZIN.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: Type locality [Logvinenko & Starobogatov, 1968].

- Subregions: CS.
- Bionomics: Described from the depth of 81 m [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.

**157(187). *Pseudamnicola exigua*
(Eichwald, 1838)**

Paludina exigua Eichwald, 1838: 152-153.

- Type locality: Not stated. The Caspian Sea – from the title of Eichwald's work.
- Types: Not traced.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: The northern and eastern Caspian Sea [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Unknown.
- IUCN conservation status: Not assessed.

**158(188). *Pseudamnicola prasina*
Rosen, 1903**

Pseudamnicola prasina Rosen, 1903: 182.

- Type locality: Tajikistan, Obi-Garm settlement (approximately 38°43'00"N; 69°42'50"E).
- Syntypes: ZMMU.
- Global distribution: Endemic to Central Asia.
- Distribution in the former USSR: Type locality [Zhadin, 1952].
- Subregions: CA.
- Bionomics: Unknown.
- IUCN conservation status: Not assessed.

**159(189). *Pseudamnicola sphaerion*
(Mousson, 1863)**

[= *Lithoglyphus caspius* "Kryn." sensu Clessin et W. Dybowski in W. Dybowski, 1888; *Lithogly-*

phus exiguus sensu Lindholm, 1924, non *Paludina exigua* Eichwald, 1838].

Bithynia sphaerion Mousson, 1863: 89-90

- Type locality: Southern Azerbaijan, the Caspian Sea ("mer Caspienne, a Taly-sch"; Mousson, 1863).
- Types: Not traced, possibly in Zürich Zoological Museum [fide Dance, 1986].
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: The southern Caspian Sea [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs at depths between 0 and 35 m.
- IUCN conservation status: Not assessed.

**Subfamily Pyrgulinae
Brusina, 1882**

[= Caspiidae B. Dybowski, 1913; Microliopalaeinae B. Dybowski et Grochmalicki, 1914; Micromelaniidae B. Dybowski et Grochmalicki, 1914; Turricaspiinae B. Dybowski et Grochmalicki, 1915; Liosarmatinae B. Dybowski et Grochmalicki, 1920; Chilopyrgulinae Radoman, 1973; Micropyrgulidae Radoman, 1973; Falsipyrgulinae Radoman, 1983; Ohridopyrgulinae Radoman, 1983; Prosostheniinae Pana, 1989]

(Pyrgulinae Brusina, 1882)

Type genus: *Pyrgula* Cristofori et Jan, 1832

**Genus *Caspia* Clessin et W.
Dybowski, 1888**

[= *Hydrobia* Hartmann, 1821, partim; *Pyrgula* Cristofori et Jan, 1832, partim; *Clathrocaspia* Lindholm, 1929]

Type species: *Caspia baerii* Clessin et W. Dybowski in W. Dybowski, 1888 (SD Wenz, 1926)

Remark: The genus contains marine, brackishwater and few freshwater species. In order not to split the genus we provide description of all its species.

160(190). *Caspia baerii* Clessin et W. Dybowski in W. Dybowski, 1888

Caspia baerii W. Dybowski, 1888: 36-37, pl. 3, fig. 4 a-b

- Type locality: The Caspian Sea.
- Types: Not traced.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: The middle and southern Caspian Sea [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs at depth between 30 and 80 m.
- IUCN conservation status: Not assessed.

161(191). *Caspia brotzkajae* Starobogatov in Anistratenko et Prisjzhnjuk, 1992

Caspia (Clathrocaspia) brotzkajae Anistratenko & Prisjzhnjuk, 1992: 18, fig. 2, a.

- Type locality: Russia, the Daghestan shore of the Caspian Sea.
- Types: ZIN.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: Type locality [Anistratenko & Prisjzhnjuk, 1992].
- Subregions: CS.
- Bionomics: This species was found at depth about 60 m [Anistratenko & Prisjzhnjuk, 1992].
- IUCN conservation status: Not assessed.

162(192). *Caspia gmelinii* Clessin et W. Dybowski in W. Dybowski, 1888

Caspia gmelinii W. Dybowski, 1888: 37-38, pl. 3, fig. 7a-b.

- Type locality: The Caspian Sea.
- Types: Not traced.
- Global distribution: Endemic to the Caspian Sea.

- Distribution in the former USSR: The middle and southern Caspian Sea [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs at depth between 30 and 81 m [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: DD (data deficient).

163(193). *Caspia knipowitchi* Makarov, 1938

Caspia gmelini var. *knipowitchi* Makarov, 1938: 1058, fig. 1.

- Type locality: Ukraine, in the Dnieper River near Kherson City.
- Types: Not traced.
- Global distribution: Endemic to the south-eastern Europe.
- Distribution in the former USSR: The middle Caspian Sea; mouth of the Dnieper river, the Black Sea limans, the delta of the Don River [Logvinenko & Starobogatov, 1968; Anistratenko & Stadnichenko, 1994].
- Subregions: SE, CS.
- Bionomics: Lives in rivers and freshwater parts of limans [Starobogatov *et al.*, 2004]. In the Caspian Sea occurs between 50 and 75 m of depth [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: LC (least concern).

164(194). *Caspia logvinenkoi* (Golikov et Starobogatov, 1966)

Pyrgula logvinenkoi Golikov & Starobogatov, 1966: 354, fig. 1 (7).

- Type locality: Russia, the delta of the Don River.
- Holotype: ZIN No. 4489/1 in systematic catalogue.
- Global distribution: Endemic to the Sea of Azov basin [Anistratenko *et al.*, 2011].

- Distribution in the former USSR: The Don River Delta [Anistratenko *et al.*, 2011].
- Subregions: SE.
- Bionomics: Lives in river estuaries. A rarest species, known to the date from five specimens only [Anistratenko, 2007; Anistratenko *et al.*, 2011].
- IUCN conservation status: Not assessed.

**165(195). *Caspia makarovi*
(Golikov et Starobogatov, 1966)**

[= *Pyrgula gmelini alushtensis* Golikov et Starobogatov, 1972]

Pyrgula makarovi Golikov & Starobogatov, 1966: 353-354, fig. 1 (5).

- Type locality: Ukraine, in the Dnieper liman.
- Holotype: ZIN No. 4492/1 in systematic catalogue.
- Global distribution: Endemic to the Azov–Black Sea basin [Anistratenko *et al.*, 2011].
- Distribution in the former USSR: Estuaries of the Don, Dnieper and Dniester rivers; limans of the northern Black Sea coast [Anistratenko *et al.*, 2011].
- Subregions: SE.
- Bionomics: Lives in rivers and freshwater parts of limans [Starobogatov *et al.*, 2004].
- IUCN conservation status: LC (least concern).

**166(196). *Caspia stanislavi* Alexenko
et Starobogatov, 1987**

Caspia gmelini stanislavi Alexenko & Starobogatov, 1987: 33, fig. 1.

- Type locality: Ukraine, in the delta of the Dnieper river.
- Holotype: Not traced; possibly should be in the ZIN collection.
- Global distribution: Endemic to the North Black Sea region.

- Distribution in the former USSR: Lower reaches of the Dnieper river and the Dnieper-Bug liman [Starobogatov *et al.*, 2004].
- Subregions: SE.
- Bionomics: Lives in rivers and freshwater parts of limans [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

Addition to the genus *Caspia*. One more species of *Caspia*, *C. gaillardi* (Tadjalli-Pour, 1977), was mentioned by Sitnikova & Starobogatov [1998] among material for morphological study collected in southern and middle Caspian Sea. Nevertheless, no identified material of *C. gaillardi* was found in ZIN. The type locality of this species is situated in the Iranian coast of Caspian Sea. It is not clear, whether it should be included into the list of the RAC malacofauna.

**Genus *Caspiohydrobia*
Starobogatov, 1970**

[= *Hydrobia* Hartmann, 1821, partim; *Pyrgula* Cristofori et Jan, 1832, partim; *Pyrgohydrobia* Radoman, 1955, partim]

Type species: *Pyrgohydrobia eichwaldiana* Golikov et Starobogatov, 1966 (OD)

**167(197). *Caspiohydrobia*
eichwaldiana (Golikov et
Starobogatov, 1966)**

[= *Paludina pusilla* Eichwald, 1830, non Basterot, 1825; *Littorinella acuta* Eichwald, 1855; *Hydrobia pusilla* W. Dybowski, 1888; *Hydrobia ventrosa* auct., non Montagu, 1803; *Hydrobia ventrosa* var. *evanescens* Kolesnikov, 1947, non Guerne, 1880]

Pyrgohydrobia eichwaldiana Golikov & Starobogatov, 1966: 353, fig. 1 (4).

- Type locality: Ukraine, the Kuyalnik

liman near Odessa City (approximately 46°34'30"N; 30°44'30"E).

- Holotype: ZIN No. 4327/1 in systematic catalogue.
- Global distribution: Endemic to the south-eastern Europe.
- Distribution in the former USSR: The southern Caspian Sea, limans of the Black and Azov seas [Golikov & Starobogatov, 1966; Logvinenko & Starobogatov, 1968].
- Subregions: SE, CS.
- Bionomics: Occurs at depths between 0 and 35 m [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.

**168(198). *Caspiohydrobia aralensis*
Starobogatov et Andreeva, 1981**

Caspiohydrobia aralensis Starobogatov & Andreeva, 1981: 31, fig. 5.

- Type locality: The Aral Sea, Sary-Chaganak Bay, 2.5 m.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to Northern Asia.
- Distribution in the former USSR: The Aral Sea and saline lakes of Northern and Central Kazakhstan (the Shukuroy Lake, the Mnogosopochnoye Lake, Turgay depression) [Starobogatov & Andreeva, 1981; Andreeva, 1987]; the Southern Urals [Shishkoedova, 2010].
- Subregions: WS, CA.
- Bionomics: Lives in large brackish-water lakes [Andreeva, 1987].
- IUCN conservation status: Not assessed.

**169(199). *Caspiohydrobia behningi*
Starobogatov et Andreeva, 1981**

Caspiohydrobia behningi Starobogatov & Andreeva, 1981: 31, fig. 2.

- Type locality: The Aral Sea, central part of Bol'shoye More, 21 m.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to Northern Asia.
- Distribution in the former USSR: The Aral Sea, brackish waterbodies of the Turgay depression in Northern Kazakhstan [Starobogatov & Andreeva, 1981; Andreeva, 1987].
- Subregions: WS, CA.
- Bionomics: Lives in large brackish-water lakes [Andreeva, 1987].
- IUCN conservation status: DD (data deficient).

**170(200). *Caspiohydrobia bergi*
Starobogatov et Andreeva, 1981**

Caspiohydrobia bergi Starobogatov & Andreeva, 1981: 34, fig. 9.

- Type locality: The Aral Sea, north-east from the Vozrozhdenie Island, 8 m.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to Northern Asia.
- Distribution in the former USSR: The Aral Sea, brackish waterbodies of the Turgay depression in Northern Kazakhstan [Starobogatov & Andreeva, 1981; Andreeva, 1987].
- Subregions: WS, CA.
- Bionomics: Lives in large brackish-water lakes [Andreeva, 1987].
- IUCN conservation status: Not assessed.

**171(201). *Caspiohydrobia borealis*
Andreeva et Frolova, 1989**

Caspiohydrobia borealis Andreeva & Frolova, 1989: 134-135, fig. a.

- Type locality: Kazakhstan, Kustanay Region, the Ubagan River, near its exit from Kushmurun Lake.

- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to Northern Asia.
- Distribution in the former USSR: Northern and Central Kazakhstan [Andreeva & Frolova, 1989].
- Subregions: WS.
- Bionomics: Lives in large brackish-water lakes [Andreeva, 1987].
- IUCN conservation status: Not assessed.

**172(202). *Caspiohydrobia chrysopsis*
(Kolesnikov, 1947)**

Hydrobia chrysopsis Kolesnikov, 1947: 106, 110.

- Type locality: Not specified (the Caspian Sea – from the title).
- Types: Not traced.
- Global distribution: Endemic to Northern Asia.
- Distribution in the former USSR: The southern Caspian Sea; the Aral Sea [Logvinenko & Starobogatov, 1968; Andreeva, 1987]; the Southern Urals [Shishkoedova, 2010].
- Subregions: CA, CS, WS.
- Bionomics: Lives in large brackish-water lakes [Andreeva, 1987].
- IUCN conservation status: Not assessed.

**173(203). *Caspiohydrobia conica*
(Logvinenko et Starobogatov, 1968)**

Pyrgohydrobia conica Logvinenko & Starobogatov, 1968: 346-348, fig. 358 (3).

- Type locality: The northern, middle and southern Caspian Sea, 0-35 m.
- Possible syntypes: ZIN Nos. 4314/5, 4315/6 in systematic catalogue.
- Global distribution: Endemic to Northern Asia.
- Distribution in the former USSR: The southern Caspian Sea; the Aral Sea [Logvinenko & Starobogatov, 1968;

Andreeva, 1987]; the Southern Urals [Shishkoedova, 2010].

- Subregions: CA, CS.
- Bionomics: Lives in large brackish-water lakes [Andreeva, 1987].
- IUCN conservation status: Not assessed.
- Remark: Sysoev & Kantor [1992] erroneously cited holotype of the species. Since holotype was never mentioned in the original description, their statement was false.

**174(204). *Caspiohydrobia coniformis*
Starobogatov et Izzatullaev, 1974**

Caspiohydrobia coniformis Starobogatov & Izzatullaev, 1974: 933-934, fig. 1.

- Type locality: Tajikistan, Dangarinsky District, river deposits near Lyaur village.
- Holotype: ZIN No. 4318/1 in systematic catalogue.
- Global distribution: Endemic to Northern Asia.
- Distribution in the former USSR: Brackish waterbodies of Tajikistan [Andreeva, 1987]; the Southern Urals [Shishkoedova, 2011].
- Subregions: WS, CA.
- Bionomics: Lives in large brackish-water lakes [Andreeva, 1987].
- IUCN conservation status: Not assessed.

**175(205). *Caspiohydrobia convexa*
(Logvinenko et Starobogatov in
Golikov et Starobogatov, 1966)**

Pyrgohydrobia convexa Golikov & Starobogatov, 1966: 353, fig. 1 (2, 3).

- Type locality: The Caspian Sea, Great Kirov Bay.
- Holotype: ZIN No. 4320/1 in systematic catalogue.
- Global distribution: Endemic to Northern Asia.

- Distribution in the former USSR: The southern Caspian Sea; the Aral Sea [Logvinenko & Starobogatov, 1968; Andreeva, 1987]; the Southern Urals [Shishkoedova, 2010].
- Subregions: SE, CA, CS.
- Bionomics: Lives in large brackish-water lakes; occurs at depths between 0 and 10 m [Golikov & Starobogatov, 1966; Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.

**176(206). *Caspihydrobia curta*
(Logvinenko et Starobogatov, 1968)**

Pyrgohydrobia curta Logvinenko & Starobogatov, 1968: 348, fig. 358 (7).

- Type locality: Western parts of the middle and southern Caspian Sea.
- Holotype: Not traced, possibly in ZIN.
- Global distribution: Endemic to the Aral and Caspian Seas.
- Distribution in the former USSR: The Caspian Sea, the Aral Sea [Logvinenko & Starobogatov, 1968; Andreeva, 1987].
- Subregions: CA, CS.
- Bionomics: Lives in large brackish-water lakes; occurs at depths between 10 and 40 m [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.

**177(207). *Caspihydrobia cylindrica*
(Logvinenko et Starobogatov, 1968)**

Pyrgohydrobia cylindrica Logvinenko & Starobogatov, 1968: 350, fig. 358 (13).

- Type locality: Middle and southern Caspian Sea, 0-35 m.
- Holotype: Not traced, possibly in ZIN.
- Global distribution: Endemic to the Aral and Caspian Seas.
- Distribution in the former USSR: The Caspian Sea, the Aral Sea [Logvinenko & Starobogatov, 1968; Andreeva, 1987].

- Subregions: CS, CA.
- Bionomics: Lives in large brackish-water lakes; occurs at depths between 11 and 40 m [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.
- Remark: Sysoev & Kantor [1992] erroneously cited holotype of the species. Since holotype was never mentioned in the original description, their statement was false.

**178(208). *Caspihydrobia dubia*
(Logvinenko et Starobogatov, 1968)**

Pyrgohydrobia dubia Logvinenko & Starobogatov, 1968: 348, fig. 358 (6).

- Type locality: The northern, middle and southern Caspian Sea.
- Holotype: Not traced, possibly in ZIN.
- Global distribution: Endemic to the Aral and Caspian Seas.
- Distribution in the former USSR: The Caspian Sea, the Aral Sea [Logvinenko & Starobogatov, 1968; Andreeva, 1987].
- Subregions: CS, CA.
- Bionomics: Lives in large brackish-water lakes; occurs at depths between 0 and 40 m [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.

**179(209). *Caspihydrobia elongata*
Starobogatov et Izzatullaev, 1974**

Caspihydrobia elongata Starobogatov & Izzatullaev, 1974: 934, fig. 2.

- Type locality: Tajikistan, Dangarinsky District, river deposits near Lyaur village.
- Holotype: ZIN No. 4334/1 in systematic catalogue.
- Global distribution: Endemic to Central Asia.
- Distribution in the former USSR:

Brackish waterbodies of Tajikistan [Andreeva, 1987].

- Subregions: CA.
- Bionomics: Lives in large brackish-water lakes [Andreeva, 1987].
- IUCN conservation status: DD (data deficient).

**180(210). *Caspiohydrobia gemmata*
(Kolesnikov, 1947)**

Hydrobia grimmeri var. *gemma* Kolesnikov, 1947: 106, 110.

- Type locality: Not specified (the Caspian Sea – from the title).
- Types: Not traced.
- Global distribution: Endemic to Northern Asia.
- Distribution in the former USSR: The northern, middle and southern Caspian Sea; the Aral Sea [Logvinenko & Starobogatov, 1968; Andreeva, 1987].
- Subregions: CA, CS.
- Bionomics: Lives in large brackish-water lakes [Andreeva, 1987]. In the Caspian Sea occurs at depths between 0 and 50 m.
- IUCN conservation status: DD (data deficient).

**181(211). *Caspiohydrobia grimmeri*
(Clessin et W. Dybowski in W.
Dybowski, 1888)**

Hydrobia grimmeri W. Dybowski, 1888: 55-56, pl. 3, fig. 2.

- Type locality: The Caspian Sea.
- Types: Not traced.
- Global distribution: Northern and Central Asia, the Lake Sawa (southwestern Iraq) [Haase *et al.*, 2010].
- Distribution in the former USSR: The southern Caspian Sea and the Aral Sea [Logvinenko & Starobogatov, 1968; Andreeva, 1987]; the Southern Urals [Shishkoedova, 2010].
- Subregions: CS, CA, WS.

• Bionomics: In the Caspian Sea occurs at depths between 0 and 50 m [Logvinenko & Starobogatov, 1968].

- IUCN conservation status: DD (data deficient).
- Remark: Haase *et al.* [2010] place this species to the genus *Ecrobria* Stimpson, 1865 (= *Ventrosia* Radoman, 1977).

**182(212). *Caspiohydrobia husainovae*
Starobogatov, 1974**

Caspiohydrobia husainovae Starobogatov, 1974: 257, fig. 227.

- Type locality: The Aral Sea, about 20 km NW of the Obruchev Island, 20 m.
- Holotype: ZIN No. 1 in systematic catalogue.
- Global distribution: Endemic to Northern Asia.
- Distribution in the former USSR: The Aral Sea, the Shukuroy Lake, waterbodies of the Karasu-Shiderty River (Pavlodar Region, Kazakhstan) [Starobogatov, 1974; Andreeva, 1987]; the Southern Urals [Shishkoedova, 2010].
- Subregions: CA, WS
- Bionomics: Lives in large brackish-water lakes [Andreeva, 1987].
- IUCN conservation status: Not assessed.

**183(213). *Caspiohydrobia johanseni*
Frolova, 1984**

Caspiohydrobia johanseni Frolova, 1984: 46.

- Type locality: Kazakhstan, Pavlodar Region, lower stream of the Karasu-Shiderty River, 5 km from Zagotskot settlement.
- Lectotype (sic!): ZIN, No. 6 in systematic catalogue. Currently the “lectotype” shell is nearly dissolved in acid alcohol and is unrecognizable.
- Global distribution: Endemic to Kazakhstan.
- Distribution in the former USSR:

Northern and Central Kazakhstan, brackish-water bodies of the Turgay depression [Frolova, 1984; Andreeva, 1987].

- Subregions: WS.
- Bionomics: Lives in large brackish-water lakes [Andreeva, 1987].
- IUCN conservation status: Not assessed.

184(214). *Caspiohydrobia kazakhstanica* Starobogatov et Andreeva, 1981

Caspiohydrobia kazakhstanica Starobogatov & Andreeva, 1981: 30, fig. 1.

- Type locality: The Aral Sea, central part of Bol'shoye More, 19 m.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to Northern Asia.
- Distribution in the former USSR: The Aral Sea, the Shukuroy Lake, waterbodies of the Karasu-Shiderty River (Pavlodar Region, Kazakhstan), the Turgay depression [Starobogatov & Andreeva, 1981; Andreeva, 1987]; the Southern Urals [Shishkoedova, 2010].
- Subregions: WS, CA.
- Bionomics: Lives in large brackish-water lakes [Andreeva, 1987].
- IUCN conservation status: Not assessed.

185(215). *Caspiohydrobia ljaurica* Starobogatov et Izzatullaev, 1974

Caspiohydrobia ljaurica Starobogatov & Izzatullaev, 1974: 934, fig. 5.

- Type locality: Tajikistan, Dangarinsky District, the river deposits near Lyaury village.
- Holotype: ZIN No. 4344/1 in systematic catalogue.
- Global distribution: Endemic to Central Asia.
- Distribution in the former USSR:

Brackish waterbodies of Tajikistan [Andreeva, 1987].

- Subregions: CA.
- Bionomics: Lives in large brackish-water lakes [Andreeva, 1987].
- IUCN conservation status: Not assessed.

186(216). *Caspiohydrobia nikitinskii* Starobogatov et Andreeva, 1981

Caspiohydrobia nikitinskii Starobogatov & Andreeva, 1981: 33, fig. 7.

- Type locality: The Aral Sea, off Baigubekmuryr Cape, 4.8 m.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to Northern Asia.
- Distribution in the former USSR: The Aral Sea, brackish-water bodies of the Turgay depression (the upper Ubagan River Basin, Kustanai Region, Kazakhstan) [Andreeva, 1987].
- Subregions: WS, CA.
- Bionomics: Lives in large brackish-water lakes [Andreeva, 1987].
- IUCN conservation status: Not assessed.

187(217). *Caspiohydrobia nikolskii* Starobogatov et Andreeva, 1981

Caspiohydrobia nikolskii Starobogatov & Andreeva, 1981: 33-34, fig. 8.

- Type locality: The Aral Sea, Arktumsuk Cape, 10 m.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to Northern Asia.
- Distribution in the former USSR: The Aral Sea [Starobogatov & Andreeva, 1981]; Southern Urals [Shishkoedova, 2011].
- Subregions: WS, CA.

- Bionomics: Lives in large brackish-water lakes [Andreeva, 1987].
- IUCN conservation status: Not assessed.

**188(218). *Caspiohydrobia obrutchevi*
Starobogatov et Andreeva, 1981**

Caspiohydrobia obrutchevi Starobogatov & Andreeva, 1981: 31-32, fig. 4.

- Type locality: The Aral Sea, south-eastern part of Bol'shoye More, 20 km northwestward from Obruchev Island, 20 m.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Aral Sea.
- Distribution in the former USSR: The Aral Sea [Starobogatov & Andreeva, 1981].
- Subregions: CA.
- Bionomics: Lives in large brackish-water lakes [Andreeva, 1987].
- IUCN conservation status: Not assessed.

**189(219). *Caspiohydrobia oviformis*
(Logvinenko et Starobogatov, 1968)**

Pyrgohydrobia oviformis Logvinenko & Starobogatov, 1968: 349, fig. 358 (9).

- Type locality: Southern part of the Caspian Sea.
- Holotype: Not traced, possibly in ZIN.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: The southern part of the Caspian Sea [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Lives in large brackish-water lakes; occurs at depths between 0 and 30 m [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.

**190(220). *Caspiohydrobia parva*
(Logvinenko et Starobogatov, 1968)**

Pyrgohydrobia parva Logvinenko & Starobogatov, 1968: 348, fig. 358 (4).

- Type locality: The northern, middle and southern parts of the Caspian sea, 5–40 m.
- Holotype: Not traced, possibly in ZIN.
- Global distribution: Endemic to the Aral and Caspian Seas.
- Distribution in the former USSR: The Caspian and Aral seas [Logvinenko & Starobogatov, 1968; Andreeva, 1987].
- Subregions: CA, CS.
- Bionomics: Lives in large brackish-water lakes; occurs at depths between 5 and 40 m [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.

**191(221). *Caspiohydrobia pavlovskii*
Starobogatov et Izzatullaev, 1974**

Caspiohydrobia pavlovskii Starobogatov & Izzatullaev, 1974: 935, fig. 6.

- Type locality: Tajikistan, Dangarinsky District, the river deposits near Lyaur village.
- Holotype: ZIN No. 4347/1 in systematic catalogue.
- Global distribution: Endemic to the Aral and Caspian Seas.
- Distribution in the former USSR: Type locality and the Aral Sea [Andreeva, 1987].
- Subregions: CA.
- Bionomics: Lives in large brackish-water lakes [Andreeva, 1987].
- IUCN conservation status: DD (data deficient).

**192(222). *Caspiohydrobia sidorovi*
Starobogatov et Andreeva, 1981**

Caspiohydrobia sidorovi Starobogatov & Andreeva, 1981: 33, fig. 6.

- Type locality: The Aral sea, Sary-Chaganak Bay, 2.5 m.
- Global distribution: Endemic to Northern Asia.
- Distribution in the former USSR: The Aral Sea, waterbodies of the Karasu-Shiderty River basin (Pavlodar Region, Kazakhstan), brackish waterbodies of the Turgay depression (the upper Ubagan River Basin, Kustanai Region, Kazakhstan) [Andreeva, 1987]; Southern Urals [Shishkoedova, 2010].
- Subregions: WS, CA.
- Bionomics: Lives in large brackish-water lakes [Andreeva, 1987].
- IUCN conservation status: Not assessed.

**193(223). *Caspiohydrobia sogdiana*
Starobogatov et Izzatullaev, 1974**

Caspiohydrobia sogdiana Starobogatov & Izzatullaev, 1974: 934, fig. 3.

- Type locality: Tajikistan, Dangarin-sky District, the river deposits near Lyaur village.
- Holotype: ZIN No. 4349/1 in systematic catalogue.
- Global distribution: Endemic to Northern Asia.
- Distribution in the former USSR: The Aral Sea, brackish waterbodies of the Turgay depression (the upper Ubagan River Basin, Kustanai Region, Kazakhstan) [Andreeva, 1987]; Southern Urals [Shishkoedova, 2010].
- Subregions: CA, WS.
- Bionomics: Lives in large brackish-water lakes [Andreeva, 1987].
- IUCN conservation status: DD (data deficient).

**194(224). *Caspiohydrobia subconvexa*
(Logvinenko et Starobogatov, 1968)**

Pyrgohydrobia subconvexa Logvinenko & Starobogatov, 1968: 348, fig. 358 (10).

- Type locality: The northern, middle and southern parts of Caspian sea, at depths up to 10 m.
- Holotype: Not traced, possibly in ZIN.
- Global distribution: Endemic to the Aral and Caspian Seas.
- Distribution in the former USSR: The Caspian and Aral seas [Logvinenko & Starobogatov, 1968; Andreeva, 1987].
- Subregions: CA, CS.
- Bionomics: Lives in large brackish-water lakes; occurs at depths between 0 and 10 m [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.

**195(225). *Caspiohydrobia*
tadzhikistanica Starobogatov et
Izzatullaev, 1974**

Caspiohydrobia tadzhikistanica Starobogatov & Izzatullaev, 1974: 934, fig. 4.

- Type locality: Tajikistan, Dangarin-sky District, river deposits near Lyaur village.
- Holotype: ZIN No. 4351/1 in systematic catalogue.
- Global distribution: Endemic to Northern and Central Asia.
- Distribution in the former USSR: Brackish waters of Tajikistan, the Aral Sea [Starobogatov & Izzatullaev, 1974; Andreeva, 1987]; the Southern Urals [Shishkoedova, 2011].
- Subregions: WS, CA.
- Bionomics: Lives in large brackish-water lakes [Andreeva, 1987].
- IUCN conservation status: DD (data deficient).

**196(226). *Caspiohydrobia turrata*
(Logvinenko et Starobogatov, 1968)**

Pyrgohydrobia turrata Logvinenko & Starobogatov, 1968: 348, fig. 358 (5).

- Type locality: The southern Caspian Sea.
- Holotype: Not traced, possibly in ZIN.

- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: Southern part of the Caspian Sea [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Lives in large brackish-water lakes; occurs at depths between 0 and 40 m [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.

Genus *Euxinipyrghula* Sitnikova et Starobogatov, 1999

[= *Pyrgula* Cristofori et Jan, 1832, partim; *Micromelania* Brusina, 1874, partim; *Turricaspia* B. Dybowski et Grochmalicki, 1915, partim; *Laevicaspia* B. Dybowski et Grochmalicki, 1917, partim; *Caspiella* Thiele, 1928, partim]

Type species: *Pyrgula milachevitchi* Golikov et Starobogatov, 1966 (OD)

197(227). *Euxinipyrghula milachevitchi* (Golikov et Starobogatov, 1966)

[= *Micromelania lincta* Milashewitsch, 1916, partim]

Pyrgula milachevitchi Golikov & Starobogatov, 1966: 359, fig. 2 (15).

- Type locality: Ukraine, the Dnieper-Bug liman, off Chufutovka.
- Holotype: ZIN, No. 4510/1 in systematic catalogue.
- Global distribution: Endemic to the Northern Black Sea region.
- Distribution in the former USSR: Limans of the northern and northwestern coasts of the Black Sea, Taganrog Bay [Golikov & Starobogatov, 1966; Anistratenko & Stadnichenko, 1995].
- Subregions: SE.
- Bionomics: Lives in lakes and limans [Anistratenko & Stadnichenko, 1995].

- IUCN conservation status: Not assessed.

198(228). *Euxinipyrghula azovica* (Golikov et Starobogatov, 1966)

Pyrgula azovica Golikov & Starobogatov, 1966: 357, fig. 2 (7).

- Type locality: The Azov Sea, off Taganrog City.
- Holotype: ZIN, No. 4362/1 in systematic catalogue.
- Global distribution: Endemic to the Northern Black Sea region.
- Distribution in the former USSR: Taganrog Bay (Azov Sea), lower reaches of the Dnieper River and the Dniestr liman [Alexenko & Starobogatov, 1987; Anistratenko *et al.*, 2011].
- Subregions: SE.
- Bionomics: Occurs in lower courses of large rivers, limans and sea bays [Anistratenko *et al.*, 2011].
- IUCN conservation status: Not assessed.

199(229). *Euxinipyrghula borysthena* (Alexenko et Starobogatov, 1987)

Turricaspia derbentina borysthena Alexenko & Starobogatov, 1987: 34-35, fig. 6.

- Type locality: Ukraine, lower reaches of the Dnieper River.
- Holotype: Not traced, most probably in ZIN.
- Global distribution: Endemic to the Northern Black Sea region.
- Distribution in the former USSR: Lower reaches of the Dnieper River and the Dnieper-Bug liman [Alexenko & Starobogatov, 1987; Anistratenko & Stadnichenko, 1995].
- Subregions: SE.
- Bionomics: Occurs in lower courses of large rivers, limans and sea bays [Anistratenko *et al.*, 2011].
- IUCN conservation status: Not assessed.

- Remark: Anistratenko & Stadnichenko [1995] regarded this species as a subspecies of *Turricaspia derbentina* (Logvinenko & Starobogatov, 1968).

**200(230). *Euxinipyrghula grigorievi*
(Alexenko et Starobogatov, 1987)**

Turricaspia grigorievi Alexenko & Starobogatov, 1987: 35, fig. 7.

- Type locality: Ukraine, lower reaches of the Dnieper River.
- Holotype: Not traced, most probably in ZIN.
- Global distribution: Endemic to the Northern Black Sea region.
- Distribution in the former USSR: Ukraine, the Dnieper and Dniester limans, lower reaches of the Dnieper River, the Yalpug Lake [Alexenko & Starobogatov, 1987; Anistratenko & Stadnichenko, 1995].
- Subregions: SE.
- Bionomics: Occurs in lower courses of large rivers, limans and lakes [Anistratenko & Stadnichenko, 1995].
- IUCN conservation status: Not assessed.

**201(231). *Euxinipyrghula limanica*
(Golikov et Starobogatov, 1966)**

Pyrgula limanica Golikov & Starobogatov, 1966: 357, fig. 2 (6).

- Type locality: Ukraine, the Yuzhnyi Bug River off Nikolaev City.
- Holotype: ZIN, No. 4471/1 in systematic catalogue.
- Global distribution: Endemic to the Northern Black Sea region.
- Distribution in the former USSR: Ukraine, the Dnieper-Bug and Dniester limans, the lower reaches of the Dnieper river, the Yalpug Lake [Anistratenko & Stadnichenko, 1995].
- Subregions: SE.
- Bionomics: Occurs in lower courses

of large rivers, limans and lakes [Anistratenko & Stadnichenko, 1995].

- IUCN conservation status: Not assessed.

**202(232). *Euxinipyrghula lincta*
(Milaschewitsch, 1908)**

Micromelania lincta Milaschewitsch, 1908: 991.

- Type locality: Ukraine, Odessa Region, the Kotlabukh Lake (approximately 45°25'35"N; 28°59'41"E).
- Lectotype: ZIN, No. 4401/1 in systematic catalogue [see Golikov & Starobogatov, 1966].
- Global distribution: Endemic to the Northern Black Sea region.
- Distribution in the former USSR: Ukraine, the northwest Black Sea Maritime Territory [Anistratenko & Stadnichenko, 1995].
- Subregions: SE.
- Bionomics: Occurs in lower courses of large rivers, limans and lakes [Anistratenko & Stadnichenko, 1995].
- IUCN conservation status: LC (least concern).

**203(233). *Euxinipyrghula ostroumovi*
(Golikov et Starobogatov, 1966)**

[= *Micromelania lincta* Milaschewitsch, 1908, partim]

Pyrgula ostroumovi Golikov & Starobogatov, 1966: 358, fig. 2 (13).

- Type locality: Ukraine, Odessa Region, the Kotlabukh Lake (approximately 45°25'35"N; 28°59'41"E).
- Holotype: ZIN, No. 4523/1 in systematic catalogue.
- Global distribution: Endemic to the Northern Black Sea region.
- Distribution in the former USSR: Ukraine, the northwestern coast of Black Sea [Anistratenko & Stadnichenko, 1995].

- Subregions: SE.
- Bionomics: Lives in salt lakes and limans [Golikov & Starobogatov, 1966; Anistratenko & Stadnichenko, 1995].
- IUCN conservation status: Not assessed.

**204(234). *Euxinipyrghula ukrainica*
(Alexenko et Starobogatov, 1987)**

Turricaspia meneghiniana ukrainica Alexenko & Starobogatov, 1987: 35, fig. 9.

- Type locality: Ukraine, lower reaches of the Dnieper River.
- Holotype: Not traced, most probably in ZIN.
- Global distribution: Endemic to the Northern Black Sea region.
- Distribution in the former USSR: Ukraine, the Dnieper-Bug and Dniester limans, the lower reaches of the Dnieper river, the Yalpug Lake [Anistratenko & Stadnichenko, 1995].
- Subregions: SE.
- Bionomics: Occurs in lower courses of large rivers, limans and lakes [Anistratenko & Stadnichenko, 1995].
- IUCN conservation status: Not assessed.

**Genus *Pyrghula* Cristofori et
Jan, 1832**

[= *Micromelania* Brusina, 1874, partim; *Caspia* Clessin et W. Dybowski, 1888, partim; *Celekenia* Andrussov, 1902; *Trachycaspia* B. Dybowski et Grochmalicki, 1915, *Turricaspia* B. Dybowski et Grochmalicki, 1915, partim; *Laevicaspia* B. Dybowski et Grochmalicki, 1917; *Clessiniola* Lindholm, 1924, partim; *Caspiella* Thiele, 1928, partim; *Caspiopyrgula* Logvinenko et Starobogatov, 1968; *Eurycaspia* Kolesnikov in Logvinenko et Starobogatov, 1968; *Ulskia* Logvinenko et Starobogatov, 1968]

Type species: *Pyrghula annulata* Jan, 1832 (M)

**205(235). *Pyrghula abichi* Logvinenko
et Starobogatov, 1968**

[= *Caspia cincta* sensu Kolesnikov, 1947, non Abich, 1859, partim]

Pyrghula abichi Logvinenko & Starobogatov, 1968: 372, fig. 366 (3).

- Type locality: Southern and western parts of the Middle Caspian Sea, 36–120 m.
- Holotype: Not traced, possibly in ZIN.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: Southern and western parts of the Middle Caspian Sea [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs at depths between 36 and 120 m [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: DD (data deficient).

**206(236). *Pyrghula aenigma*
Logvinenko et Starobogatov, 1968**

Pyrghula aenigma Logvinenko & Starobogatov, 1968: 375, fig. 366 (12).

- Type locality: The Caspian Sea, northward of Apsheron Peninsula, 75 m.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: Type locality [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Found at 75 m of depth [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.

**207(237). *Pyrghula bakuana*
(Kolesnikov, 1947)**

Turricaspia bakuana Kolesnikov, 1947: 108, 112.

- Type locality: Not specified (the Caspian Sea – from the title).
- Types: Not traced.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: The southern and middle Caspian Sea [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs between 25 and 75 m of depth [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.

**208(238). *Pyrgula basalis*
(B. Dybowski et Grochmalicki, 1915)**

Micromelania dimidiata var. *basalis* B. Dybowski & Grochmalicki, 1915b: 131, pl. 3, fig. 36 a-b.

- Type locality: The Caspian Sea.
- Global distribution: Endemic to the Caspian Sea.
- Subregions: CS.
- IUCN conservation status: Not assessed.
- Remark: This species includes two subspecies.

208(238a). *Pyrgula basalis basalis* (B. Dybowski et Grochmalicki, 1915)

- Lectotype: ZIN, No. 4368/1 in systematic catalogue (see Logvinenko & Starobogatov, 1968).
- Distribution in the former USSR: The middle and southern Caspian Sea [Logvinenko & Starobogatov, 1968].
- Bionomics: Occurs between 35 and 300 m of depth [Logvinenko & Starobogatov, 1968].

208(238b). *Pyrgula basalis laticarinata* Logvinenko et Starobogatov, 1968

[= *Micromelania dimidiata* sensu W. Dybowski, 1888, partim, non *Rissoa dimidiata* Eichwald, 1838]

Pyrgula laticarinata Logvinenko & Starobogatov, 1968: 359, fig. 359 (3).

- Type locality: The southern Caspian Sea, mouth of the Kura River, 39°07.5'N, 49°35'E, 88 m.
- Lectotype: ZIN, No. 1 in systematic catalogue [designated in Kantor *et al.*, 2010].
- Distribution in the former USSR: The southern Caspian Sea [Logvinenko & Starobogatov, 1968].
- Bionomics: Occurs between 80 and 120 m of depth [Logvinenko & Starobogatov, 1968].

**209(239). *Pyrgula behningi*
Logvinenko et Starobogatov, 1968**

Pyrgula behningi Logvinenko & Starobogatov, 1968: 380, fig. 367 (13).

- Type locality: Western part of the southern Caspian Sea, in the vicinities of the Kura River mouth, 39°05'N, 49°48'E, 120 m.
- Holotype: Not traced, possibly in ZIN.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: Western part of the southern Caspian Sea [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs between 75 and 200 m of depth [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.

**210(240). *Pyrgula cincta*
(Abich, 1859)**

[= *Caspia orthii* Clessin et W. Dybowski in W. Dybowski, 1888]

Rissoa cincta Abich, 1859: 57, Taf. 2, Fig. 6.

- Type locality: Not specified (the Caspian Sea – from the title).
- Holotype: Not traced.
- Global distribution: Endemic to the Caspian Sea.

- Distribution in the former USSR: The southern Caspian Sea [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs between 20 and 60 m of depth [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: DD (data deficient).

211(241). *Pyrgula columna*

Logvinenko et Starobogatov, 1968

Pyrgula columna Logvinenko & Starobogatov, 1968: 368, fig. 363 (8).

- Type locality: Western part of the southern Caspian Sea.
- Holotype: Not traced, possibly in ZIN.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: Western part of the southern Caspian Sea [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs between 25 and 50 m of depth [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.

212(242). *Pyrgula concinna*

Logvinenko et Starobogatov, 1968

[= *Hydrobia spica* sensu Grimm, 1876, partim, sensu W. Dybowski, 1888, non Eichwald, 1855; *Turricaspia spica* var. *nova* Kolesnikov, 1947, partim]

Pyrgula concinna Logvinenko & Starobogatov, 1968: 365, fig. 362 (3).

- Type locality: The middle Caspian Sea, 25–80 m.
- Holotype: Not traced, possibly in ZIN.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: Type locality [Logvinenko & Starobogatov, 1968].

- Subregions: CS.
- Bionomics: Occurs between 25 and 80 m of depth [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.

**213(243). *Pyrgula curta*
(Nalivkin, 1914)**

Micromelania curta Nalivkin, 1914: 21–22, 31, pl. 6, figs. 1–4, 7, 9–14.

- Type locality: Not stated (a hill south of Bibi-Eibat, west of Shikhova village, Apsheron Peninsula, Azerbaijan [fossil] – from preface to paper).
- Holotype: Not traced.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: The southern Caspian Sea [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs between 20 and 60 m of depth [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.

214(244). *Pyrgula derzhavini*

Logvinenko et Starobogatov, 1968

Pyrgula derzhavini Logvinenko & Starobogatov, 1968: 379, fig. 367 (9).

- Type locality: The middle and southern Caspian Sea, 45–81 m.
- Holotype: Not traced, possibly in ZIN.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: Type locality [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs between 45 and 81 m of depth [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.

**215(245). *Pyrgula dimidiata*
(Eichwald, 1838)**

[= *Micromelania dimidiata* var. *eucalia* B. Dybowski et Grochmalicki, 1915; *Micromelania dimidiata* var. *gracilis* B. Dybowski et Grochmalicki, 1915; *Micromelania dimidiata* var. *ptychophora* B. Dybowski et Grochmalicki, 1915; *Micromelania dimidiata* var. *bicarinata* B. Dybowski et Grochmalicki, 1915; *Pyrgula dimidiata grossui* Golikov et Starobogatov, 1966]

Rissoa dimidiata Eichwald, 1838: 156.

- Type locality: "In eodem lapide calcareo, fossilis" (in Quaternary limestones, fossil, probably somewhere in Daghestan) [Eichwald, 1838: 156].
- Holotype: Not traced.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: The middle and southern Caspian Sea [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs between 35 and 200 m of depth [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.
- Remark: *Micromelania dimidiata* var. *eucalia* B. Dybowski et Grochmalicki, 1915 was listed as a valid species of *Turricaspia* by Sitnikova & Starobogatov [1998], though without discussion of its taxonomic status.

**216(246). *Pyrgula dubia* Logvinenko
et Starobogatov, 1968**

Pyrgula dubia Logvinenko & Starobogatov, 1968: 368, fig. 363 (5).

- Type locality: Western part of the middle Caspian Sea, 75–100 m.
- Holotype: Not traced, possibly in ZIN.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: Type locality [Logvinenko & Starobogatov, 1968].

- Subregions: CS.
- Bionomics: Occurs between 75 and 100 m of depth; only dead individuals were found [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.

**217(247). *Pyrgula ebersini*
Logvinenko et Starobogatov, 1968**

Pyrgula ebersini Logvinenko & Starobogatov, 1968: 368, fig. 363 (7).

- Type locality: Western part of the middle Caspian Sea, 0–50 m.
- Holotype: Not traced, possibly in ZIN.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: Type locality [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs between 0 and 50 m of depth; only dead individuals were found [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: DD (data deficient).

**218(248). *Pyrgula eulimellula*
(B. Dybowski et Grochmalicki, 1915)**

[= *Turricaspia grimmi* sensu Kolesnikov, 1947, partim, non Clessin et W. Dybowski, 1888]

Micromelania (*Turricaspia*) *eulimellula* B. Dybowski & Grochmalicki, 1915b: 123–125, pl. 3, fig. 27, a–b.

- Type locality: The Caspian Sea.
- Lectotype: ZIN, No. 4436/1 in systematic catalogue.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: The middle Caspian Sea [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs at depths below

80 m [Logvinenko & Starobogatov, 1968].

- IUCN conservation status: Not assessed.

**219(249). *Pyrgula fedorovi*
Logvinenko et Starobogatov, 1968**

Pyrgula fedorovi Logvinenko & Starobogatov, 1968: 362, fig. 360 (2).

- Type locality: Western part of the middle Caspian Sea, 80 m.
- Holotype: Not traced, possibly in ZIN.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: Type locality [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Registered at 80 m of depth; only dead individuals were found [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.

220(250). *Pyrgula grimmi* (Clessin et W. Dybowski in W. Dybowski, 1888)

Micromelania grimmi W. Dybowski, 1888: 27-28, pl. 1, fig. 2a-c.

- Type locality: The Caspian Sea.
- Types: Not traced.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: The southern Caspian Sea [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs at depths between 70 and 200 m [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: DD (data deficient).

**221(251). *Pyrgula isseli*
Logvinenko et Starobogatov, 1968**

Pyrgula isseli Logvinenko & Starobogatov, 1968: 378, fig. 367 (6).

- Type locality: The southern Caspian Sea, 40–75 m.

- Holotype: Not traced, possibly in ZIN.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: Type locality [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs at depths between 40 and 75 m [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: DD (data deficient).

**222(252). *Pyrgula kolesnikoviana*
Logvinenko et Starobogatov in
Golikov et Starobogatov, 1966**

[= *Rissoa conus* sensu Eichwald, 1841, partim, non Eichwald, 1838; *Caspia conus* sensu Kolesnikov, 1948, partim, non Eichwald, 1838]

Pyrgula kolesnikoviana Golikov & Starobogatov, 1966: 357-258, fig. 2 (8, 9).

- Type locality: The Caspian Sea, northward of Apsheron peninsula, northward from Kamni Dva Brata Island, 40°47'N, 49°42'E, 30 m.
- Holotype: ZIN No. 4462/1 in systematic catalogue.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: The southern Caspian Sea [Golikov & Starobogatov, 1966; Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs at depths between 25 and 120 m [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: DD (data deficient).

**223(253). *Pyrgula kowalewskii*
(Clessin et W. Dybowski in
W. Dybowski, 1888)**

Caspia kowalewskii W. Dybowski, 1888: 40-41, pl. 3, fig. 9a-b.

- Type locality: The Caspian Sea.

- Types: Not traced.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: The southern Caspian Sea [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs at depths between 70 and 200 m [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.

**224(254). *Pyrgula lencoranica*
Logvinenko et Starobogatov, 1968**

[= *Turricaspia sieversi* sensu Kolesnikov, 1947, non Clessin in W. Dybowski, 1888]

Pyrgula lencoranica Logvinenko & Starobogatov, 1968: 357, fig. 358 (14).

- Type locality: The Caspian Sea.
- Holotype: Not traced, possibly in ZIN.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: The Caspian Sea [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs at depths between 0 and 50 m [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.

225(255). *Pyrgula lirata* (B. Dybowski et Grochmalicki, 1915)

[= *Micromelania spica* var. *incisata* B. Dybowski et Grochmalicki, 1915]

Micromelania (*Turricaspia*) *spica* var. *lirata* B. Dybowski & Grochmalicki, 1915b: 117, pl. 2, fig. 18.

- Type locality: The Caspian Sea.
- Lectotype: ZIN, No. 4552/1 in systematic catalogue.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: Western part of the middle and southern

Caspian Sea [Logvinenko & Starobogatov, 1968].

- Subregions: CS.
- Bionomics: Occurs at depths between 25 and 50 m [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.

**226(256). *Pyrgula marginata*
(Westerlund, 1902)**

Nematurella marginata Westerlund, 1902: 45.

- Type locality: “Kaspisches Meer bei Krasnojarsk” (sic!). This is obviously erroneous, most probably, Krasnovodsk (now Turkmenbashi) City in Turkmenistan is meant [Vinarski *et al.*, 2013b].
- Syntypes: NMG, No. 4368 in systematic catalogue. There are seven shells of syntypes labeled as “Mare Casp[icum] australe” in the type series [see Vinarski *et al.*, 2013b for details].
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: The middle and southern Caspian Sea [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs at depths between 25 and 120 m [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.

227(257). *Pyrgula nana* Logvinenko et Starobogatov, 1968

Pyrgula nana Logvinenko & Starobogatov, 1968: 379-380, fig. 367 (12).

- Type locality: Western part of the Caspian Sea, 75–120 m.
- Holotype: Not traced, possibly in ZIN.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR:

Western part of the Caspian Sea [Logvinenko & Starobogatov, 1968].

- Subregions: CS.
- Bionomics: Occurs at depths between 75 and 120 m; only dead individuals were found [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.

**228(258). *Pyrgula nossovi*
(Kolesnikov, 1947)**

Turricaspia nossovi Kolesnikov, 1947: 108, 111.

- Type locality: Not specified (the Caspian Sea – from the title).
- Types: Not traced.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: The southern Caspian Sea [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs between 100 and 200 m of depth [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: DD (data deficient).

**229(259). *Pyrgula pallasii* (Clessin et
W. Dybowski in W. Dybowski, 1888)**

Caspia pallasii W. Dybowski, 1888: 37, pl. 3, fig. 3a-b.

- Type locality: The Caspian Sea.
- Types: Not traced.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: The southern Caspian Sea [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs at depths between 50 and 150 m; only dead individuals were found [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.

**230(260). *Pyrgula pseudobacuana*
Logvinenko et Starobogatov, 1968**

Pyrgula pseudobacuana Logvinenko & Starobogatov, 1968: 358, fig. 358 (16).

- Type locality: The southern Caspian Sea, 50–80 m.
- Holotype: Not traced, possibly in ZIN.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: Type locality [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs at depths between 50 and 80 m; only dead individuals were found [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.

**231(261). *Pyrgula pseudodimidiata*
(B. Dybowski et Grochmalicki, 1915)**

Micromelania (Turricaspia) pseudodimidiata B. Dybowski & Grochmalicki, 1915b: 126–128, pl. 3, fig. 32, a-b.

- Type locality: Not stated (the Caspian Sea – from the title).
- Lectotype: ZIN, No. 4536/1 in systematic catalogue.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: The southern Caspian Sea [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs at depths between 0 and 50 m [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.

**232(262). *Pyrgula pseudospica*
Logvinenko et Starobogatov, 1968**

Pyrgula pseudospica Logvinenko & Starobogatov, 1968: 366, fig. 363 (1).

- Type locality: The middle and southern Caspian Sea, 15–75 m.

- Holotype: Not traced, possibly in ZIN.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: Type locality [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs at depths between 15 and 75 m [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.

233(263). *Pyrgula pulla* (B. Dybowski et Grochmalicki, 1915)

Micromelania (Turricaspia) caspia var. *pulla* B. Dybowski & Grochmalicki, 1915b: 111, pl. I, fig. 6a.

- Type locality: Not stated (the Caspian Sea – from the title).
- Lectotype: ZIN, No. 4422/1 in systematic catalogue.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: The middle and southern Caspian Sea [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs at depths between 15 and 75 m [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: DD (data deficient).

234(264). *Pyrgula rudis* Logvinenko et Starobogatov, 1968

Pyrgula rudis Logvinenko & Starobogatov, 1968: 362, fig. 360 (5).

- Type locality: The middle and southern Caspian Sea, 50–100 m.
- Holotype: Not traced, possibly in ZIN.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: Type locality [Logvinenko & Starobogatov, 1968].

- Subregions: CS.
- Bionomics: Occurs at depths between 50 and 100 m; only dead individuals were found [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: DD (data deficient).

235(265). *Pyrgula schorygini* Logvinenko et Starobogatov, 1968

Pyrgula schorygini Logvinenko & Starobogatov, 1968: 379, fig. 367 (11).

- Type locality: The Caspian Sea; off Apsheron Peninsula, 40°07.5'N, 50°57.5'E, 88 m.
- Holotype: ZIN, No. 4357/1 in systematic catalogue.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: The southern Caspian Sea [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs at depths between 45 and 120 m [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.

236(266). *Pyrgula* (?) *sieversii* (O. Boettger, 1881)

[= *Pyrgula syriaca* Pallary, 1930]

Hydrobia sieversii O. Boettger, 1881a: 246–247, pl. 9, fig. 23.

- Type locality: Azerbaijan, bank deposits of the Araks River near Nakhichevan' Town (approximately 39°10'30"N; 45°21'41"E).
- Holotype: SMF, No. 141487 in systematic catalogue.
- Global distribution: Endemic to the Transcaucasia. Recorded also in the Pliocene deposits of Turkey [Yildirim, 1999].

- Distribution in the former USSR: Type locality [Zhadin, 1952].
- Subregions: CT.
- Bionomics: Unknown.
- IUCN conservation status: Not assessed.
- Remark: This species was described as belonging to the genus *Hydrobia*. Zhadin [1952] placed it in the genus *Pyrgula* but it seems very doubtful. Some authors [Yildirim, 1999] considered it as a member of the genus *Falsipyrgula* Radoman, 1973 distributed now in Anatolia, Turkey [Anistratenko, 2008]. Besides, there is a secondary homonym for *P. sieversi* (Btg.), namely *Pyrgula sieversi* (Clessin in W. Dybowski, 1888) described from the Caspian Sea and mentioned in the recent works [Kantor & Sysoev, 2005; Kantor *et al.*, 2010]. Zhadin [1952] cited this species under the name *Caspiella sieversi*, however, it is absent in both subsequent catalogues of the Caspian malacofauna [Logvinenko & Starobogatov, 1968; Bogutskaya *et al.*, 2013]. The true identity of “*Caspiella sieversi*” is thus not clear.

237(267). *Pyrgula similis* Logvinenko et Starobogatov, 1968

[= *Micromelania grimmi* Clessin et W. Dybowski in W. Dybowski, 1888, partim]

Pyrgula similis Logvinenko & Starobogatov, 1968: 375, fig. 366 (11).

- Type locality: Eastern part of the middle Caspian Sea, 20–50 m.
- Types: Not traced.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: Eastern part of the middle Caspian Sea [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs at depths between 20 and 50 m [Logvinenko & Starobogatov, 1968].

- IUCN conservation status: Not assessed.

238(268). *Pyrgula simplex*

Logvinenko et Starobogatov, 1968

Pyrgula simplex Logvinenko & Starobogatov, 1968: 367–368, fig. 363 (4).

- Type locality: The middle Caspian Sea, 40–120 m.
- Types: Not traced.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: Type locality [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs at depths between 40 and 120 m; only dead specimens were found [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.

239(269). *Pyrgula sowinskyi*

Logvinenko et Starobogatov, 1968

Pyrgula sowinskyi Logvinenko & Starobogatov, 1968: 378, fig. 367 (4).

- Type locality: The middle and southern Caspian Sea, 70–126 m.
- Types: Not traced.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: Type locality [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs at depths between 70 and 126 m [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: DD (data deficient).

240(270). *Pyrgula turkmenica*

Logvinenko et Starobogatov, 1968

Pyrgula turkmenica Logvinenko & Starobogatov, 1968: 368, fig. 363 (6).

- Type locality: Eastern part of the southern Caspian Sea, 80–150 m.
- Types: Not traced.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: Type locality [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs at depths between 80 and 150 m; only dead specimens were found [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.

**241(271). *Pyrgula ulskii*
(Clessin et W. Dybowski in
W. Dybowski, 1888)**

Caspia ulskii W. Dybowski, 1888: 38-39, pl. 3, fig. 8a-b.

- Type locality: The middle Caspian Sea, north-east of Naphtabank.
- Probable syntypes: ZIN, No. 4608/1 in systematic catalogue.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: The southern Caspian Sea [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs at depths between 45 and 81 m [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.

**242(272). *Pyrgula uralensis*
Logvinenko et Starobogatov, 1968**

Pyrgula uralensis Logvinenko & Starobogatov, 1968: 359, fig. 360 (1).

- Type locality: Eastern part of the northern Caspian Sea.
- Types: Not traced.

- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: Type locality [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Unknown.
- IUCN conservation status: Not assessed.

**Genus *Turricaspia* B. Dybowski et
Grochmalicki, 1915**

[= *Pyrgula* Cristofori et Jan, 1832, partim; *Micromelania* Brusina, 1874, partim; *Caspia* Clessin et W. Dybowski, 1888, partim; *Clessiniola* Lindholm, 1924, partim; *Oxyppyrghula* Logvinenko et Starobogatov, 1968]

Type species: *Micromelania turricula* f. *typica* B. Dybowski et Grochmalicki, 1915 = *Micromelania turricula* Clessin et W. Dybowski in W. Dybowski, 1888 (SD Wenz, 1939)

**243(273). *Turricaspia turricula*
(Clessin et W. Dybowski in W.
Dybowski, 1888)**

[= *Micromelania turricula* f. *typica* B. Dybowski et Grochmalicki, 1915]

Micromelania turricula W. Dybowski, 1888: 34, pl. 1, fig. 3 a-c.

- Type locality: The Caspian Sea.
- Probable syntypes: ZIN, Nos. 4574/1 and 4575/2 in systematic catalogue.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: The middle and southern Caspian Sea [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs at depths below 60 m [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.

**244(274). *Turricaspia andrussowi*
(B. Dybowski et Grochmalicki, 1915)**

[= *Hydrobia spica* sensu Grimm, 1876, partim, non Eichwald, 1855; *Micromelania turricula* var. *major* B. Dybowski et Grochmalicki, 1915; *Micromelania turricula* var. *nova* B. Dybowski et Grochmalicki, 1915, partim; *Micromelania spica* var. *lordosa* B. Dybowski et Grochmalicki, 1915; *Micromelania spica* f. *striata* B. Dybowski et Grochmalicki, 1915; *Micromelania elegantula* var. *mediocincta* B. Dybowski et Grochmalicki, 1915; *Micromelania brusinae* B. Dybowski et Grochmalicki, 1915; *Turricaspia turricula* sensu Kolesnikov, 1947, partim]

Micromelania (Turricaspia) andrussowi B. Dybowski & Grochmalicki, 1915b: 125-126, pl. 3, fig. 31, a-b.

- Type locality: Not stated (the Caspian Sea – from the title).
- Lectotype: ZIN, No. 4355/1 in systematic catalogue.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: The middle and southern Caspian Sea [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs at depths between 25 and 80 m [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.

**245(275). *Turricaspia astrachanica*
(Pirogov, 1971)**

Pyrgula astrachanica Pirogov, 1970[1971]: 249-251, fig. 1.

- Type locality: Russia, Astrakhan' region, the Volga Delta.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the lower Volga basin.
- Distribution in the former USSR: Type locality [Starobogatov *et al.*, 2004].
- Subregions: SE.

- Bionomics: In rivers and channels [Starobogatov *et al.*, 2004].
- IUCN conservation status: DD (data deficient).

**246(276). *Turricaspia bogatscheviana*
(Logvinenko et Starobogatov, 1968)**

Pyrgula bogatscheviana Logvinenko & Starobogatov, 1968: 367, fig. 363 (2).

- Type locality: Western part of the Caspian Sea.
- Types: Not traced.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: Type locality [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Empty shells of this species were found at 60 m of depth [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.

**247(277). *Turricaspia boltovskoji*
(Golikov et Starobogatov, 1966)**

Pyrgula boltovskoji Golikov & Starobogatov, 1966: 357, fig. 2 (4).

- Type locality: The Azov Sea off Taganrog.
- Holotype: ZIN, No. 4373/1.
- Global distribution: Endemic to the Ponto-Caspian region.
- Distribution in the former USSR: Taganrog Bay (Azov Sea), lower reaches of the Dnieper River; the Caspian Sea [Alexenko & Starobogatov, 1987; Anistratenko & Stadnichenko, 1995].
- Subregions: SE, CS.
- Bionomics: Brackishwater species, lives in seas and estuaries [Anistratenko & Stadnichenko, 1995].
- IUCN conservation status: Not assessed.
- Remark: Anistratenko & Stadnichen-

ko [1995] quoted this species as *T. boltovskoji boltovskoji* and mentioned that there is another subspecies in the Caspian Sea (*T. b. subovum*), not described yet. To our knowledge, this subspecies is still not described.

**248(278). *Turricaspia caspia*
(Eichwald, 1838)**

[= *Buliminus goebeli* Westerlund, 1896; *Micromelania caspia* f. *typica* B. Dybowski et Grochmalicki, 1915; *Micromelania caspia* var. *eichwaldi* B. Dybowski et Grochmalicki, 1915; *Micromelania caspia* var. *brunnea* B. Dybowski et Grochmalicki, 1915; *Micromelania caspia* var. *major* B. Dybowski et Grochmalicki, 1915]

Rissoa caspia Eichwald, 1838: 154-155.

- Type locality: Russia, Daghestan Republic, in the Quaternary limestones ["in eodem lapide calcario Dagesthanico, fossilis"; Eichwald, 1838: 154] (see remark below).
- Lectotype: ZIN, No. 1 in systematic catalogue [Alexenko & Starobogatov, 1987].
- Distribution in the former USSR: The middle and southern Caspian Sea [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs at depths between 30 and 150 m [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: LC (least concern).
- Remark: The species was described as fossil, from the Quaternary deposits. While designating the lectotype, Alexenko & Starobogatov [1987] mentioned that the label reads "Caspian Sea". This may indicate that the "lectotype" is a Recent shell and does not belong to the type series. *Micromelania caspia* var. *brunnea* B. Dybowski et Grochmalicki, 1915 was listed as a valid species of *Turricaspia* by Sitnikova & Staroboga-

to [1998], though without discussion of taxonomy

**249(279). *Turricaspia chersonica*
Alexenko et Starobogatov, 1987**

Turricaspia chersonica Alexenko & Starobogatov, 1987: 35-36, fig. 10.

- Type locality: Ukraine, in the Dnieper River delta.
- Holotype: Not traced, most probably in ZIN.
- Global distribution: Endemic to the northern Black Sea region.
- Distribution in the former USSR: Type locality [Anistratenko & Stadnichenko, 1995].
- Subregions: SE.
- Bionomics: Not studied. The only known finding of this species was made in a large river estuary.
- IUCN conservation status: DD (data deficient).

**250(280). *Turricaspia conus*
(Eichwald, 1838)**

Rissoa conus Eichwald, 1838: 155.

- Type locality: "In eodem lapide calcareo, fossilis" (in the Quaternary limestones, not specified where, probably somewhere in Daghestan).
- Global distribution: Endemic to the Ponto-Caspian Region.
- Subregions: SE, CS.
- Remark: This species includes two subspecies.

**250(280a). *Turricaspia conus conus*
(Eichwald, 1838)**

- Types: Not traced.
- Distribution in the former USSR: The Caspian Sea [Logvinenko & Starobogatov, 1968].
- Bionomics: Occurs between 0 and 120 m of depth [Logvinenko & Starobogatov, 1968].

- IUCN conservation status: DD (data deficient).

250(280b). *Turricaspia conus lindholmiana* (Golikov et Starobogatov, 1966)

[= *Micromelania lincta* Milashevitsch, 1916, partim]

Pyrgula (Casiella) lindholmiana Golikov & Starobogatov, 1966: 357, fig 2 (5).

- Type locality: Lower Don River, limans of the Azov Sea, and the north-western part of the Black Sea.
- Holotype: ZIN, No. 4425/1 in systematic catalogue.
- Distribution in the former USSR: Lower reaches of the Don and Dnieper rivers, limans of the Azov Sea and the north-western Black Sea [Golikov & Starobogatov, 1966; Alexenko & Starobogatov, 1987].
- Bionomics: Occurs in lower courses of large rivers and estuaries, on muddy-sand substrates [Anistratenko & Stadnichenko, 1995].
- IUCN conservation status: LC (least concern).

251(281). *Turricaspia dagestanica* (Logvinenko et Starobogatov, 1968)

Pyrgula dagestanica Logvinenko & Starobogatov, 1968: 361, fig. 360 (3).

- Type locality: Western shore of the middle Caspian Sea.
- Holotype: Not traced, most probably in ZIN.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: Type locality [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs at depths between 20 and 30 m; only empty shells were found [Logvinenko & Starobogatov, 1968].

- IUCN conservation status: DD (data deficient).

252(282). *Turricaspia derbentina* (Logvinenko et Starobogatov, 1968)

Pyrgula derbentina Logvinenko & Starobogatov, 1968: 374, fig. 366 (8).

- Type locality: The middle and southern Caspian Sea.
- Holotype: Not traced, most probably in ZIN.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: Type locality [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs at depths between 16 and 131 m [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.

253(283). *Turricaspia eburnea* (Logvinenko et Starobogatov, 1968)

Pyrgula eburnea Logvinenko & Starobogatov, 1968: 370, fig. 365 (1).

- Type locality: Eastern part of the southern Caspian Sea.
- Holotype: Not traced, most probably in ZIN.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: Type locality [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs at depths between 50 and 75 m [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.

254(284). *Turricaspia elegantula* (Clessin et W. Dybowski in W. Dybowski, 1888)

Micromelania elegantula W. Dybowski, 1888: 33, pl. 1, fig. 7 a-c.

- Type locality: The Caspian Sea.
- Probable syntype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: Eastern part of the southern Caspian Sea [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs at depths between 40 and 60 m [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.

**255(285). *Turricaspia ismailensis*
(Golikov et Starobogatov, 1966)**

Pyrgula ismailensis Golikov & Starobogatov, 1966: 358, fig. 2 (11).

- Type locality: Ukraine, the Danube River delta, the lakes Yalpug and Kugurlui.
- Holotype: ZIN, No. 4447/1 in systematic catalogue.
- Global distribution: Endemic to the Black Sea maritime region.
- Distribution in the former USSR: The north-western Black Sea Maritime Territory [Anistratenko & Stadnichenko, 1995].
- Subregions: SE.
- Bionomics: Not studied [Anistratenko & Stadnichenko, 1995].
- IUCN conservation status: VU (vulnerable species).

**256(286). *Turricaspia martensii*
(Clessin et W. Dybowski in W.
Dybowski, 1888)**

[= *Pyrgula triton* sensu Logvinenko & Starobogatov, 1968, partim, non Eichwald, 1838; *Pyrgula variabilis* sensu Logvinenko & Starobogatov, 1968, non Eichwald, 1838]

Clessinia Martensii W. Dybowski, 1888: 43, pl. 2, fig. 5.

- Type locality: Azerbaijan, the Caspian Sea near Baku City.
- Types: Not traced.
- Global distribution: Endemic to the Ponto-Caspian region.
- Distribution in the former USSR: Brackish waters of the northwestern Black and Azov seas maritime territories, and the Caspian Sea [Logvinenko & Starobogatov, 1968; Anistratenko & Stadnichenko, 1995; Anistratenko *et al.*, 2011].
- Subregions: SE, CS.
- Bionomics: Lives in limans and estuaries [Anistratenko & Stadnichenko, 1995].
- IUCN conservation status: Not assessed.

**257(287). *Turricaspia meneghiniana*
(Issel, 1865)**

[= *Micromelania subulata* Westerlund, 1902; *Micromelania caspia* var. *inflata* B. Dybowski et Grochmalicki, 1915]

Bithynia meneghiniana Issel, 1865: 405, pl. 1, figs. 12, 13.

- Type locality: Azerbaijan, Baku City (fossil).
- Types: Not traced.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: The middle and southern Caspian Sea.
- Subregions: CS.
- Bionomics: Occurs at depths between 0 and 35 m [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: LC (least concern).

**258(288). *Turricaspia ovum*
(Logvinenko et Starobogatov, 1968)**

Pyrgula ovum Logvinenko & Starobogatov, 1968: 374, fig. 366 (9).

- Type locality: The middle Caspian Sea.
- Holotype: Not traced, most probably in ZIN.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: Type locality [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs at depths between 20 and 75 m [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.

**259(289). *Turricaspia pseudotriton*
(Golikov et Starobogatov, 1966)**

[= *Clessiniola variabilis* Ilyina, 1966, partim; *Turricaspia bogensis* sensu Anistratenko & Stadnichenko, 1995, non Küster, 1852]

Pyrgula pseudotriton Golikov et Starobogatov, 1966: 356-357, fig. 2, 3.

- Type locality: Ukraine, the Dniester and Dnieper-Bug limans.
- Types: Not traced.
- Global distribution: Endemic to the Ponto-Caspian Region.
- Distribution in the former USSR: Brackish waters of the north-western Black Sea Maritime Territory (Dnieper-Bug and Dniester limans), the Caspian Sea [Anistratenko & Stadnichenko, 1995; Starobogatov *et al.*, 2004].
- Subregions: SE, CS.
- Bionomics: In brackishwater habitats, for example, in river estuaries [Anistratenko & Stadnichenko, 1995].
- IUCN conservation status: Not assessed.
- Taxonomic remark: In the current Russian literature, the species is cited under the name *Turricaspia bogensis* (Küster, 1852) with *T. pseudotriton* accepted as its junior synonym [Anistratenko & Stadnichenko, 1995; Kantor & Sysoev, 2005].

However, it appears unlikely that *Paludina bogensis* Küster, with type locality situated in Poland ("Bug-Fluss im Polen" = Zapadnyi Bug River; see Küster, 1852), really belongs to the Ponto-Caspian genus *Turricaspia*. The true identity of *Paludina bogensis* needs to be determined in future. In this situation, V. Anistratenko (pers. comm.) proposes to return to the name *T. pseudotriton* for designation of a Ponto-Caspian endemic species known under the name *T. bogensis* sensu Anistratenko et Stadnichenko [1995].

**260(290). *Turricaspia pullula* (B.
Dybowski et Grochmalicki, 1915)**

Micromelania (Turricaspia) caspia var. *pullula* B. Dybowski & Grochmalicki, 1915b: 111-112, pl. 1, fig. 7.

- Type locality: The Caspian Sea.
- Lectotype: ZIN, No. 4423/1 in systematic catalogue.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: Western part of the middle Caspian Sea [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Found at 60 m of depth [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: DD (data deficient).

**261(291). *Turricaspia sajenkovae*
(Logvinenko et Starobogatov, 1968)**

Pyrgula sajenkovae Logvinenko & Starobogatov, 1968: 361, fig. 360 (4).

- Type locality: The middle Caspian Sea.
- Holotype: Not traced, most probably in ZIN.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: Type locality [Logvinenko & Starobogatov, 1968].

- Subregions: CS.
- Bionomics: Occurs at depths between 20 and 75 m [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: DD (data deficient).

**262(292). *Turricaspia spasskii*
(Logvinenko et Starobogatov, 1968)**

[= *Turricaspia spica* sensu Kolesnikov, 1947, non Eichwald, 1855]

Pyrgula spasskii Logvinenko & Starobogatov, 1968: 361, fig. 360 (8).

- Type locality: Western part of the middle Caspian Sea.
- Holotype: Not traced, most probably in ZIN.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: Type locality [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs at depths between 40 and 70 m [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: DD (data deficient).

**263(293). *Turricaspia spica*
(Eichwald, 1855)**

[= *Micromelania spica* f. *typica* B. Dybowski et Grochmalicki, 1915]

Paludina spica Eichwald, 1855: 303-304, pl. 10, figs. 8-10.

- Type locality: The Caspian Sea ("im Kaspischen Meere, am ufer der Inseln Tschetschnja, vorzüglich nordostwärts der Insel im Meeresgrunde").
- Holotype: Not traced, most probably in ZIN.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: Western and northern parts of the mid-

dle Caspian Sea, the Volga delta [Logvinenko & Starobogatov, 1968; Starobogatov *et al.*, 2004].

- Subregions: SE, CS.
- Bionomics: Occurs at depths between 0 and 30 m [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.

**264(294). *Turricaspia triton*
(Eichwald, 1838)**

[= *Clessinia ahngerii* Westerlund, 1902; *Clessiniola variabilis* sensu Kolesnikov, 1947, non Eichwald, 1838]

Paludina triton Eichwald, 1838: 152.

- Type locality: Russia, Daghestan, in Quaternary limestone („in eodem lapide Daghestanico fossilis”).
- Lectotype: ZIN, No. 1 in systematic catalogue [see Alexenko & Starobogatov, 1987].
- Global distribution: Endemic to the Ponto-Caspian Region.
- Distribution in the former USSR: The Caspian Sea; the Azov and Black Sea limans and mouths of the rivers [Logvinenko & Starobogatov, 1968; Anistratenko & Stadnichenko, 1995; Starobogatov *et al.*, 2004; Anistratenko *et al.*, 2011].
- Subregions: SE, CS.
- Bionomics: Occurs at depths between 20 and 25 m (the Caspian Sea); between 1 and 10 m (the Black Sea) [Logvinenko & Starobogatov, 1968; Anistratenko & Stadnichenko, 1995].
- IUCN conservation status: LC (least concern).

**265(295). *Turricaspia trivialis*
(Logvinenko et Starobogatov, 1968)**

[= *Caspia grimmi* Clessin et W. Dybowski in W. Dybowski, 1888, partim; *Clessiniola grimmi* sensu Kolesnikov, 1947, partim]

Pyrgula trivialis Logvinenko & Starobogatov, 1968: 374-375, fig. 366 (10).

- Type locality: The middle and southern Caspian Sea.
- Holotype: Not traced, most probably in ZIN.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: Type locality [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs at depths between 20 and 150 m [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: DD (data deficient).

266(296). *Turricaspia variabilis* (Eichwald, 1838)

[= *Bithynia eichwaldi* Krynicki, 1837, non auct.; *Clessiniola martensi* sensu Kolesnikov, 1947]

Paludina variabilis Eichwald, 1838: 151-152.

- Type locality: Russia, in the Volga River near Astrakhan' City, the Caspian Sea, fossil in Quaternary limestones in Daghestan.
- Types: Non traced.
- Global distribution: Endemic to the Ponto-Caspian Region.
- Distribution in the former USSR: The Caspian Sea; the lower courses of the rivers, freshwater parts of the Azov and Black seas [Logvinenko & Starobogatov, 1968; Anistratenko & Stadnichenko, 1995; Anistratenko *et al.*, 2011].
- Subregions: SE, CS.
- Bionomics: Occurs at depths between 20 and 25 m (Caspian Sea); in the Azov and Black Seas it lives in limans and estuaries [Logvinenko & Starobogatov, 1968; Anistratenko & Stadnichenko, 1995; Anistratenko *et al.*, 2011].
- IUCN conservation status: LC (least concern).

267(297). *Turricaspia vinogradovi* (Logvinenko et Starobogatov, 1968)

Pyrgula vinogradovi Logvinenko & Starobogatov, 1968: 368, fig. 363 (9).

- Type locality: The northern Caspian Sea.
- Holotype: Not traced, most probably in ZIN.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: The northern Caspian Sea and the Volga delta [Logvinenko & Starobogatov, 1968].
- Subregions: SE, CS.
- Bionomics: Not studied.
- IUCN conservation status: Not assessed.

Addition to the genus *Turricaspia*.

Several nominal species of this genus found exclusively as subfossil empty shells on phaseoline silt of the Black Sea were included into previous versions of the Catalogue [Kantor & Syshev, 2005; Kantor *et al.*, 2010]. However, we still lack evidence of their presence in the living state and, thus, their placing to the list of recent mollusks appears to be premature. These species are: *Turricaspia borceana* (Golikov et Starobogatov, 1966), *T. crimeana* (Golikov et Starobogatov, 1966), *T. iljinae* (Golikov et Starobogatov, 1966), *T. marisnigri* Starobogatov in Alexenko et Starobogatov, 1987; *T. nevesskae* (Golikov et Starobogatov, 1966).

Addition to the family Hydrobiidae.

We add to Hydrobiidae s. l. a small genus *Shadinia* Akramowski, 1976 originally placed in the family Lithoglyphidae Tryon, 1866. V. Anistratenko (pers. comm.) considers this taxonomic opinion very doubtful and proposes to classify *Shadinia* within the family Hydrobiidae s. l.

Genus *Shadinia* Akramowski, 1976[= *Pyrgula* Cristofori et Jan, 1832, partim]Type species: *Pyrgula terpoghassiani* Zhadin, 1952 (OD)**268(298). *Shadinia terpoghassiani* (Zhadin, 1952)**[= *Pyrgula terpoghassiani* Akramowski, 1952, nomen nudum]*Pyrgula terpoghassiani* Zhadin, 1952: 227, fig. 151.

- Type locality: Armenia, the Aigerlich Lake in nearly 35 km W from Erevan City (approximately 40°08'40"N; 44°10'10"E).
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Transcaucasia.
- Distribution in the former USSR: Armenia, in the Araks River Basin, Azerbaijan [Akramowski, 1976].
- Subregions: CT.
- Bionomics: Lives in springs, river and channels; sometimes occurs in lakes and reservoirs [Akramowski, 1976].
- IUCN conservation status: Not assessed.

269(299). *Shadinia akramowskii* (Zhadin, 1952)*Hydrobia akramowskii* Zhadin, 1952: 226, fig. 149.

- Type locality: Armenia, Zangibassar District, a spring in Dzhabachalu village.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to Armenia.
- Distribution in the former USSR: Armenia, valley of the middle Araks River [Akramowski, 1976].
- Subregions: CT.

- Bionomics: Lives in springs [Akramowski, 1976].

- IUCN conservation status: Not assessed.

Family Lithoglyphidae Tryon, 1866

[= Hydrobiidae Stimpson, 1865, partim; Bithynellidae Kobelt, 1878, partim]

(Lithoglyphinae Tryon, 1866: 156)

Type genus: *Lithoglyphus* Menke, 1830

This little family of prosobranchiate mollusks is believed to embrace about 100–115 recent species [Strong *et al.*, 2008; Hershler & Liu, 2012] distributed in Eurasia and North America [Starobogatov, 1970; Hershler & Liu, 2012]. According to Hausdorf *et al.* [2003], an endemic Baikalian family Benedictiidae Clessin, 1880 should be classified within Lithoglyphidae as its subfamily. This opinion was accepted by Bouchet & Rocroi [2005]. On the other hand, Benedictiidae seems to represent a group of snails that is conchologically divergent from Lithoglyphidae s. str. Its isolated zoogeographical position should also be taken into account. Finally, the results of Hausdorf *et al.* [2003] were obtained by using the mitochondrial markers only, and the authors themselves considered their suggestion to lower the taxonomic rank of Benedictiidae as 'provisional' [Hausdorf *et al.*, 2003: 440]. Hence, we retain here the family rank for Benedictiidae as it is accepted in the current Russian literature [Sitnikova *et al.*, 2004; Starobogatov *et al.*, 2004]. Most recent taxonomic works on Palearctic Lithoglyphidae are: Alexenko *et al.* [1990], Anistratenko & Stadnichenko [1995], Glöer [2002a], Welter-Schultes [2012].

Genus *Lithoglyphus* Menke, 1830

[= *Lithoclypus* Cristofori et Jan, 1832; *Lithoglypter* Fitzinger, 1833]

Type species: *Paludina naticoides* C. Pfeiffer, 1828 (SD Herrmannsen, 1847)

Remark: The genuine authorship of the genus *Lithoglyphus* represents a problem since at least three different versions are proposed in literature. The genus has been ascribed either to Hartmann (sometimes as Megerle von Mühlfeld in Hartmann, 1821) or to C. Pfeiffer (as Pfeiffer, 1828) [Geyer, 1927; Kabat & Hershler, 1993; Anistratenko & Stadnichenko, 1995; Glöer, 2002a; Kantor & Sysoev, 2005]. Here we follow Welter-Schultes [2012], who, having examined the question, concluded that the proper authorship should be attributed to Menke, 1830.

Welter-Schultes [2012] recognized a single species, *Lithoglyphus naticoides* s.l., whereas other authors accepted 2–3 separate species in this genus [Glöer, 2002a; Starobogatov *et al.*, 2004] or even more [Bank, 2014].

270(300). *Lithoglyphus naticoides* (C. Pfeiffer, 1828)

[= *Paludina neritoides* Partsch in Fitzinger, 1833; *Lithoglyphus penchinati* Bourguignat, 1870; *L. renoufi* Servain, 1881; *L. chersonicus* Lindholm, 1908]

Paludina naticoides C. Pfeiffer, 1828: 45–46, pl. 8, fig. 1, 2, 4.

- Type locality: The Danube River near Vienna (Austria), Budapest (Hungary).
- Global distribution: The Eastern and Central Europe.
- Subregions: NE, SE.
- IUCN conservation status: LC (least concern).
- Remark: According to Anistratenko

& Stadnichenko [1995], this species includes two subspecies.

270(300a). *Lithoglyphus naticoides naticoides* (C. Pfeiffer, 1828)

- Types: Probably lost. Pfeiffer's collection was dispersed after his death [Dance, 1986].
- Distribution in the former USSR: Basins of rivers of the Azov-Black Sea maritime area, entered the Volga River delta [Anistratenko & Stadnichenko, 1995; Starobogatov *et al.*, 2004].
- Bionomics: Rheophilic mollusks adapted to exist in various types of lotic waterbodies [Anistratenko & Stadnichenko, 1995; Glöer, 2002a].

270(300b). *Lithoglyphus naticoides berolinensis* Westerlund, 1886

Lithoglyphus naticoides var. *berolinensis* Westerlund, 1886: 85.

- Type locality: Germany, Berlin.
- Type series: The lectotype and a paralectotype in ZIN collection (No. 1), paralectotypes also are kept in NMG (No. 4549) and SMNH (No. 14; 39) [Vinarski *et al.*, 2013b].
- Distribution in the former USSR: Rivers of the Baltic Sea drainage [Alexenko *et al.*, 1990; Starobogatov *et al.*, 2004].
- Bionomics: Rheophilic mollusks adapted to exist in various types of lotic waterbodies [Anistratenko & Stadnichenko, 1995; Glöer, 2002a].

271(301). *Lithoglyphus apertus* (Küster, 1852)

[= *Lithoglyphus segurii* Bourguignat, 1854]

Paludina aperta Küster, 1852: 45–46, pl. 9, figs. 14–18.

- Type locality: Croatia, the Sava River near Zagreb City.
- Types: Not traced.

- Global distribution: The Southern Europe.
- Distribution in the former USSR: The Northern Black Sea maritime area [Anistratenko & Stadnichenko, 1995].
- Subregions: SE.
- Bionomics: Lives in large rivers and river channels, also occurs in limans [Anistratenko & Stadnichenko, 1995].
- IUCN conservation status: Not assessed.
- Remark: Westerlund [1886] considered this species as a variety of *L. naticoides*. Some modern authors [Welter-Schultes, 2012] did not accept *L. apertus* as a valid species of the fauna of Europe, whereas others [Bank, 2014] placed it into species lists of the Balkan malacofauna.

**272(302). *Lithoglyphus pyramidatus*
von Möllendorff, 1873**

[= *Lithoglyphus croaticus* A.J. Wagner, 1912]

Lithoglyphus pyramidatus von Möllendorff, 1873: 59, fig. 20.

- Type locality: Bosnia and Herzegovina, the Vrbas River near Banja Luka City.
- Types: Not traced.
- Global distribution: The Southern Europe and Middle East (Anatolia).
- Distribution in the former USSR: Ukraine except Carpathians, the Volga delta [Anistratenko & Stadnichenko, 1995].
- Subregions: SE.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: This species is sometimes accepted as a junior synonym of *L. fuscus* (C. Pfeiffer, 1828) [Bank, 2014]. Other authors acknowledged it as a separate species [Geyer, 1927; Glöer, 2002a].

**Family Benedictiidae
Clessin, 1880**

(Benedictiinae Clessin, 1880a: 194)

Type genus: *Benedictia* W. Dybowski, 1875

All extant representatives of this family inhabit the Baikal Lake [Sitnikova *et al.*, 2004] though there are data on finding of *Benedictia pyramidata* Martinson, 1957 in the Cretaceous deposits of south-eastern Mongolia [Martinson, 1961]. The overall diversity of the Recent Benedictiidae is estimated to be about 15 species [Sitnikova *et al.*, 2004]. The data on Benedictiidae taxonomy, distribution and bionomics given below are taken mostly from the annotated catalogue compiled by Sitnikova *et al.* [2004] and therefore we do not provide references (except of cases where other than Sitnikova *et al.* [2004] sources were used). The most important sources of information on recent Baicaliidae are those by Lindholm [1909], Kozhov [1936], Sitnikova [1987, 1995], and Sitnikova *et al.* [2004].

**Genus *Benedictia*
W. Dybowski, 1875**

[= *Dalainoria* Lindholm, 1927; *Lindholmia* Kozhov, 1936, non Hesse, 1936]

Type species: *Benedictia fragilis* W. Dybowski, 1875 (OD)

Subgenus *Benedictia* s. str.

**273(303). *Benedictia* (*Benedictia*)
fragilis W. Dybowski, 1875**

Benedictia fragilis W. Dybowski, 1875: 5-21, pl. 1, figs. 1-5; pl. 5, figs. 1-16; pl. 7, figs. 17-19; pl. 8, figs. 1-4.

- Type locality: Russia, Irkutsk Region, the Baikal Lake in Kultuk settlement (restricted by Sitnikova *et al.*, 2004).

- Types: Lectotype and six paralectotypes are in ZIN [Sitnikova, 1987].
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: Southern and central parts of the Baikal Lake.
- Subregions: BL.
- Bionomics: Lives on sandy-mud substrates with admixture of detritus. Occurs between 30 and 1300 m of depth (most usually between 80 and 200 m).
- IUCN conservation status: Not assessed.

274(304). *Benedictia (Benedictia) distinguenda* Lindholm, 1924

Benedictia fragilis distinguenda Lindholm, 1924a: 22.

- Type locality: Russia, the Baikal Lake, Olkhon Island, Kobylia Golova peninsula (approximately 53°04'20"N; 106°55'50"E).
- Global distribution: Endemic to the Baikal Lake.
- Subregions: BL.
- IUCN conservation status: Not assessed.
- Remark: There are two subspecies recognized within *B. distinguenda*. Sitnikova *et al.* [2004] supposed that *B. distinguenda* could be nothing but a local race of *B. fragilis*.

274(304a). *Benedictia (Benedictia) distinguenda distinguenda* Lindholm, 1924

- Types: ZIN. The type series contains the lectotype and 10 paralectotypes.
- Distribution in the former USSR: The northern Baikal Lake, Maloye More.
- Bionomics: Inhabits sandy and sandy-mud substrates with admixture of detritus. Occurs at depths between 20 and 200 m.

274(304b). *Benedictia (Benedictia) distinguenda lamuana* Sitnikova, 1987

Benedictia distinguenda lamuana Sitnikova, 1987: 1473, fig. 3, 5.

- Type locality: Russia, the Baikal Lake, of the mouth of the Bol'shaya Kotinka river (western coast of the southern Baikal).
- Holotype: ZIN.
- Distribution in the former USSR: The southern Baikal Lake.
- Bionomics: Inhabits sandy and sandy-mud substrates with admixture of detritus. Occurs at depths between 20 and 200 m.

275(305). *Benedictia (Benedictia) kotyensis* Matiokin, Dzuban et Sitnikova, 1988

Benedictia kotyensis Matiokin *et al.*, 1988: 123-134, fig. 6 (1-3).

- Type locality: Russia, the Baikal Lake, at the mouth of Bol'shaya Kotinka River, 20-30 m.
- Types: Holotype is kept in ZIN; paratypes are in ZIN and LIN collections.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: Southern and central parts of the Baikal Lake.
- Subregions: BL.
- Bionomics: Lives on sandy substrates with admixture of mud. Occurs between 20 and 30 m of depth.
- IUCN conservation status: DD (data deficient).

276(306). *Benedictia (Benedictia) limnaeoides* (Schrenck, 1867)

Paludina limnaeoides Schrenck, 1867: 619, pl. 26, figs. 2-6.

- Type locality: Russia, the Amur River

in the Bureinskiy Ridge (the locus typicus stated by the author is wrong; see Sitnikova *et al.*, 2004).

- Global distribution: Endemic to the Baikal Lake.
- Subregions: BL.
- IUCN conservation status: LC (least concern).
- Remark: Three subspecies are recognized within *B. limnaeoides*.

**276(306a). *Benedictia* (*Benedictia*)
limnaeoides limnaeoides
(Schrenck, 1867)**

- Lectotype: ZIN [designated by Sitnikova, 1987].
- Distribution in the former USSR: The southern Baikal Lake.
- Bionomics: Inhabits sandy substrates with admixture of detritus. Occurs at depths between 10 and 120 m.

**276(306b). *Benedictia* (*Benedictia*)
limnaeoides litoralis Kozhov, 1936**

Benedictia limnaeoides var. *litoralis* Kozhov, 1936: 45, pl. 1, figs. 11, 27.

- Type locality: Russia, the northern Baikal Lake, Boguchanskaya Inlet, 9.5 m.
- Lectotype: ZIN [designated by Sitnikova, 1987].
- Distribution in the former USSR: The Baikal Lake: Chivurkuy Bay and Boguchanskaya Inlet [Kozhov, 1936].
- Bionomics: Inhabits sandy and sandy-mud substrates with admixture of detritus. Occurs at depths between 10 and 60 m.

**276(306c). *Benedictia* (*Benedictia*)
limnaeoides ongurensis Kozhov, 1936**

Benedictia limnaeoides var. *ongurensis* Kozhov, 1936: 44, pl. 2, figs. 30-32.

- Type locality: Russia, the Baikal Lake, Olkhonskiye Vorota Strait, 11.5 fathoms.
- Lectotype: ZIN [designated by Sitnikova, 1987].

- Distribution in the former USSR: The northern Baikal Lake and Maloye More.
- Bionomics: Inhabits sandy substrates with admixture of detritus. Occurs at depths between 5 and 120 m.

**277(307). *Benedictia* (*Benedictia*)
nana Beckman et Starobogatov, 1975**

Benedictia (*Baicalocochlea*) *nana* Beckman & Starobogatov, 1975: 101, fig. 3, B.

- Type locality: Russia, the northern Baikal Lake, near Sosnovka settlement, depth 300 m.
- Holotype: ZIN.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: Type locality.
- Subregions: BL.
- Bionomics: Lives on sandy-pebble substrates. Occurs between 300 and 400 m of depth.
- IUCN conservation status: DD (data deficient).

**278(308). *Benedictia* (*Benedictia*)
pulchella Sitnikova, 1987**

Benedictia pulchella Sitnikova, 1987: 1472, fig. 3, 8.

- Type locality: Russia, Irkutsk Region, the Baikal Lake in Kultuk settlement.
- Global distribution: Endemic to the Baikal Lake.
- Subregions: BL.
- IUCN conservation status: Not assessed.
- Remark: There are two subspecies within *B. pulchella*.

**278(308a). *Benedictia* (*Benedictia*)
pulchella pulchella Sitnikova, 1987**

- Types: ZIN. The type series contains the holotype and 20 paratypes (the type series was separated from the syntypes of *Benedictia fragilis*).

- Distribution in the former USSR: The southern Baikal Lake.
- Bionomics: Inhabits sandy and sandy-mud substrates with admixture of detritus. Occurs at depths between 20 and 220 m.

278(308b). *Benedictia (Benedictia) pulchella sarmensis* Sitnikova, 1987

Benedictia pulchella sarmensis Sitnikova, 1987: 1472, fig. 3, 7.

- Type locality: Russia, the Baikal Lake, Maloye More near Sarma settlement.
- Holotype: ZIN.
- Distribution in the former USSR: The northern Baikal Lake.
- Bionomics: Inhabits sandy and muddy substrates with admixture of pebble. Occurs at depths between 20 and 220 m.

Subgenus *Baicalocochlea*
Lindholm, 1927

Type species: *Paludina baicalensis* Gerstfeldt, 1859 (OD)

279(309). *Benedictia (Baicalocochlea) baicalensis* (Gerstfeldt, 1859)

[= *Benedictia lindholmi* Kozhov, 1929]

Paludina baicalensis Gerstfeldt, 1859: 6, fig. 8.

- Type locality: Russia, Irkutsk Region, the Baikal Lake in Kultuk settlement.
- Types: Lectotype and six paralectotypes are in ZIN [Sitnikova, 1987].
- Global distribution: Endemic to the Baikal.
- Distribution in the former USSR: Southern and central parts of the Baikal Lake.
- Subregions: BL.
- Bionomics: Lives on sandy-mud substrates with admixture of detritus. Occurs between 30 and 1300 m of depth (most usually between 80 and 200 m).

- IUCN conservation status: Not assessed.

280(310). *Benedictia (Baicalocochlea) maxima* (W. Dybowski, 1875)

Hydrobia maxima W. Dybowski, 1875: 27, pl. 1, fig. 24.

- Type locality: Russia, Irkutsk Region, the Baikal Lake in Kultuk settlement.
- Global distribution: Endemic to the Baikal Lake.
- Subregions: BL.
- IUCN conservation status: Not assessed.
- Remark: There are two subspecies within *B. maxima*.

280(310a). *Benedictia (Baicalocochlea) maxima maxima* (W. Dybowski, 1875)

- Types: ZIN (lectotype and paralectotype).
- Distribution in the former USSR: The southern and central Baikal Lake.
- Bionomics: Inhabits sandy and mud substrates. Occurs at depths between 40 and 260 m.

280(310b). *Benedictia (Baicalocochlea) maxima marisminus* Sitnikova, 1987

Benedictia maxima marisminus Sitnikova, 1987: 1474, fig. 4, 3.

- Type locality: Maloye More Strait.
- Holotype: ZIN.
- Distribution in the former USSR: The northern Baikal Lake.
- Bionomics: Inhabits sandy and mud substrates. Occurs at depths between 20 and 200 m.

281(311). *Benedictia (Baicalocochlea) pumyla* (Lindholm, 1924)

Kobeltocochlea pumyla Lindholm, 1924a: 17.

- Type locality: Russia, the northern Baikal Lake, Tukalaranga Bay.

- Holotype: ZIN.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The northern Baikal Lake.
- Subregions: BL.
- Bionomics: Lives on sandy-mud substrates with admixture of detritus. Occurs between 30 and 1300 m of depth (most usually between 80 and 200 m).
- IUCN conservation status: Not assessed.

**282(312). *Benedictia*
(*Baicalocochlea*) *shadini*
Beckman et Starobogatov, 1975**

[= *Benedictia maxima* sensu Zhadin, 1952, partim]

Benedictia shadini Beckman & Starobogatov, 1975: 100-101, fig. 35 [B].

- Type locality: Russia, the Baikal Lake, Maloye More.
- Holotype: ZIN.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: Type locality.
- Subregions: BL.
- Bionomics: Lives on sandy-mud substrates. Occurs between 19 and 135 m of depth.
- IUCN conservation status: Not assessed.

**Genus *Kobeltocochlea*
Lindholm, 1909**

Type species: *Hydrobia martensiana* W. Dybowski, 1875 (OD)

**283(313). *Kobeltocochlea*
martensiana (W. Dybowski, 1875)**

Hydrobia martensiana W. Dybowski, 1875: 24, pl. 1, figs. 18-23.

- Type locality: Russia, Irkutsk Region, the Baikal Lake in Kultuk settlement.

- Types: ZIN. The type series includes the lectotype and five paralectotypes.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: Southern and central parts of the Baikal Lake.
- Subregions: BL.
- Bionomics: Lives on rocky substrates with sponges. Occurs between 2 and 40 m of depth.
- IUCN conservation status: Not assessed.

**284(314). *Kobeltocochlea falsipumyla*
Sitnikova, 2000**

Kobeltocochlea falsipumyla Sitnikova, 2000: 105, fig. 1-5.

- Type locality: Russia, the Baikal Lake, the Akademiya Ridge (border between the central and northern Baikal).
- Types: ZIN (the holotype) and LIN (a single paratype).
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The northern Baikal Lake.
- Subregions: BL.
- Bionomics: Lives on sandy substrate with admixture of pebble. Occurs between 150 and 540 m of depth (a single finding at 50 m).
- IUCN conservation status: Not assessed.

**285(315). *Kobeltocochlea*
lindholmiana Sitnikova, 1987**

Kobeltocochlea lindholmiana Sitnikova, 1987: 1471, fig. 2, 3.

- Type locality: Russia, the Baikal Lake, Olkhonskiye Vorota Strait.
- Types: ZIN (the holotype) and LIN (a single paratype).
- Global distribution: Endemic to the Baikal Lake.

- Distribution in the former USSR: The northern Baikal Lake and Maloye More.
- Subregions: BL.
- Bionomics: Lives on sandy substrate with admixture of pebble. Occurs between 150 and 540 m of depth (a single finding at 50 m).
- IUCN conservation status: Not assessed.
- Remark: Sitnikova *et al.* [2004] supposed that this species may be synonymous to *K. olchonensis* Lindholm, 1909.

**286(316). *Kobeltocochlea olchonensis*
Lindholm, 1909**

Kobeltocochlea martensiana var. *olchonensis* Lindholm, 1909: 37.

- Type locality: Russia, the Baikal Lake, Olkhonskiye Vorota Strait.
- Types: ZIN (the lectotype and five paralectotypes).
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The northern and central Baikal Lake.
- Subregions: BL.
- Bionomics: Lives on sandy-mud or, rarely, on sandy-rocky substrates. Occurs between 2 and 40 m of depth.
- IUCN conservation status: Not assessed.

**Genus *Pseudobenedictia*
Sitnikova, 1987**

Type species: *Kobeltocochlea michnoi* Lindholm, 1929 (OD)

**287(317). *Pseudobenedictia michnoi*
(Lindholm, 1929)**

Kobeltocochlea michnoi Lindholm, 1929c: 316, fig. 2.

- Type locality: Stated as Mongolia, Hövsgöl (= Kossogol) Lake. However, this is erroneous since no representatives of the family Benedictidae are

known from Mongolia [Sitnikova *et al.*, 1996, 2004].

- Holotype: ZIN [fide Sitnikova *et al.*, 2004].
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The Baikal Lake, in various localities.
- Subregions: BL.
- Bionomics: Lives on submerged stones at depths from 3 to 30 m.
- IUCN conservation status: Not assessed.

**Genus *Yaroslaviella*
Sitnikova, 2001**

Type species: *Yaroslaviella eximia* Sitnikova, 2001 (OD)

**288(318). *Yaroslaviella eximia*
Sitnikova, 2001**

Yaroslaviella eximia Sitnikova, 2001: 499, figs. 1-3.

- Type locality: Russia, the Baikal Lake, the Akademiya Ridge (border between the central and northern Baikal), 102–157 m.
- Types: ZIN (the holotype), LIN (paralectotypes).
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: Type locality.
- Subregions: BL.
- Bionomics: Lives on sandy-pebble substrated at depths between 100 and 260 m.
- IUCN conservation status: Not assessed.

**Family Pomatiopsidae
Stimpson, 1865**

(Pomatiopsinae Stimpson, 1865: 4)

Type genus: *Pomatiopsis* Tryon, 1862

This family, with about 170 extant species [Strong *et al.*, 2008], is widely

distributed in South-East Asia, south of North America, South Africa, South America, and Australia [Starobogatov, 1970; Davis, 1979]. A single genus, *Sibirobithynella* Johansen et Starobogatov, 1982, occurs in south Siberia and Central Asia. Davis [1979] proposed to distinguish two subfamilies of Pomatiopsidae: Pomatiopsinae and Triculinae Annandale, 1924. This opinion has been accepted by Bouchet & Rocroi [2005], though some authors [Johansen & Starobogatov, 1982; Starobogatov & Sitnikova, 1983] regarded Triculidae as a family of its own.

Subfamily Triculinae Annandale, 1924

[= Delevayidae Annandale, 1924]

(Triculinae Annandale, 1924: 276)

Type genus: *Tricula* Benson, 1843

Remark: The only genus of the RAC malacofauna ever classified within Triculinae is *Sibirobythinella* [Johansen & Starobogatov, 1982]. This classification was regarded by the authors themselves as 'provisional'. Later on, the genus was ('provisionally' again) transferred to the family Belgrandiellidae Radoman, 1983 [Izzatullaev *et al.*, 1985; Starobogatov *et al.*, 2004]. Kantor & Sysoev [2005], however, returned to the opinion of Johansen & Starobogatov [1982]. Surely, the taxonomic position of this genus should be clarified in future. Here we accept the original placement of *Sibirobythinella* to the Triculinae.

Genus *Sibirobythinella* Johansen et Starobogatov, 1982

Type species: *Sibirobythinella kuznetziana* Johansen et Starobogatov, 1982 (OD)

289(319). *Sibirobythinella* *kuznetziana* Johansen et Starobogatov, 1982

Sibirobythinella kuznetziana Johansen & Starobogatov, 1982: 1142-1144, fig. a, b.

- Type locality: Russia, Kemerovo Region, the Kuznetzk Alatau Mountains, "lime-tree island", stream on the right bank of the Tom' River 2.5 km downstream from Kazyr, station 95, samples 163-165.
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and 430 paratypes. Also, several hundreds of paratypes are kept in the collection of the Tomsk State University.
- Global distribution: Endemic to the Western Siberia.
- Distribution in the former USSR: Type locality.
- Subregions: WS.
- Bionomics: Lives in springs.
- IUCN conservation status: Not assessed.

290(320). *Sibirobythinella almaatina* Izzatullaev, Sitnikova et Starobogatov, 1985

Sibirobythinella almaatina Izzatullaev *et al.*, 1985: 56-57, fig. 3, 2.

- Type locality: Kazakhstan, Alma-Ata Region, the Zailiyskiy Alatau Ridge, Belbulak spring and vicinities of Talgar.
- Type series: ZIN. The type series includes the holotype and five paratypes.
- Global distribution: Endemic to Central Asia.
- Distribution in the former USSR: The southern Kazakhstan.
- Subregions: CA.
- Bionomics: Lives in springs.
- IUCN conservation status: Not assessed.

Subclass Heterobranchia Burmeister, 1837

Family Valvatidae Gray, 1840

(Valvatidae Gray, 1840a: 79)

Type genus: *Valvata* O.F. Müller, 1774

The family Valvatidae embraces about 70 species of minute branchiate snails distributed nearly exclusively in the northern hemisphere, both in Eurasia and North America [Starobogatov, 1970; Strong *et al.*, 2008; Haszprunar, 2014]. This relatively small group has created many difficulties for the taxonomists, and currently we have two drastically different systems proposed for European valvatids snails (summarized in Table 12). In addition, a body of nomenclatorial problems concerning Valvatidae has been accumulated in the literature. Some of these problems highlighted by Haszprunar [2014] bear relation to valvatid snails of the RAC area. The working system of the family used here is of quite preliminary and compromise character and serves rather to organize information than for making sound scientific inferences. We have taken into account the results of Clewing *et al.* [2014] based on genetic studies of Palearctic and Nearctic species and subgenera of Valvatidae. The future molecular studies will, surely, help to resolve the phylogenetic affinities and taxonomic relationships of the genus and subgenus level taxa of Valvatidae. The most informative works on taxonomy, morphology and nomenclature of the Valvatidae are: Sitnikova [1983, 1994], Chernogorenko & Starobogatov [1987], Rath [1988], Falniowski [1989], Bogatov & Zatravkin [1990], Anistratenko & Anistratenko [2001], Glöer [2002a], Anistratenko *et al.* [2010], Haszprunar [2014].

Subfamily Valvatinae Gray, 1840

Genus *Valvata* O.F. Müller, 1774

[= *Valvearius* Duméril, 1805; *Gyrorbis* Fitzinger, 1833, non Moquin-Tandon, 1855; *Planella* Schlüter, 1838; *Piscinaliana* Paladilhe, 1866, non Bourguignat, 1881 (Bivalvia); *Planorbiana* Paladilhe, 1866; *Planorbitina* De Bitti, 1870; *Valvatinella* De Bitti, 1870; *Cristatiana* Servain, 1888; *Microcincinna* Sitnikova et Starobogatov, 1983; *Alienella* Starobogatov et Zatravkin, 1985]

Type species: *Valvata cristata* O.F. Müller, 1774 (M)

Subgenus *Valvata* s.str.

291(321). *Valvata* (*Valvata*) *cristata* O.F. Müller, 1774

[= *Nerita valvata* Gmelin, 1791; *Valvata planorbis* Draparnaud, 1801; *Valvata branchiata* Gruithuisen, 1821; *Valvata minuta* Mörch, 1864, non Draparnaud, 1805; *Valvata chorystogyra* Hagenmüller, 1884; *Valvata intermedia* Locard, 1889]

Valvata cristata O.F. Müller, 1774: 198-199.

- Type locality: Denmark, in swamps (“in paludosis”).
- Types: Apparently lost. We failed to find the type materials in ZMUC [Nekhaev *et al.*, 2015].
- Global distribution: North-western Palearctic.
- Distribution in the former USSR: The European part of RAC, southern part of the Western Siberia [Anistratenko & Anistratenko, 2001; Starobogatov *et al.*, 2004; Vinarski *et al.*, 2007].
- Subregions: NE, SE, WS.
- Bionomics: Lives in small waterbodies enriched by vegetation [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

Table 12. Taxonomy of European valvatid snails according to the Western European [Falkner *et al.*, 2001; Glöer, 2002a] and Russian [Starobogatov *et al.*, 2004] systems

Falkner <i>et al.</i> [2001]; Glöer [2002a]			Starobogatov <i>et al.</i> [2004]							
Genus	Subgenus	Species	Genus	Subgenus	Species					
<i>Valvata</i> O.F. Müller, 1774	<i>Valvata</i> s. str.	<i>V. cristata</i> O.F. Müller, 1774	<i>Valvata</i>	<i>Valvata</i> s.str.	<i>V. cristata</i> s. str. <i>V. planorbulina</i> Paladilhe, 1867 <i>V. spirorbis</i> Draparnaud, 1801					
	<i>Cincinna</i> Hübner, 1810	<i>V. piscinalis</i> <i>geyeri</i> Menzel, 1904		<i>Microcincinna</i> Starobogatov in Sitnikova, 1983	<i>V. andreaei</i> Menzel, 1904* <i>V. elatior</i> Menzel, 1904 <i>V. geyeri</i> <i>V. lietuvienis</i> Chernogorenko et Starobogatov, 1987 <i>V. nana</i> Westerlund, 1873 <i>V. pusilla</i> (O.F. Müller, 1774) <i>V. trochoidea</i> Menke, 1845 <i>V. vystitiensis</i> Chernogorenko et Starobogatov, 1987					
			<i>V. piscinalis</i> <i>piscinalis</i> (O.F. Müller, 1774)			<i>Cincinna</i> s. str.	<i>C. ambigua</i> (Westerlund, 1873) <i>C. chersonica</i> Chernogorenko et Starobogatov, 1987 <i>C. dilatata</i> (Eichwald, 1830) <i>C. falsifluviatilis</i> Starobogatov in Anistratenko & Anistratenko, 2001 <i>C. liljeborgi</i> (Westerlund, 1897) <i>C. obtusa</i> (Draparnaud, 1801) <i>C. piscinalis</i> <i>C. skorikovi</i> Lindholm, 1912			
		<i>V. piscinalis</i> <i>antiqua</i> (Morris, 1838)						<i>C. antiqua</i> <i>C. contorta</i> (O.F. Müller, 1774)		
									<i>V. piscinalis</i> <i>alpestris</i> (Küster, 1853)	no correspondence
		<i>V. piscinalis</i> <i>discors</i> (Westerlund, 1886)	<i>Atropidina</i> Lindholm, 1906			<i>C. depressa</i> (C. Pfeiffer, 1828) <i>C. discors</i> <i>C. kliniensis</i> (Milaschewitsch, 1881) <i>C. macrostoma</i> <i>C. pulchella</i> (Studer, 1820)				
	<i>Tropidina</i> H. et A. Adams, 1854	<i>V. macrostoma</i> Mörch, 1864		<i>Sibirovalvata</i> Starobogatov et Streletzkaia, 1967	<i>C. frigida</i> (Westerlund, 1873)					
		<i>V. sibirica</i> Middendorff, 1851								

* Starobogatov *et al.* [2004] and Kantor & Sysoev [2005] use incorrect spelling *V. andreana*.

**291(322). *Valvata (Valvata) planorbulina*
Paladilhe, 1867**

Valvata planorbulina Paladilhe, 1867: 50, pl. 21, figs. 23-26.

- Type locality: France, Herault Department, deposits of the Lez River.
- Types: Not traced.
- Global distribution: Europe.

- Distribution in the former USSR: Basin of the Baltic Sea, the central part of the Dnieper basin [Anistratenko & Anistratenko, 2001; Starobogatov *et al.*, 2004].
- Subregions: NE, SE.
- Bionomics: Lives in rivers and reservoirs, on macrophytes [Anistratenko & Anistratenko, 2001].
- IUCN conservation status: Not assessed.
- Remark: According to the Western European authors [Falniowski, 1989; Falkner *et al.*, 2001; Glöer 2002a], all species of planispiral *Valvata* with smooth (not ribbed) shell, including *V. planorbulina*, should be synonymized with *V. cristata*.

**291(323). *Valvata (Valvata) spirorbis*
Draparnaud, 1805**

Valvata spirorbis Draparnaud, 1805: 41, pl. I, fig. 32, 33.

- Type locality: Not stated (France – from the title of Draparnaud's work).
- Types: NHMV, No. 14717 in systematic catalogue. There is a single shell (syntype) in the NHMV collection.
- Global distribution: Europe.
- Distribution in the former USSR: The European part of RAC [Anistratenko & Anistratenko, 2001; Starobogatov *et al.*, 2004]. Alleged distribution of this species in the Western Siberia [Starobogatov *et al.*, 2004] has not been corroborated by subsequent studies [Vinarski *et al.*, 2007].
- Subregions: NE, SE.
- Bionomics: Lives in rivers and reservoirs, on macrophytes [Anistratenko & Anistratenko, 2001].
- IUCN conservation status: Not assessed.
- Remark: According to the Western European authors [Falniowski, 1989; Falkner *et al.*, 2001; Glöer 2002a], all species of planispiral *Valvata* with smooth (not ribbed) shell, including *V. spirorbis*, should be synonymized with *V. cristata*.

**292(324). *Valvata (Valvata) trochoidea*
Menke, 1845**

Valvata contorta var. *trochoidea* Menke, 1845: 116.

- Type locality: Not stated in the original description.
- Types: Not traced. Menke's collection was dispersed after his death [Dance, 1986].
- Global distribution: Northwestern Palearctic.
- Distribution in the former USSR: The European part of RAC, except extreme north and south, south of the Western Siberia [Anistratenko & Anistratenko, 2001; Starobogatov *et al.*, 2004; Vinarski *et al.*, 2007].
- Subregions: NE, SE, WS.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: *Valvata trochoidea* is the oldest nominal taxon in a group of minute *Valvata* (*Valvata* s. str.) with turbospiral shells, which is classified by the Russian authors as the subgenus *Microcincinna* with *V. geyeri* as its type species [Sitnikova, 1983; Anistratenko & Anistratenko, 2001]. The species of *Microcincinna* other than *V. trochoidea* are listed below. The Western European malacologists usually interpret these snails as dwarf forms of *V. piscinalis* [Steusloff, 1922; Geyer, 1927] or as a subspecies of the latter, *V. piscinalis geyeri* Menzel, 1904 [Glöer, 2002a]. The true identity of these small valvatids should be resolved in future.

**292(325). *Valvata (Valvata) andreaei*
Menzel, 1904**

Valvata (Cincinna) andreana (lapsus calami) Menzel, 1904a: 77, textfig.

- Type locality: Germany, diluvial (interglacial) freshwater sediments of Wallensen south of Hannover and in older alluvial calcareous tuff of Alfeld and / Leine, Niedersachsen [fide Haszprunar, 2014].
- Types: Not traced, possibly in SMF.

- Global distribution: Northeastern Europe and the Western Siberia.
- Distribution in the former USSR: The Baltic Sea basin, the Zapadnyi Bug basin, south of the Western Siberia [Anistratenko & Anistratenko, 2001; Starobogatov *et al.*, 2004; Vinarski *et al.*, 2007].
- Subregions: NE, SE, WS.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: DD (data deficient).
- Remark: The species was named after German naturalist A. Andreae and therefore the spelling of species epithet *andreae* is obviously lapsus calami. Menzel corrected himself the spelling in the same issue of *Nachrichtsblatt der Deutschen Malakozoologischen Gesellschaft* [Menzel, 1904b: 96]. Nevertheless, in the Russian literature the species epithet is traditionally spelled incorrectly, including most recent catalogues [Anistratenko & Anistratenko, 2001; Starobogatov *et al.*, 2004; Kantor & Sysoev, 2005].

**292(326). *Valvata (Valvata) geyeri*
Menzel, 1904**

Valvata (Cincinna) geyeri Menzel, 1904a: 78-79, textfig.

- Type locality: Germany, (Weisensee) near Füssen in Bavaria [fide Haszprunar, 2014].
- Types: SMF 140672/7 [see Boeters & Falkner, 1998, pl. 8, fig. 11-12].
- Global distribution: Northeastern Europe and the Western Siberia.
- Distribution in the former USSR: The Baltic Sea basin, the middle Dnieper basin, south of the Western Siberia [Anistratenko & Anistratenko, 2001; Starobogatov *et al.*, 2004; Vinarski *et al.*, 2007].
- Subregions: NE, SE, WS.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: This species was described as subfossil. It has been regarded either as dwarf form (Zwergform) of *V. piscinalis* [Geyer, 1927] or as an extant subspecies of the latter [Glöer, 2002a].

**292(327). *Valvata (Valvata) latior*
Menzel, 1904**

[= *Valvata elatior* auct., erroneous spelling]

Valvata (Cincinna) andreae var. *latior* Menzel, 1904a: 78-79, textfig.

- Type locality: Germany, Wallensen near Salzhemmendorf, Kreis Hameln, Niedersachsen and Alfeld / Leine, Niedersachsen [fide Haszprunar, 2014].
- Types: Not traced.
- Global distribution: Northeastern Europe.
- Distribution in the former USSR: The Baltic Sea basin [Starobogatov *et al.*, 2004].
- Subregions: NE.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: The name of this species has been erroneously cited in the Russian literature as *Valvata elatior* [see, for instance, Anistratenko & Anistratenko, 2001; Starobogatov *et al.*, 2004].

**292(328). *Valvata (Valvata) lietuvienensis*
Chernogorenko et Starobogatov, 1987**

Valvata lietuvienensis Chernogorenko & Starobogatov, 1987b: 149.

- Type locality: The Vyshtitis Lake, at the border of Kaliningrad Region of Russia and Lithuania (appr. 54°25'40"N; 22°43'30"E).
- Types: ZIN, Nos. 1-3 in systematic catalogue. The type series includes the holotype and 10 paratypes.
- Global distribution: Northeastern Europe.
- Distribution in the former USSR: Type locality [Starobogatov *et al.*, 2004].
- Subregions: NE.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

**292(329). *Valvata (Valvata) nana*
Westerlund, 1886 sensu Chernogorenko
et Starobogatov, 1987**

Valvata nana "Westerlund, 1886" Chernogorenko & Starobogatov, 1987: 148.

- Type locality: Denmark, Zealand Island.
- Types: Two syntypes shells are extant -

one in NMG (No. 4679) and another in SMNH (No. 14: 96) [Vinarski *et al.*, 2013b].

- Global distribution: Northeastern Europe.
- Distribution in the former USSR: The Baltic Sea basin [Starobogatov *et al.*, 2004].
- Subregions: NE.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Having examined the type material of *Valvata nana*, Vinarski *et al.* [2013b] concluded that conchological characteristics of the syntypes do not correspond to the diagnosis of the subgenus *Microcincinna*, and, most probably, *V. nana* sensu Chernogorenko et Starobogatov, 1987 is not conspecific with *V. nana* sensu Westerlund, 1886. Moreover, as Haszprunar [2014] mentioned, the latter name is a junior homonym of *Valvata nana* Meek, 1873, a fossil species described from Cretaceous deposits of Utah, USA.

**292(330). *Valvata (Valvata) pusilla*
(O.F. Müller, 1774)**

Nerita pusilla O.F. Müller, 1774: 171.

- Type locality: Germany, Brandenburg, Ruppiner See [fide Haszprunar, 2014].
- Types: Apparently lost. We failed to find the type materials in ZMUC [Nekhaev *et al.*, 2015].
- Global distribution: Northeastern Europe.
- Distribution in the former USSR: The Baltic Sea basin, the Zapadniy Bug River basin [Anistratenko & Anistratenko, 2001; Starobogatov *et al.*, 2004].
- Subregions: NE, SE.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Geyer [1927] regarded *V. pusilla* as an ecophenotypic (riverine) race of *V. piscinalis*. It is very difficult to ascertain the true identity of the Müller's species due to loss of its types.

**292(331). *Valvata (Valvata) vystitiensis*
Chernogorenko et Starobogatov, 1987**

Valvata vystitiensis Chernogorenko & Starobogatov, 1987b: 148.

- Type locality: The Vyshtitis Lake, at the border of Kaliningrad Region of Russia and Lithuania (approximately 54°25'40"N; 22°43'30"E).
- Types: ZIN, Nos. 1-3 in systematic catalogue. The type series includes the holotype and two paratypes.
- Global distribution: Northeastern Europe.
- Distribution in the former USSR: Type locality [Starobogatov *et al.*, 2004].
- Subregions: NE.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

**Subgenus *Atropidina*
Lindholm, 1906**

[= *Tropidina* H. et A. Adams, 1854, partim]

Type species: *Valvata pulchella* Studer, 1789 (or Studer, 1820)

Remark: The determination of the type species of *Atropidina* is difficult since the name *Valvata pulchella* Studer has been used in two different meanings. According to Boeters & Falkner [1998], *V. pulchella* mentioned in the earlier Studer's work [Studer, 1789] is not identical with the species listed under this name in the subsequent paper [Studer, 1820]. It was stated that *V. pulchella* Studer, 1789 is a junior synonym of *V. piscinalis*, whereas *V. pulchella* Studer, 1820 has been redescribed under the name *V. studeri* Boeters & Falkner, 1998 [see discussion in Haszprunar, 2014]. Lindholm [1906] did not specify which usage of the name he followed. Kennard & Woodward [1926] attributed the two Studer's names to synonyms of *Valvata macrostoma* Mörch, 1864.

**293(331). *Valvata (Atropidina)*
macrostoma Mörch, 1864**

[= *Valvata umbilicata* Fitzinger, 1833, nomen nudum; *Valvata macrostoma* Steenbuch in Beck,

1847, nomen nudum; *Valvata umbilicata* Servain, 1881]

Valvata macrostoma Mörch, 1864: 59.

- Type locality: Denmark, in various localities (“Talrig i en Mosegrøft paa sognefogdens Lod i Rudi (Stb.); Sorösø (Stp.); Viborgsø (Fedd.)”).
- Types: Not identified. According to Dance [1986], Mörch’s collection is dispersed between ZMUC and BMNH.
- Global distribution: Northwestern Palearctic.
- Distribution in the former USSR: The European part of RAC [Anistratenko & Anistratenko, 2001; Starobogatov *et al.*, 2004]. This species was mentioned for the Irtysh basin by Chernogorenko & Starobogatov [1987b] under the name *V. umbilicata*, but subsequent studies did not corroborate its presence in the Western Siberia [Vinarski *et al.*, 2007].
- Subregions: NE, SE.
- Bionomics: Lives in temporary waterbodies [Anistratenko & Anistratenko, 2001; Starobogatov *et al.*, 2004]. According to Glöer [2002a], in Europe it occurs also in large lakes and rivers.
- IUCN conservation status: LC (least concern).
- Remark: The authorship of the taxonomic name *V. macrostoma* is often attributed to Steenbuch [Geyer, 1927; Ehrmann, 1933; Anistratenko & Anistratenko, 2001], however it contradicts the ICZN rules and the proper author of this taxon is Mörch [see Haszprunar, 2014 for discussion].

292(332). *Valvata (Atropidina) depressa* C. Pfeiffer, 1821

[= *Valvata borealis* Milachevitch, 1881]

Valvata depressa C. Pfeiffer, 1821: 100, pl. 4, fig. 33.

- Type locality: Germany, „in einem schlammigen Wassergraben, unweit Hanau, bey

dem Dorfe Enkheim“ (= in a muddy ditch not far from Hanau, at the village Enkheim – today a part of Bergen-Enkheim in Frankfurt/Main) [fide Haszprunar, 2014].

- Types: Not traced. Pfeiffer’s collection was dispersed after his death [Dance, 1986].
- Global distribution: North-western Palearctic.
- Distribution in the former USSR: The European part of RAC and south of the Western Siberia (the Irtysh basin) [Anistratenko & Anistratenko, 2001; Starobogatov *et al.*, 2004; Vinarski *et al.*, 2007].
- Subregions: NE, SE, WS.
- Bionomics: Lives in rivers, lakes, large ponds and reservoirs [Anistratenko & Anistratenko, 2001].
- IUCN conservation status: Not assessed.
- Remark: The usage of the taxonomic name *Valvata depressa* is ambiguous. Chernogorenko & Starobogatov [1987b] placed it into the subgenus *Atropidina* as a species related to *V. macrostoma* and *V. pulchella*, whereas the European authors did not accept this species as a valid one [Falkner *et al.*, 2001; Glöer, 2002a; Welter-Schultes, 2012]. Sometimes it was considered as a dwarf form of *V. piscinalis* [Geyer, 1927].

292(332). *Valvata (Atropidina) pulchella* Studer, 1820 sensu Chernogorenko et Starobogatov, 1987

Valvata pulchella Studer, 1820: 23, non Studer, 1789.

- Type locality: Switzerland, “Umgebung des Bielersee’s in Wassergräben”.
- Lectotype: NMBE [designated by Forcart, 1957]. Haszprunar [2014: 88] noted that this designation is invalid since “an unavailable name has no types at all”.
- Global distribution: Northwestern Palearctic.
- Distribution in the former USSR: The European part of RAC and the Western Siberia [Anistratenko & Anistratenko, 2001; Starobogatov *et al.*, 2004; Vinarski *et al.*, 2007].
- Subregions: NE, SE, WS.
- Bionomics: Lives in temporary habitats [Anistratenko & Anistratenko, 2001].

- IUCN conservation status: Not assessed.
- Remark: The taxonomic name *V. pulchella* Studer, 1820 is not used in the current European literature. According to Boeters & Falkner [1998], this species was not identical with *V. pulchella* Studer, 1789 and hence it was re-described under the name *V. studeri* Boeters & Falkner, 1998. *V. studeri* is believed to have a rather narrow range (lives in the Alps only) [Welter-Schultes, 2012] and hardly may be conspecific with any valvatinid snail occurring in the RAC area.

294(335). *Valvata (Atropidina) discors* Westerlund, 1886

Valvata discors Westerlund, 1886: 133.

- Type locality: “Schweden in See Ringsjön, eine forma major in Pite Lappmark bei Jörn” [Westerlund, 1886: 133]. Several Swedish lakes share the same name Ringsjön, but in this case the lake is definitely Lake Ringsjön in the province Skåne (Scania) in the southernmost part of the country [see Vinarski *et al.*, 2013b].
- Syntypes: Two syntypes in NMG (No. 4649) and other two in SMNH (No. 14: 78).
- Global distribution: North-western Palearctic.
- Distribution in the former USSR: The European part of RAC, south of the Western Siberia [Anistratenko & Anistratenko, 2001; Starobogatov *et al.*, 2004; Vinarski *et al.*, 2007].
- Subregions: NE, SE, WS.
- Bionomics: Lives in lakes and rivers [Anistratenko & Anistratenko, 2001].
- IUCN conservation status: Not assessed.
- Remark: Validity of this taxon was supported both by Western European [Glöer, 2002a] and Russian [Chernogorenko & Starobogatov, 1987b; Starobogatov *et al.*, 2004] researchers, but its taxonomic rank is disputed. Glöer [2002a] accepted it as a subspecies of *V.*

piscinalis, whereas the Russian authors considered it as a separate species not related to the latter. Finally Glöer & Zettler [2005] discussed whether this taxon is a true subspecies or only a reaction form.

294(336). *Valvata (Atropidina) kliniensis* Milaschewitsch, 1881

Valvata fluviatilis var. *kliniensis* Milaschewitsch, 1881: 236.

- Type locality: Russia, Moscow Region, Klin District, Muzhevo (= “Moujevo”) village (approximately 56°27′14″N; 36°50′54″E).
- Syntypes: 46 syntypes are in ZIN, No. 1 in systematic catalogue.
- Global distribution: North-western Palearctic.
- Distribution in the former USSR: The European part of RAC and south of the Western Siberia [Anistratenko & Anistratenko, 2001; Starobogatov *et al.*, 2004; Vinarski *et al.*, 2007].
- Subregions: NE, SE, WS.
- Bionomics: Lives in lakes and large ponds, sometimes in rivers [Anistratenko & Anistratenko, 2001].
- IUCN conservation status: Not assessed.
- Remark: Conchologically, this species is very similar to *V. discors* [compare, for example, figs. 118 and 121 in Anistratenko & Anistratenko, 2001] and may well be conspecific with the latter. In this case, however, the Milaschewitsch’s name has a nomenclatorial priority over the Westerlund’s.

Subgenus *Cincinna* Mörch, 1864

Type species: not specified. Mörch [1864: 59-60] included *Valvata piscinalis*, *V. pusilla* O.F. Müller, 1774 and *V. antiqua* Morris, 1838 to the subgenus *Cincinna*. Most authors regarded *V. piscinalis* as the type species of *Cincinna*.

Remark: In most publications, the authorship of the (sub-)genus *Cincinna* was ascribed to Hübner and referred to as

Hübner, 1810 [see, for example, Lindholm, 1906; Geyer, 1927; Anistratenko & Anistratenko, 2001; Glöer, 2002a]. Recently, Haszprunar [2014: 5-6] strongly argued for Mörch [1864] as the true author of this taxon (in the nomenclatorial sense). In this case, however, the subgeneric name *Tropidina* has a formal priority before *Cincinna*.

295(337). *Valvata (Cincinna) piscinalis* O.F. Müller, 1774

[= *Helix fascicularis* Gmelin, 1791; *Turbo fontinalis* Pulteney, 1799; *Turbo thermalis* Dillwyn, 1817; *Valvata moquiniana* Dupuy, 1851; *Valvata lacustris* Clessin, 1877; *Valvata gallica* Locard, 1889; *Valvata meretricis* Locard, 1889; *Valvata piscinalis* var. *ladogensis* Lindholm, 1912, partim]

Valvata piscinalis O.F. Müller, 1774: 172.

- Type locality: “In piscina horti Fridrichsdalenjis frequens” [frequent in fish ponds of Fridrichsdal], Fridrichsdal, nowadays a suburb of Copenhagen, Denmark.
- Types: Apparently lost. We failed to find the type materials in ZMUC.
- Global distribution: Europe and Siberia.
- Distribution in the former USSR: The European part of RAC, the Western Siberia [Anistratenko & Anistratenko, 2001; Starobogatov *et al.*, 2004; Vinarski *et al.*, 2007], Armenia [Akramowski, 1976].
- Subregions: NE, SE, WS, CT.
- Bionomics: Lives in lakes and rivers [Anistratenko & Anistratenko, 2001].
- IUCN conservation status: LC (least concern).

295(338). *Valvata (Cincinna) dilatata* (Eichwald, 1830)

[= *Valvata piscinalis* var. *ladogensis* Lindholm, 1912, partim]

Paludina dilatata Eichwald, 1830: 219.

- Type locality: Byelorussia, Quaternary deposits near Grodno City.
- Lectotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: North-western Palearctic.
- Distribution in the former USSR: The European part of RAC and the Western Siberia (except its northern part) [Anistratenko & Anistratenko, 2001; Starobogatov *et al.*, 2004; Vinarski *et al.*, 2007].
- Subregions: NE, SE, WS.
- Bionomics: Lives in lakes and rivers [Anistratenko & Anistratenko, 2001].
- IUCN conservation status: Not assessed.
- Remark: The Western European malacologists did not accept validity of this species and it is not included into the lists of European malacofauna [Falkner *et al.*, 2001; Welter-Schultes, 2012].

295(339). *Valvata (Cincinna) falsifluviatilis* (Starobogatov in Anistratenko et Anistratenko, 2001)

Cincinna (Cincinna) falsifluviatilis Anistratenko et Anistratenko, 2001: 139-140. fig. 110 (nom. nov. for *Valvata fluviatilis* sensu Westerlund, 1886, non Colbeau, 1868)

- Type locality: “Belgien, England, Deutschland, Russland” (localities listed by Westerlund [1886: 134] for *V. fluviatilis*).
- Lectotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: North-western Palearctic.
- Distribution in the former USSR: The European part of RAC and the Western Siberia (except its northern part) [Anistratenko & Anistratenko, 2001; Starobogatov *et al.*, 2004; Vinarski *et al.*, 2007].
- Subregions: NE, SE, WS.
- Bionomics: Lives in rivers [Anistratenko & Anistratenko, 2001].
- IUCN conservation status: Not assessed.
- Remark: According to Haszprunar [2014: 41], the taxonomic name *Cincinna falsifluviatilis* Starobogatov in Anistratenko & Anistratenko, 2001 “is a nomen nudum and not available”.

**295(340). *Valvata (Cincinna) lilljeborgi*
Westerlund, 1897**

Valvata lilljeborgi Westerlund, 1897a: 137.

- Type locality: Sweden, in stream Fyrisån at Uppsala City.
- Types: ZIN, No. 1 in systematic catalogue (two syntypes) and NMG, No. 4654 (five syntypes).
- Global distribution: North-western Palearctic.
- Distribution in the former USSR: The European part of RAC and south of the Western Siberia [Anistratenko & Anistratenko, 2001; Starobogatov *et al.*, 2004; Vinarski *et al.*, 2007].
- Subregions: NE, SE, WS.
- Bionomics: Lives in rivers, ponds, reservoirs and lakes [Anistratenko & Anistratenko, 2001].
- IUCN conservation status: Not assessed.
- Remark: Western European malacologists did not accept validity of this species and it is not included into the lists of European malacofauna [Falkner *et al.*, 2001; Welter-Schultes, 2012].

**295(341). *Valvata (Cincinna) obtusa*
(Draparnaud, 1801)**

Cyclostoma obtusum Draparnaud, 1801: 30-40.

- Type locality: Northern France.
- Types: NHMV, No. 14704 in systematic catalogue. The type series includes 10 shells of syntypes, most of them juvenile or subadults.
- Global distribution: North-western Palearctic.
- Distribution in the former USSR: The European part of RAC and south of the Western Siberia [Anistratenko & Anistratenko, 2001; Starobogatov *et al.*, 2004; Vinarski *et al.*, 2007].
- Subregions: NE, SE, WS.
- Bionomics: Lives in rivers [Anistratenko & Anistratenko, 2001].
- IUCN conservation status: Not assessed.
- Remark: Western European malacologists did not accept validity of this species and it is not included into the lists of European mala-

cofauna [Falkner *et al.*, 2001; Welter-Schultes, 2012].

**295(342). *Valvata (Cincinna) skorikovi*
Lindholm, 1911**

[= *Valvata danubiana* Put' et Polyszczuk, 1969]

Valvata (Cincinna) skorikovi Lindholm, 1911: 299-300.

- Type locality: Russia, Leningrad Region, Neva Bay near Kronstadt Town (approximately 60°00'N; 30°00'E).
- Syntype: ZIN, No. 1 in systematic catalogue.
- Global distribution: North-western Palearctic.
- Distribution in the former USSR: The European part of RAC and the Western Siberia (except its north part) [Anistratenko & Anistratenko, 2001; Starobogatov *et al.*, 2004; Vinarski *et al.*, 2007].
- Subregions: NE, SE, WS.
- Bionomics: Lives in rivers and lakes [Anistratenko & Anistratenko, 2001].
- IUCN conservation status: Not assessed.
- Remark: Western European malacologists did not accept validity of this species and it is not included into the lists of European malacofauna [Falkner *et al.*, 2001; Welter-Schultes, 2012].

**296(343). *Valvata (Cincinna) ambigua*
Westerlund, 1873**

Valvata ambigua Westerlund, 1873: 439.

- Type locality: Sweden near Gothenburg City.
- Types: Westerlund [1873: 439] stated that he based this taxon on a sample collected by Malm in Gothenburg. It is housed now in ZMB. Initially, this sample contained three shells, but now it includes only two (one of these two is completely broken) [Vinarski *et al.*, 2013a]. However, there are more samples of *V. ambigua* collected in Gothenburg, in the original Westerlund's collection. Probably, these specimens should

be included in the type series as syntypes. These samples are as follows: ZIN (No. 1 in systematic catalogue; three specimens). SMNH (No. 14:79, five specimens) [see also Vinarski *et al.*, 2013a, b].

- Global distribution: North-western Palearctic.

- Distribution in the former USSR: The European part of RAC, south of the Western Siberia [Anistratenko & Anistratenko, 2001; Starobogatov *et al.*, 2004; Vinarski *et al.*, 2007, 2013a].

- Subregions: NE, SE, WS.

- Bionomics: Lives in lakes, reservoirs and cooling ponds [Anistratenko & Anistratenko, 2001].

- IUCN conservation status: Not assessed.

- Remark: Validity of this taxon has not been accepted by the Western European researchers [Falkner *et al.*, 2001; Glöer, 2002a; Welter-Schultes, 2012], but recently some arguments for its specific independence from *V. piscinalis* were presented [Glöer & Diercking, 2010; Vinarski *et al.*, 2013a].

296(344). *Valvata (Cincinna) chersonica* (Chernogorenko et Starobogatov, 1987)

Cincinna chersonica Chernogorenko & Starobogatov, 1987b: 150.

- Type locality: Ukraine, mouth of the Dnieper River.

- Types: It was stated that the holotype is kept in ZIN, under No. 1 in systematic catalogue [Kantor *et al.*, 2010], however, in fact, a single paratype shell, collected in north-western Kazakhstan, is placed in the ZIN collection under this number. The current location of the holotype is unknown for us.

- Global distribution: Northwestern Palearctic.

- Distribution in the former USSR: Southern parts of Eastern Europe and the Western Siberia [Anistratenko & Anistratenko, 2001; Vinarski *et al.*, 2007].

- Subregions: SE, WS.

- Bionomics: Lives in rivers and lakes [Anistratenko & Anistratenko, 2001].

- IUCN conservation status: Not assessed.

- Remark: Western European malacologists did not accept validity of this species and it is not included into the lists of European malacofauna [Falkner *et al.*, 2001; Welter-Schultes, 2012]. From the conchological point of view, *V. chersonica* is similar to *V. ambigua* and, probably, is a synonym of the latter.

297(345). *Valvata (Cincinna) antiqua* Morris, 1838

Valvata antiqua Morris, 1838: 544.

- Type locality: England, alluvial deposits near Grays in the Thames valley.

- Types: Not traced.

- Global distribution: Europe and Siberia.

- Distribution in the former USSR: The European part of RAC, south of the Western Siberia [Anistratenko & Anistratenko, 2001; Starobogatov *et al.*, 2004; Vinarski *et al.*, 2007].

- Subregions: NE, SE, WS.

- Bionomics: Lives in lakes, reservoirs and cooling ponds [Anistratenko & Anistratenko, 2001].

- IUCN conservation status: Not assessed.

- Remark: Validity of this taxon was accepted both by Western European [Glöer, 2002a] and Russian [Chernogorenko & Starobogatov, 1987b; Starobogatov *et al.*, 2004] researchers, but its taxonomic rank was disputed. Glöer [2002a] treated it as a subspecies of *V. piscinalis*, whereas the Russian authors consider it a separate species.

297(346). *Valvata (Cincinna) antiquilina* Mozley, 1934

Valvata antiquilina Mozley, 1934: 1, pl. 1, fig. 4.

- Type locality: Russia, Altay Region, the

Burla Lake system, the Khomutinoye Lake (approximately 53°26'35"N; 78°41'37"E).

- Syntypes: USNM, No. 469212.
- Global distribution: Probable endemic to the Western Siberia.
- Distribution in the former USSR: Southern part of the Western Siberia [Vinarski *et al.*, 2007].
- Subregions: WS.
- Bionomics: Found in large steppe and forest-steppe lakes.
- IUCN conservation status: Not assessed.
- Remark: This species, described in 1934, has been overlooked by subsequent Russian authors [Zhadin, 1952; Starobogatov *et al.*, 2004]. Lazutkina [2004] identified it from samples collected in several waterbodies of the southern part of the Western Siberia (the middle Ob' and Irtysh River basins).

297(347). *Valvata (Cincinna) contorta* (O.F. Müller, 1774)

[= ? *Helix contortaplicata* Gmelin, 1791; *Valvata piscinalis* var. *fluviatilis* Colbeau, 1859, non Westerland, 1886]

Nerita contorta Müller, 1774: 187-188.

- Type locality: Denmark, Fridrichsdal in vicinities of Copenhagen City.
- Types: Apparently lost. We failed to find the type materials in ZMUC [Nekhaev *et al.*, 2015].
- Global distribution: Probable endemic to the Central and Eastern Europe.
- Distribution in the former USSR: The Baltic Sea basin, central and lower parts of the Dnieper River basin [Kantor *et al.*, 2010].
- Subregions: NE, SE.
- Bionomics: Found in large steppe and forest-steppe lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Usually, this species is considered as a synonym of *V. piscinalis* [Westerlund, 1886; Glöer, 2002a]. Starobogatov *et al.* [2004] mentioned a valvatid species conchologically similar to *V. antiqua* under this name. The true identity of the Müller's *Nerita contorta* is difficult to ascertain because of loss of the type material.

Subgenus *Pamirocincinna*
Sitnikova et Starobogatov in
Sitnikova, 1983

Type species: *Valvata pamirensis* Starobogatov, 1972 (OD)

298(348). *Valvata (Pamirocincinna) pamirensis* Starobogatov, 1972

Valvata (Cincinna) pamirensis Starobogatov, 1972: 170-171, fig. 9.

- Type locality: Tajikistan, Gorno-Badakhshan Autonomous Region, Shaimak, 7 km from Kyzyl-Ravat, a warm spring on right bank of the Aksu River, sample 136.
- Types: ZIN, Nos. 1-10 in systematic catalogue. The type series includes the holotype and several hundreds paratypes.
- Global distribution: Central Asia.
- Distribution in the former USSR: Type locality [Starobogatov, 1972].
- Subregions: CA.
- Bionomics: Registered in warm springs [Starobogatov, 1972].
- IUCN conservation status: Not assessed.

299(349). *Valvata (Pamirocincinna) gafurovi* Izzatullaev, 1977

Valvata (Cincinna) gafurovi Izzatullaev, 1977: 948-949, textfig.

- Type locality: Tajikistan, Gorno-Badakhshan Autonomous Region, the Sulukty-Sai Lake (area about 300 m²), 10 km SW from Kyzil-Rabat, on depth 2-3 m.
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and two paratypes. 19 paratypes are in IZT, No. 1 in systematic catalogue [D. Palatov, pers. comm.]
- Global distribution: Central Asia.
- Distribution in the former USSR: Tajikistan [Izzatullaev, 1977].
- Subregions: CA.

- Bionomics: Found in a large mountain lake [Izzatullaev, 1977].
- IUCN conservation status: Not assessed.

Subgenus *Pseudomegalovalvata*
Kozhov, 1936

Type species: *Valvata (Megalovalvata) bathybia* W. Dybowski, 1886 (M)

Remark: The data on taxonomy, distribution and bionomics of *Pseudomegalovalvata* given below are taken mostly from the annotated catalogue compiled by Sitnikova *et al.* [2004], and therefore we do not provide references (except of cases where sources other than Sitnikova *et al.* [2004] were used).

300(350). *Valvata*
(*Pseudomegalovalvata*) *bathybia*
W. Dybowski, 1886

Valvata (Cincinna) bathybia W. Dybowski, 1886: 129, pl. 4, fig. 2.

- Type locality: Russia, Irkutsk Region, the Baikal Lake in Kultuk settlement [restricted by Sitnikova *et al.*, 2004].
- Types: Sitnikova *et al.* [2004] mentioned ZIN as the place where the lectotype is kept. However, no information about the lectotype of *V. bathybia* is given in systematic catalogue of ZIN collection.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The southern and central Baikal Lake.
- Subregions: BL.
- Bionomics: Lives on sandy-mud substrates with admixture of pebble and small stones. Occurs between 50 and 400 m of depth.
- IUCN conservation status: Not assessed.

301(351). *Valvata*
(*Pseudomegalovalvata*) *laethmophila*
Beckman et Starobogatov, 1975

Valvata (Pseudomegalovalvata) laethmophila Beckman & Starobogatov, 1975: 95, fig. 1, d.

- Type locality: Russia, Irkutsk Region, the south Baikal Lake, Listvennichnyi Bay.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: Type locality.
- Subregions: BL.
- Bionomics: Lives on sandy-mud substrates with admixture of pebble and small stones or on bed rocks covered by a thin layer of mud. Occurs between 100 and 800 m of depth.
- IUCN conservation status: Not assessed.

302(352). *Valvata*
(*Pseudomegalovalvata*) *olkhonica*
Beckman et Starobogatov, 1975

Valvata (Pseudomegalovalvata) olkhonica Beckman & Starobogatov, 1975: 94, fig. 1, b.

- Type locality: Russia, the Baikal Lake, Maloye More, Kharin-Irgi Bay.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: Type locality.
- Subregions: BL.
- Bionomics: Found at depths between 32 and 39 m, on muddy sand.
- IUCN conservation status: Not assessed.

303(353). *Valvata*
(*Pseudomegalovalvata*) *profundicola*
Beckman et Starobogatov, 1975

Valvata (Pseudovalvata) profundicola Beckman & Starobogatov, 1975: 95, fig. 1, r.

- Type locality: Russia, northern shore of the Baikal Lake, near Bolsodey (Molokon) Cape (approximately 54°55'10"N; 108°56'40"E).
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and 35 paratypes.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The northern Baikal Lake.
- Subregions: BL.
- Bionomics: Found at 1380 m of depth on muddy substrate.
- IUCN conservation status: Not assessed.

**304(354). *Valvata*
(*Pseudomegalovalvata*) *tenagobia*
Beckman et Starobogatov, 1975**

Valvata (*Pseudovalvata*) *tenagobia* Beckman & Starobogatov, 1975: 93, fig. 1, a.

- Type locality: Russia, the Baikal Lake, Maloye More, Kharin-Irgi Bay.
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and 15 paratypes.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The northern Baikal Lake.
- Subregions: BL.
- Bionomics: Found at depths between 32 and 39 m, on muddy sand.
- IUCN conservation status: Not assessed.

**Subgenus *Sibirovalvata*
Starobogatov et Streletzkaja, 1967**

Type species: *Valvata confusa* Westerlund, 1897 (OD)

Remark: The subgenus was established for a group of valvatid snails characterized by ribbed shell surface and distributed almost exclusively in Siberia

and the Russian Far East. The recent results of molecular taxonomic study of Asiatic Valvatidae has shown, however, that this subgenus is paraphyletic and includes representatives of two distinct phylogenetic lineages. For example, *V. sibirica* may, in fact, belong to the Nearctic subgenus *Tropidina* [Clewing *et al.*, 2014]. Besides, the morphological uniqueness of *Sibirovalvata* may also be questioned since thin ribs on shell surface are sometimes found in European representatives of *Valvata*, including *V. piscinalis* [see, for example, Anistratenko *et al.*, 2010, fig. 3, G, H]. The validity of some species of *Sibirovalvata* described in the 1980–1990s on the basis of slight conchological differences should be verified as well. The first results of molecular taxonomic analysis [Clewing *et al.*, 2014] hinted that the overall species diversity of this group has, most likely, been overestimated.

**305(355). *Valvata* (*Sibirovalvata*)
confusa Westerlund, 1897**

[= *Valvata stelleri* W. Dybowski, 1904]

Valvata (*Cincinna*) *confusa* Westerlund, 1897b: 130.

- Type locality: Russia, Republic of Yakutia (Sakha), in the Olenek River valley.
- Types: ZIN, Nos. 32 and 33 in systematic catalogue. The type materials in ZIN include the lectotype (designated by Starobogatov & Streletzkaja, 1967) and 11 paralectotypes. Besides, five paralectotypes are in NMG (No. 4656).
- Global distribution: Endemic to Asiatic Russia.
- Distribution in the former USSR: From northern part of the Western Siberia eastward to the Kamchatka and Chukchi Peninsulars, the northern Kurile Islands

(Shumshu Island) [Bogatov & Zatravkin, 1990; Prozorova & Starobogatov, 1998c; Starobogatov *et al.*, 2004].

- Subregions: WS, ES, NF.
- Bionomics: Lives in lakes and rivers with slow current [Prozorova & Starobogatov, 1998c].
- IUCN conservation status: Not assessed.

306(356). *Valvata (Sibirovalvata) aliena* Westerlund, 1877

Valvata aliena Westerlund, 1877: 63, fig. 15.

- Type locality: Russia, the Krasnoyarsk Territory, Turukhansk District, vicinity of former village Nizhne-Imbatsk [= "Jenissei, Nischnij Imbatsk (lat. 63°50')"].
- Types: ZIN (lectotype, No. 8 in systematic catalogue); NMG (2 paralectotypes, No. 4664), SMNH (2 paralectotypes, No. 14:89)
- Global distribution: Endemic to Siberia.
- Distribution in the former USSR: North of the Western Siberia, the Yenisei River basin, estuaries of large tributaries of the Baikal Lake [Starobogatov & Streletzkaja, 1967; Starobogatov *et al.*, 2004, Sitnikova *et al.*, 2004; Vinarski *et al.*, 2007].
- Subregions: WS, ES.
- Bionomics: Lives in rivers [Prozorova & Starobogatov, 1998c].
- IUCN conservation status: LC (least concern).

307(357). *Valvata (Sibirovalvata) brevicula* Kozhov, 1936

Valvata (Cincinna) aliena var. *brevicula* Kozhov, 1936: 18, pl. 1, fig. 30.

- Type locality: Russia, the Baikal Lake, Boguchanskaya Bay.
- Types: According to Sitnikova *et al.* [2004], the lectotype of this species is kept in ZIN. However, in the hand-written catalogue of ZIN collection is only

information on seven specimens of *V. brevicula* collected in the type locality and, probably, being the syntypes. No data on the lectotype are given in the catalogue.

- Global distribution: Endemic to Siberia.
- Distribution in the former USSR: The Baikal Lake; the Ob' (northern part), Yenisei and Lena River basins [Starobogatov & Streletzkaja, 1967; Starobogatov *et al.*, 2004, Sitnikova *et al.*, 2004; Vinarski *et al.*, 2007].
- Subregions: WS, ES, BL.
- Bionomics: Lives in rivers with slow current and floodplain lakes [Prozorova & Starobogatov, 1998c]. In the Baikal Lake the species is found in bays.
- IUCN conservation status: Not assessed.
- Remark: Clewing *et al.* [2014] did not find any genetic differences between *V. brevicula* and *V. confusa*. However, only specimens of *V. brevicula* from the Western Siberia collected far from the type locality were studied.

308(358). *Valvata (Sibirovalvata) chereshevi* (Bogatov, Zatravkin et Starobogatov in Bogatov et Zatravkin, 1990)

Cincinna (Sibirovalvata) chereshevi Bogatov & Zatravkin, 1990: 35-36, fig. 8. a-b.

- Type locality: Russia, the southern Chukchi Peninsula, basin of the Khatyrka River, the Elergytygyn Lake (approximately 68°28'40"N; 172°55'30"E).
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to Siberia.
- Distribution in the former USSR: The southern Chukchi Peninsula (basin of

the Khatyrka River) and northern part of the Okhotsk Sea maritime area [Starobogatov *et al.*, 2004].

- Subregions: NF.
- Bionomics: Lives in glacial lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

309(359). *Valvata (Sibirovalvata) japonica* Martens, 1877

[= *Cincinna kizakikoensis* Fujita et Habe, 1991]

Valvata japonica Martens, 1877: 116.

- Type locality: Japan, Honshû, the Ashi (= Hakone) Lake (35°12'35"N, 139°0'16"E).
- Types: ZMB, No. 38883. There are two extant syntypes in the type series.
- Global distribution: Endemic to the northern Far East.
- Distribution in the former USSR: Lakes of the southern Sakhalin Island [Prozorova & Starobogatov, 1999a; Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed. The species *Cincinna kizakikoensis* Fujita et Habe, 1991 [a presumably synonym of *V. japonica*; see Prozorova & Starobogatov, 1999a] is, however, classified as CR (critically endangered) by IUCN experts.
- Remarks: A series of nominal species conchologically similar to *V. japonica* has been described from the Russian Far East. The validity of these taxa (listed below) needs to be checked.

309(360). *Valvata (Sibirovalvata) amurensis* (Moskvicheva in Starobogatov et Zatravkin, 1985)

Cincinna amurensis Starobogatov & Zatravkin, 1985: 1156-1157, fig. 1.

- Type locality: Russia, the Amur Basin, the

Kutumanda River (we were unable to locate this river on a modern map).

- Types: ZIN, Nos. 1–106 in systematic catalogue. The type series contains the holotype and nearly 500 paratypes
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Amur River basin (except its upper part), the Ussuri River, the Khanka Lake [Bogatov & Zatravkin, 1990; Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in permanent waterbodies [Bogatov & Zatravkin, 1990].
- IUCN conservation status: Not assessed.

309(361). *Valvata (Sibirovalvata) chishimana* (Prozorova et Starobogatov, 1999)

Cincinna chishimana Prozorova & Starobogatov, 1999a: 54-55, figs. 2B, 3.

- Type locality: Russia, the Kurile Archipelago, the Iturup Island, the Reidovoye Lake, 1-5 m.
- Types: ZIN, Nos. 1 and 2 in systematic catalogue (the holotype and 14 paratypes). Other 26 paratypes are in IBSS.
- Global distribution: Endemic to the Kurile Archipelago.
- Distribution in the former USSR: The Iturup Island [Prozorova & Starobogatov, 1999a].
- Subregions: SF.
- Bionomics: Lives in lakes [Prozorova & Starobogatov, 1999a].
- IUCN conservation status: Not assessed.

309(362). *Valvata (Sibirovalvata) klucharevae* (Starobogatov in Starobogatov et Zatravkin, 1985)

Cincinna klucharevae Starobogatov & Zatravkin, 1985: 1158, fig. 5.

- Type locality: Russia, the southern Sakhalin Island, near Bousset lagoon, the Bolshoi Vavay Lake, depth 2.4 m.
- Types: ZIN. The type series contains the holotype and nearly 150 paratypes.
- Global distribution: Endemic to the Russian Far East.

- Distribution in the former USSR: The southern Sakhalin Island [Bogatov & Zatravkin, 1990; Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lakes [Bogatov & Zatravkin, 1990].
- IUCN conservation status: Not assessed.

309(363). *Valvata (Sibirovalvata) simusyuensis* Miyadi, 1935

Valvata piscinalis simusyuensis Miyadi, 1935: 60-61, pl. 3, fig. 2.

- Type locality: Russia, the Kurile Archipelago, the Shumshu Island.
- Types: Ôtsu Hydrobiological Station (nowadays – Center for Ecological Research, Kyoto University; fide Haszprunar [2014]).
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Shumshu Island, the eastern Kamchatka Peninsula [Starobogatov *et al.*, 2004].
- Subregions: NF, SF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

309(364). *Valvata (Sibirovalvata) sirotskii* (Starobogatov et Zatravkin, 1985)

Cincinna sirotskii Starobogatov & Zatravkin, 1985: 1157, fig. 2.

- Type locality: Russia, the Khabarovsk Territory, an open pit near Novyi Mir settlement (approximately 50°27'35"N; 136°58'1.5"E).
- Types: ZIN, Nos. 1–4 in systematic catalogue. The type series contains the holotype and 67 paratypes.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: Basins of the Amur (except its upper part), Ussuri and Tugur rivers, the north-western Sakhalin Island [Bogatov & Zatravkin, 1990; Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in rivers and floodplain lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

310(365). *Valvata (Sibirovalvata) korotnevi* Lindholm, 1909

Valvata (Cincinna) korotnevi Lindholm, 1909: 73, pl. 1, fig. 63.

- Type locality: Russia, Republic of Buryatia, Angarskiy Sor bay of the Baikal Lake (approximately 55°41'55"N; 109°45'55"E).
- Lectotype: ZIN, No. 1 in systematic catalogue [designated by Starobogatov & Streletzkaja, 1967: 285].
- Global distribution: Endemic to Siberia.
- Distribution in the former USSR: Southern part of the central Siberia, the Baikal Lake [Sitnikova *et al.*, 2004; Starobogatov *et al.*, 2004].
- Subregions: ES, BL.
- Bionomics: Lives in lakes and oxbows [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

311(366). *Valvata (Sibirovalvata) lewisi* Currier, 1868

Valvata lewisi Currier, 1868: 9 [new name for *Valvata striata* sensu Lewis, 1856, non Philippi, 1834].

- Type locality: USA, Michigan State, Grattam, Kent.
- Types: Not traced.
- Global distribution: North America, extreme north-east of Asiatic Russia (Beringia). In North America, this species occurs in southern Canada and northern USA [Burch, 1982].
- Distribution in the former USSR: The southern Chukchi Peninsula (Khatyrka River basin) [Starobogatov *et al.*, 2004].
- Subregions: NF.
- Bionomics: Lives in lakes (excluding thermokarst ones) [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Clarke [1981] did not mention this species in his monograph devoted to freshwater Mollusca of Cana-

da. Haszprunar [2014: 63] wrote “it is improbable that this American species [i.e. *V. lewisi*] is identical with the Siberian ones reported by Starobogatov *et al.* (2004)”.

311(367). *Valvata (Sibirovalvata) helicoidea* Dall, 1905

Valvata lewisi helicoidea Dall, 1905: 123, pl. 2, figs. 1, 2.

- Type locality: USA, the Lake Bennett, Yukon Territory; Old Fort Yukon, Alaska.
- Types: USNM No. 180304.
- Global distribution: Northern Holarctic (North America, Northern Asia).
- Distribution in the former USSR: The Chukchi Peninsula, northwestern Kamchatka, the Eastern Siberia (from Khatanga to the Kolyma) and the Western Siberia (the lower Ob' basin) [Bogatov & Zatravkin, 1990; Dolgin, 2001; Starobogatov *et al.*, 2004; Vinarski *et al.*, 2007].
- Subregions: WS, ES, NF.
- Bionomics: Lives in waterbodies of different types, especially of thermokarst origin [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: The taxonomic status of this taxon is disputed. Clarke [1981] accepted it as *Valvata sincera helicoidea*, whereas Burch [1982, 1989] did not mention this species at all. Haszprunar [2014] assumed the identity of *V. helicoidea* with some of Siberian species of *Valvata*.

312(368). *Valvata (Sibirovalvata) mergella* Westerlund, 1883

Valvata mergella Westerlund, 1883: 166.

- Type locality: USA, Alaska State, Port Clarence.
- Syntypes: SMNH, No. 1640 [see Johannes, 2011; Vinarski *et al.*, 2013].
- Global distribution: North America, extreme north-east of Asiatic Russia (Beringia). In North America, this species occurs from Alaska to Washington State [Burch, 1982].

- Distribution in the former USSR: The Chukchi Peninsula: the Khatyrka River basin in the south to the Chaun lowland in the north [Starobogatov *et al.*, 2004].
- Subregions: NF.
- Bionomics: Lives in waterbodies of different types, especially of thermokarst origin [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Haszprunar [2014: 68] stated that “it is uncertain, whether the American and the Russian specimens [of *Valvata mergella*] are conspecific”.

313(369). *Valvata (Sibirovalvata) sibirica* Middendorff, 1851

[= *Valvata frigida* Westerlund, 1873]

Valvata cristata var. *sibirica* Middendorff, 1851: 299.

- Type locality: Russia, Siberia. Middendorff [1851] cited three localities of this species: Barnaul, Berezovo (a small town in the northern part of the Western Siberia), and the Kamchatka River.
- Types: Starobogatov & Prozorova [1998c: 56] stated that the lectotype of this species was designated by Bogatov & Zatravkin [1990], but in the latter publication such a nomenclatorial act was not proposed. The authors [Bogatov & Zatravkin, 1990: 33] gave data on the syntype (labeled as collected in Barnaul) of *V. sibirica* only. This syntype is kept in ZIN under No. 1 in systematic catalogue.
- Global distribution: North of Europe (Scandinavia, Russia) and Northern Asia.
- Distribution in the former USSR: North of the European Russia, Siberia eastward to the Transbaikalia and the Okhotsk Sea shore; the Kamchatka Peninsula [Middendorff, 1851; Glöer, 2002a; Starobogatov *et al.*, 2004] [Starobogatov *et al.*, 2004].
- Subregions: NE, WS, ES, BL, NF.

- Bionomics: Lives in permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: LC (least concern).
- Remark: The species is accepted in CLECOM database as inhabiting Norway, Sweden and Finland [Falkner *et al.*, 2001]. The CLECOM team considered *V. sibirica* and *Valvata frigida* Westermund, 1873 to be conspecific; in the Russian literature, all findings of this species from Northern Europe were ascribed to *V. frigida*. The molecular study of Clewing *et al.* [2014] revealed identity of two species. Besides, there is a series of nominal species conchologically similar to *V. sibirica* in the malacofauna of the Russian Far East. The validity of these taxa (listed below) needs to be checked.

313(370). *Valvata (Sibirovalvata) burensis* (Starobogatov et Zatravkin, 1985)

Cincinna burensis Starobogatov & Zatravkin, 1985: 1158, fig. 6.

- Type locality: Russia, the Khabarovsk Territory, a lake on the left bank of the River Bureya, near Chekunda (old) settlement (approximately 50°51'14"N; 132°13'17"E).
- Types: ZIN, Nos. 1–7 in systematic catalogue. The type series contains the holotype and 53 paratypes.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: Basins of the Bureya and Manoma rivers and taiga tributaries of the Ussuri River [Bogatov & Zatravkin, 1990; Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in permanent lotic waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

313(371). *Valvata (Sibirovalvata) hankensis* (Prozorova, 1988)

Cincinna hankensis Prozorova, 1988b: 1736–1738.

- Type locality: Russia, the Primorye Territory, a small lake near the shore of the Khanka Lake.
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series contains the holotype and 6 paratypes.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: Basin of the Khanka Lake and southern part of the Primorye territory [Bogatov & Zatravkin, 1990; Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in permanent lotic waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

313(372). *Valvata (Sibirovalvata) hokkaidoensis* Miyadi, 1935

Valvata piscinalis hokkaidoensis Miyadi, 1935: 61–62, pl. 3, fig. 4.

- Type locality: Japan, Hokkaido Island, the Tôro-ko Lake.
- Types: Ôtsu Hydrobiological Station (nowadays – Center for Ecological Research, Kyoto University; fide Haszprunar [2014]).
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The southern Sakhalin Island [Prozorova *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in floodplain waterbodies [Prozorova *et al.*, 2004].
- IUCN conservation status: Not assessed.

313(373). *Valvata (Sibirovalvata) iturupensis* (Prozorova in Prozorova et Starobogatov, 1998)

Cincinna iturupensis Prozorova & Starobogatov, 1998c: 61, 63, fig. 3D.

- Type locality: Russia, the Kurile Archipelago, the Iturup Island, the Dobroye Lake.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Kurile Archipelago.
- Distribution in the former USSR: The Iturup Island [Starobogatov *et al.*, 2004].
- Subregions: SF.

- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

313(374). *Valvata (Sibirovalvata) kamchatica* (Prozorova et Starobogatov, 1998)

Cincinna kamchatica Prozorova & Starobogatov, 1998c: 63, 65, fig. 3A.

- Type locality: Russia, the eastern Kamchatka Peninsula, a puddle in the Bol'shoy Kamchatskiy Island in the valley of the Kamchatka River.
- Types: ZIN. The type series includes the holotype and 305 paratypes [fide Prozorova & Starobogatov, 1998c].
- Global distribution: Endemic to north-eastern Asia.
- Distribution in the former USSR: Kamchatka, the Kolyma River basin, the northern Okhotsk Sea maritime area [Starobogatov *et al.*, 2004].
- Subregions: ES, NF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

313(375). *Valvata (Sibirovalvata) middendorffi* (Moskvicheva in Starobogatov et Zatravkin, 1985)

Cincinna middendorffi Starobogatov & Zatravkin, 1985: 1158-1159, fig. 7.

- Type locality: Russia, the Amur River (without exact localization; based on a Shrenck's sample made in 1855).
- Types: ZIN, Nos. 1–29 in systematic catalogue. The type series contains the holotype and nearly 350 paratypes.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: Basin of the Amur River and the Primorye Territory [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in semipermanent and temporary waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

- Remark: The species was originally described as a subspecies of *V. sibirica*. Prozorova & Starobogatov [1998c] proposed to regard it as a separate species.

313(376). *Valvata (Sibirovalvata) saghalinensis* Miyadi, 1935

Valvata pulchella saghalinensis Miyadi, 1935: 61, pl. 3, fig. 3.

- Type locality: Russia, the Sakhalin Island, "along the shore of a lakelet Tyatya-numa on the western coast of the southern Sakhalin".
- Types: tsu Hydrobiological Station (nowadays – Center for Ecological Research, Kyoto University; fide Haszprunar [2014]).
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The southern Sakhalin Island [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in small semipermanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Starobogatov & Zatravkin [1985] accepted this taxon as a subspecies of *V. sibirica*. Prozorova & Starobogatov [1998c] proposed to consider it as a separate species.

314(377). *Valvata (Sibirovalvata) sorensis* W. Dybowski, 1886

Valvata (Cincinna) sorensis W. Dybowski, 1886: 113, pl. 4, figs. 1, 3, 5.

- Type locality: Russia, eastern coast of the Baikal lake, Posol'skiy Sor bay.
- Types: According to Sitnikova *et al.* [2004], the lectotype is kept in ZIN. Having consulted the catalogue of the ZIN collection, we revealed that all samples of *V. sorensis* from its type locality were collected in 1925 and thus could not be used by W. Dybowski for describing a new species in 1886.
- Global distribution: Northern Asia.
- Distribution in the former USSR: Siberia (except its south-western part), the

Baikal Lake, the Kamchatka Peninsula, the northern Kurile Archipelago (the Shumshu Island) [Dolgin, 2001; Starobogatov *et al.*, 2004; Vinarski *et al.*, 2007].

- Subregions: WS, ES, BL, NF, SF.
- Bionomics: Lives in lakes and rivers with slow current [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remarks: Since the Lindholm's [1909] work, the incorrect spelling *V. ssorensis* has prevailed in Russian literature [Kozhov, 1936; Starobogatov & Streletzkaja, 1967; Bogatov & Zatravkin, 1990; Kantor & Sysoev, 2005]. Meanwhile Haszprunar [2014] noted that this taxon was named *Valvata sorensis* by Władisław Dybowski [Dybowski, 1886: 113]. Clewing *et al.* [2014] did not find any genetic differences between *V. sorensis* and *V. confusa*. However, only specimens of *V. sorensis* from the Western Siberia collected far from the type locality were studied.

314(378). *Valvata (Sibirovalvata) tymiensis* (Starobogatov in Starobogatov et Zatravkin, 1985)

Cincinna tymiensis Starobogatov & Zatravkin, 1985: 1157, fig. 3.

- Type locality: Russia, the Sakhalin Island, right bank of the River Tym' near Nogliki settlement (approximately 51°48'19"N; 143°06'40"E).
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series contains the holotype and 26 paratypes.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Sakhalin Island, the Tym River basin [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

315(379). *Valvata (Sibirovalvata) sujfunensis* (Prozorova in Prozorova et Starobogatov, 1998)

Cincinna sujfunensis Prozorova & Starobogatov, 1998c: 65, 67, fig. 4H.

- Type locality: Russia, the Primorye Territory, the Razdol'naya (= Sujfun) River near Razdol'noye settlement (approximately 43°32'00"N; 131°53'50"E).
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Razdol'naya River and rivers entering the Khanka Lake from south-east [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

**Genus *Megalovalvata*
Lindholm, 1906**

[= *Liratina* Lindholm, 1906]

Type species: *Valvata grubei* W. Dybowski, 1875 (OD)

Remark: The results of molecular analysis carried out by Clewing *et al.* [2014] hinted that *Megalovalvata* possibly should be ranked as a subgenus of the genus *Valvata* s. l. (as it was originally proposed by its author, Lindholm). The data on taxonomy, distribution and bionomics of *Megalovalvata* given below are taken mostly from the annotated catalogue compiled by Sitnikova *et al.* [2004] and therefore we do not provide references (except of cases where sources other than Sitnikova *et al.* [2004] were used).

**316(380). *Megalovalvata baicalensis*
(Gerstfeldt, 1859)**

[= *Valvata grubei* W. Dybowski, 1875]

Paludina baicalensis Gerstfeldt, 1859: 515, fig. 25 a-c.

- Type locality: Russia, the Baikal Lake in Kultuk Settlement.
- Lectotype: ZIN, No. 104 in systematic catalogue.
- Global distribution: Endemic to the Baikal Region.
- Distribution in the former USSR: The Baikal Lake and the Angara River [Sitnikova *et al.*, 2004; Starobogatov *et al.*, 2004].
- Subregions: BL, ES.
- Bionomics: Occurs on stones and rocky substrates, between 3 and 50 m of depth.
- IUCN conservation status: Not assessed.

**317(381). *Megalovalvata demersa*
(Lindholm, 1909)**

Valvata (Liratina) baicalensis var. *demersa* Lindholm, 1909: 79.

- Type locality: Russia, the Baikal Lake, Berkhin Bay, 25 fathoms.
- Lectotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The entire Baikal Lake, in different depressions.
- Subregions: BL.
- Bionomics: Occurs on sandy-rock substrates, between 3 and 50 m of depth.
- IUCN conservation status: Not assessed.

**318(382). *Megalovalvata kozhovi*
Sitnikova, 1983**

Megalovalvata kozhovi Sitnikova, 1983: 35.

- Type locality: Russia, western coast

of the northern Baikal Lake, Zavorotnaya Bay.

- Types: ZIN, Nos. 1–6 in systematic catalogue. The type series includes the holotype and 440 paratypes.
- Global distribution: Endemic to the Baikal Region.
- Distribution in the former USSR: Found in several bays and inlets of the Baikal Lake.
- Subregions: BL.
- Bionomics: Occurs on muddy or sandy-mud substrates, between 3 and 20 m of depth.
- IUCN conservation status: Not assessed.

**319(383). *Megalovalvata lauta*
(Lindholm, 1909)**

Valvata (Atropidina) lauta Lindholm, 1909: 74, pl. 1, figs. 68–70.

- Type locality: Russia, eastern coast of the northern Baikal Lake, Davsha Inlet.
- Lectotype: ZIN, No. 17 in systematic catalogue.
- Global distribution: Endemic to the Baikal Region.
- Distribution in the former USSR: The northern Baikal Lake and eastern coast of the central Baikal.
- Subregions: BL.
- Bionomics: Occurs on sandy substrates, between 2 and 70 m of depth.
- IUCN conservation status: Not assessed.

**320(384). *Megalovalvata parvula*
(Kozhov, 1936)**

Valvata (Megalovalvata) lauta var. *parvula* Kozhov, 1936: 25.

- Type locality: Russia, eastern coast of the central Baikal, off the Listvennichnyi Island, 5 m.
- Lectotype: ZIN, No. 3 in systematic catalogue.

- Global distribution: Endemic to the Baikal Region.
- Distribution in the former USSR: Known from several localities situated in different parts of the Baikal Lake.
- Subregions: BL.
- Bionomics: Occurs on sandy substrates, between 2 and 50 m of depth.
- IUCN conservation status: Not assessed.

321(385). *Megalovalvata piligera* (Lindholm, 1909)

Valvata baicalensis var. *piligera* Lindholm, 1909: 77.

- Type locality: Russia, the Baikal Lake, Maloye More, 26 fathoms.
- Global distribution: Endemic to the Baikal Lake.
- Subregions: BL.
- IUCN conservation status: Not assessed.
- Remark: There are three subspecies within *M. piligera*.

321(385a). *Megalovalvata piligera piligera* (Lindholm, 1909)

- Lectotype: ZIN, No. 29 in systematic catalogue.
- Distribution in the former USSR: Maloye More and the southern Baikal Lake.
- Bionomics: Inhabits sandy and sandy-mud substrates sometimes with admixture of pebbles. Occurs at depths between 5 and 40 m.

321(385b). *Megalovalvata piligera minor* (Lindholm, 1909)

Valvata (Liratina) baicalensis f. *minor* Lindholm, 1909: 78.

- Type locality: Russia, western coast of the Baikal Lake, Boguchanskaya Bay.
- Types: Not traced.
- Distribution in the former USSR: Except of the type locality, the subspecies

has been found in Chivyrkyi and Barguzin Bays.

- Bionomics: Inhabits sandy substrates. Occurs at depths between 2 and 50 m.

321(385c). *Megalovalvata piligera nudicarinata* (Lindholm, 1924)

Valvata (Liratina) piligera nudicarinata Lindholm, 1924b: 217.

- Type locality: Russia, the southern Baikal Lake, Kultuk.
- Lectotype: ZIN, No. 96 in systematic catalogue.
- Distribution in the former USSR: The southern Baikal Lake.
- Bionomics: Inhabits sandy substrates. Occurs at depths between 5 and 40 m.

Subfamily Borystheniinae

Starobogatov in Sitnikova, 1983

(Borystheniinae Starobogatov in Sitnikova, 1983: 34)

Type genus: *Borysthenia* Lindholm, 1914

Genus *Borysthenia* Lindholm, 1914

[= *Jelskia* Bourguignat, 1877, non Taczanowski, 1877 (Araneae)]

Type species: *Valvata jelskii* Crosse, 1863 (OD)

Remark: The genus includes a widely distributed in Europe species *B. naticina* (Menke) accepted by all malacologists, and three other taxa allegedly regarded as distinct species in the Russian taxonomy [Anistratenko & Anistratenko, 2001; Starobogatov *et al.*, 2004]. The validity of these species must be checked.

322(386). *Borysthenia naticina* (Menke, 1845)

Valvata naticina Menke, 1845: 129.

- Type locality: Hungary, the Danube River at Budapest City.
- Types: Not traced. Menke's collection was dispersed after his death [Dance, 1986].
- Global distribution: The eastern Central Europe, the Eastern Europe and Turkey [Zettler, 2012].
- Distribution in the former USSR: Basins of the Dnieper, Yuzhnyi Bug, Dniester, Danube, Neman, and Visla rivers; the Baltic Sea region [Anistratenko & Anistratenko, 2001; Starobogatov *et al.*, 2004; Zettler, 2012]. Recorded from the Western Siberia as invasive species [Sharapova, 2008].
- Subregions: NE, SE, WS (invasive).
- Bionomics: Lives in rivers [Anistratenko & Anistratenko, 2001].
- IUCN conservation status: LC (least concern).

**322(387). *Borysthenia alligans*
(Lindholm, 1927)**

Valvata naticina f. *alligans* Lindholm, 1927a: 22.

- Type locality: Poland, the Vistula (= Weichsel) River near Plock Town (approximately 52°32'13"N; 19°41'00"E).
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Eastern Europe.
- Distribution in the former USSR: Basins of the Dnieper, Dniester, Neman, and Vistula rivers; Kaliningrad Region of Russia [Anistratenko & Anistratenko, 2001].
- Subregions: NE, SE.
- Bionomics: Lives in rivers [Anistratenko & Anistratenko, 2001].
- IUCN conservation status: Not assessed.

**322(388). *Borysthenia jelskii*
(Crosse, 1863)**

Valvata jelskii Crosse, 1863: 382-384, pl. 13, fig. 3.

- Type locality: Ukraine, the Dnieper River near Kiev City.
- Holotype: MHNH.
- Global distribution: Endemic to the Eastern Europe.
- Distribution in the former USSR: Type locality [Anistratenko & Anistratenko, 2001].
- Subregions: SE.
- Bionomics: Not known.
- IUCN conservation status: DD (data deficient).
- Remark: The species was based on a single shell of unclear origin. Possibly, it is an aberrant specimen of *B. naticina* or fossil shell belonging to an extinct Quaternary species of the genus [Anistratenko & Anistratenko, 2001]. Mörch [1867] hypothesized that *V. jelskii* is a juvenile specimen of *Lithoglyphus*.

**322(389). *Borysthenia menkeana*
(Jelski, 1863)**

Valvata menkeana Jelski, 1863: 136-137, pl. 6, fig. 4.

- Type locality: Ukraine, the Dnieper off Romanovka, near Kiev (the lectotype label). Haszprunar [2014: 67] quotes "profonds du Dnieper" as the type locality for this species.
- Lectotype: ZIN (designated by Sitnikova *et al.* [1986]), No. 2 in systematic catalogue. The paralectotypes are in ZIN and MHNH collections.
- Global distribution: Endemic to the Eastern Europe.
- Distribution in the former USSR: Basins of the Dnieper, Yuzhnyi Bug, Dniester, Danube, Neman, Vistula rivers; Kaliningrad Region of Russia [Anistratenko & Anistratenko, 2001].
- Subregions: NE, SE.
- Bionomics: Lives in rivers [Anistratenko & Anistratenko, 2001].
- IUCN conservation status: Not assessed.

Infraclass Opisthobranchia Milne-Edwards, 1846
Order Nudibranchia Cuvier, 1814

Superfamily Fionoidea Gray, 1857

Family Tergipedidae Bergh, 1889

(Tergipedinae Bergh in Carus, 1889: 209)

Type genus: *Tergipes* Cuvier, 1805

Genus *Tenellia* A. Costa, 1866

Type species: *Tenellia mediterranea* A. Costa, 1866 = *Tenellia adspersa* Nordmann, 1845 (M)

**323(390). *Tenellia adspersa*
Nordman, 1845**

[= *Tergipes lacinulatus* sensu Schultze, 1849, non Blainville, 1824; *Embletonia palida* Alder et Hancock, 1854; *Eolis ventilabrum* Dalyell, 1853; *Embletonia hyalina* Sanford, 1861; *Tenellia mediterranea* A. Costa, 1866; *Embletonia grayi* Kent, 1869; *Eolis armoricana* Hesse, 1872; *Stiliger*

bellulus sensu Starostin & Turpaeva, 1963, non d'Orbigny]

Tenellia adspersa Nordman, 1845: 270.

- Type locality: The Black Sea.
- Types: Not traced.
- Global distribution: The Azov, Black, Caspian and Japan seas [Kantor & Sysoev, 2005].
- Distribution in the former USSR: This marine gastropod included to this catalogue as being an invasive species registered recently in the fauna of the Caspian Sea [Antsulevich & Starobogatov, 1991; Starobogatov, 1994c].
- Subregions: CS.
- Bionomics: Occurs at depths between 0 and 10 m [Kantor & Sysoev, 2005].
- IUCN conservation status: Not assessed.

Infraclass Pulmonata Cuvier, 1814

Order Hygrophyla Férussac, 1822

[= Basommatophora Keferstein, 1865, partim; = Lymnaeida Minichev et Starobogatov, 1975]

Remark: Schrödl [2014] argued against the use of the taxonomic name Pulmonata because of paraphyletic state of Pulmonata in its traditional sense. However, the WoRMS editors still consider it as an infraclass.

Superfamily Acroloxoidea Thiele, 1931

Family Acroloxidae Thiele, 1931

(Acroloxinae Thiele, 1931: 144)

Type genus: *Acroloxus* Beck, 1838

This relatively small family of freshwater limpets includes 6 recent genera and nearly 53 species, most of which are endemics of the ancient giant lakes – Baikal and Ohrid [Shirokaya, 2005]. Acroloxidae are distributed mostly in Eurasia (Palearctic and northern part of Sino-Indian realm); a single species (*Acroloxus coloradoensis* Henderson, 1930) is known from Nearctic [Starobogatov, 1970; Burch, 1982; Banareescu, 1990]. The most important publications devoted to taxonomy, phylogeny and distribution of Palearctic Acroloxidae are those by Hubendick [1962], Starobogatov [1989], Kruglov & Starobogatov [1991], Glöer [2002a], Sitnikova *et al.* [2004], Stadnichenko [2004], and Shirokaya [2005].

Genus *Acroloxus* Beck, 1838

[= *Patella* Linnaeus, 1758, partim; *Ancylus* O.F. Müller, 1774, partim; *Velletia* Gray, 1840; *Acroxus* Bourguignat, 1853; *Calytra* Westerlund, 1885]

Type species: *Patella lacustris* Linnaeus, 1758 (SD Hermannsen, 1846)

Remark: All European representatives of this genus (except of a series of Balkan endemics) are usually classified within a single species *Acroloxus lacustris* [Glöer, 2002a; Welter-Schultes, 2012], though the Russian authors [Kruglov & Starobogatov, 1991; Starobogatov *et al.*, 2004] tended to accept much more nominal species of *Acroloxus* in the fauna of the Eastern Europe that are characterized by relatively slight conchological differences among each other. Their validity should be checked in future. In Asiatic Russia, a series of nearly 10 species of this genus has recently been described. Shirokaya *et al.* [2011] demonstrated that at least some of these taxa are morphologically distinct.

Subgenus *Acroloxus* s. str.

324(391). *Acroloxus* (*Acroloxus*) *lacustris* (Linnaeus, 1758)

[= *Ancylus spina-rosae* Draparnaud, 1805; *Ancylus moquinianus* Bourguignat, 1853]

Patella lacustris Linnaeus, 1758: 778.

- Type locality: Europe, in lakes [Linnaeus, 1758: 778].
- Possible syntypes: UUZM Nos. 1269 a-b [Wallin, 2001]. Kruglov & Starobogatov [1991] designated the neotype of *Patella lacustris* collected from Lidingen, Sweden, Gongster swamp (ZIN collection, No. 22 in systematic catalogue). To substantiate this act, Kruglov & Starobogatov [1991] quote Hanley [1855], who stated that the original type series of *P. lacustris* is lost. However, Hanley

[1855] could examine only a part of Linnaeus collection that is kept in LSL. Thus, he could not be aware of existence of syntypes in UUZM and therefore the neotype designation made by Kruglov & Starobogatov [1991] should be rejected.

- Global distribution: Europe and the Western Siberia.
- Distribution in the former USSR: The European part of RAC; southern part of the Western Siberia [Starobogatov *et al.*, 2004; Vinarski *et al.*, 2007]
- Subregions: NE, SE, WS.
- Bionomics: Lives in lentic waterbodies on macrophytes [Glöer, 2002a].
- IUCN conservation status: LC (least concern).
- Remark: Six species of the Eastern European *Acroloxus* listed below are not accepted as valid by the Western European malacologists, and their reality should be checked in future.

**324(392). *Acroloxus (Acroloxus) caucasicus* Kruglov et }
Starobogatov, 1991**

Acroloxus caucasicus Kruglov & Starobogatov, 1991: 73-74, fig. 2, 7.

- Type locality: Russia, Daghestan, Chontaul Reserve, the Shaitankazak Lake (approximately 43°19'28"N; 46°57'00"E).
- Types: ZIN, Nos. 1–3 in systematic catalogue. The type series includes the holotype and two paratypes.
- Global distribution: The Eastern Europe.
- Distribution in the former USSR: Daghestan, Stavropol Region of Russia [Kruglov & Starobogatov, 1991].
- Subregions: SE, CT.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

324(393). *Acroloxus (Acroloxus) lindholmi* Kruglov et Starobogatov, 1991

Acroloxus lindholmi Kruglov & Starobogatov, 1991: 72, fig. 2, 4.

- Type locality: Russia, Leningrad Region, the Luga River near Preobrazhenskoe (nowadays Tolmachevo) settlement (approximately 58°51'36"N; 29°53'29"E).
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and a single paratype.
- Global distribution: The Eastern Europe (the Baltic Sea basin).
- Distribution in the former USSR: Type locality [Kruglov & Starobogatov, 1991].
- Subregions: NE.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

324(394). *Acroloxus (Acroloxus) oblongus* (Lightfoot, 1786)

Patella oblonga Lightfoot, 1786: 168, pl. 3, figs. 1-5.

- Type locality: England, Buckinghamshire, near Beaconsfield.
- Types: Not traced.
- Global distribution: Europe, the Western Siberia [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: The European part of RAC; southern part of the Western Siberia [Kruglov & Starobogatov, 1991; Stadnichenko, 2004; Vinarski *et al.*, 2007].
- Subregions: NE.
- Bionomics: Lives in lentic waterbodies as well as in lotic habitats with slow stream [Stadnichenko, 2004].
- IUCN conservation status: Not assessed.
- Remark: Khokhutkin & Vinarski [2013] showed that it is impossible to distinguish between *A. lacustris* s. str. and *A. oblongus* on the basis of shell measurements (shells from the Uralian waterbodies were studied).

324(395). *Acroloxus (Acroloxus) okaensis* Kruglov et Starobogatov, 1991

Acroloxus okaensis Kruglov & Starobogatov, 1991: 70-72, fig. 2, 3 ; 3, 3.

- Type locality: Russia, Vladimir Region, Studenets inlet of the Oka River near Murom Town (approximately 55°36'26"N; 42°03'16"E).

- Types: ZIN, Nos. 1–6 in systematic catalogue. The type series includes the holotype and 38 paratypes.
- Global distribution: The Eastern Europe.
- Distribution in the former USSR: The European part of RAC: Karelia, basins of the Oka and Dnieper rivers [Kruglov & Starobogatov, 1991; Stadnichenko, 2004].
- Subregions: NE, SE.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

324(396). *Acroloxus (Acroloxus) rossicus* Kruglov et Starobogatov, 1991

Acroloxus rossicus Kruglov & Starobogatov, 1991: 72–73. fig. 2, 5; 3, 4.

- Type locality: Russia, Tula Region, the Myshega River near Aleksin Town (approximately 54°31'03"N; 37°02'22"E).
- Types: ZIN, Nos. 1–5 in systematic catalogue. The type series includes the holotype and 15 paratypes.
- Global distribution: The Eastern Europe.
- Distribution in the former USSR: The European part of RAC: Karelia, basins of the Oka and Dnieper rivers, Daghestan [Kruglov & Starobogatov, 1991; Stadnichenko, 2004].
- Subregions: NE, SE, CT.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: LC (least concern).

324(397). *Acroloxus (Acroloxus) shadini* Kruglov et Starobogatov, 1991

Acroloxus shadini Kruglov & Starobogatov, 1991: 73. fig. 2, 6.

- Type locality: Russia, Daghestan, Chontaul Reserve, the Shaitankazak Lake (approximately 43°19'28"N; 46°57'00"E).
- Types: ZIN, Nos. 1–6 in systematic catalogue. The type series includes the holotype and 16 paratypes.
- Global distribution: The Eastern Europe and the Western Siberia.
- Distribution in the former USSR: The European part of RAC: southern part of the

Western Siberia [Kruglov & Starobogatov, 1991; Vinarski *et al.*, 2007].

- Subregions: NE, SE, WS.
- Bionomics: Lives in lakes and rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Khokhutkin & Vinarski [2013] showed that it is impossible to distinguish between *A. lacustris* s. str. and *A. shadini* on the basis of shell measurements (shells from the Uralian waterbodies were studied).

325(398). *Acroloxus (Acroloxus) arachleicus* Kruglov et Starobogatov, 1991

Acroloxus arachleicus Kruglov & Starobogatov, 1991: 74, fig. 2, 9.

- Type locality: Russia, the Zabaikalsky Territory, the Arakhley Lake (approximately 52°13'00"N; 112°52'30"E).
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and 15 paratypes.
- Global distribution: Endemic to the Transbaikalia.
- Distribution in the former USSR: Type locality and the Kichera River basin in Buryatia [Starobogatov *et al.*, 2004; Prozorova *et al.*, 2009; Shirokaya *et al.*, 2011].
- Subregions: ES.
- Bionomics: Lives in lakes on macrophytes [Prozorova *et al.*, 2009].
- IUCN conservation status: DD (data deficient).

326(399). *Acroloxus (Acroloxus) baicalensis* Kozhov, 1936

Acroloxus lacustris var. *baicalensis* Kozhov, 1936: 184, 314, pl. 7, fig. 39.

- Type locality: Russia, the Baikal Lake, Krutaya Inlet of Chivyrkuy Bay.
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and 15 paratypes.
- Global distribution: Endemic to Asiatic Russia.

- Distribution in the former USSR: Except the type locality this species has been registered from several localities situated in the Transbaikalia as well as in the Russian Far East eastward to the Pacific Ocean shore [Prozorova *et al.*, 2009; Shirokaya *et al.*, 2011]
- Subregions: ES, BL, SF.
- Bionomics: Lives in lakes on small depths, not deeper than 3 m [Prozorova *et al.*, 2009].
- IUCN conservation status: Not assessed.

327(400). *Acroloxus (Acroloxus) kolhymensis* Prozorova et Starobogatov, 1998

Acroloxus kolhymensis Prozorova & Starobogatov, 1998a: 39-41, figs. 1A, 2A-B.

- Type locality: Russia, Republic of Yakutia (Sakha), vicinities of Cherskiy Settlement, a small lake near the Shchuchye Lake (approximately 68°45'05"N; 161°20'00"E).
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and a single paratype.
- Global distribution: Endemic to the Eastern Siberia.
- Distribution in the former USSR: The Lower Kolyma River basin [Starobogatov *et al.*, 2004]
- Subregions: ES.
- Bionomics: Lives in floodplain lakes on macrophytes [Starobogatov *et al.*, 2004].
- IUCN conservation status: DD (data deficient).

327(401). *Acroloxus (Acroloxus) regelae* Prozorova et Starobogatov, 1998

Acroloxus regelae Prozorova & Starobogatov, 1998a: 39-41, figs. 1A, 2A-B.

- Type locality: Russia, Republic of Yakutia (Sakha), vicinities of Cherskiy Settlement, a

small lake near the Shchuchye Lake (approximately 68°45'05"N; 161°20'00"E).

- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and a single paratype.
- Global distribution: Endemic to the Eastern Siberia.
- Distribution in the former USSR: The Lower Kolyma River basin [Starobogatov *et al.*, 2004]
- Subregions: ES.
- Bionomics: Lives in floodplain lakes on macrophytes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: The species was described on the basis of two specimens taken from the same sample that the type specimens of *A. kolhymensis*. The differences between *A. kolhymensis* and *A. regelae* are relatively small, and their specific distinctness should be checked by analysis of variation in a larger sample.

Subgenus *Amuracroloxus* Kruglov et Starobogatov, 1991

Type species: *Acroloxus likharevi* Moskvicheva, Kruglov et Starobogatov in Kruglov et Starobogatov, 1991 (OD)

328(402). *Acroloxus (Amuracroloxus) likharevi* Moskvicheva, Kruglov et Starobogatov in Kruglov et Starobogatov, 1991

Acroloxus likharevi Kruglov & Starobogatov, 1991: 75-76, fig. 1 2, 3 5-6.

- Type locality: Russia, the Primorye Territory, vicinity of Ussuriysk Town, Olenevka River.
- Types: ZIN, Nos. 1-2 in systematic catalogue. The type series includes the holotype and 8 paratypes.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: Basins of the Amur and Tugur (the southern Okhotsk Sea maritime area) rivers

and the rivers entering the Japan Sea and Tatar Strait [Starobogatov *et al.*, 2004]

- Subregions: SF.
- Bionomics: Lives in rivers on macrophytes or dense substrates [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

329(403). *Acroloxus (Amuracroloxus) hassanicus* Kruglov et Starobogatov, 1991

Acroloxus hassanicus Kruglov & Starobogatov, 1991: 77, fig. 1, 4; 3, 8.

- Type locality: Russia, the Primorye Territory, an unnamed oxbow in the floodplain of the the Poima (former Adimi) River near Bamburovo station (approximately 42°56'20"N; 131°19'00"E).
- Types: ZIN, Nos. 1–4 in systematic catalogue. The type series includes the holotype and 14 paratypes.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Primorye Territory: basins of the Ussuri River, the Khanka Lake and rivers of the southern Primorye [Starobogatov *et al.*, 2004]
- Subregions: SF.
- Bionomics: Lives in lakes and oxbows on macrophytes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

330(404). *Acroloxus (Amuracroloxus) klucharevae* Kruglov et Starobogatov, 1991

Acroloxus klucharevae Kruglov & Starobogatov, 1991: 78, fig. 1, 6.

- Type locality: Russia, the Sakhalin Island, the Lake Bol'shoye Vavaiskoye, near Aniva Bay (approximately 42°56'20"N; 131°19'00"E).

- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Sakhalin Island.
- Distribution in the former USSR: Type locality [Starobogatov *et al.*, 2004]
- Subregions: SF.
- Bionomics: Known from a large lagoon lake where is found on macrophytes [Starobogatov *et al.*, 2004].
- IUCN conservation status: DD (data deficient).

331(405). *Acroloxus (Amuracroloxus) orientalis* Kruglov et Starobogatov, 1991

Acroloxus orientalis Kruglov & Starobogatov, 1991: 75, fig. 2, 10.

- Type locality: Russia, the Sakhalin Island, a spring connecting the Tym' River and the Kotika Lake.
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series include the holotype and five paratypes.
- Global distribution: Endemic to the Far East (Russia and Hokkaido Island, Japan).
- Distribution in the former USSR: The northern Sakhalin, upper part of the Zeya River basin (Amur Region) [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in rivers and lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: DD (data deficient).

332(406). *Acroloxus (Amuracroloxus) ussuriensis* Moskvicheva, Kruglov et Starobogatov in Kruglov et Starobogatov, 1991

Acroloxus ussuriensis Kruglov & Starobogatov, 1991: 75, fig. 2, 10.

- Type locality: Russia, the Primorye Territory, the Ussuri River basin, the

Malyi Sungachik River, 1 km from the mouth.

- Types: ZIN, Nos. 1–17 in systematic catalogue. The type series include the holotype and 48 paratypes.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The northern Sakhalin, upper part of the Zeya River basin (Amur Region) [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in rivers and lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: LC (least concern).

**333(407). *Acroloxus*
(*Amuracroloxus*) *victori*
Prozorova, 1996**

Acroloxus victori Prozorova, 1996: 495–497, figs. 1 (1), 2.

- Type locality: Russia, Khabarovsk Territory, the Chistovodnaya River in vicinities of Vanino City, near railroad bridge (approximately 49°04'15"N; 140°13'50"E).
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: Type locality [Starobogatov *et al.*, 2004]. Recently, this species has been found in the Shirokaya River of the Ivano-Arakhley lake-river system (Transbaikalia) as well as in the Amur River drainage – the Moadi River near Arsenyevo Settlement [Shirokaya *et al.*, 2011].
- Subregions: ES, SF.
- Bionomics: Lives in rivers [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

**334(408). *Acroloxus* (*Amuracroloxus*)
zarjaensis Kruglov et
Starobogatov, 1991**

Acroloxus zarjaensis Kruglov & Starobogatov, 1991: 77–78, fig. 1, 5.

- Type locality: Russia, the Primorye Territory, the Zarya Lake (43°01'59"N, 134°09'02"E).
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: Type locality [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Not studied. The holotype was collected from a large lake [Kruglov & Starobogatov, 1991].
- IUCN conservation status: Not assessed.

**Genus *Baicalancylus*
Starobogatov, 1967**

[= *Ancylus* O.F. Müller, 1774, partim; *Acroloxus* Beck, 1838, partim; *Pseudancylastrum* Lindholm, 1909, partim]

Type species: *Ancylus dybowski* var. *laricensis* W. Dybowski, 1913 (OD)

The data on taxonomy, distribution and bionomics of *Baicalancylus* given below are taken mostly from the annotated catalogue compiled by Sitnikova *et al.* [2004] and therefore we do not provide references.

**335(409). *Baicalancylus laricensis*
(B. Dybowski, 1913)**

Ancylus dybowski var. *laricensis* W. Dybowski, 1913: 140 (nom. nov. pro *Ancylus dybowski* sensu Lindholm, 1909).

- Type locality: Russia, the Baikal Lake near Listvyanka Settlement (approximately 51°51'30"N, 104°51'00"E).
- Holotype: ZIN, No. 1 in systematic catalogue.

- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The Baikal Lake, in different localities.
- Subregions: BL.
- Bionomics: Lives on rocky and stony substrates. Occurs at depths between 2 and 20 m.
- IUCN conservation status: Not assessed.

336(410). *Baicalancylus boettgerianus* (Lindholm, 1909)

Ancylus (Pseudancylastrum) boettgerianus Lindholm, 1909: 28, pl. 2, figs. 37-38.

- Type locality: Russia, the Baikal Lake, near cape Kurma in Maloye More (border between the central and northern Baikal).
- Lectotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The northern Baikal Lake and Maloye More.
- Subregions: BL.
- Bionomics: Lives on rocky substrates. Occurs at depths between 2 and 10 m.
- IUCN conservation status: Not assessed.

337(411). *Baicalancylus kobelti* (W. Dybowski, 1875)

Ancylus kobelti W. Dybowski, 1885: 313, fig. 1.

- Type locality: Russia, the Baikal Lake near Listvyanka Settlement (approximately 51°51'30"N, 104°51'00"E).
- Types: Not traced.
- Global distribution: Endemic to the Baikal Lake region.
- Distribution in the former USSR: The southern Baikal Lake and the Angara River.
- Subregions: ES, BL.
- Bionomics: Lives on hard substrates. Occurs at depths between 5 and 10 m.

- IUCN conservation status: Not assessed.

338(412). *Baicalancylus njurgonicus* Starobogatov, 1989

Baicalancylus njurgonicus Starobogatov, 1989: 72, fig. 2, 3 (B, 3, II).

- Type locality: Russia, the Baikal Lake, Maloye More near Nyurgon Cape.
- Types: ZIN. The type series includes the holotype and 12 paratypes.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The Baikal Lake, in different localities.
- Subregions: BL.
- Bionomics: Lives on rocks and stones. Occurs at depths between 2 and 10 m.
- IUCN conservation status: DD (data deficient).

Genus *Gerstfeldtiancylus* Starobogatov, 1989

[= *Ancylus* O.F. Müller, 1774, partim; *Acroloxus* Beck, 1838, partim; *Pseudancylastrum* Lindholm, 1909, partim]

Type species: *Gerstfeldtiancylus gerstfeldti* Starobogatov, 1989 = *Ancylus renardii* W. Dybowski, 1884 (OD)

The data on taxonomy, distribution and bionomics of *Gerstfeldtiancylus* given below are taken mostly from the annotated catalogue compiled by Sitnikova *et al.* [2004] and therefore we do not provide references (except of cases where sources other than Sitnikova *et al.* [2004] were used).

Subgenus *Gerstfeldtiancylus* s. str.

339(413). *Gerstfeldtiancylus* (*Gerstfeldtiancylus*) *renardii* (W. Dybowski, 1884)

[= *Gerstfeldtiancylus gerstfeldti* Starobogatov, 1989]

"*Ancylus*" *renardii* W. Dybowski, 1884: 157, pl. 4, figs. 2, 4.

- Type locality: Russia, the southern Baikal Lake.
- Syntypes: Zoological Museum of Lviv University (Ukraine).
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The Baikal Lake, in different localities.
- Subregions: BL.
- Bionomics: Lives on rocks and stones. Occurs at depths between 2 and 10 m.
- IUCN conservation status: Not assessed.
- Shirokaya [2005] proved the synonymy between *G. renardii* and *G. gerstfeldti* (the type species of the genus).

**340(414). *Gerstfeldtiancylus*
(*Gerstfeldtiancylus*) *kotyensis*
Starobogatov, 1989**

[= *Gerstfeldtiancylus kozhovi* Starobogatov, 1989]

Gerstfeldtiancylus kotyensis Starobogatov, 1989: 63, fig. 2, 3 (B, 3, л).

- Type locality: Russia, NW part of the southern Baikal Lake near Bol'shiye Koty Settlement (approximately 51°54'15"N, 105°04'30"E).
- Holotype: ZIN, No. 1 in systematic catalogue. The type series also includes 18 paratypes [Starobogatov, 1989].
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The Baikal Lake, in different localities.
- Subregions: BL.
- Bionomics: Lives on surface of small and medium sized stones. Occurs at depths between 4 and 40 m.
- IUCN conservation status: Not assessed.
- Shirokaya [2005] proved the synonymy between *G. kotyensis* and *G. kozhovi* Starobogatov, 1989.

**341(415). *Gerstfeldtiancylus*
(*Gerstfeldtiancylus*) *ushunensis*
Shirokaya, 2007**

Gerstfeldtiancylus ushunensis Shirokaya, 2007: 56, fig. 3-7.

- Type locality: Russia, the Baikal Lake, Malye Olkhonskie Vorota Strait, Ushun Bay, 53°00'54"N, 106°56'96"E, 20-22 m. depth, on stones.
- Types: ZIN, Nos. 1–3 in systematic catalogue. Several paratypes are kept in LIN. The type series includes the holotype and 15 paratypes.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: Type locality.
- Subregions: BL.
- Bionomics: Occurs at depths between 4 and 22 m. It has been recorded on substrate "composed of multi-layered boulders" [Shirokaya, 2007: 64].
- IUCN conservation status: Not assessed.

**Subgenus *Kozhoviancylus* Kruglov
et Starobogatov, 1991**

Type species: *Gerstfeldtiancylus benedictiae* Starobogatov, 1989 (OD)

**342(416). *Gerstfeldtiancylus*
(*Kozhoviancylus*) *benedictiae*
Starobogatov, 1989**

[= *Ancylus* (*Pseudancylastrum*) *troscheli* sensu Lindholm, 1909, non W. Dybowski, 1875, part.]

Gerstfeldtiancylus benedictiae Starobogatov, 1989: 65, fig. 2, 6 (B, 3, л).

- Type locality: Russia, the Baikal Lake near Listvyanka Settlement (approximately 51°51'30"N, 104°51'00"E).
- Types: ZIN, Nos. 1–16 in systematic catalogue. The type series includes the holotype and 74 paratypes.

- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The Baikal Lake, in different localities.
- Subregions: BL.
- Bionomics: Occurs at depths between 3 and 30 m. It inhabits mostly shell surface of the *Benedictia* snails; also it may be found on stones.
- IUCN conservation status: Not assessed.

**343(417). *Gerstfeldtiancylus*
(*Kozhoviancylus*) *caputiformis*
Starobogatov, 1989**

Gerstfeldtiancylus caputiformis Starobogatov, 1989: 65, fig. 2, 5 (B, 3, л).

- Type locality: Russia, western coast of the northern Baikal Lake, Zavorotnaya Inlet, 4 m.
- Types: ZIN, Nos. 1–5 in systematic catalogue. The type series includes the holotype and 12 paratypes.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The northern Baikal Lake.
- Subregions: BL.
- Bionomics: Lives on minute stones or large pebbles. Occurs at depths between 3 and 10 m.
- IUCN conservation status: Not assessed.

**344(418). *Gerstfeldtiancylus*
(*Kozhoviancylus*) *pileolus*
Starobogatov, 1989**

Gerstfeldtiancylus pileolus Starobogatov, 1989: 67, fig. 2, 8 (B, 3, л).

- Type locality: Russia, western coast of the northern Baikal Lake, Zavorotnaya Inlet, 4 m.
- Types: ZIN, Nos. 1–3 in systematic catalogue. The type series includes the holotype and 35 paratypes.

- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: Type locality.
- Subregions: BL.
- Bionomics: Registered from pebble substrates between 3 and 4 m of depth.
- IUCN conservation status: Not assessed.

**345(419). *Gerstfeldtiancylus*
(*Kozhoviancylus*) *porfirievae*
Starobogatov, 1989**

[= *Ancylus* (*Pseudancylastrum*) *troscheli* sensu Lindholm, 1909, non W. Dybowski, 1875, partim]

Gerstfeldtiancylus porfirievae Starobogatov, 1989: 66, fig. 2, 7 (B, 3, л).

- Type locality: Russia, western coast of the northern Baikal Lake, Kocherikovsky Cape, 6–8.5 m.
- Types: ZIN, Nos. 1–3 in systematic catalogue. The type series includes the holotype and five paratypes.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The northern Baikal Lake.
- Subregions: BL.
- Bionomics: Lives on minute stones or large pebbles. Occurs at depths between 4 and 12 m.
- IUCN conservation status: Not assessed.

Addition to the genus *Gerstfeldtiancylus*. One more species of this genus was described by Shirokaya *et al.* [2003]. The authors did not place it formally to either of the subgenera of *Gerstfeldtiancylus*.

**346(420). *Gerstfeldtiancylus roepstorfi*
Shirokaya, Röpstorff et
Sitnikova, 2003**

[= *Gerstfeldtiancylus renardii* sensu Starobogatov, 1989, non W. Dybowski, 1884]

Gerstfeldtiancylus roepstorfi Shirokaya *et al.*, 2003: 117, 119, fig. 3 C-D, 4 A-I.

- Type locality: Russia, the Baikal Lake, littoral of Maly Ushkaniy Island, depth 13 m.
- Types: LIN, Nos. 898 and 899 in systematic catalogue (the holotype and three paratypes). A single paratype is kept in the Institute of Geological Sciences, Free University, Berlin, Germany.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: Northern and southern parts of the Baikal Lake [Shirokaya *et al.*, 2003].
- Subregions: BL.
- Bionomics: Lives on rocky and stony littoral. Occurs at depths between 10 and 25 m [Shirokaya *et al.*, 2003].
- IUCN conservation status: Not assessed.

Genus *Pseudancylastrum*
Lindholm, 1909

[= *Ancylus* O.F. Müller, 1774, partim]

Type species: *Ancylus sibiricus* Gerstfeldt, 1859 (OD)

The data on taxonomy, distribution and bionomics of *Pseudancylastrum* given below are taken mostly from the annotated catalogue compiled by Sitnikova *et al.* [2004] and therefore we do not provide references (except of cases where sources other than Sitnikova *et al.* [2004] were used).

Subgenus *Pseudancylastrum* s. str.

**347(421). *Pseudancylastrum*
(*Pseudancylastrum*) *sibiricum*
(Gerstfeldt, 1859)**

Ancylus sibiricus Gerstfeldt, 1859: 23, fig. 30.

- Type locality: Russia, Irkutsk Region, Irkutsk City, the Angara River.

- Lectotype: ZIN.
- Global distribution: Endemic to the Baikal Lake region.
- Distribution in the former USSR: The southern Baikal Lake and the upper courses of the Angara River.
- Subregions: ES, BL.
- Bionomics: Lives on large and medium sized stones. Occurs at depths between 2.5 and 10 m.
- IUCN conservation status: LC (least concern).

**348(422). *Pseudancylastrum*
(*Pseudancylastrum*) *aculiferum*
Starobogatov, 1989**

Pseudancylastrum aculiferum Starobogatov, 1989: 55, fig. 1, 10 (B, 3, л).

- Type locality: Russia, Irkutsk Region, Kultuk (SW coast of the southern Baikal Lake) [Starobogatov, 1989].
- Types: ZIN, Nos. 1–4 in systematic catalogue. The type series includes the holotype and nine paratypes.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The southern Baikal Lake.
- Subregions: BL.
- Bionomics: Lives on minute stones or large pebbles. Occurs at depths between 4 and 36 m.
- IUCN conservation status: Not assessed.

**349(423). *Pseudancylastrum*
(*Pseudancylastrum*) *beckmanae*
Starobogatov, 1989**

Pseudancylastrum beckmanae Starobogatov, 1989: 49, fig. 1, 4 (B, 3, л).

- Type locality: Russia, western coast of the northern Baikal Lake, Solontsovyi Cape, 4–18 m.
- Types: ZIN, Nos. 1–5 in systematic catalogue. The type series includes the holotype and 20 paratypes.

- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: Western coast of the northern Baikal.
- Subregions: BL.
- Bionomics: Lives on minute stones or large pebbles. Occurs at depths between 4 and 20 m.
- IUCN conservation status: Not assessed.

**350(424). *Pseudancylastrum*
(*Pseudancylastrum*) *cornu*
Starobogatov, 1989**

Pseudancylastrum cornu Starobogatov, 1989: 50, fig. 1, 5 (B, 3, л).

- Type locality: Russia, western coast of the northern Baikal Lake, Solontsovyi Cape, 4–18 m.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The southern Baikal.
- Subregions: BL.
- Bionomics: Unknown.
- IUCN conservation status: Not assessed.

**351(425). *Pseudancylastrum*
(*Pseudancylastrum*) *dybowski*
(Clessin, 1882)**

Ancylus dybowski Clessin, 1882b: 38, pl. 7, fig. 1.

- Type locality: Russia, the southern Baikal Lake [Starobogatov, 1989].
- Types: Not traced and probably lost. Clessin's collection was in Stuttgart Museum, totally destroyed during 1939–1945 war [Dance, 1986].
- Global distribution: Endemic to the Baikal Lake region.
- Distribution in the former USSR: The southern Baikal and the Angara River downstream to Irkutsk.
- Subregions: ES, BL.
- Bionomics: Lives on large and medi-

um sized stones. Occurs at depths between 2.5 and 10 m.

- IUCN conservation status: Not assessed.

**352(426). *Pseudancylastrum*
(*Pseudancylastrum*) *korotnevi*
Starobogatov, 1989**

Pseudancylastrum korotnevi Starobogatov, 1989: 51, fig. 1, 6 (B, 3, л).

- Type locality: Russia, western coast of the northern Baikal Lake, Kocherikovsky Cape, 6–8.5 m.
- Types: ZIN, Nos. 1–5 in systematic catalogue. The type series includes the holotype and nine paratypes.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: Western coast of the Baikal Lake.
- Subregions: BL.
- Bionomics: Lives on large and medium sized stones. Occurs at depths between 4 and 10 m.
- IUCN conservation status: Not assessed.

**353(427). *Pseudancylastrum*
(*Pseudancylastrum*) *olgae*
Starobogatov, 1989**

Pseudancylastrum olgae Starobogatov, 1989: 48, fig. 1, 3 (B, 3, л).

- Type locality: Russia, Republic of Buryatia, SE coast of the southern Baikal Lake, near Klyuevka village (approximately 51°41'35"N, 105°45'55"E).
- Types: ZIN, Nos. 1–3 in systematic catalogue. The type series includes the holotype and three paratypes.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: South-western coast of the southern Baikal Lake.
- Subregions: BL.
- Bionomics: Lives on small stones and

large pebbles. Occurs at depths between 2.5 and 10 m.

- IUCN conservation status: DD (data deficient).

**354(428). *Pseudancylastrum*
(*Pseudancylastrum*) *poberezhnyi*
Starobogatov, 1989**

Pseudancylastrum poberezhnyi Starobogatov, 1989: 56, fig. 1, 11 (B, 3, Л).

- Type locality: Russia, NW part of the southern Baikal Lake near Bol'shiye Koty Settlement (approximately 51°54'15"N, 105°04'30"E).
- Types: ZIN, Nos. 1–14 in systematic catalogue. The type series includes the holotype and 22 paratypes.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The Baikal Lake, in different localities.
- Subregions: BL.
- Bionomics: Lives on small and medium sized stones. Occurs at depths between 4 and 15 m.
- IUCN conservation status: DD (data deficient).

**355(429). *Pseudancylastrum*
(*Pseudancylastrum*) *troschelii*
(W. Dybowski, 1875)**

Ancylus troschelii W. Dybowski, 1875: 64, pl. 4, figs. 35–37.

- Type locality: Russia, Irkutsk Region, Kultuk (SW coast of the southern Baikal Lake).
- Lectotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: Western coast of the southern Baikal Lake.
- Subregions: BL.
- Bionomics: Lives on small and medi-

um sized stones. Occurs at depths between 5 and 25 m.

- IUCN conservation status: DD (data deficient).

**356(430). *Pseudancylastrum*
(*Pseudancylastrum*) *werestschagini*
Starobogatov, 1989**

Pseudancylastrum werestschagini Starobogatov, 1989: 53, fig. 1, 8 (B, 3, Л).

- Type locality: Russia, NW part of the southern Baikal Lake near Bol'shiye Koty Settlement (approximately 51°54'15"N, 105°04'30"E).
- Types: ZIN, Nos. 1–17 in systematic catalogue. The type series includes the holotype and 75 paratypes.
- Global distribution: Endemic to the Baikal Lake region.
- Distribution in the former USSR: the southern Baikal Lake; the Angara River downstream to Irkutsk.
- Subregions: BL.
- Bionomics: Lives on stones. Occurs at depths between 3 and 20 m.
- IUCN conservation status: Not assessed.

Subgenus Frolikhiancylus

Sitnikova et Starobogatov, 1993

Type species: *Pseudancylastrum frolikhae* Sitnikova et Starobogatov, 1993 (OD)

Remark: Numerous evidences from morphology, ecology and peculiarities of embryogenesis indicate that *Frolikhiancylus* should be ranked as a genus of its own [A. Shirokaya, pers. comm.]

**357(431). *Pseudancylastrum*
(*Frolikhiancylus*) *frolikhae* Sitnikova
et Starobogatov in Sitnikova, Fialkov
et Starobogatov, 1993**

Pseudancylastrum frolikhae Sitnikova et al., 1993: 134, fig. 1.

- Type locality: Russia, south-western coast of the northern Baikal, Frolikha Bay, 340–350 m.
- Types: LIN, Nos. 263–264 in systematic catalogue. The type series includes the holotype and two paratypes.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The northern Baikal Lake.
- Subregions: BL.
- Bionomics: A deep-water species, the only representative of the family Acroloxidae known to inhabit depths below 100 m. It is associated with hydrothermal vents and oil-seeps of the Baikal [Sitnikova & Shirokaya, 2013].
- IUCN conservation status: Not assessed.

Subgenus *Parancylastrum* Kruglov et Starobogatov, 1991

Type species: *Pseudancylastrum dorogostajskii* Starobogatov, 1989 (OD)

**358(432). *Pseudancylastrum*
(*Parancylastrum*) *dorogostajskii*
Starobogatov, 1989**

Pseudancylastrum dorogostajskii Starobogatov, 1989: 57, fig. 1, 12 (B, 3, n).

- Type locality: Russia, the Baikal Lake near Listvyanka Settlement (approximately 51°51'30"N, 104°51'00"E).
- Types: ZIN, Nos. 1–10 in systematic catalogue. The type series includes the holotype and 37 paratypes.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: Western coast of the southern Baikal and eastern coast of the northern Baikal.
- Subregions: BL.
- Bionomics: Lives on stones. Occurs at depths between 3 and 20 m.

- IUCN conservation status: Not assessed.

**359(433). *Pseudancylastrum*
(*Parancylastrum*) *irindaense*
Starobogatov, 1989**

Pseudancylastrum irindaense Starobogatov, 1989: 52, fig. 1, 7 (B, 3, n).

- Type locality: Russia, Republic of Buryatia, east coast of the northern Baikal Lake, Irinda Bay, 5 m (approximately 54°50'46"N, 109°40'23"E).
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and four paratypes.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: Type locality and Maloye More (near Kurma Cape).
- Subregions: BL.
- Bionomics: Lives on large stones. Occurs at depths between 2 and 20 m.
- IUCN conservation status: Not assessed.

Superfamily Lymnaeoidea
Rafinesque, 1815

**Family Lymnaeidae
Rafinesque, 1815**

[= Limnophysidae W. Dybowski, 1903; Acellinae Haldeman, 1912; Fossariinae B. Dybowski, 1913; Valencienninae Kramberger-Gorjanovic, 1923]

(Lymnidae Rafinesque, 1815: 144)

Type genus: *Lymnaea* Lamarck, 1799

A large and diverse family of aquatic snails widely distributed on all continents except Antarctica [Hubendick, 1951; Starobogatov, 1970; Banarescu, 1990]. The highest species richness of lymnaeid snails is observed in North America and Eurasia, especially in

temperate latitudes. There are no universally accepted criteria for taxa delineation in the family and therefore it is almost impossible to say exactly how many species and genera of Lymnaeidae are there. The generic structure of the family is highly controversial [Vinarski, 2013]. The estimates of its global species richness vary from only 40 [Hubendick, 1951] to about 100 [Strong *et al.*, 2008] or even not less than 200 [Kruglov, 2005] species. Kruglov [2005] accepted more than 120 species of lymnaeid snails in the RAC malacofauna, but, in fact, many of them may prove to be synonyms of earlier established taxa, especially under molecular scrutiny. The most important works on taxonomy, zoogeography, and phylogeny of Palearctic Lymnaeidae are those by Hubendick [1951], Kruglov & Starobogatov [1993a, b], Jackiewicz [1998], Bargues *et al.*, [2001, 2003], Glöer [2002a], Stadnichenko [2004], Kruglov [2005], Andreeva *et al.* [2010], Correa *et al.* [2010], Vinarski [2013], and Sitnikova *et al.* [2014a]. The generic system of Lymnaeidae accepted here follows that proposed by Vinarski [2013], with some corrections.

Subfamily Lymnaeinae Rafinesque, 1815

Genus *Lymnaea* Lamarck, 1799

[= *Helix* Linnaeus, 1758, partim; *Buccinum* O.F. Müller, 1774, partim; *Turbo* Da Costa, 1778, partim; *Bulimus* Bruguière, 1789, non Scopoli, 1777, partim; *Limnaea* sensu auct., non Poli, 1791; *Limneus* Draparnaud, 1801; *Lymnus* Montfort, 1810; *Lymnaeus* Cuvier, 1817; *Lymnula* Rafinesque, 1819; *Limnea* Fleming, 1828; *Stagnicola* Jeffreys, 1830, partim; *Eulimneus* Sandberger, 1875; *Stagnaliana* Servain, 1881; *Limnoluturgida* Chiamanti, 1899; *Omphalolymnus* W. Dybowski, 1903; *Kobeltilymnaea* Kruglov et Starobogatov, 1993]

Type species: *Helix stagnalis* Linnaeus, 1758 (M)

Remark: In the past century, most authors accepted *Lymnaea* in a very wide sense, i.e. covering almost all lymnaeids except of some most divergent genera. The most influential taxonomic works of the twentieth century [Hubendick, 1951; Kruglov & Starobogatov, 1993a, b; Jackiewicz, 1998a] followed this approach. In the current taxonomy, however, an opposite view dominates. Most modern authors accepted a series of genera of Lymnaeidae [Falkner *et al.*, 2001; Glöer, 2002a; Welter-Schultes, 2012; Vinarski, 2013], and *Lymnaea* s. str. is regarded as including only the “great pond snails” and their relatives. Here, we accept this genus as consisting of two subgenera, in accordance with results of molecular study by Vinarski *et al.* [2012a].

Subgenus *Lymnaea* s. str.

Remark: Taxonomy of the “great pond snails” (= subgenus *Lymnaea* s. str.) is rather confusing. Traditionally, all snails of this group were placed into a large polymorphic species *Lymnaea stagnalis* s. lato [Hubendick, 1951; Zhadin, 1952; Jackiewicz, 1998a] though some authors proposed to split it into a series of separate species [Locard, 1893; Kruglov & Starobogatov, 1985c, 1993a], six of which were accepted by Kruglov [2005] as inhabiting the RAC territory (Table 13). The genetic studies carried out by Mezhzherin *et al.* [2008] and Vinarski *et al.* [2012b] have shown that these alleged species lack the genetic support and may be regarded merely as “morphotypes”. Besides, Mezhzherin *et al.* [2008] proposed to delineate two “allospecies” within the *L. stagnalis* complex. These allospecies, revealed in the Ukrainian populations of the great pond

Table 13. Different views on the taxonomy of the *Lymnaea stagnalis* s. lato complex

Falkner <i>et al.</i> [2001]; Glöer [2002a]	Kruglov & Starobogatov [1993a]; Kruglov [2005]		
	Subgenus	Section	Species
<i>Lymnaea (Lymnaea)</i> <i>stagnalis</i> (Linnaeus, 1758) s. lato	<i>Lymnaea</i> s. str.	<i>Lymnaea</i> s.str.	<i>L. doriana</i> (Bourguignat, 1862) <i>L. fragilis</i> (L., 1758) – <i>L. fragilis fragilis</i> – <i>L. f. producta</i> (Colbeau, 1859) <i>L. stagnalis</i> (L., 1758) – <i>L. stagnalis stagnalis</i> – <i>L. s. turgida</i> (Hartmann, 1840)
		<i>Kobeltilymnaea</i> Kruglov et Starobogatov, 1993	<i>L. araratensis</i> Kruglov et Starobogatov, 1985
		<i>Stagnaliana</i> Servain, 1881	<i>L. media</i> (Kobelt, 1877) <i>L. bodamica</i> (Miller, 1873)

snail, cannot be distinguished on the basis of morphological traits and they have not been given formal Latin names by Mezhzherin *et al.* [2008]. The study of Vinarski *et al.* [2012b] confirmed the existence of two intraspecific phylogenetic lineages with distinct ranges of distribution in the RAC territory. Vinarski [2015a] accepted the approach proposed by Mezhzherin *et al.* [2008] and developed a new classification scheme for the Palearctic *L. stagnalis* s. l. complex which is ranked as a superspecies sensu Amadon [1966] comprising three allospecies, two of which are presented in the ex-USSR malacofauna.

**360(434). *Lymnaea (Lymnaea)*
stagnalis (Linnaeus, 1758)**

Helix stagnalis Linnaeus, 1758: 774.

- Type locality: Europe, in lentic waterbodies (“Habitat in Europae stagnis”; Linnaeus, 1758: 774)
- Syntypes: UUZM, Nos. 1004 a-b.

There are two syntypes in the type series.

- Global distribution: Holarctic.
- IUCN conservation status: LC (least concern).
- Remark: Mezhzherin *et al.* [2008] and Vinarski [2015a] considered *L. stagnalis* s. l. as a superspecies [sensu Amadon, 1966] including 2–3 allospecies. The two allospecies represented in the former USSR area are characterized below.

**360(434a). *Lymnaea (Lymnaea)*
[*stagnalis*] *stagnalis*
(Linnaeus, 1758)³²**

[= *Helix fragilis* Linnaeus, 1758; *Buccinum lacustre* Studer, 1789; *Stagnicola stagnalis* var. *roseolabiata* Hartmann, 1821; *Limnaea stagnalis* var. *elegans* Beck, 1837; *Limnaea stagnalis* var. *minor* Beck, 1837; *Limnaea stagnalis* var. *turgida*

³² In accordance with Amadon [1966] recommendation, we use square brackets for designation of allospecies within a superspecies.

Beck, 1837; *Stagnicola stagnalis* var. *bicolor* Hartmann, 1840; *Stagnicola vulgaris* Hartmann, 1840; *Limnaea stagnalis* var. *globosa* Gassies, 1849; *Limnaea stagnalis* var. *producta* Colbeau, 1859; *Limnaea stagnalis* var. *alpicola* Gredler, 1859; *Limnaea borealis* Bourguignat, 1862; *Limnaea colpodia* Bourguignat, 1862; *Limnaea dori-ana* Bourguignat, 1862; *Limnaea elophila* Bourguignat, 1862; *Limneus major* Jeffreys, 1862; *Limnaea stagnalis* var. *gallica* Bourguignat, 1864; *Limnaea stagnalis* var. *gracilis* Mörch, 1864; *Limnaea stagnalis* var. *productissima* Roffiaen, 1868; *Limnaea stagnalis* var. *palustriformis* Kobelt, 1871; *Limnaea stagnalis* var. *rhodani* Kobelt, 1871; *Limnaea stagnalis* var. *alata* Westerlund, 1871; *Limnaea stagnalis* var. *baltica* Westerlund, 1871; *Limnaea stagnalis* var. *subulata* Westerlund, 1871; *Limnaea stagnalis* var. *lepida* Westerlund, 1873; *Limnaea bodamica* Miller, 1873; *Limnaea stagnalis* var. *ampliata* Clessin, 1876; *Limnaea stagnalis* var. *angulosa* Clessin, 1876; *Limnaea stagnalis* var. *arenaria* Clessin, 1876; *Limnaea profunda* Clessin, 1877; *Limnaea stagnalis* var. *media* Kobelt, 1877; *Limnaea karpinskii* Clessin, 1880; *Limnaea livonica* Kobelt, 1884; *Limnaea stagnalis* var. *bottnica* Westerlund, 1884; *Limnaea auricularia* var. *concilians* Westerlund, 1885; *Limnaea auricularia* var. *moratensis* Clessin, 1887; *Limnaea stagnalis* var. *variegatus* Clessin, 1887; *Limnaea coutagnei* Locard, 1893; *Limnaea helvetica* Locard, 1893; *Limnaea moitessieri* Locard, 1893; *Limnaea west-erlundii* Locard, 1893; *Limnaea stagnalis* var. *goilandicus* Westerlund, 1894; *Limnaea stagnalis* var. *nordmanni* Westerlund, 1894; *Limnaea stagnalis* var. *nereni* Westerlund, 1897; *Limnaea stagnalis* var. *sophronia* Westerlund, 1897; *Limnaea chantreii* Kobelt, 1912]³³

- Distribution in the former USSR: This allospecies represents the “European”, or “Western” phylogenetic lineage within *L. stagnalis* s. l. It is distributed in the Western and Central Europe. In the RAC territory, individuals genetically determined as belonging to this lineage were found in the western parts of Ukraine and the European Russia. The exact lo-

calization of the border between two allospecies has not been outlined yet.

- Subregions: NE, SE.
- Bionomics: The species is among the most widespread, ecologically plastic and abundant species of aquatic pulmonates of Eurasia. It inhabits a wide range of types of waterbodies from small rivers with slow current to large mountain lakes and temporary floodplain ponds. Like most other lymnaeid species, the great pond snail is usually confined to shallow zones of waterbodies enriched by aquatic vegetation [Zhadin, 1952; Jackiewicz, 1998a; Glöer, 2002a; Andreeva *et al.*, 2010].

360(434b). *Lymnaea* (*Lymnaea*) [*stagnalis*] *acicularis* (Westerlund, 1894)

[= *Lymnaea stagnalis* auct., partim; *Limnaea sorrensis* W. Dybowski, 1913; *Lymnaea araratensis* Kruglov et Starobogatov, 1985]

Limnaea stagnalis var. *acicularis* Westerlund, 1894: 195.

- Type locality: Russia, the Western Siberia near “Lensele”. We could not decipher this locality. Perhaps, it should mean Vinzili Settlement situated in Tyumen Region (about 29 km from Tyumen).
- Types: Not traced. Westerlund [1894] mentioned that the types are in “Helsingfors Museum” (nowadays Zoological Museum of Helsinki University, Finland). There are samples of *Limnaea stagnalis* var. *acicularia* determined by Westerlund in NMG and ZIN collections but in both cases their nomenclatorial status (as probable syntypes) is not evident.
- Distribution in the former USSR: This allospecies represents the “Asiatic”, or “Eastern” phylogenetic lineage within *L. stagnalis* s. l. It is distributed in the eastern half of the European part of RAC,

³³ This long list of synonyms is by no means complete. The actual synonymy of *L. stagnalis* s. lato is monstrously large.

also in the Transcaucasia, Siberia, Central Asia and extreme north-east of Asia (but not registered in the Amur river basin). According to COI sequences, this allospecies is presented also in North America [Vinarski, Schniebs, unpublished].

- Subregions: NE, SE, CT, WS, ES, CA, NF.
- Bionomics: Ecologically this allospecies does not differ from *L. [stagnalis] stagnalis*.

Subgenus *Kazakhlymnaea*
Kruglov et Starobogatov, 1984

Type species: *Lymnaea palustris kazakensis* Mozley, 1934 (OD)

Remark: Originally this taxon was introduced as a section of the subgenus *Corvusiana* Servain, 1881 [Kruglov & Starobogatov, 1984b]. A recent molecular study has revealed its close affinity to the genus *Lymnaea* s. str. [Vinarski *et al.*, 2012a].

361(435). *Lymnaea* (*Kazakhlymnaea*) *taurica* (Clessin, 1880)

[= *Limnaea lagorii* W. Dybowski, 1903]

Limnaea taurica Clessin, 1880b: 197.

- Type locality: “Kamüsch bei Theodosia in der Krim” [Clessin, 1880b: 199]. Most probably, it is the Blizhniye Kamyschi (= “Kamüsch”) wetland that is situated in approximately 5 km NE from the center of Feodosia Town, Crimea (45°05'N; 35°25'E).
- Types: Apparently lost. Topotypic specimens from the Clessin's collections were found by us in ZIN under No. 1 in systematic catalogue [see Vinarski *et al.*, 2012a for details], other topotypes are kept in NMG (No. 3816), SMNH (No. 12: 16), and ZMB (No. 33517).

Most probably, these shells represents the syntypes of *Limnaea taurica*.

- Global distribution: Endemic to the ex-USSR territory.
- IUCN conservation status: Not assessed.
- Remark: Vinarski *et al.* [2012a] distinguished two subspecies of *L. taurica*.

**361(435a). *Lymnaea*
(*Kazakhlymnaea*) *taurica taurica*
(Clessin, 1880)**

• Distribution in the former USSR: Southern part of the Eastern Europe (Crimea Peninsula, Odessa Region of Ukraine, south of the European Russia). There are samples of this species labeled as “Caucasus” in NMG and ZIN collections.

- Subregions: SE, CT.
- Bionomics: The subspecies is recorded in temporary waterbodies such as floodplain swamps. It is among the rarest taxa of aquatic snails in Europe.

**361(435b). *Lymnaea*
(*Kazakhlymnaea*) *taurica kazakensis*
Mozley, 1934**

Lymnaea palustris kazakensis Mozley, 1934: 3-4, pl. 1, fig. 7.

- Type locality: Northern Kazakhstan, small dry lake bottom near the village of Novo Troetskaya (it proved to be impossible to locate the *locus typicus* exactly).
- Types: USNM No. 470457. Although the holotype of *L. palustris kazakensis* was designated in the original publication (as “type”), the lot that is kept in USNM under this number contains seven specimens, labeled as syntypes on a later printed label. It was impossible to isolate the “holotype” and none of the specimens matches the original illustration.

- Distribution in the former USSR: The southern Urals (including the Ural River basin), southern part of the Western Siberia, Kazakhstan [Pirogov *et al.*, 1994; Lazareva, 1967a; Khokhutkin *et al.*, 2009]. May be found in the lower Volga basin [Starobogatov *et al.*, 2004].
- Subregions: SE, WS, CA.
- Bionomics: Lives in temporary and semi-temporary steppe lakes and pools [Andreeva *et al.*, 2010].

Genus *Stagnicola*

Leach in Jeffreys, 1830

[= *Limnaea* auct., partim; *Buccinum* O.F. Müller, 1774, partim; *Limnophysa* Fitzinger, 1833, partim; *Entochilius* Sandberger, 1880; *Fenziana* Servain, 1881; *Palustrisiana* Servain, 1881; *Microlimnaea* W. Dybowski, 1908; *Palustria* W. Dybowski, 1908; *Turriminaea* W. Dybowski, 1908; *Cos-tolimnaea* W. Dybowski, 1908; *Berlaniana* Kruglov et Starobogatov, 1986]

Type species: *Buccinum palustre* O.F. Müller, 1774 (M)

Subgenus *Stagnicola* s. str.

362(436). *Stagnicola* (*Stagnicola*) *palustris* (O.F. Müller, 1774)

[= *Buccinum fragilis* Schröter, 1779, non Linnaeus, 1758; *Helix fontinalis* Donovan, 1803; *Lymnaea leachiana* Risso, 1826; *Limneus communis* Jeffreys, 1830; *Limnaea palustris* var. *elongata* Beck, 1837; *Limnaeus syriacus* Mousson, 1861; *Limnaeus siculus* Küster, 1862; *Limnaea palustris* var. *curta* Clessin, 1873; *Limnaea palustris* var. *flavida* Clessin, 1873; *Galba turricula* Jackiewicz, 1959, non Held, 1836; *Lymnaea starobogatovi* Lazareva, 1967; *Lymnaea turricula* sensu Kruglov et Starobogatov, 1986, non Held, 1836]

Buccinum palustre O.F. Müller, 1774: 131.

- Type locality: Not stated in the original description. Müller [1774: 132] mentioned only that this species is abundant in swamps ("in paludosis frequens").

Most probably, its type locality is Fridrichsdal, a suburb of Copenhagen, Denmark [see Falkner, 1984; Nekhaev *et al.*, 2015 for details].

- Types: Lost. We failed to find the type series of this species in ZMUC.
- Global distribution: Europe and the Western Siberia.
- Distribution in the former USSR: The European part of RAC, the Transcaucasia, the Western Siberia [Kruglov & Starobogatov, 1993a; Stadnichenko, 2004; Andreeva *et al.*, 2010].
- Subregions: NE, SE, CT, WS.
- Bionomics: Lives in temporary or semi-permanent waterbodies. Sometimes it may be found in shallow zones of large lakes.
- IUCN conservation status: Not assessed.
- Remark: Kruglov & Starobogatov [1986, 1993a] placed *S. palustris* from the Transcaucasia into a separate subspecies *S. palustris syriacus* (Mousson, 1861). The taxonomic status of this subspecies is, however, unclear and needs to be resolved.

362(437). *Stagnicola* (*Stagnicola*) *archangelica* (Kruglov et Starobogatov, 1986)

Lymnaea archangelica Kruglov & Starobogatov, 1986: 60. fig. 1, 1; 2, 1.

- Type locality: Russia, Arkhangel'sk Region, a pool in the floodplain of the Uyemlyanka River, nearly 10-12 km from its inflowing to the Severnaya Dvina River.
- Types: ZIN, Nos. 1–6 and 8 in systematic catalogue. Currently the type series contains the holotype and 122 paratypes, however, part of the paratypes (those from the Urals and Western Siberia) belong, in fact, to another species, *Ladislavella terebra* [Khokhutkin *et al.*, 2009].
- Global distribution: Endemic to the European part of RAC.

- Distribution in the former USSR: North of the European part of RAC eastward to the Ural Mountains, possibly also in the Western Siberia [Khokhutkin *et al.*, 2009; Andreeva *et al.*, 2010].
- Subregions: NE, WS (?).
- Bionomics: Lives in temporary floodplain habitats [Andreeva *et al.*, 2010].
- IUCN conservation status: Not assessed.
- Remark: Anatomically this species is almost undistinguishable from *S. palustris* and, probably, represents merely an intraspecific morph of the latter.

362(438). *Stagnicola (Stagnicola) atra* (Schrank, 1803)

Buccinum atrum Schrank, 1803: 288.

- Type locality: Germany, the Danube River in Bavaria.
- Types: Lost.
- Global distribution: The Central and Eastern Europe.
- Distribution in the former USSR: The European part of RAC eastward to the Ural Mountains [Stadnichenko, 2004; Khokhutkin *et al.*, 2009; Andreeva *et al.*, 2010].
- Subregions: NE, SE.
- Bionomics: Lives in small permanent and semi-permanent waterbodies [Stadnichenko, 2004].
- IUCN conservation status: Not assessed.
- Remark: The true identity of Schrank's *Buccinum atrum* is almost impossible to learn due to loss of the type material. The Western European malacologists did not accept this species as a valid one [Glöer, 2002a; Welter-Schultes, 2012], and *S. atra* sensu Kruglov & Starobogatov, 1986 corresponds well to the diagnosis of *S. palustris* of the Western European authors [Jackiewicz, 1998a; Glöer, 2002a]. Kruglov & Starobogatov [1986, 1993a] accepted three subspecies of *S. atra*. One of them (*S. atra starobogatovi*) is an apparent synonym of *S. palustris*, whereas the third one, *S. atra zebrella* W. Dybowski, 1913, is accepted now as a separate species [Khokhutkin *et al.*, 2009; Andreeva *et al.*, 2010].

363(439). *Stagnicola (Stagnicola) callomphala* (Servain, 1881)

[= *Lymnophysa palustris* var. *clessiniana* Hazay, 1881; *Limnaea palustris* var. *transsylvanica* Kimałowicz, 1884; *Turriminaea typica* W. Dybowski, 1908; *Lymnaea danubialis* sensu Starobogatov, 1977, non Schrank, 1803]

Limnaea callomphala Servain, 1881: 78.

- Type locality: Hungary, the Balaton Lake between Füred et Tihany (approximately 46°54'50"N; 17°53'45"E).
- Types: Not traced.
- Global distribution: Southern part of the Eastern Europe.
- Distribution in the former USSR: South of the European part of RAC eastward to the South Urals [Stadnichenko, 2004; Khokhutkin *et al.*, 2009]. Its alleged presence in the Western Siberia [Knelzen & Stenko, 1987; Andreeva *et al.*, 2010] is rather doubtful.
- Subregions: NE, SE.
- Bionomics: Lives in small permanent and semi-permanent floodplain waterbodies [Stadnichenko, 2004].
- IUCN conservation status: Not assessed.
- Remark: Anatomically this species is similar to *S. palustris*, and it is not accepted as valid by the Western European authors [Glöer, 2002a; Welter-Schultes, 2012]. However, *S. callomphala* has a distinct shell habitus and a rather restricted range much narrower than that of *S. palustris*. These facts would support its independent taxonomic status.

364(440). *Stagnicola (Stagnicola) fuscus* (C. Pfeiffer, 1821) sensu Kruglov et Starobogatov, 1986

Lymnaeus fuscus C. Pfeiffer, 1821: 92, pl. 4, fig. 25.

- Type locality: Germany, in vicinities of Cassel City.
- Types: Not traced.

- Global distribution: The Central and Eastern Europe.
- IUCN conservation status: Not assessed (*Stagnicola fuscus* sensu Falkner *et al.*, 2001, non Kruglov & Starobogatov, 1986 is ranked as LC – least concern).
- Remark: In the Western European malacology, a quite different species of *Stagnicola*, not living in the RAC territory, is accepted under the name *S. fusca*. According to Jackiewicz [1998b], its proper name should be *S. vulnerata* (Küster, 1862), whereas *S. fuscus* is a synonym of *S. palustris*. The species *S. fuscus* sensu Kruglov & Starobogatov, 1986 has, however, some conchological peculiarities as compared to *S. palustris* [Palatov & Vinarski, 2014] and its range is narrower than that of *S. palustris*. These facts would support its taxonomic distinctness. Kruglov & Starobogatov [1986, 1993a] distinguished two subspecies within *S. fuscus*.

364(440a). *Stagnicola (Stagnicola) fuscus fuscus* (C. Pfeiffer, 1821)

- Distribution in the former USSR: The European part of RAC [Kruglov & Starobogatov, 1993a; Palatov & Vinarski, 2014]. Recently found in waterbodies of the Caucasian region (D. Palatov, M. Vinarski, unpublished).
- Subregions: NE, SE, CT.
- Bionomics: The subspecies is registered in permanent waterbodies and wetlands [Kruglov, 2005]. According to Palatov & Vinarski [2014], it lives in small springs and large lentic waterbodies.

364(440b). *Stagnicola (Stagnicola) fuscus maritimus* (Clessin, 1878)

Limnaea palustris var. *maritima* Clessin, 1878: 76, pl. 3, fig. 17

- Type locality: Sweden, the coast of

the Gulf of Bothnia in Medelpad Province.

- Types: Not traced and probably lost. Clessin's collection was in Stuttgart Museum, totally destroyed during 1939–1945 war [Dance, 1986].
- Distribution in the former USSR: The Baltic Sea.
- Subregions: NE.
- Bionomics: A brackishwater subspecies living in the shallow zone of the Baltic Sea [Kruglov & Starobogatov, 1986, 1993a].

364(441). *Stagnicola (Stagnicola) pachyta* (Westerlund, 1885)

Limnaea taurica var. *pachyta* Westerlund, 1885: 48.

- Type locality: Not stated in the original description. Most probably, it was the Crimea Peninsula.
- Types: Lost [see Vinarski *et al.*, 2013b for details].
- Global distribution: Endemic to the south-eastern Europe.
- Distribution in the former USSR: Two localities of this species are known: the Crimea Peninsula and the Volga Delta [Kruglov & Starobogatov, 1986].
- Subregions: SE.
- Bionomics: Unknown.
- IUCN conservation status: Not assessed.
- Remark: Originally, this taxon was described as a variety of *Limnaea taurica* with the type locality situated somewhere in the Crimea Peninsula [Westerlund, 1885]. Kruglov & Starobogatov [1986] redescribed this species on the basis of a single specimen collected in the Volga Delta. It is not clear, however, if there is any correspondence between this specimen and the original Westerlund's taxon. Unfortunately, the type series of this species is lost, and one may judge on its true identity only hypothetically. Kruglov [2005] accepted *S. pachyta* as a species closely allied to *S. fuscus*. A recent finding of *S. pachyta* in Odessa Region of Ukraine [Son, 2004] is based on a wrong determina-

tion (actually these mollusks proved to belong to *L. taurica taurica*).

365(442). *Stagnicola (Stagnicola) gloeeri* (Vinarski, 2011)

Lymnaea (Stagnicola) gloeeri Vinarski, 2011: 55, fig. 1, M-R.

- Type locality: Russia, Tyumen Region, the Ra-Iz Ridge (the Polar Urals), small artificial pond lying at the base of the railway embankment at kilometer 141 of the Labytnangi–Seida railroad (approximately 66°50'N, 65°40'E).
- Types: ZIN, Nos. 1 and 2 in systematic catalogue (the holotype and 5 paratypes). Other 9 paratypes are in the Museum of Siberian Aquatic Mollusks, Omsk State Pedagogical University (Nos. 15-1493 and 15-2048).
- Global distribution: Northern parts of the Urals and the Western Siberia.
- Distribution in the former USSR: Except the type locality, the species has been found in southern part of the Yamal Peninsula. Empty shells of presumably this species collected in the Timan Tundra (Pechora Lowland) are kept in ZMMU (No. Lc-2835).
- Subregions: NE, WS.
- Bionomics: Lives in small permanent and semi-permanent waterbodies.
- IUCN conservation status: Not assessed.

366(443). *Stagnicola (Stagnicola) iliensis* (Lazareva, 1967)

Lymnaea iliensis Lazareva, 1967a: 1347-1348, figs. 1 (6-6a), 2 (6-6a).

- Type locality: Southern Kazakhstan, the Balkhash Lake basin, a floodplain lake situated near the entrance of the Kaskelenka River to the Ili River.
- Types: ZIN, Nos. 1–6 in systematic catalogue. The type series includes the holotype and several tens of paratypes.
- Global distribution: Kazakhstan and adjacent areas.

- Distribution in the former USSR: Northern, Southern and Eastern Kazakhstan, southern part of the Western Siberia [Vinarski, 2008].
- Subregions: WS, CA.
- Bionomics: Lives in small permanent and semi-permanent waterbodies.
- IUCN conservation status: Not assessed.
- Remark: Morphologically, this species is similar to *S. saridalensis* but there are some qualitative differences in the structure of the female reproductive tract that may indicate its taxonomic distinctness [Vinarski, 2008].

367(444). *Stagnicola (Stagnicola) saridalensis* (Mozley, 1934)

[= *Lymnaea palustris draverti* Mozley, 1934; *Lymnaea likharevi* Lazareva, 1967]

Lymnaea palustris saridalensis Mozley, 1934: 2-3, pl. 1, fig. 1.

- Type locality: Northern Kazakhstan, small, somewhat saline lake on the Steppe Sari Dala, 15 km southwest of Pavlodar.
- Holotype: USNM No. 469734.
- Global distribution: Northwestern Asia (within the RAC boundaries).
- Distribution in the former USSR: The Western Siberia northward to the Polar circle, Northern, Western and Southern Kazakhstan, the Urals [Vinarski *et al.*, 2007; Khokhutkin *et al.*, 2009; Andreeva *et al.*, 2010]. Also registered in Lipetsk Region of the European Russia [as *Lymnaea likharevi*, see Kruglov & Starobogatov, 1986].
- Subregions: SE, WS, CA.
- Bionomics: Lives in small permanent and semi-permanent waterbodies. Sometimes may be found in shallow zones of large lakes and reservoirs.
- IUCN conservation status: LC (least concern).
- Remark: A statistical analysis of vari-

ation of characters of shell and soft body has shown that there are no sharp distinction between *S. saridalensis* and *Lymnaea likharevi* Lazareva, 1967, and, thus, the two taxa should be conspecific [Vinarski, 2014a].

368(445). *Stagnicola (Stagnicola) turricula* (Held, 1836)

[= *Galba palustris* sensu Jackiewicz, 1959, non O.F. Müller, 1774; *Lymnaea vulnerata* sensu Jackiewicz, 1962, non Küster, 1862; *Lymnaea danubialis* sensu Kruglov et Starobogatov, 1986, non Schrank, 1803]

Limnaea turricula Held, 1836: 278.

- Type locality: Germany, Bavaria, in the Danube River valley.
- Types: Lost. Held's types were destroyed during the World War II (G. Falkner, pers. comm.).
- Global distribution: The Central and Eastern Europe [Jackiewicz, 1992, 1998a].
- Distribution in the former USSR: The European part of RAC.
- Subregions: NE, SE.
- Bionomics: Lives in different types of waterbodies, including large lakes, ponds, rivers and streams, ditches and peatbogs [Jackiewicz, 1998a].
- IUCN conservation status: LC (least concern).
- Remark: Morphologically, *Lymnaea (Stagnicola) turricula* sensu Kruglov & Starobogatov [1986] is not identical with *L. (S.) turricula* sensu Jackiewicz [1993]. Due to absence of the type series, it is difficult to determine what is the true identity of the species, and different viewpoints are possible. However, it should be noted that in the case of *L. turricula* Falkner [1985] did act as the First Reviser, and his conclusions were based on examination of topotypic specimens, whereas Kruglov & Staroboga-

tov [1986] studied materials from the European Russia only. Falkner's interpretation was accepted by Jackiewicz [1989, 1992] and was adopted in the current Western European literature [Glöer, 2002a; Welter-Schultes, 2012]. We also are inclined to accept it here. In this case, *L. (S.) turricula* sensu Kruglov & Starobogatov becomes a synonym of *S. palustris* sensu Jackiewicz [1992]. Judging from the morphological description provided by Kruglov [2005], the species *L. (S.) danubialis* sensu Kruglov & Starobogatov, 1986 must also be synonymized with *L. (S.) turricula* sensu Jackiewicz. Formally, the former name has a priority before *L. turricula* Held, but it is almost impossible to conclude on the true identity of *Buccinum danubialis* Schrank, 1803 because of vagueness of its original description and loss of the type material. Bargues *et al.* [2001, 2003] proposed to treat *S. turricula* as a subspecies of *S. palustris* since the two taxa are genetically very similar. Pieńkowska *et al.* [2015] presented additional arguments supporting the species status of *S. turricula*. In particular, it has been shown that the two taxa are not allopatric that makes impossible to consider them as subspecies of the same species.

368(446). *Stagnicola (Stagnicola) badia* (Küster, 1862)

Limnaeus badius Küster, 1862: 23, pl. 4, figs. 18-19.

- Type locality: Croatia (or Bosnia and Herzegovina), the Neretva (= Narenta) River.
- Types: Not traced.
- Global distribution: Endemic to the southeastern Europe.
- Distribution in the former USSR: The Volga Delta [Kruglov & Starobogatov, 1986].
- Subregions: SE.
- Bionomics: Unknown [Stadnichenko, 2004].

- IUCN conservation status: Not assessed.
- Remark: Proportions of the copulative apparatus of this species [Kruglov, 2005] correspond with those in *S. turricula* (Held, 1836) sensu Jackiewicz [1992, 1998].

368(447). *Stagnicola (Stagnicola) berlani* (Bourguignat, 1870) sensu Kruglov & Starobogatov, 1986

Limnaea berlani Bourguignat, 1870: 44-45.

- Type locality: Not stated in the original description (the lower Danube – from the title). Hubendick [1951: 182] stated that the type locality is situated somewhere in Bulgaria.
- Types: MHNG No. 6785 [see Sitnikova *et al.*, 2012 for details].
- Global distribution: Endemic to the south-eastern Europe.
- Distribution in the former USSR: South of the European part of RAC, the northern Caucasus, the Transcaucasia [Kruglov & Starobogatov, 1993a].
- Subregions: SE, CT.
- Bionomics: Lives in temporary and semi-permanent waterbodies [Stadnichenko, 2004].
- IUCN conservation status: Not assessed.
- Remark: Sitnikova *et al.* [2012] studied the syntype of *Limnaea berlani* and published its photo. Given its large size and peculiar appearance, it is impossible to classify this specimen within *Stagnicola*. Apparently, it belongs to *L. stagnalis* and, thus, a replacement name should be given to *Lymnaea (S.) berlani* sensu Kruglov & Starobogatov [1986]. Proportions of the copulative apparatus of this species [Kruglov, 2005] correspond with those in *S. turricula* (Held, 1836) sensu Jackiewicz [1992, 1998].

369(448). *Stagnicola (Stagnicola) ventricosella* (B. Dybowski, 1913)

Lymnaea (Fossaria) ventricosella B. Dybowski, 1913: 189, pl. 4, fig. 18.

- Type locality: Russia, the Baikal Lake, Bol'shoy Sor.

- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to Siberia [Kruglov & Starobogatov, 1993a].
- Distribution in the former USSR: The Baikal Region, northern parts of the Western and Central Siberia [Kruglov & Starobogatov, 1993a; Andreeva *et al.*, 2010].
- Subregions: WS, ES, BL.
- Bionomics: Almost unknown. Most probably, the species prefer to live in small temporary or semi-permanent waterbodies.
- IUCN conservation status: Not assessed.

370(449). *Stagnicola (Stagnicola) zebrella* (B. Dybowski, 1913)

[=*Costolimnaea zebrella* var. *pellucida* B. Dybowski, 1913]

Costolimnaea zebrella B. Dybowski, 1913: 186, pl. 4, fig. 10 a, b.

- Type locality: Russia, the Baikal Lake, Kultuk.
- Lectotype: ZIN, No. 1 in systematic catalogue [fide Starobogatov & Streletskaja, 1967]. The lectotype status of this specimen, however, is not indicated in the catalogue.
- Global distribution: The north-eastern Europe and Siberia [Kruglov & Starobogatov, 1993a].
- Distribution in the former USSR: The north-eastern Europe, the Western Siberia (except southern part), the Yenisei drainage basin, the Baikal Region [Kruglov & Starobogatov, 1993a; Andreeva *et al.*, 2010].
- Subregions: NE, WS, ES, BL.
- Bionomics: Almost unknown. Most probably, the species prefer to inhabit small temporary or semi-permanent waterbodies [Andreeva *et al.*, 2010].
- IUCN conservation status: Not assessed.

Subgenus *Corvusiana*
Servain, 1881

Type species: *Helix corvus* Gmelin, 1791 (SD Kobelt, 1883)

Remark: This taxon was ranked as subgenus of the genus *Lymnaea* by Kruglov & Starobogatov [1984b]. Vinarski [2013] accepted it as a separate genus but recent molecular studies hint that *Corvusiana* is no more than a subgenus of *Stagnicola* [Bargues et al., 2001, 2003; Pieńkowska et al., 2015].

**371(450). *Stagnicola* (*Corvusiana*)
corvus (Gmelin, 1791)**

[= *Limnaea palustris* var. *corviformis* Bourguignat, 1881, partim; *Lymnaea curtacorvus* Kruglov et Starobogatov, 1984]

Helix corvus Gmelin, 1791: 3665.

- Type locality: Germania, Thuringia.
- Types: Not traced.
- Global distribution: Europe.
- Distribution in the former USSR: The European part of RAC, except of extreme south and north [Kruglov & Starobogatov, 1993a; Palatov & Vinarski, 2014].
- Subregions: NE, SE.
- Bionomics: Inhabits a wide range of habitats, from lakes and oxbows to small ponds, ditches and peatbogs [Jackiewicz, 1998].
- IUCN conservation status: LC (least concern).
- Remark: Kruglov & Starobogatov [1984b] described a species *Lymnaea* (*Corvusiana*) *curtacorvus* from the Pildzhskoye Lake in Karelia. A molecular study of topotypes has revealed no genetic distance from typical *S. corvus* [Schniebs & Vinarski, unpublished]. Most probably, *L. curtacorvus*, with its short-spined shell, is a ecophenotypic

modification of the latter species adapted to live in shallow zones of large lakes.

**371(451). *Stagnicola* (*Corvusiana*)
gueretiniana (Servain, 1881)**

Limnaea gueretiniana Servain, 1881: 76.

- Type locality: Serbia, the Sava River near Belgrad City.
- Types: Not traced.
- Global distribution: Endemic to the south-eastern Europe.
- Distribution in the former USSR: The European part of RAC, except of its north [Kruglov & Starobogatov, 1993a; Stadnichenko, 2004; Palatov & Vinarski, 2014].
- Subregions: NE, SE.
- Bionomics: Lives in lentic waterbodies with different hydrological regime [Stadnichenko, 2004].
- IUCN conservation status: Not assessed.
- Remark: *S. gueretiniana* differs from *S. corvus* by quantitative traits only and, probably, is a synonym of the latter [Palatov & Vinarski, 2014]. Western European malacologists did not accept *S. gueretiniana* as a valid species [Glöer, 2002a; Welter-Schultes, 2012] though the species *S. montenegrinus* Glöer et Pešić, 2009 recently described from the Balkans may be, in fact, identical with *S. gueretiniana* sensu Kruglov & Starobogatov, 1984.

Genus *Omphiscola*
Rafinesque, 1819

[= *Limnaea* auct., partim; *Leptolimnea* Swainson, 1840; *Glabriana* Servain, 1881]

Type species: *Buccinum glabrum* O.F. Müller, 1774 (SM Beck, 1838)

**372(452). *Omphiscola glabra*
(O.F. Müller, 1774)**

[= *Helix octona* Pennant, 1777; *Bulinus leucostomus* Poirer, 1801; *Helix octanfracta* Montagu, 1803; *Limnaeus elongatus* Draparnaud, 1805; *Helix fossaria* Dillwyn, 1817, non Montagu, 1803; *Limnaeus subulatus* Kickx, 1830; *Limnaea dublieri* Requier, 1848; *Limnaea glabra* var. *elegans*

Moquin-Tandon, 1855; *Limnaea glabra* var. *variabilis* Moquin-Tandon, 1855; *Limnaea glabra* var. *labiata* Westerlund, 1871; *Limnaea glabra* var. *normalis* Westerlund, 1871; *Limnaea glabra* var. *clavata* Westerlund, 1885]

Buccinum glabrum O.F. Müller, 1774: 135-136.

- Type locality: Denmark, Fridrichsdal (a suburb of Copenhagen).
- Types: Lost. We failed to find the type series of this species in ZMUC [Nekhaev *et al.*, 2015].
- Global distribution: Europe.
- Distribution in the former USSR: The Baltic Sea basin [Kruglov & Starobogatov, 1993a] and Western Ukraine [Stadnichenko, 2004].
- Subregions: NE, SE.
- Bionomics: Lives “in shallow, still waters with dense vegetation” [Jackiewicz, 1998: 38]. The species has become very rare in many European countries.
- IUCN conservation status: NT (near threatened).
- Remark: Having examined the type material of *Limnaea glabra* var. *clavata* kept in NMG [see Vinarski *et al.*, 2013b], we could not find any important differences from typical *O. glabra*. Kruglov & Starobogatov [1981], however, regarded *L. glabra* var. *clavata* as a distinct species.

Genus *Aenigmomphiscola* Kruglov et Starobogatov, 1981

Type species: *Aenigmomphiscola europaea* Kruglov et Starobogatov, 1981 (OD)

373(453). *Aenigmomphiscola* *europaea* Kruglov et Starobogatov, 1981

Aenigmomphiscola europaea Kruglov & Starobogatov, 1981: 969, fig. 1, 1, 7, 12; 3A; 4A.

- Type locality: Russia, Republic of

Bashkortostan, vicinities of Ufa city, in a bog near Urgun village [Kruglov & Starobogatov, 1981]. In reality, Urgun (= Muldashevo) village is situated 230 km E from Ufa City, approximate coordinates are 54°24'N; 59°23'E [Vinarski & Grebennikov, 2012].

- Types: ZIN, Nos. 1–6 in systematic catalogue. The type series includes the holotype and 100 paratypes.
- Global distribution: Endemic to the European Russia.
- Distribution in the former USSR: Only a few localities of this species in the European Russia have been found to the date [Kruglov & Starobogatov, 1981; Vinarski & Grebennikov, 2012; Sitnikova *et al.*, 2014a]. The type locality still is the easternmost reliable finding of *Ae. europaea*.
- Subregions: NE, SE.
- Bionomics: Lives in wetland areas [Kruglov, 2005]. A rare species [Vinarski & Grebennikov, 2012].
- IUCN conservation status: Not assessed.

374(454). *Aenigmomphiscola* *uvalievae* Kruglov et Starobogatov, 1981

[= *Aenigmomphiscola kazakhstanica* Kruglov et Starobogatov, 1981]

Aenigmomphiscola uvalievae Kruglov & Starobogatov, 1981: 971-973, fig. 1, 2, 8, 13; 2; 3B; 4B; 5.

- Type locality: Kazakhstan, Akmola (former Kokchetav) Region, Schchuchinsk district, a pasture of the soviet collective farm named after Frunze, sheep winter stay.
- Types: ZIN, Nos. 1–9 in systematic catalogue. The type series includes the holotype and 96 paratypes.
- Global distribution: Northern Kazakhstan and adjacent areas.

- Distribution in the former USSR: Only a few localities of this species in the Urals, southern part of the Western Siberia and Northern Kazakhstan have been discovered to the date [Kruglov & Starobogatov, 1981; Khokhutkin *et al.*, 2009; Vinarski & Grebennikov, 2012; Sitnikova *et al.*, 2014a]. A record of this species in Samara Region [Chuzhekova & Polyakova, 2007] needs further investigation.

- Subregions: SE, WS.

- Bionomics: Poorly studied. The findings of this species known to the date were made in wet meadows, bogs, and even rivers [Vinarski & Grebennikov, 2012; Sitnikova *et al.*, 2014a].

- IUCN conservation status: Not assessed.

- Remark: Vinarski & Grebennikov [2012] noted that *Ae. uvalievae* and *Ae. kazakhstanica* cannot be distinguished in syntopy on the basis of their conchological traits and, thus, are conspecific. The indirect evidence of this is the fact that the paratypes of both species were collected (partially) from the same waterbodies and, most probably, represents intraspecific variants of conchological variation.

Genus *Ladislavella*

B. Dybowski, 1913

[= *Polyrhytis* Meek, 1876, partim; *Catascopia* Meier-Brook et Barges, 2002]

Type species: *Ladislavella sorensis* B. Dybowski, 1913 = *Limnaea palustris* var. *terebra* Westerlund, 1885 (SD Hubendick, 1951)

Remark: Kruglov & Starobogatov [1986] considered *Ladislavella* as a section of the genus *Stagnicola*. The taxonomic history of *Ladislavella* as well as its proper systematic position and species composition were discussed by Vi-

narski [2012a] who accepted this taxon as a separate lymnaeid genus not closely allied to *Stagnicola*.

Subgenus *Ladislavella* s.str.

375(455). *Ladislavella* (*Ladislavella*) *terebra* (Westerlund, 1885)

[= *Limnaea attenuata* Westerlund, 1877, non Say, 1821; *Fossaria pulchelletta* B. Dybowski, 1913; *Ladislavella terebra* var. *pulla* B. Dybowski, 1913; *Ladislavella terebra* var. *sorensis* B. Dybowski, 1913; *Ladislavella terebra* var. *sorica* B. Dybowski, 1913; *Fossaria kultukiana* W. Dybowski, 1913; *Fossaria lindholmi* W. Dybowski, 1913; *Leptolimnaea liogyra* var. *sorensis* W. Dybowski, 1913; *Leptolimnaea terebra* var. *sorensiana* W. Dybowski, 1913; *Leptolimnaea terebra* var. *sorensis* W. Dybowski, 1913; *Limnaea palustris bolotensis* Mozley, 1934; *Galba occulta* Jackiewicz, 1959]

Limnaea palustris var. *terebra* Westerlund, 1885: 46.

- Type locality: "Siberia, Tunguska" (collection place of the neotype). It is not exactly known which river is meant (there are several rivers in Siberia bearing this name, including the Nizhnyaya Tunguska and the Podkamennaya Tunguska).

- Neotype: NMG, No. 3798 [see Vinarski & Glöer, 2008; Vinarski *et al.*, 2013b].

- Global distribution: Northern Palearctic.

- Distribution in the former USSR: Western Ukraine [Korniushin, 1999], entire Siberia, including the Baikal Lake [B. Dybowski, 1913; Vinarski & Glöer, 2008; Andreeva *et al.*, 2010], extreme north-east of Europe, Kolguev Island of the Barents Sea [Smith, 1896].

- Subregions: NE, SE, WS, ES, BL.

- Bionomics: Lives in temporary and semi-permanent waterbodies also in floodplain wetlands [Andreeva *et al.*, 2010].

- IUCN conservation status: Not assessed.

376(456). *Ladislavella (Ladislavella) liogyra* (Westerlund, 1897)

Limnaea palustris var. *liogyra* Westerlund, 1897b: 125.

- Type locality: Russia, the Far East, the Primorye Territory, southern part of the Ussuri River basin. The syntype label bears inscription “Grigorjewskoje” (nowadays Grigorievka village, approximate coordinates 44°09′40″N; 132°00′00″E).
- Types: A single specimen (syntype) from the type locality is kept in NMG under No. 3805 in systematic catalogue [see Vinarski *et al.*, 2013b].
- Global distribution: The Russian Far East.
- Distribution in the former USSR: The Amur River drainage and the Primorye Territory [Kruglov & Starobogatov, 1993a].
- Subregions: SF.
- Bionomics: Lives in temporary and semi-permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

Subgenus *Walterlymnaea*

Starobogatov et Budnikova, 1976

[= *Pseudoisidora* Thiele, 1931, partim; *Dallirhytis* Kruglov et Starobogatov, 1989]

Type species: *Limnaea catascopium* Say, 1817 (OD)

377(457). *Ladislavella (Walterlymnaea) atkaensis* (Dall, 1884)

[= *Limnaea randolphi* Baker, 1904]

Limnaea ovata var. *atkaensis* Dall, 1884: 343.

- Type locality: USA, the Aleutian Islands, the Atka Island near Korovin Bay.
- Syntypes: USNM No. 29031. The type

series includes two syntypes [fide Bogatov & Zatravkin, 1990].

- Global distribution: Beringia and northwestern Canada [Clarke, 1981; Burch, 1982].
- Distribution in the former USSR: The Chukchi Peninsula (the Amguema river drainage and eastwards) and the Koryak upland [Starobogatov *et al.*, 2004].
- Subregions: NF.
- Bionomics: Lives in large lentic waterbodies [Kruglov, 2005].
- IUCN conservation status: Not assessed.

377(458). *Ladislavella (Walterlymnaea) petersi* (Dall, 1905)

[= *Limnaea alascaensis* Baker, 1911]

Limnaea petersi Dall, 1905: 66, pl. 2, fig. 3.

- Type locality: USA, Alaska, the Koyukuk River, north of Yukon.
- Syntypes: USNM No. 180332. The type series includes two syntypes [fide Bogatov & Zatravkin, 1990].
- Global distribution: Beringia and British Columbia (Canada) [Bogatov & Zatravkin, 1990].
- Distribution in the former USSR: The Chukchi Peninsula (only extreme eastern part), the Koryak upland [Kruglov & Starobogatov, 1993a].
- Subregions: NF.
- Bionomics: Occurs in coastal zone of large cold lakes, on vegetation or bottom substrate [Bogatov & Zatravkin, 1990].
- IUCN conservation status: Not assessed.
- Remark: North American malacologists [Clarke, 1981; Burch, 1982, 1989] did not accept *L. petersi* as a valid species distinct from *L. atkaensis*.

378(459). *Ladislavella (Walterlymnaea) azabatschensis* (Kruglov et Starobogatov, 1989)

Limnaea azabatschensis Kruglov & Starobogatov, 1989a: 18, fig. 1, 5, 2, 4.

- Type locality: Russia, the Kamchatka Peninsula, a channel from Azabachye Lake to the Kamchatka River.

- Holotype: ZIN No. 1 in systematic catalogue.
- Global distribution: Endemic to extreme northeast of Asia.
- Distribution in the former USSR: The south-eastern Kamchatka [Kruglov, 2005].
- Subregions: NF.
- Bionomics: Lives in lentic waterbodies [Kruglov, 2005].
- IUCN conservation status: Not assessed.

**379(460). *Ladislavella*
(*Walterlymnaea*) *falsipalustris*
(Kruglov et Starobogatov, 1989)**

Lymnaea falsipalustris Kruglov & Starobogatov, 1989a: 19, fig. 1, 6; 2, 5.

- Type locality: Russia, the Kamchatka Peninsula, a channel from Azabachye Lake to the Kamchatka River.
- Holotype: ZIN No. 1 in systematic catalogue.
- Global distribution: Endemic to extreme northeast of Asia.
- Distribution in the former USSR: The south-eastern Kamchatka [Kruglov, 2005].
- Subregions: NF.
- Bionomics: Lives in lentic waterbodies [Kruglov, 2005].
- IUCN conservation status: Not assessed.

**380(461). *Ladislavella*
(*Walterlymnaea*) *tumrokensis*
(Kruglov et Starobogatov, 1985)**

[= *Lymnaea nuttaliana* sensu Kruglov & Starobogatov, 1989, non Lea, 1841; *Lymnaea kurenkovi* Kruglov et Starobogatov, 1989]

Lymnaea tumrokensis Kruglov & Starobogatov, 1985b: 30, fig. 1, 6.

- Type locality: Russia, the Kamchatka Peninsula, a hot spring in the Tumrok ridge.
- Types: ZIN Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and 30 paratypes.

- Global distribution: Endemic to Ber- ingia.
- Distribution in the former USSR: The Kamchatka Peninsula and the Koryak Upland.
- Subregions: NF.
- Bionomics: Lives in small waterbod- ies, including hot springs [Kruglov, 2005].
- IUCN conservation status: NT (near threatened).
- Remark: Originally, this species was placed into the subgenus *Orientogalba* Kruglov et Starobogatov, 1985 of the genus *Lymnaea* s. l. [Kruglov & Starobo- gatov, 1985b, 1993b]. A molecular study of topotypic specimens has shown that, in fact, the species should be classified within *Walterlymnaea* as it is closely allied to the Nearctic representatives of the subgenus [Vinarski *et al.*, 2016]. Two more species delineated by Kruglov & Starobogatov [1989, 1993a] proved to be identical with *L. tumrokensis*: *L. ku- renkovi* and *L. nuttaliana* Lea, 1841 sen- su Kruglov & Starobogatov, 1989. Though the latter species name is the oldest of them and has a formal priority before *L. tumrokensis*, it is doubtful that speci- mens from Kamchatka described by Kruglov & Starobogatov [1989a] under this name are identical with *L. nuttaliana* sensu Lea, 1841 with the type locality situated in Oregon, USA [Vinarski *et al.*, 2016].

Genus *Galba* Schrank, 1803

[= *Truncatuliana* Servain, 1881; *Fossaria* West- erlund, 1885; *Montigalba* Izzatullaev, Kruglov et Starobogatov, 1983]

Type species: *Buccinum truncatum*

* A note added to the proof: Vinarski *et al.* [2016] concluded that *L. tumrokensis* is a subspecies of the Nearctic species *Ladislavella catascopia* (Say, 1817).

O.F. Müller, 1774 (SD, ICZN opinion 1896, 1998)

Remark: The genus is accepted here following Vinarski [2013], i.e. including *Sibirigalba* Kruglov et Starobogatov, 1985 as a subgenus.

Subgenus *Galba* s. str.

381(462). *Galba (Galba) truncatula* (O.F. Müller, 1774)

[= *Bulimus truncatus* Bruguière, 1789; *Bulimus obscurus* Poiret, 1801; *Limneus minuta* Draparnaud, 1801; *Helix fossaria* Montagu, 1803; *Galba pusilla* Schrank, 1803; *Limneus grayanus* Jeffreys, 1830; *Limneus tinctus* Jeffreys, 1830; *Limnaeus limbatus* Rossmässler, 1835; *Limnaeus pullus* Rossmässler, 1835; *Limnaea truncatula* var. *communis* Beck, 1837; *Limnaea truncatula* var. *major* Beck, 1837; *Limnaeus limosus* Cantraine, 1838, non Linnaeus, 1758; *Limnaea truncatula* var. *elegans* Beck, 1837; *Limnaea dublieri* Locard, 1882, non Requier, 1848; *Limnaea montana* Servain, 1888; *Limnaea moquini* Locard, 1893; *Limnaea pumila* Locard, 1893]

Buccinum truncatulum O.F. Müller, 1774: 130-131.

- Type locality: Germany, Thuringien, vicinity of Thangelstedt Town (approximately 50°50'40"N; 11°16'00"E).
- Types: Lost. We failed to find the type materials in ZMUC.
- Global distribution: Eurasia, Northern America, Southern America, Northern and Eastern Africa [Hubendick, 1951; Brown, 1994; Durand *et al.*, 2002; Glöer, 2002a].
- Distribution in the former USSR: The species is likely distributed throughout the former USSR territory except of extreme north-east of Asia.
- Subregions: NE, SE, CT, WS, ES, CA, SF.
- Bionomics: An amphibious species usually dwelling in smallest temporary and semi-permanent waterbodies such as pools and wet meadows. Also it may

inhabit wet shores of small rivers [Kruglov, 2005; Andreeva *et al.*, 2010].

- IUCN conservation status: LC (least concern).
- Remark: Kruglov & Starobogatov [1985b, 1993a] proposed to split *G. truncatula* s. l. into a series of species attributed to two "sections" of the subgenus *Galba*. Recent molecular taxonomic studies revealed that despite high conchological diversity only two Palearctic species of *Galba* may be distinguished by means of standard genetic markers [Bargues *et al.*, 2011; Schniebs & Vinarski, unpublished], *G. truncatula* and *G. schirazensis* (Küster, 1862). The status of other nominal species is unclear and should be refined in future.

381(463). *Galba (Galba) almaatina* (Izzatullaev, Kruglov et Starobogatov, 1983)

Limnaea almaatina Izzatullaev *et al.*, 1983a: 323, fig. 1 (3-4).

- Type locality: Southern Kazakhstan, Alma-Ata Region, a spring in the valley of Bol'shaya Almaatinka River.
- Holotype: ZIN, No. 1.
- Global distribution: Central Asia (within boundaries of ex-USSR).
- Distribution in the former USSR: Mountain parts of Central Asia, probably in the Altay Mountains [Kruglov & Starobogatov, 1993a].
- Subregions: CA.
- Bionomics: Lives in springs [Kruglov, 2005].
- IUCN conservation status: Not assessed.

381(464). *Galba (Galba) bowelli* (Preston, 1909)

Limnaea bowelli Preston, 1909: 115, fig. 1.

- Type locality: Tibet, "Te-ring Gompa, in a small hill stream arising from a spring, 14,000 feet; also from Mangtsa, 14,500 feet; High Hill, Gompa, Gyantse valley in a small hill stream, among moss and stones, 14,500 feet; and Gyantse, 13,120 feet".
- Types: Not traced.

- Global distribution: Central Asia (mountain regions).
- Distribution in the former USSR: Mountain part of Central Asia, probably in the inner Altay and Tuva [Kruglov & Starobogatov, 1993a].
- Subregions: CA.
- Bionomics: Lives in springs [Kruglov, 2005].
- IUCN conservation status: Not assessed.

**381(465). *Galba (Galba) goupili*
(Moquin-Tandon, 1855)**

Limnaea truncatula var. *goupili* Moquin-Tandon, 1855: 474.

- Type locality: Northwestern France, Sarthe Department.
- Types: Not traced.
- Global distribution: Europe [Kruglov, 2005].
- Distribution in the former USSR: The European part of RAC [Kruglov & Starobogatov, 1993a; Stadnichenko, 2004].
- Subregions: NE, SE, CT.
- Bionomics: Lives in springs and temporary waterbodies [Kruglov, 2005].
- IUCN conservation status: Not assessed.
- Remark: Though the type locality of this species is situated in France, *G. goupili* is not accepted as valid by Western European malacologists and was not included in the check-lists of the European malacofauna [Falkner *et al.*, 2001; Welter-Schultes, 2012; Bank, 2014].

**381(466). *Galba (Galba) oblonga*
(Puton, 1847)**

Lymnea oblonga Puton, 1847: 60.

- Type locality: France, upper Rhein, Doller.
- Types: Not traced.
- Global distribution: Europe, Central Asia [Kruglov, 2005].
- Distribution in the former USSR: The European part of RAC, the Caucasus and Tajikistan [Kruglov, 2005].
- Subregions: NE, SE, CT, CA.
- Bionomics: Lives in springs [Kruglov, 2005].
- IUCN conservation status: Not assessed.
- Remark: Though the type locality of this species is situated in France, *G. oblonga*

was not accepted as valid by Western European malacologists and was not included in the check-lists of the European malacofauna [Falkner *et al.*, 2001; Bank, 2014; Welter-Schultes, 2012].

**381(467). *Galba (Galba) subangulata*
(Roffiaen, 1868)**

[= *Limnaea truncatula* var. *ventricosa* Moquin-Tandon, 1855, non Hartmann, 1841].

Limnaea truncatula var. *subangulata* Roffiaen, 1868: 78, pl. 1, fig. 9.

- Type locality: Switzerland, "près d'Altorf, dans un fossé de la plaine vers Seedorf" [Roffiaen, 1868: 78].
- Types: Not traced.
- Global distribution: Europe, Central Asia [Kruglov, 2005].
- Distribution in the former USSR: The European part of RAC, the Caucasus and Central Asia [Starobogatov *et al.*, 2004; Kruglov, 2005].
- Subregions: NE, SE, CT, CA.
- Bionomics: Lives in small temporary waterbodies [Stadnichenko, 2004].
- IUCN conservation status: Not assessed.
- Remark: Though the type locality of this species is situated in Switzerland, *G. subangulata* was not accepted as valid by Western European malacologists and it was not included in the check-lists of the European malacofauna [Falkner *et al.*, 2001; Bank, 2014; Welter-Schultes, 2012].

**381(468). *Galba (Galba) tengriana*
(Izzatullaev, Kruglov et
Starobogatov, 1983)**

Lymnaea tengriana Izzatullaev *et al.*, 1983a: 323, fig. 1 (5).

- Type locality: Tajikistan, Kulyab Region, Muminabad, a pool in vicinity of the Khan-Tengri Ridge.
- Types: ZIN, No. 1 (the holotype) and 2 (a single paratype) in systematic catalogue.
- Global distribution: Central Asia [Kruglov, 2005].
- Distribution in the former USSR: Tajikistan [Kruglov, 2005].
- Subregions: CA.

- Bionomics: Lives in temporary pools [Kruglov, 2005].
- IUCN conservation status: DD (data deficient).

**381(469). *Galba (Galba) thiesseae*
(Clessin, 1879)**

[= *Lymnaea shadini* Izzatullaev, Kruglov et Starobogatov, 1983]

Limnaea truncatula var. *thiesseae* Clessin, 1879: 4, pl. 1, fig. 2.

- Type locality: Greece, the Euboea Island.
- Types: Not traced. Topotypic specimens determined by Clessin himself (probable syntypes) are kept in NMG (No. 3840), SMNH (No. 12:19) and ZIN (No. 1 in systematic catalogue).
- Global distribution: South Palearctic [Kruglov, 2005].
- Distribution in the former USSR: Southern part of the European Russia, Ukraine, the Caucasus (Daghestan), western Central Asia [Kruglov, Starobogatov, 1993a; Stadnichenko, 2004; Starobogatov *et al.*, 2004], south of the Western Siberia [Vinarski, 2012b].
- Subregions: SE, CT, WS, CA.
- Bionomics: Lives in springs, brooks and irrigation channels [Kruglov, 2005].
- IUCN conservation status: Not assessed.
- Remark: Though the type locality of this species is situated in Greece, *G. thiesseae* was not accepted as valid by Western European malacologists and it was not included in the check-lists of the European malacofauna [Falkner *et al.*, 2001; Bank, 2006; Welter-Schultes, 2012].

**382(470). *Galba (Galba) schirazensis*
(Küster, 1862)**

[= *Limnaea persica* Sowerby, 1873, non Issel, 1865]

Lymnaeus schirazensis Küster, 1862: 53, pl. 11, fig. 28-31.

- Type locality: Iran, vicinity of Shiraz Town (approximately 29°37'N; 52°32'E).
- Types: Not traced.
- Global distribution: South Europe,

Northern Africa (Egypt), Central Asia, the Middle East, Central and Southern America (introduced) [Bargues *et al.*, 2011].

- Distribution in the former USSR: Central Asia and the Caucasus [Kruglov, 2005].
- Subregions: CT, CA.
- Bionomics: An amphibious species, found in antropophilic habitats and livestock inhabited places as well as in mountain rivers and streams [Bargues *et al.*, 2011].
- IUCN conservation status: LC (least concern).
- Remark: Bargues *et al.* [2011: 20] considered *G. schirazensis* as “a cryptic species by evolutionary convergence, probably as a consequence of adaptation to a similar amphibious way of life and similar habitats”. It was accepted as valid in Russian taxonomy [Kruglov & Starobogatov, 1993a; Kruglov, 2005] though the shell characteristics of *G. schirazensis* sensu Kruglov & Starobogatov, 1993 are somewhat different from those described by Bargues *et al.* [2011].

**Subgenus *Sibirigalba* Kruglov et
Starobogatov, 1985**

Type species: *Limnaea truncatula* var. *sibirica* Westerlund, 1885 (OD)

**383(471). *Galba (Sibirigalba) sibirica*
(Westerlund, 1885)**

Limnaea truncatula var. *sibirica* Westerlund, 1885: 52.

- Type locality: Russia, the Krasnoyarsk Territory, vicinities of Luzino village, lower courses of the Yenisei River.
- Lectotype: SMNH, No. 12:19 (see Vinarski *et al.*, 2013b for details).
- Global distribution: North-eastern Eurasia and Alaska [Kruglov, 2005].
- Distribution in the former USSR:

Northern part of the Western Siberia, the Altay, the Eastern Siberia, the Amur basin and the Primorye Territory, extreme northeastern Asia [Kruglov, 2005].

- Subregions: WS, ES, NF, SF.
- Bionomics: Lives in minute temporary waterbodies [Bargues *et al.*, 2011].
- IUCN conservation status: Not assessed.

Subfamily Amphipepleinae Pini, 1877

[= Radicinae Vinarski, 2013]

Type genus: *Amphipeplea* Nilsson, 1822
= *Myxas* G.W. Sowerby I, 1822 (M)

Genus *Myxas* G.W. Sowerby I, 1822

[= *Amphipeplea* Nilsson, 1822; *Lutea* T. Brown, 1827; *Cyclolimnaea* Dall, 1905]

Type species: *Buccinum glutinosum* O.F. Müller, 1774 (M)

384(472). *Myxas glutinosa* (O.F. Müller, 1774)

[= *Lymnaea lacustris* T. Brown, 1827, non Studer, 1820; *Amphipeplea ampullacea* Beck, 1837; *Myxas mulleri* Leach, 1852; *Limnaea glutinosa* var. *mucronata* Jeffreys, 1862]

Buccinum glutinosum O.F. Müller, 1774: 129.

- Type locality: Not stated in the original description. O.F. Müller [1774: 129] mentioned only that this species lives on leaves of yellow water lily, *Nuphar lutea* ("in foliis *Nymphaeae* imprimis luteae, haud frequens"). Most probably, the type locality should be quoted as Fridrichsdal, a suburb of Copenhagen, Denmark [see Falkner, 1984; Nekhaev *et al.*, 2015 for details].
- Types: Lost. We failed to find the type series of this species in ZMUC.
- Global distribution: Europe and Siberia [Kruglov, 2005].

- Distribution in the former USSR: Europe, southern part of the Western Siberia, northern part of the central Siberia (a single known habitat), central Kazakhstan [Kruglov & Starobogatov, 1993b; Stadnichenko, 2004; Vinarski *et al.*, 2013d].

- Subregions: NE, SE, WS, ES.
- Bionomics: Lives in stagnant waterbodies of different types, sometimes may be found in rivers with slow current. In many countries *M. glutinosa* has become a very rare species [Jackiewicz, 1998; Vinarski *et al.*, 2013d].
- IUCN conservation status: Not assessed.

- Remark: Two more species of *Myxas* listed below were recognized by Kruglov & Starobogatov [1985a, 1993b] as inhabiting the European waterbodies. Conchologically and anatomically these species are very similar to *M. glutinosa* therefore the Western European authors did not regard them as valid [Glöer, 2002a; Welter-Schultes, 2012].

384(473). *Myxas dupuyi* (Locard, 1893)

Amphipeplea dupuyi Locard, 1893: 47.

- Type locality: France, Gironde Department, Peychaud swamp.
- Types: Not traced. Locard collection is divided now between NMNH and Lyon Museum [fide Dance, 1986]. However, there are no type specimens in NMHN.
- Global distribution: Europe, except of south [Kruglov, 2005].
- Distribution in the former USSR: The Baltic Sea basin, Ukraine [Stadnichenko, 2004; Kruglov, 2005].
- Subregions: NE, SE.
- Bionomics: Lives in lakes [Kruglov, 2005].
- IUCN conservation status: Not assessed.

384(474). *Myxas mabiliei* (Locard, 1893)

Amphipeplea mabiliei Locard, 1893: 47.

- Type locality: France, Aube Department, vicinity of Troyes City (approximately 48°18'00"N; 04°04'45"E).
- Types: Not traced. Locard collection is divided now between NMNH and Lyon Museum [fide Dance, 1986]. However, there are no type specimens in NMHN.
- Global distribution: Europe, except of south [Kruglov, 2005].
- Distribution in the former USSR: The Baltic Sea basin [Kruglov, 2005].
- Subregions: NE.
- Bionomics: Lives in eutrophic lakes [Kruglov, 2005].
- IUCN conservation status: Not assessed.

Genus *Pacifimyxas* Kruglov et
Starobogatov, 1985

Type species: *Lymnaea magadanensis* Kruglov et Starobogatov, 1985 (OD)

Remark: Vinarski [2013] suggested that *Pacifimyxas* may be a subgenus of the genus *Myxas*. The species of this group have not been studied by means of molecular taxonomic methods, and their taxonomic status and phylogenetic affinities are not well understood.

385(475). *Pacifimyxas magadanensis* (Kruglov et Starobogatov, 1985)

Lymnaea magadanensis Kruglov & Starobogatov, 1985a: 76, fig. 1, 5; 2, 4.

- Type locality: Russia, Magadan Region, a water reservoir of the hydroelectric power station in Magadan City (approximately 59°34'00"N; 150°48'00"E).
- Types: ZIN, Nos. 3 and 4 in systematic catalogue. There are the holotype and two paratypes in ZIN collection (Kruglov & Starobogatov [1985a] mentioned 12 paratypes).
- Global distribution: North-eastern Asia [Kruglov, 2005].

- Distribution in the former USSR: Northern coast of the Okhotsk Sea and upper part of the Kolyma River basin [Kruglov & Starobogatov, 1993b].
- Subregions: ES, NF.
- Bionomics: Not studied.
- IUCN conservation status: Not assessed.

386(476). *Pacifimyxas streletzkae* (Kruglov et Starobogatov, 1985)

Lymnaea streletzkae Kruglov & Starobogatov, 1985a: 76, fig. 1, 6; 2, 5.

- Type locality: Russia, Magadan Region, a bog in the floodplain of the Kolyma River (middle part) near Agrobaza settlement.
- Types: ZIN, Nos. 3 and 4 in systematic catalogue. There are the holotype and 12 paratypes in ZIN collection (Kruglov & Starobogatov [1985a] mentioned eight paratypes).
- Global distribution: North-eastern Asia [Kruglov, 2005].
- Distribution in the former USSR: Northern coast of the Okhotsk Sea and upper part of the Kolyma River basin [Kruglov & Starobogatov, 1993b].
- Subregions: ES, NF.
- Bionomics: Not studied.
- IUCN conservation status: Not assessed.

Genus *Radix* Montfort, 1810

Type species: *Radix auriculatus* Montfort, 1810 = *Helix auricularia* Linnaeus, 1758 (OD)

Subgenus *Radix* s. str.

[= *Xymorus* Gebler, 1829; *Gulnaria* Turton, 1831; *Neritostoma* H. et A. Adams, 1855; *Auriculariana* Servain, 1881; *Psiliana* Servain, 1881; *Acuminatiana* Bourguignat, 1889; *Desertiradix* Kruglov et Starobogatov, 1989; *Iraniradix* Kruglov et Starobogatov, 1989; *Nipponiradix* Kruglov et Starobogatov, 1989; *Okhotiradix* Kruglov et Starobogatov, 1989; *Pamiriradix* Kru-

glov et Starobogatov, 1989; *Thermoradix* Kruglov et Starobogatov, 1989; *Ussuriradix* Kruglov et Starobogatov, 1989]

Remark: According to Kruglov [2005], no less than 33 nominal species of this subgenus are represented in the RAC malacofauna, with two prominent “hotspots” of *Radix* diversity – in Central Asia and the Russian Far East. Recent molecular studies have shown that the actual number of species is, most probably, significantly lower since several alleged species studied by means of genetic methods proved to be infraspecific forms of *R. auricularia* genetically indistinguishable from the latter [Bolotov *et al.*, 2014]. However, most species of *Radix* accepted as valid by Kruglov [2005] are still not examined under molecular genetic scrutiny and their status needs to be clarified in future.

387(477). *Radix (Radix) auricularia* (Linnaeus, 1758)

[= *Buccinum auricula* O.F. Müller, 1774; *Radix auriculatus* Montfort, 1810; *Helix putris* Dillwyn, 1817, non Linnaeus, 1758; *Limnaeus auricularius* var. *ventricosus* Hartmann, 1821; *Limnaeus auricularius* var. *fragilis* Rossmässler, 1835; *Limnaeus auricularius* var. *minor* Rossmässler, 1835; *Limnaeus auricularius* var. *normalis* Rossmässler, 1835; *Limnaeus subcorneus* Rossmässler, 1835; *Limnaea auricularia* var. *contorta* Beck, 1837; *Limnaea auricularia* var. *papillata* Beck, 1837; *Gulnaria auricularia* var. *acuminata* Hartmann, 1844; *Gulnaria auricularia* var. *angulata* Hartmann, 1844; *Limnaea canalis* Dupuy, 1851; *Limnaea psilia* Bourguignat, 1862; *Limnaea scalaris* Sowerby, 1872; *Limnaea auricularia* var. *contracta* Clessin, 1876; *Limnaea auricularia* var. *fluminensis* Westerlund, 1885; *Limnaea ampulla* Locard, 1893; *Limnaea membranacea* Kobelt, 1912; *Limnaea auricularia* var. *fluvialis* Zhadin, 1923; *Lymnaea hadutkae* Kruglov et Starobogatov, 1989; *Lymnaea hakusyensis* Kruglov et Starobogatov, 1989; *Lymnaea thermobaicalica* Kruglov et Starobogatov, 1989; *Lymnaea thermokamschatica* Kruglov et Starobogatov, 1989]

Helix auricularia Linnaeus, 1758: 774-775.

- Type locality: Europe.
- Types: Not traced, absent in UUZM [Wallin, 2001]. Hanley [1855] mentioned that a single shell of this species (? syn-type) was kept in the Museum of the Linnean Society in London.
- Global distribution: Holarctic [Huben-dick, 1951].
- Distribution in the former USSR: Almost all territory of the ex-USSR except of the extreme north [Kruglov & Starobogatov, 1993a; Prozorova & Foster, 1997; Starobogatov *et al.*, 2004; Sitnikova *et al.*, 2004; Bolotov *et al.*, 2014].
- Subregions: NE, SE, CT, CA, WS, ES, BL, NF, SF.
- Bionomics: Ecologically plastic species able to inhabit a wide range of permanent waterbodies, including rivers, channels, oxbows, lakes, reservoirs and ponds [Jackiewicz, 1998; Kruglov, 2005; Andreeva *et al.*, 2010].
- IUCN conservation status: LC (least concern).

• Remark: Four nominal species of *Radix* described by Kruglov & Starobogatov [1989b] from hot springs of Siberia and Kamchatka are merely synonyms of *R. auricularia* [Bolotov *et al.*, 2014; I. Bolotov, pers. comm.] and, most likely, represent morphologically divergent populations of this species formed under unusual conditions of life. These “thermal” taxa are *Lymnaea (Radix) hadutkae*, L. (R.) *hakusyensis*, L. (R.) *thermobaicalica*, and L. (R.) *thermoka-mtschatica*.

387(478). *Radix (Radix) intercisa* (Lindholm, 1909)

[= *Gulnaria intercisa* var. *sorica* B. Dybowski, 1913; *Lymnaea auricularia torquilla* Lazareva, 1967b, non Westerlund, 1877]

Limnaea auricularia var. *intercisa* Lindholm, 1909: 5, pl. 1, fig.72.

- Type locality: Russia, the Middle Baikal Lake, Maloye More.
- Types: According to Sitnikova *et al.* [2004], the lectotype is kept in ZIN. However, the lectotype has never been designated (T.Ya. Sitnikova, pers. comm.). Two samples of this species from V. Lindholm's collection that may represent the syntypes of *Limnaea auricularia* var. *intercisa* are kept now under name *L. auricularia* (Nos. 274 and 275 in systematic catalogue of ZIN collection).
- Global distribution: Endemic to Siberia [Kruglov, 2005].
- Distribution in the former USSR: The Baikal Lake (including the open Baikal), south-east of the Western Siberia, south of the central Siberia [Kruglov, 2005; Andreeva *et al.*, 2010].
- Subregions: WS, ES, BL.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: There are no genetic differences between topotypic specimens of *R. intercisa* and Palearctic *R. auricularia* [Stift *et al.*, 2004; Schniebs & Vinarski, unpublished] and, possibly, *R. intercisa* is a synonym of the latter. Sitnikova & Takhteev [2006] considered *R. intercisa* to be a form of the subspecific rank of *R. auricularia*.

**387(479). *Radix (Radix) iturupica*
(Kruglov et Starobogatov, 1989)**

Limnaea iturupica Kruglov & Starobogatov, 1989b: 26, fig. 1, 20; 2, 17.

- Type locality: Russia, the Kurile Archipelago, the Iturup Island, the Lebyazhye Lake.
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and a single paratype.
- Global distribution: Endemic to the Kurile Archipelago [Kruglov, 2005].
- Distribution in the former USSR: The southern Kurile Islands [Kruglov, 2005].
- Subregions: SF.
- Bionomics: Lives in lentic waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

- Remark: There are no genetic differences between topotypic specimens of *R. iturupica* and Palearctic *R. auricularia* [Schniebs & Vinarski, unpublished] and, possibly, *R. iturupica* is a synonym of the latter.

**387(480). *Radix (Radix) narzykulovi*
(Izzatullaev, Kruglov et
Starobogatov, 1983)**

Limnaea narzykulovi Izzatullaev *et al.*, 1983b: 55, fig. 3-4.

- Type locality: Tajikistan, the Pamir Mountains, the Turumtaikul' Lake (approximately 37°29'00"N; 72°31'45"E).
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. There are the holotype and 24 paratypes in the ZIN collection.
- Global distribution: Endemic to Central Asia [Kruglov, 2005].
- Distribution in the former USSR: The Eastern Pamir mountains [Kruglov, 2005].
- Subregions: CA.
- Bionomics: Lives in large mountain lakes [Kruglov, 2005].
- IUCN conservation status: Not assessed.
- Remark: There are no genetic differences between topotypic specimens of *R. narzykulovi* and Palearctic *R. auricularia* [Schniebs & Vinarski, unpublished] and, possibly, *R. narzykulovi* is a synonym of the latter.

**387(481). *Radix (Radix) schubinae*
(Kruglov, Starobogatov and Zatravkin in
Kruglov et Starobogatov, 1989)**

Limnaea schubinae Kruglov & Starobogatov, 1989b: 24, fig. 1, 16; 1, 14.

- Type locality: Russia, the Khabarovsk Territory, Amursk Town, the Bochinka River (approximately 50°14'04"N; 136°53'51"E).
- Types: ZIN, Nos. 1–5, 7 in systematic catalogue. The type series includes the holotype and 30 paratypes.
- Global distribution: The Far East (Korea and Russia) [Kruglov, 2005].
- Distribution in the former USSR: The Amur Basin and the Primorye Territory [Kruglov & Starobogatov, 1993a].
- Subregions: SF.
- Bionomics: Lives in lentic and lotic water-

bodies with inflow of cold spring waters [Starobogatov *et al.*, 2004].

- IUCN conservation status: Not assessed.
- Remark: There are no genetic differences between *R. schubinae* and Palearctic *R. auricularia* [Schniebs & Vinarski, unpublished] and, possibly, *R. schubinae* is a synonym of the latter.

**387(482). *Radix (Radix) ussuriensis*
(Kruglov et Starobogatov, 1989)**

Lymnaea ussuriensis Kruglov & Starobogatov, 1989b: 24, fig. 1, 15; 2, 13.

- Type locality: Russia, the Khabarovsk Territory, Khabarovsk City, a lake at the city border (approximately 48°30'00"N; 135°05'00"E).
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and 40 paratypes.
- Global distribution: The Russian Far East [Kruglov, 2005].
- Distribution in the former USSR: The Amur Basin and the Primorye Territory [Kruglov & Starobogatov, 1993a].
- Subregions: SF.
- Bionomics: Lives in lakes and waterbodies with slow current [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: There are no genetic differences between *R. ussuriensis* and Palearctic *R. auricularia* [Schniebs & Vinarski, unpublished] and, possibly, *R. ussuriensis* is a synonym of the latter.

**388(483). *Radix (Radix) alticola*
(Izzatullaev, Kruglov et
Starobogatov, 1983)**

Lymnaea alticola Izzatullaev *et al.*, 1983b: 53, fig. 1-2.

- Type locality: Tajikistan, a hot spring near the Yashikul' Lake (approximately 37°47'00"N; 72°51'00"E).
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Central Asia [Kruglov, 2005].

- Distribution in the former USSR: Tajikistan [Kruglov, 2005].
- Subregions: CA.
- Bionomics: Lives in hot springs.
- IUCN conservation status: Not assessed.
- Remark: Preliminary molecular data obtained by using the topotypic specimens of *R. alticola* have shown this species is genetically distinct from *R. auricularia* [Schniebs & Vinarski, unpublished].

**389(484). *Radix (Radix) arachleica*
(Kruglov et Starobogatov, 1989)**

Lymnaea arachleica Kruglov & Starobogatov, 1989b: 23, fig. 1, 6, 2, 2.

- Type locality: Russia, the Zabaikalsky Territory, the Arakhley Lake (approximately 52°13'00"N; 112°52'30"E).
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and 14 paratypes.
- Global distribution: Endemic to the Eastern Siberia [Kruglov, 2005].
- Distribution in the former USSR: Type locality [Kruglov, 2005].
- Subregions: ES.
- Bionomics: Registered in a large lake.
- IUCN conservation status: CR (critically endangered).

**390(485). *Radix (Radix) bactriana*
(Hutton, 1849)**

Limnaea bactriana Hutton, 1849: 656.

- Type locality: Afghanistan, Quettah, in marsh lands and streams.
- Holotype: Asiatic Society of Bengal [fide Annandale & Prashad, 1919].
- Global distribution: Central Asia [Kruglov, 2005].
- Distribution in the former USSR: Republics of Central Asia: southern Kazakhstan and Uzbekistan [Lazareva, 1967b; Kruglov, 2005].

- Subregions: CA.
- Bionomics: Lives in lakes (including brackishwater ones such as Balkhash Lake) and shallow temporary habitats [Lazareva, 1967b].
- IUCN conservation status: LC (least concern).
- Remark: Lazareva [1967b] considered this taxon as a subspecies of *R. auricularia*.

**391(486). *Radix (Radix) chereshevi*
(Kruglov et Starobogatov, 1989)**

Limnaea chereshevi Kruglov & Starobogatov, 1989b: 27, fig. 1, 24; 2, 22.

- Type locality: Russia, the Kamchatka Peninsula, the Maloye Lake, basin of the river Bolshaya.
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and five paratypes.
- Global distribution: Northeastern Asia [Kruglov, 2005]. There is a sample of *R. chereshevi* collected from the Kluane Lake (Canada) in the ZIN collection (identified by Ya.I. Starobogatov).
- Distribution in the former USSR: The Kamchatka Peninsula [Kruglov, 2005].
- Subregions: NF.
- Bionomics: Lives in large lakes [Kruglov, 2005].
- IUCN conservation status: Not assessed.

**392(487). *Radix (Radix) coreana*
(Martens, 1886)**

Limnaea auricularia var. *coreana* Martens, 1886: 80.

- Type locality: Korea, "Changjin, Prov. Hangyöngdo".
- Types: ZMB, Nos. 38440 (a and b) and 55594. The type series includes the lectotype [designated by Kilius, 1967] and ten paralectotypes.
- Global distribution: The Far East.

- Distribution in the former USSR: The Amur River basin, southern part of the Primorye [Kruglov & Starobogatov, 1993a].
- Subregions: SF.
- Bionomics: Lives in lentic waterbodies among vegetation [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

**393(488). *Radix (Radix) euphratica*
(Mousson, 1874)**

Limnaea euphratica Mousson, 1874: 40-41.

- Type locality: Iraq, vicinity of Es-Samava Town (approximately 31°19'00"N; 45°17'00"E).
- Types: Not traced, possibly in Zürich Zoological Museum [fide Dance, 1986].
- Global distribution: Middle East and Central Asia.
- Distribution in the former USSR: Southern Daghestan, Azerbaijan, Tajikistan, Uzbekistan, Turkmenistan [Kruglov & Starobogatov, 1993a].
- Subregions: CT, CA.
- Bionomics: Lives in large waterbodies [Kruglov, 2005].
- IUCN conservation status: Not assessed.

**394(489). *Radix (Radix) gebleri*
(Middendorff, 1851)**

Limnaeus gebleri Middendorff, 1851: 292, pl. 30, fig. 1-3.

- Type locality: "Barnaul" [Middendorff, 1851]. Lazareva [1967b] suggested that this designation is erroneous and the true type locality of the species is the Zaisan Lake (Eastern Kazakhstan).
- Lectotype: ZIN, No. 1 in systematic catalogue (see Lazareva, 1967b; Vinarski, 2009).
- Global distribution: Endemic to eastern Kazakhstan.

- Distribution in the former USSR: Having examined samples of *R. gebleri* shells kept in ZIN, Vinarski [2009] revealed that only those from the Zaisan Lake correspond to the original diagnosis of the species given by Middendorff [1851]. Other shells from Kazakhstan and the Altay labeled as *R. gebleri* cannot be distinguished from those of *Radix auricularia* and, most likely, belong to the latter species. Possibly, the species is endemic to the Zaisan Lake. Further studies are needed to ascertain if *R. gebleri* really occurs in other waterbodies of eastern Kazakhstan and adjacent territories as it is stated in literature [Kruglov & Starobogatov, 1993a; Kruglov, 2005].
- Subregions: WS.
- Bionomics: Lives in large lakes.
- IUCN conservation status: Not assessed.

**395(490). *Radix (Radix) gedrosiana*
(Annandale et Prashad, 1919)**

Limnaea gedrosiana Annandale & Prashad, 1919: 48-49, pl. 7, fig. 2-4.

- Type locality: Afghanistan, in different localities [Pishin district (Chaman), Kandahar, Quetta and in the Hamun-i-Helmand in Seistan; Annandale & Prashad, 1919: 49].
- Syntypes: Zoological Survey of India, M 11533/2.
- Global distribution: Central Asia.
- Distribution in the former USSR: South of Tajikistan [Kruglov, 2005].
- Subregions: CA.
- Bionomics: Lives in temporary and semi-permanent waterbodies [Kruglov, 2005].
- IUCN conservation status: Not assessed.

**396(491). *Radix (Radix) japonica*
(Jay, 1856)**

Lymnaea japonica Jay, 1856: 294-295, pl. 5, figs. 10-12.

- Type locality: Japan, "Simoda" (= Shimoda Town on the Honshu Island).
- Types: Not traced.
- Global distribution: The Far East.
- Distribution in the former USSR: The southern Kurile Islands [Kruglov & Starobogatov, 1993a].
- Subregions: SF.
- Bionomics: Lives in temporary and semi-permanent waterbodies [Kruglov, 2005].
- IUCN conservation status: Not assessed.

**397(492). *Radix (Radix) kunashirica*
(Kruglov et Starobogatov, 1989)**

Lymnaea kunashirica Kruglov & Starobogatov, 1989b: 27, fig. 1, 22; 2, 1.

- Type locality: Russia, the Kurile Archipelago, the Kunashir Island, the Lagunnoye Lake (approximately 44°03'33"N, 145°45'38"E).
- Types: ZIN, No. 1 and 2 in systematic catalogue. The type series contains the holotype and two paratypes.
- Global distribution: Endemic to the Kurile Archipelago.
- Distribution in the former USSR: The Kunashir Island [Kruglov & Starobogatov, 1993a].
- Subregions: SF.
- Bionomics: Not studied.
- IUCN conservation status: Not assessed.

**398(493). *Radix (Radix) kurilensis*
(Kruglov et Starobogatov, 1989)**

Lymnaea kurilensis Kruglov & Starobogatov, 1989b: 26, fig. 1, 2; 2, 20.

- Type locality: Russia, the Kurile Archipelago, the Iturup Island, the Lebyazhye Lake.
- Types: ZIN, No. 1-3, 5 in systematic catalogue. The type series contains the holotype and 11 paratypes.

- Global distribution: Endemic to the Kurile Archipelago.
- Distribution in the former USSR: The Kunashir Island [Kruglov & Starobogatov, 1993a].
- Subregions: SF.
- Bionomics: Not studied.
- IUCN conservation status: Not assessed.

**399(494). *Radix (Radix) mongolica*
(Yen, 1939)**

Pseudosuccinea mongolica Yen, 1939: 68, pl. 5, fig. 54.

- Type locality: China, Inner Mongolia, Alashan Desert, “Dsha-ra-tai, Da-ba-sun”.
- Types: SMF, No. 40332. The type series includes the holotype and three paratypes.
- Global distribution: West of Central Asia and the Far East (China, Mongolia, Russia).
- Distribution in the former USSR: The Primorye Territory, the Khanka Lake [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives on sandy-mud substrates and vegetation [Prozorova *et al.*, 2009].
- IUCN conservation status: Not assessed.

**400(495). *Radix (Radix) obliquata*
(Martens, 1864)**

Limnaeus obliquatus Martens, 1864b: 116, pl. 3, fig. 9-10.

- Type locality: Kyrgyzstan, the Issyk-Kul’ Lake.
- Types: ZMB, No. 7164. The type series contains two syntypes.
- Global distribution: Central Asia, in mountain regions.
- Distribution in the former USSR: The Issyk-Kul’ Lake, Tuva (southern part of Central Siberia) [Kruglov & Staroboga-

tov, 1993a; Prozorova & Sharyi-Ool, 1999].

- Subregions: ES, CA.
- Bionomics: Lives in large mountain lakes.
- IUCN conservation status: LC (least concern).

**401(496). *Radix (Radix) pacifampla*
(Kruglov et Starobogatov, 1989)**

Lymnaea pacifampla Kruglov & Starobogatov, 1989b: 25, fig. 1, 17; 2, 15.

- Type locality: Russia, the Primorye Territory, mouth of the Gladkaya River inflowing the Possiet Bay.
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and four paratypes.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Khanka Lake basin, the Primorye Territory (except for northernmost areas) [Kruglov & Starobogatov, 1993a].
- Subregions: SF.
- Bionomics: Lives in permanent waterbodies [Kruglov, 2005].
- IUCN conservation status: Not assessed.

**402(497). *Radix (Radix) parapsilia*
Vinarski et Glöer, 2009**

[= *Lymnaea psilia* sensu Izzatullaev *et al.*, 1983b, non Bourguignat, 1862]

Radix parapsilia Vinarski et Glöer, 2009: 132, fig. 2, C-D, 8-9.

- Type locality: Russia, Omsk Region, Tara District, the Krivoye lake in vicinity of Atak village (56°46’N, 74°37’E).
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and nine paratypes.
- Global distribution: Northern Eurasia.
- Distribution in the former USSR: Eastern Palearctic, including almost all terri-

tory of the ex-USSR and some adjacent countries (Mongolia, Northern China, Sweden), possibly in the Central Europe [Vinarski & Glöer, 2009].

- Subregions: NE, SE, WS, ES, CA, NF, SF.

- Bionomics: Lives in permanent waterbodies [Kruglov, 2005].

- IUCN conservation status: Not assessed.

**403(498). *Radix (Radix) persica*
(Bourguignat in Issel, 1865)**

Limnaea auricularia var. *persica* Issel, 1865: 47.

- Type locality: Iran, Kermani, a thermal spring [fide Sitnikova *et al.*, 2012].

- Holotype: MHNG, No. 6321.

- Global distribution: Central Asia.

- Distribution in the former USSR: Southern Azerbaijan and Tajikistan [Sitnikova *et al.*, 2012].

- Subregions: CT, CA.

- Bionomics: Lives in large waterbodies [Kruglov, 2005].

- IUCN conservation status: LC (least concern).

**404(499). *Radix (Radix) rectilabrum*
(Annandale et Prashad, 1919)**

Limnaea gedrosiana var. *rectilabrum* Annandale & Prashad, 1919: 49-50, pl. 6, fig. 1-6.

- Type locality: Afghanistan, "Kushdil Khan reservoir, altitude 5000 ft in the hill-country of Baluchistan north of Quetta, and a small pool in the desert some miles south of Nasratabad in Seistan" [Annandale & Prashad, 1919: 50].

- Syntypes: Zoological Survey of India, M 11534/2.

- Global distribution: Central Asia.

- Distribution in the former USSR: Tajikistan, southern Uzbekistan, Turkmenistan (waterbodies of the Kopet Dag Ridge) [Kruglov, 2005].

- Subregions: CA.

- Bionomics: Lives in temporary waterbodies [Kruglov, 2005].

- IUCN conservation status: Not assessed.

**405(500). *Radix (Radix) schelechovi*
(Kruglov et Starobogatov, 1989)**

Limnaea schelechovi Kruglov & Starobogatov, 1989b: 28, fig. 1, 25; 2, 16.

- Type locality: Russia, Magadan Region, the Okhotsk Sea coast (Shelikhov Bay), the Yagel'noye Lake, coast of Yamskaya Inlet.

- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and 91 paratypes.

- Global distribution: Endemic to north-eastern Asia.

- Distribution in the former USSR: Type locality [Kruglov, 2005].

- Subregions: NF.

- Bionomics: Not studied.

- IUCN conservation status: Not assessed.

**406(501). *Radix (Radix) sirikulensis*
(Nevill, 1878)**

Limnaea defilippi var. *sirikulensis* Nevill, 1878: 7.

- Type locality: Northern India, the Sirikul Lake.

- Syntypes: Zoological Survey of India.

- Global distribution: Central Asia.

- Distribution in the former USSR: Tajikistan, the Pamir Mountains [Kruglov, 2005].

- Subregions: CA.

- Bionomics: Lives in large mountain lakes [Kruglov, 2005].

- IUCN conservation status: Not assessed.

**407(502). *Radix (Radix) solidissima*
(Kobelt, 1872)**

Limnaea lagotis var. *solidissima* Kobelt, 1872: 777.

- Type locality: India, the Himalaya

Mountains. The syntype is labeled as “Himalaya, Ostindien”.

- Types: ZMB, No. 20416. There is a single syntype in the ZMB collection.
- Global distribution: Central Asia.
- Distribution in the former USSR: Tajikistan, the Pamir Mountains [Kruglov, 2005].
- Subregions: CA.
- Bionomics: Lives in large mountain lakes [Kruglov, 2005].
- IUCN conservation status: Not assessed.

408(503). *Radix (Radix) subdisjuncta* (Nevill, 1878)

Limnaea lagotis var. *subdisjuncta* Nevill, 1878: 9.

- Type locality: Northern India, “neighbourhood of Leh.”
- Syntypes: Zoological Survey of India.
- Global distribution: Central Asia eastward to Inner Mongolia [Kruglov & Starobogatov, 1993a].
- Distribution in the former USSR: Kyrgyzstan (the Issyk-Kul’ Lake), Uzbekistan and Turkmenistan [Kruglov, 2005].
- Subregions: CA.
- Bionomics: Lives in large mountain lakes [Kruglov, 2005].
- IUCN conservation status: Not assessed.

409(504). *Radix (Radix) tenera* (Küster, 1862)

Limnaeus tener Küster, 1862: 54-55, pl. 12, fig. 1-2.

- Type locality: Iran (“Persien”).
- Types: Not traced.
- Global distribution: Central Asia.
- Distribution in the former USSR: Tajikistan and southern Uzbekistan [Kruglov & Starobogatov, 1993a].
- Subregions: CA.

- Bionomics: Lives in large waterbodies [Kruglov, 2005].
- IUCN conservation status: LC (least concern).

410(505). *Radix (Radix) zarenkovi* (Kruglov et Starobogatov, 1989)

Limnaea zarenkovi Kruglov & Starobogatov, 1989b: 26, fig. I, 23; 2, 18.

- Type locality: Russia, the Kurile Archipelago, the Iturup Island, the Lebedinskoye Lake (According to the handwritten catalogue of ZIN collection, the holotype of this species was collected from an unnamed lake situated in 1-1.5 km from a river that flows out from the Blagodatnoye Lake. The Lake Lebedinskoye is the habitat of the paratypes of *L. zarenkovi*).
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and 12 paratypes.
- Global distribution: Endemic to the Kurile Archipelago.
- Distribution in the former USSR: The Iturup Island [Kruglov & Starobogatov, 1993a].
- Subregions: CA.
- Bionomics: Lives in large permanent waterbodies [Kruglov, 2005].
- IUCN conservation status: Not assessed.

Subgenus *Peregriana* Servain, 1881

[= *Ampullaceana* Servain, 1881; *Biformiana* Servain, 1881; *Bouchardiana* Servain, 1881; *Caenisiana* Servain, 1881; *Cyphideana* Servain, 1881; *Effusiana* Servain, 1881; *Limosiana* Servain, 1881; *Nivalisiana* Servain, 1881; *Rochiana* Servain, 1881; *Thermalisiana* Germain, 1903; *Biwakoia* Burch et Habe, 1969; *Altailyamnaea* Kruglov et Starobogatov, 1983; *Sibirilyamnaea* Kruglov et Starobogatov, 1983; *Amurlyamnaea* Kruglov et Starobogatov, 1984; *Kamtschaticana* Kruglov et Starobogatov, 1984; *Ohridlyamnaea* Kruglov et Starobogatov, 1993]

Type species: *Buccinum peregrum* O.F. Müller, 1774 (SD Kobelt, 1883)

Remark: Similar to the previous subgenus, several tens of nominal species were delineated within *Peregriana* by Kruglov & Starobogatov [1983b; 1984a; 1993b]. Most of them are still not assessed by molecular taxonomic methods and their validity may raise doubts especially because the most recent studies based on simultaneous use of morphological and molecular data have revealed a relatively low number of valid species of *Peregriana* in the European waterbodies as well as high level of intraspecific variation both in conchological and anatomical characters [Pfenninger *et al.*, 2006; Schniebs *et al.*, 2011]. It means that the actual species diversity of *Peregriana* in the RAC area may be well lower than it is accepted by Kruglov [2005].

411(506). *Radix (Peregriana) peregra* (O.F. Müller, 1774)

[= *Turbo trianfractus* Da Costa, 1778; *Helix teres* Gmelin, 1791; *Limneus scaturiginum* Turton, 1831; *Limnaeus diaphanus* Rossmäßler, 1835; *Limnaeus frigidus* Rossmäßler, 1835; *Limnaeus pereger* var. *labiatus* Rossmäßler, 1835; *Limnaeus rivularis* Rossmäßler, 1835; *Limnaeus separandus* Rossmäßler, 1835; *Limnaeus excerptus* Hartmann, 1840; *Limnaeus solidus* Philippi, 1844; *Limnaea fuliginosa* Dupuy, 1848; *Limnaea nitida* Dupuy, 1848; *Limnaea opaca* Dupuy, 1848; *Limnaea solemia* Dupuy, 1848; *Limnaea peregra* var. *paludinoidea* Mörch, 1864; *Limnaea croatica* Kobelt, 1877; *Limnaea melanostoma* Kobelt, 1877; *Limnaea peregra* var. *curta* Clessin, 1879; *Limnaea peregra* var. *tschapeki* Clessin, 1879]

Buccinum peregrum O.F. Müller, 1774: 130.

- Type locality: Denmark, Copenhagen, Frederiksberg Park, in swamps (see Khokhutkin *et al.*, 2009 for details).
- Types: Lost. We failed to find the type series of this species in ZMUC.

- Global distribution: Europe and the Western Siberia.

- Distribution in the former USSR: All the European part of the RAC territory, the Transcaucasia, southern part of the Western Siberia [Stadnichenko, 2004; Kruglov, 2005; Andreeva *et al.*, 2010].

- Subregions: NE, SE, CT, WS.

- Bionomics: Lives in temporary or semi-permanent waterbodies, including swamps and wetlands. Sometimes it may be found in shallow zones of large lakes [Khokhutkin *et al.*, 2009].

- IUCN conservation status: Not assessed.

- Remark: In the current European literature this species has been renamed *Radix labiata* [Falkner *et al.*, 2002; Glöer, 2002a; Wetli-Schultes, 2012; Schniebs *et al.*, 2013] though examination of the syntypes of *Limnaeus pereger* var. *labiatus* kept in NHMV has shown they belong to *R. balthica* (L., 1758) [M. Vinarski, in preparation]. Three other species of the section *Peregriana* s. str. mentioned by Kruglov [2005] fall within the diagnosis of *R. peregra* / *labiata* of the Western European authors and, possibly, are junior synonyms of the latter. Their account is given below.

411(507). *Radix (Peregriana) bakowskyana* (Clessin, 1879)

[= *Limnaea peregra* var. *styriaca* Westerlund, 1881]

Limnaea peregra var. *bakowskyana* Clessin, 1879: 12, pl. 1, fig. 8.

- Type locality: Poland (?), near Plickow (Galicia).

- Types: Not traced and probably lost. Clessin's collection was in Stuttgart Museum, totally destroyed during 1939-1945 war [fide Dance, 1986].

- Global distribution: Eastern Europe [Kruglov, 2005].

- Distribution in the former USSR: Southern part of the European part of RAC, the Caucasus [Kruglov & Starobogatov, 1993b].

- Subregions: SE, CT.
- Bionomics: Lives in small waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

**411(508). *Radix (Peregriana) blauneri*
(Shuttleworth in Küster, 1862)**

Limnaeus blauneri Küster, 1862: 56, pl. 12, fig. 7-8.

- Type locality: Switzerland, Valais (= Wallis) canton, near Matterhorn (= Monte Cervino) Mt. (approximately 45°58'35"N; 07°39'30"E).
- Types: Not traced.
- Global distribution: Central and southern parts of Europe.
- Distribution in the former USSR: The Ciscaucasia [Kruglov & Starobogatov, 1993b].
- Subregions: CT.
- Bionomics: Lives in temporary waterbodies [Kruglov, 2005].
- IUCN conservation status: Not assessed.
- Remark: According to Mermod [1930], *R. blauneri* is an intraspecific form of *R. ovata* (= *R. balthica*).

**411(509). *Radix (Peregriana) fulva*
(Ziegler in Küster, 1862)**

Limnaeus fulvus Küster, 1862: 16, pl. 4, fig. 19-21.

- Type locality: Slovenia, Carniole (= Krain) historical region, in mountain springs.
- Types: Not traced.
- Global distribution: South and south-eastern parts of Europe.
- Distribution in the former USSR: The Ciscaucasia [Kruglov & Starobogatov, 1993b], Ukraine [Stadnichenko, 2004].
- Subregions: SE, CT.
- Bionomics: Lives in small waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

**412(510). *Radix (Peregriana)*
aberrans (Westerlund, 1897)**

Limnaea ovata var. *aberrans* Westerlund, 1897b: 125.

- Type locality: Russia, the Kamchatka Peninsula, the Kamchatka River (see Vinarski *et al.*, 2013b for details).

• Lectotype: ZIN. Most probably, the original description of this species was based on the materials served to Middendorff [1851] to describe another lymnaeid species, *Limnaeus kamtschaticus* Middendorff, 1851. In this situation, Kruglov & Starobogatov [1984a] designated lectotypes for both *L. aberrans* (ZIN, No. 1) and *L. kamtschaticus* (ZIN, No. 1). The type series of *Limnaea ovata* var. *aberrans* includes the lectotype and two paralectotypes (one in ZIN, No. 2 in systematic catalogue; another in NMG, No. 3729).

- Global distribution: Northeastern Asia.
- Distribution in the former USSR: The Eastern Kamchatka peninsula, northern and western shores of the Okhotsk Sea, the Kolyma River, the northern Kurile Islands [Kruglov & Starobogatov, 1993b].

- Subregions: ES, NF.
- Bionomics: Lives in shallow zones of waterbodies of various type [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

**413(511). *Radix (Peregriana) ampla*
(Hartmann, 1821)**

[= *Limnaeus sandrii* Küster, 1862; *Limnaea auricularia* var. *contracta* Clessin, 1876, non Currier, 1868; *Limnaea auricularia* var. *heldii* Clessin, 1876; *Limnaea auricularia* var. *rivalis* Kobelt, 1877; *Lymnaea patula* sensu Starobogatov, 1977, non Da Costa, 1778]

Limnaeus auricularia var. *ampla* Hartmann, 1821: 250, Taf. II, fig. 29.

- Type locality: Germany, Bavaria, the Rhein River near Reineck (see Vinarski & Glöer, 2007 for details).
- Lectotype: Naturmuseum Saint-

Gallen, Switzerland (see Vinarski & Glöer, 2007 for details).

- Global distribution: Europe and Siberia.
- Distribution in the former USSR: Europe, southern parts of Siberia eastward to the Baikal Lake; a relic part of the range was discovered in the lower Yenisei River basin [Andreeva *et al.*, 2010].
- Subregions: NE, SE, WS, ES.
- Bionomics: Lives in relatively large permanent waterbodies (lakes, reservoirs, slowly flowing rivers) among vegetation [Andreeva *et al.*, 2010].
- IUCN conservation status: Not assessed.
- Remark: Two other species listed below are conchologically similar to *R. ampla* and have been accepted in the Russian literature as valid [Kruglov & Starobogatov, 1993b; Stadnichenko, 2004]. Their actual status needs to be revised by means of molecular taxonomic methods.

413(512). *Radix (Peregriana) hartmanni* (Studer, 1820)

Limneus hartmanni Studer, 1820: 93.

- Type locality: Germany, the Konstanz Lake (= Bodensee).
- Syntypes: Naturmuseum Saint-Gallen, Switzerland [P. Glöer, pers. comm.].
- Global distribution: Europe [Kruglov, 2005].
- Distribution in the former USSR: The European part of Russia, Ukraine [Stadnichenko, 2004; Kruglov, 2005].
- Subregions: NE, SE.
- Bionomics: Lives in large lakes and rivers [Kruglov, 2005].
- IUCN conservation status: Not assessed.

413(513). *Radix (Peregriana) monnardi* (Hartmann, 1841)

Gulnaria monnardi Hartmann, 1840-1844: 71, pl. 18 (= pl. VI).

- Type locality: Switzerland, canton Vaud, Nyon (approximately 46°23'N; 06°14'E).

- Syntypes: Naturmuseum Saint-Gallen, Switzerland [P. Glöer, pers. comm.].
- Global distribution: Europe [Kruglov, 2005].
- Distribution in the former USSR: The European part of Russia (except of the north), Ukraine [Stadnichenko, 2004; Kruglov, 2005].
- Subregions: NE, SE.
- Bionomics: Lives in lentic and semi-lentic waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

414(514). *Radix (Peregriana) amurensis* (Kruglov, Moskvicheva et Starobogatov in Kruglov et Starobogatov, 1984)

Lymnaea amurensis Kruglov & Starobogatov, 1984a: 28, fig. 1 (12); 2 (14).

- Type locality: Russia, the Khabarovsk Territory, valley of the Amur River, a shallow waterbody near the Petropavlovskoe Lake, vicinities of Kukhari village.
- Types: ZIN. The type series contains the holotype and several hundreds paratypes (see Sitnikova *et al.*, 2014a for details).
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: Southern part of the Russian Far East [Sitnikova *et al.*, 2014a].
- Subregions: SF.
- Bionomics: Lives in offshore zone of semi-permanent and permanent waterbodies of various kinds, prefers running ones, often on silty bottom [Sitnikova *et al.*, 2014a].
- IUCN conservation status: Not assessed.
- Remark: Three more species conchologically similar to *R. amurensis* were described by Kruglov & Starobogatov [1984b]. In some waterbodies, these species occur syntopically with *R. amurensis* [Sitnikova *et al.*, 2014a] that may be an indirect evidence of their conspecificity.

fity. There is a strong need to revise the Far Eastern *Peregriana* by means of molecular taxonomic and multivariate statistical methods.

414(515). *Radix (Peregriana) dvoriadkini* (Kruglov et Starobogatov, 1984)

Lymnaea dvoriadkini Kruglov & Starobogatov, 1984a: 29, fig. 1 (14); 2 (17).

- Type locality: Russia, the Primorye Territory, northern coast of the Vostok Bay, a stream near Avangard settlement (approximately 42°53'30"N; 132°43'25"E).
- Types: ZIN, Nos. 1–3 in systematic catalogue. The type series includes the holotype and eight paratypes.
- Global distribution: Endemic to the Russian Far East [Kruglov, 2005].
- Distribution in the former USSR: The Amur basin and the Primorye territory westwards to the Transbaikalia [Sitnikova *et al.*, 2014a]
- Subregions: SF.
- Bionomics: Lives in offshore zone of semi-permanent and permanent waterbodies of various kinds, usually on silty bottom [Sitnikova *et al.*, 2014a].
- IUCN conservation status: Not assessed.

414(516). *Radix (Peregriana) manomaensis* (Kruglov, Starobogatov et Zatravkin in Kruglov et Starobogatov, 1984)

Lymnaea manomaensis Kruglov & Starobogatov, 1984a: 29, fig. 1 (13), 2 (15).

- Type locality: Russia, the Khabarovsk Territory, floodplain of the Amur River near Nizhnyaya Manoma settlement (approximately 49°20'06"N; 136°28'15"E).
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and four paratypes.
- Global distribution: Endemic to the Russian Far East [Kruglov, 2005].
- Distribution in the former USSR: The Lower Amur basin and the Primorye territory [Sitnikova *et al.*, 2014a]
- Subregions: SF.
- Bionomics: Lives near shore of floodland

waterbodies of different types, on water vegetation or on silty bottom [Sitnikova *et al.*, 2014a].

- IUCN conservation status: Not assessed.

414(517). *Radix (Peregriana) sihotealinica* (Kruglov et Starobogatov, 1984)

Lymnaea sihotealinica Kruglov & Starobogatov, 1984a: 29, fig. 1 (15), 2 (16).

- Type locality: Russia, the Primorye Territory, Khorol'sk district, a stream near the road between Vladimiro-Petrovka and Staraya Devitza.
- Types: ZIN, Nos. 1–12 in systematic catalogue. The type series includes the holotype and more than 200 paratypes [see Sitnikova *et al.*, 2014 for details].
- Global distribution: Endemic to the Russian Far East [Kruglov, 2005].
- Distribution in the former USSR: The Lower Amur basin and the Primorye territory [Sitnikova *et al.*, 2014a]
- Subregions: SF.
- Bionomics: Lives in offshore zone of semi-permanent and permanent waterbodies of different types, usually on silty bottom [Sitnikova *et al.*, 2014a].
- IUCN conservation status: Not assessed.

415(518). *Radix (Peregriana) balthica* (Linnaeus, 1758)

[= *Helix limosa* auct.; *Turbo patulus* Da Costa, 1778; *Bulimus limosus* Poirer, 1801; *Helix lutea* Montagu, 1803; *Limneus ovatus* Draparnaud, 1805; *Limneus acronicus* Studer, 1820; *Limneus acronicus* var. *deformis* Hartmann, 1821; *Limneus ovatus* var. *ovum* Hartmann, 1821; *Limnaeus vulgaris* Pfeiffer, 1821; *Limnaeus ecaudis* Rossmässler, 1835; *Limnaeus nigrinus* Rossmässler, 1835; *Limnaea crystallina* Beck, 1837; *Limnaea ovata* var. *leachii* Beck, 1837; *Limnaea ovata* var. *minor* Beck, 1837; *Limnaea thermalis* Beck, 1837; *Limnaea boissii* Dupuy, 1849; *Limnaea glacialis* Dupuy, 1849; *Limnaea trencaleonis* Dupuy, 1849; *Gulnaria lacustris* Leach, 1852; *Limnaea limosa* var. *crassa* Moquin-Tandon, 1855; *Limnaea limosa* var. *pellucida* Moquin-Tandon, 1855; *Limnaeus doliolum* Küster, 1862; *Limnaeus membranaceus* Küster,

1862; *Limnaea martorelli* Bourguignat, 1870; *Limnaea ovata* var. *dickinii* Kobelt, 1871; *Limnaea ovata* var. *inflata* Kobelt, 1871; *Limnaea attica* Sowerby, 1872; *Limnaea dalmatica* Sowerby, 1872; *Limnaea ovata* var. *succinea* Westerlund, 1873; *Limnaea ovata* var. *lacustrina* Clessin, 1876; *Limnaea nivalis* Bourguignat, 1879; *Limnaea bouchardiana* Servain, 1881; *Limnaea ovata* var. *janoviensis* Kobelt, 1871; *Limnaea ovata* var. *hazayana* Clessin, 1887; *Limnaea limosina* Locard, 1893; *Limnaea nubigena* Locard, 1893; *Limnaea lusitanica* Locard, 1899, partim; *Limnaea ovata* var. *ammicola* Westerlund, 1897; *Limnaea ovata* var. *petricola* Lindholm, 1909; *Limnaea virens* Kobelt, 1912]

Helix balthica Linnaeus, 1758: 775.

- Type locality: Sweden, the Baltic Sea shore [Linnaeus, 1758]. The locality of the neotype is “Sweden, Stockholm” [see Kruglov & Starobogatov, 1983b for details].
- Neotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Palearctic.
- Distribution in the former USSR: Europe and Siberia eastward to the Baikal Lake [Sitnikova *et al.*, 2004; Starobogatov *et al.*, 2004; Andreeva *et al.*, 2010].
- Subregions: NE, SE, CT, WS, ES, BL.
- Bionomics: Lives in permanent waterbodies such as lakes and ponds, reservoirs, slowly flowing rivers and so on [Andreeva *et al.*, 2010].
- IUCN conservation status: LC (least concern).
- Remark: The species *R. ovata* (Draparnaud, 1805) that had been treated as a distinct species by many authors [Geyer, 1927; Zhadin, 1952; Kruglov & Starobogatov, 1993b; Andreeva *et al.*, 2010] is considered now as the synonym of *R. balthica* [Glöer, 2002a; Welter-Schultes, 2012]. The examination of the syntypes of *Limneus ovatus* kept in NHMV has shown that these are identical with *L. balthica* sensu Kruglov & Starobogatov [1983b] and very similar to the neo-

type of the latter [Vinarski & Eschner, 2016]. Molecular data [Schniebs *et al.*, 2011] also corroborate this view.

415(519). *Radix (Peregriana) ampullacea* (Rossmässler, 1835)

Limnaeus ampullaceus Rossmässler, 1835b: 19, pl. 7, fig. 124.

- Type locality: Switzerland, the Jura Mountains, Vaud canton, Joux Lake.
- Types: Lost [R. Jansson. pers. comm.].
- Global distribution: Europe and Siberia [Kruglov, 2005].
- Distribution in the former USSR: Europe, the southern Siberia eastward to the Baikal Lake [Sitnikova *et al.*, 2004; Starobogatov *et al.*, 2004].
- Subregions: NE, SE, WS, ES, BL.
- Bionomics: Lives in lakes and rivers with slow current, on vegetation [Andreeva *et al.*, 2010].
- IUCN conservation status: Not assessed.
- Remark: Western European malacologists do not accept this species as valid considering it as a synonym of *R. balthica* [Glöer, 2002a; Welter-Schultes, 2012].

415(520). *Radix (Peregriana) carelica* (Kruglov et Starobogatov, 1983)

Lymnaea carelica Kruglov & Starobogatov, 1983b: 1467, fig. 2(6), 3(5).

- Type locality: Russia, Republic of Karelia, a shallow waterbody near the Svyatozero Lake. This habitat exists no longer (I. Nekhaev, pers. comm.).
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to north-eastern Europe [Kruglov, 2005].
- Distribution in the former USSR: Type locality [Sitnikova *et al.*, 2014a].
- Subregions: NE.
- Bionomics: Not studied. The holotype was collected in a small temporary waterbody.
- IUCN conservation status: DD (data deficient).
- Remark: Conchologically and anatomically this species is similar to *R. balthica* s. l.

[Kruglov, 2005], and its species status should be verified.

**415(521). *Radix (Peregriana) igarkae*
(Gundrizer et Starobogatov, 1979)**

Lymnaea igarkae Gundrizer & Starobogatov, 1979: 1133, fig. 1 (3); 2 (3).

- Type locality: Russia, the Krasnoyarsk Territory, a waterbody in Igarka Town (approximately 67°28'N; 86°35'E).
- Types: ZIN, Nos. 1–3 in systematic catalogue. The type series includes the holotype and four paratypes.
- Global distribution: Endemic to northern Siberia [Kruglov, 2005].
- Distribution in the former USSR: Northern parts of the Western and Central Siberia [Sitnikova *et al.*, 2014a].
- Subregions: WS, ES.
- Bionomics: Lives in permanent waterbodies, including floodplain ones [Kruglov, 2005; Sitnikova *et al.*, 2014a].
- IUCN conservation status: Not assessed.
- Remark: Conchologically and anatomically this species is similar to *R. balthica* s. l. [Kruglov, 2005], and its species status should be verified.

**415(522). *Radix (Peregriana) intermedia*
(Lamarck, 1822)**

[= *Limnaea lusitanica* Locard, 1899, partim]

Lymnaea intermedia Lamarck, 1822: 162.

- Type locality: France, Quercy Plateau.
- Syntypes: MHNG.
- Global distribution: Palearctic.
- Distribution in the former USSR: Europe and Siberia, including the Baikal Lake [Kruglov, 2005; T. Sitnikova, pers. comm.].
- Subregions: NE, SE, WS, ES, BL.
- Bionomics: Lives in permanent lentic waterbodies [Kruglov, 2005].
- IUCN conservation status: Not assessed.
- Remark: Despite the fact that the type locality of *R. intermedia* is situated in France and this species is conchologically somewhat distinct from *R. balthica*, the Western European malacologists did not recognize it as a species distinct from *R. balthica* [Falkner

et al., 2002; Glöer, 2002a; Welter-Schultes, 2012].

**415(523). *Radix (Peregriana) nogoonica*
(Kruglov et Starobogatov, 1983)**

Lymnaea nogoonica Kruglov & Starobogatov, 1983a: 140.

- Type locality: Russia, Altay Republic, vicinities of Kosh-Agach settlement, in a small lake (approximately 50°00'N; 88°40'E). According to Kruglov [2005] the type locality is Nagoon Lake, Western Mongolia.
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and two paratypes.
- Global distribution: Endemic to the Altay and Western Mongolia [Kruglov, 2005].
- Distribution in the former USSR: The Mountain Altay and Tuva [Sitnikova *et al.*, 2014a].
- Subregions: WS, ES.
- Bionomics: Not studied [Kruglov, 2005].
- IUCN conservation status: Not assessed.
- Remark: Conchologically and anatomically this species is similar to *R. balthica* s. l. [Kruglov, 2005], and its species status should be verified.

**415(524). *Radix (Peregriana) tsalolikhini*
(Kruglov et Starobogatov, 1983)**

Lymnaea tsalolikhini Kruglov & Starobogatov, 1983a: 139.

- Type locality: Mongolia, backwater of the Nagoon Lake between Khar-Nuur and Dorgon-Nuur lakes.
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and two paratypes.
- Global distribution: Endemic to Western Mongolia and adjacent areas [Sitnikova *et al.*, 2014a].
- Distribution in the former USSR: Republic of Tuva, the Nogon-Khol' lake [Sitnikova *et al.*, 2014a].
- Subregions: ES.
- Bionomics: Lives in small lakes on vegetation [Sitnikova *et al.*, 2014a].
- IUCN conservation status: Not assessed.
- Remark: Conchologically and anatomical-

ly this species is similar to *R. balthica* s. l. [Kruglov, 2005], and its species status should be checked in future.

416(525). *Radix (Peregriana) dipkunensis* (Gundrizer et Starobogatov, 1979)

Lymnaea dipkunensis Gundrizer & Starobogatov, 1979: 1134, fig. 1 (4).

- Type locality: Russia, the Krasnoyarsk Territory, the Gornoye Lake in the floodplain of the Kureika River upstream of the mouth of the Dipkun River.
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series contains the holotype and a single paratype.
- Global distribution: Endemic to Asiatic Russia.
- Distribution in the former USSR: North of the Central Siberia; a single finding in the Sakhalin Island [Kruglov, 2005; Sitnikova *et al.*, 2014a].
- Subregions: ES, SF.
- Bionomics: Lives in floodplain waterbodies [Sitnikova *et al.*, 2014a].
- IUCN conservation status: DD (data deficient).
- Remark: Two more species of endemic Siberian *Peregriana* proved to be genetically identical with *R. dipkunensis* and, perhaps, are conspecific with the latter [Schniebs & Vinarski, unpublished data]. The two species are characterized below.

416(526). *Radix (Peregriana) novikovi* (Kruglov et Starobogatov, 1983)

Lymnaea novikovi Kruglov & Starobogatov, 1983a: 139.

- Type locality: Russia, Republic of Altay, Kosh-Agach District, the Tarkhatinskoye Lake (49°34'23"N; 88°23'04"E).
- Types: ZIN, Nos. 1–11 in systematic catalogue. The type series includes the holotype and 155 paratypes.
- Global distribution: Endemic to Siberia and adjacent areas [Sitnikova *et al.*, 2014a].

- Distribution in the former USSR: The Southern Urals, the Western and the Eastern Siberia eastward to the Selenga River basin [Andreeva *et al.*, 2010; Sitnikova *et al.*, 2014a].
- Subregions: WS, ES.
- Bionomics: Lives in permanent waterbodies – lakes and slowly running rivers [Andreeva *et al.*, 2010].
- IUCN conservation status: Not assessed.

416(526). *Radix (Peregriana) teletzkiana* (Kruglov et Starobogatov, 1984)

Lymnaea teletzkiana Kruglov & Starobogatov, 1984a: 25, fig. 1 (2); 2 (2).

- Type locality: Russia, Republic of Altay, the Teletskoye Lake.
- Types: ZIN, Nos. 1–3 in systematic catalogue. The type series includes the holotype and three paratypes.
- Global distribution: Endemic to Northern Asia.
- Distribution in the former USSR: The Altay Mountains, Amur Region (the Bomnak River) [Sitnikova *et al.*, 2014a].
- Subregions: WS, SF.
- Bionomics: Lives in shallow zone of large lakes.
- IUCN conservation status: Not assessed.

417(528). *Radix (Peregriana) dolgini* (Gundrizer et Starobogatov, 1979)

[= *Lymnaea kurejkae* Gundrizer et Starobogatov, 1979; *Lymnaea napasica* Kruglov et Starobogatov, 1983]

Lymnaea dolgini Gundrizer & Starobogatov, 1979: 1132, fig. 1(2); 2 (2).

- Type locality: Russia, the Krasnoyarsk Territory, a lake in the floodplain of the Kureika River, 20 km upstream of its mouth.
- Types: ZIN, Nos. 1–3 in systematic catalogue. The type series contains the holotype and 12 paratypes.
- Global distribution: Endemic to Siberia.
- Distribution in the former USSR: Pos-

sibly, the range of the species covers all Siberia except of its northeastern part.

- Subregions: WS, ES.
- Bionomics: Lives in floodplain waterbodies [Sitnikova *et al.*, 2014a].
- IUCN conservation status: Not assessed.
- Remark: Two more species of endemic Siberian *Peregriana* – *Lymnaea kurejkae* and *L. napasica* – proved to be morphologically identical with *R. (P.) dolgini* and were treated by Vinarski [2014b] as its synonyms.

417(529). *Radix (Peregriana) gundrizeri* (Kruglov et Starobogatov, 1983)

Lymnaea gundrizeri Kruglov & Starobogatov, 1983a: 139.

- Type locality: Russia, Republic of Altay, a small waterbody (spring) on the shore of the Surulu-Kol' Lake [Kruglov & Starobogatov, 1983a]. The proper name of this lake is Sorulukol'. It is situated in the Ulagan District of Altay with coordinates 50°27'18"N; 87°27'10"E.
- Holotype: ZIN, No. 1 in systematic catalogue. The type series includes no paratypes.
- Global distribution: Endemic to Northern Asia (Southwestern Siberia and west of Mongolia).
- Distribution in the former USSR: The Altay Mountains and southern part of the Western Siberia [Sitnikova *et al.*, 2014a; Vinarski, unpublished data].
- Subregions: WS.
- Bionomics: Lives in small temporary waterbodies, usually in floodplain ones [M. Vinarski, unpublished].
- IUCN conservation status: Not assessed.
- Remark: There are no genetical differences between *R. gundrizeri* and *R. dolgini* [Schniebs & Vinarski, unpublished], and, perhaps, these are conspecific.

417(530). *Radix (Peregriana) ulaganica* (Kruglov et Starobogatov, 1983)

Lymnaea ulaganica Kruglov & Starobogatov, 1983a: 141.

- Type locality: Russia, Republic of Altay, a small waterbody (spring) on the shore of the Surulu-Kol' Lake [Kruglov & Starobogatov, 1983a]. The proper name of this lake is Sorulukol'. It is situated in the Ulagan District of Altay with coordinates 50°27'18"N; 87°27'10"E.
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and two paratypes.
- Global distribution: Endemic to Northern Asia (Southwestern Siberia and west of Mongolia).
- Distribution in the former USSR: The Altay Mountains and southern part of the Western Siberia [Vinarski, 2008; Sitnikova *et al.*, 2014a].
- Subregions: WS.
- Bionomics: Lives in small temporary waterbodies, usually in floodplain ones [M. Vinarski, unpublished].
- IUCN conservation status: LC (least concern).
- Remark: There are no genetical differences between *R. ulaganica*, *R. gundrizeri*, and *R. dolgini* (Schniebs & Vinarski, unpublished data), and, perhaps, these three species are identical. It should be noted also that the holotypes of *R. ulaganica* and *R. gundrizeri* were collected from the same waterbody (a small stream).

418(531). *Radix (Peregriana) jacutica* (Starobogatov et Streletzkaja, 1967)

[= *Lymnaea juribeica* Kruglov et Starobogatov, 1984]

Lymnaea jacutica Starobogatov & Streletzkaja, 1967: 233, fig. 27.

- Type locality: Russia, Republic of Yakutia (Sakha), mouth of the Kolyma river, near small settlement Chayachya Zaimka (69°04'42"N, 160°57'33"E).
- Types: ZIN, Nos. 1 and 4 in systematic catalogue. The type series contains the holotype and two paratypes.
- Global distribution: Endemic to Northern Asia.

- Distribution in the former USSR: Northern regions of the Western and Eastern Siberia, the Russian Far East [Andreeva *et al.*, 2010; Sitnikova *et al.*, 2014a].
- Subregions: WS, ES, NF, SF.
- Bionomics: Lives in lakes and dead channels [Sitnikova *et al.*, 2014a].
- IUCN conservation status: Not assessed.
- Remark: One more species of endemic Siberian *Peregriana* – *Lymnaea ju-ribeica* – proved to be morphologically identical with *R. (P.) jacutica* and was treated by Vinarski [2014b] as its synonym.

419(532). *Radix (Peregriana) kafanovi* (Kruglov et Starobogatov, 1984)

Lymnaea kafanovi Kruglov & Starobogatov, 1984a: 31, fig. 1 (20); 2 (6).

- Type locality: Russia, the Sakhalin Island, vicinities of Nogliki Settlement [Kruglov & Starobogatov, 1984a]. The holotype label bears more detailed information. It says the holotype was found in a small brook flowing out a swamp situated in the floodplain of the Tym' River (approximately 51°48'N, 143°07'E).
- Types: ZIN, Nos. 1–3 in systematic catalogue. The type series contains the holotype and 36 paratypes.
- Global distribution: Endemic to the Sakhalin Island [Sitnikova *et al.*, 2014].
- Distribution in the former USSR: The Sakhalin Island, basins of the Tym' and Poronai rivers [Sitnikova *et al.*, 2014a].
- Subregions: SF.
- Bionomics: Lives in floodplain lakes and small rivers.
- IUCN conservation status: Not assessed.

420(533). *Radix (Peregriana) kamtschatica* (Middendorff, 1851)

Limnaeus kamtschaticus Middendorff, 1851: 295, pl. 30, fig. 11-12.

- Type locality: Russia, the Kamchatka Peninsula, the Kamchatka River (Kruglov & Starobogatov [1984a] suggested that the type specimens were collected from the floodplain of the river).
- Lectotype: ZIN, No. 1 in systematic catalogue (see Kruglov & Starobogatov [1984a] for details).
- Global distribution: Endemic to north-eastern Asia [Kantor *et al.*, 2010].
- Distribution in the former USSR: Eastern Kamchatka, the Chukchi Peninsula, the Lena, Yana, Indigirka, and Kolyma drainage basins [Kruglov & Starobogatov, 1993a; Dolgin, 2001].
- Subregions: ES, NF.
- Bionomics: Lives in rivers [Kruglov, 2005] and floodplain waterbodies [Bogatov & Zatravkin, 1990].
- IUCN conservation status: Not assessed.

421(534). *Radix (Peregriana) lagotis* (Schränk, 1803)

[= *Limneus fontinalis* Studer, 1820; *Limneus acutus* Jeffreys, 1830; *Limnea acutalis* Morelet, 1845; *Limnaeus vulgaris* Rossmässler, 1835, non Pfeiffer, 1821; *Limnaea peregra* var. *acuminata* Jeffreys, 1862; *Limnaeus biformis* Küster, 1862; *Limnaeus effusus* Küster, 1862; *Limnaea auricularia* var. *acutior* Westerlund, 1871; *Limnaea lagotis* var. *alata* Westerlund, 1873; *Limnaea meridionalis* Kobelt, 1877; *Limnaea ovata* var. *eversa* Martens, 1882; *Limnaea cenisia* Locard, 1893; *Gulnaria lagotis lapidaria* B. Dybowski, 1913; *Lymnaea obensis* Kruglov et Starobogatov, 1984].

Buccinum lagotis Schrank, 1803: 290.

- Type locality: Germany, Bavaria, the Danube River.
- Types: Lost [G. Falkner, pers. comm.].
- Global distribution: Northern and Central Palearctic.

- Distribution in the former USSR: The European part of the RAC, Siberia, including the Baikal Lake, Central Asia [Martens, 1874, 1882; Zhadin, 1952; Kruglov & Starobogatov, 1993a; Sitnikova *et al.*, 2004; Andreeva *et al.*, 2010].
- Subregions: NE, SE, WS, ES, BL, CA.
- Bionomics: Lives in temporary or rarely desiccating waterbodies [Kruglov, 2005].
- IUCN conservation status: Not assessed.
- Remark: Vinarski [2014b] has shown that two more lymnaeid species – *L. fontinalis* (Studer, 1820) and *L. obensis* Kruglov et Starobogatov, 1984 – should be treated as synonyms of *R. lagotis*.

421(535). *Radix (Peregriana) mucronata* (Held, 1836)

Limnaea mucronata Held, 1836: 278.

- Type locality: Not designated by the author, however, his article is devoted to description of mollusks of Bavaria, so this country has to be considered as the type locality.
- Types: Held's types were destroyed during the World War II [G. Falkner, pers. comm.].
- Global distribution: Europe.
- Distribution in the former USSR: Waterbodies of the Baltic Sea basin [Kruglov & Starobogatov, 1993b]; Ukraine [Stadnichenko, 2004].
- Subregions: NE, SE.
- Bionomics: Lives in large waterbodies [Kruglov, 2005].
- IUCN conservation status: Not assessed.
- Remark: The author himself [Held, 1836: 278] believed that this species is identical with *Buccinum lagotis* Schrank, 1803. As the type materials of both species are lost, it is impossible to determine the nomenclatorial relationships between these taxa. The species *R. mucronata* was not accepted as valid in the recent Western European handbooks [Falkner *et al.*, 2001, 2002; Glöer, 2002a; Welter-Schultes, 2012].

422(536). *Radix (Peregriana) middendorffi* (W. Dybowski, 1904)

Limnaea peregra var. *middendorffi* W. Dybowski, 1904: 52, fig. 7.

- Type locality: Russia, the Kamchatka Peninsula, the Snezhinskoye Lake.
- Types: Not traced.
- Global distribution: Endemic to north-eastern Asia.
- Distribution in the former USSR: Eastern Kamchatka, northern and western shores of the Okhotsk Sea, the Kolyma, Lena, Yana, and Indigirka river basins [Kruglov & Starobogatov, 1993b; Dolgin, 2001].
- Subregions: ES, NF.
- Bionomics: Lives in large waterbodies, including rivers [Kruglov, 2005].
- IUCN conservation status: Not assessed.

423(537). *Radix (Peregriana) mongolitumida* (Kruglov et Starobogatov, 1983)

Limnaea mongolitumida Kruglov & Starobogatov, 1983a: 139.

- Type locality: Western Mongolia, the Khomyn-Kholoy Lake.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Western Mongolia and adjacent areas.
- Distribution in the former USSR: South-eastern part of Tuva Republic [Sitnikova *et al.*, 2014a].
- Subregions: ES.
- Bionomics: Lives in large waterbodies [Kruglov, 2005].
- IUCN conservation status: Not assessed.

424(538). *Radix (Peregriana) torquilla* (Westerlund, 1877)

Limnaea peregra var. *torquilla* Westerlund, 1877: 55, pl. fig. 11.

- Type locality: Russia, the Krasnoyarsk

Territory, “Jenissei, Surgutskoj, ... (lat. 62°50’)”.

- Types: Lost [Vinarski *et al.*, 2013b].
- Global distribution: Endemic to Siberia.
- Distribution in the former USSR: Northern part of the central Siberia [Starobogatov *et al.*, 2004].
- Subregions: ES.
- Bionomics: Lives in large lentic waterbodies [Kruglov, 2005].
- IUCN conservation status: Not assessed.
- Remark: Lazareva [1967b] considered this species as a subspecies of *R. auricularia*.

425(539). *Radix (Peregriana) tumida* (Held, 1836)

Limnaea tumida Held, 1836: 278.

- Type locality: Not designated by the author, however, his article is devoted to description of mollusks of Bavaria, so, this country has to be considered as the type locality.
- Types: Held’s types were destroyed during the World War II [G. Falkner, pers. comm.].
- Global distribution: Northern Palearctic.
- Distribution in the former USSR: Europe, South Siberia eastward to the Baikal Lake and North Siberia near Noril’sk City [Sitnikova *et al.*, 2004; Starobogatov *et al.*, 2004].
- Subregions: NE, SE, WS, ES, BL.
- Bionomics: Lives in permanent waterbodies [Kruglov, 2005].
- IUCN conservation status: LC (least concern).
- Remark: Glöer (2002a) treated this taxon as a intraspecific form of *Radix auricularia*.

426(540). *Radix (Peregriana) zazurnensis* (Mozley, 1934)

Limnaea (Radix) zazurnensis Mozley, 1934: 6, pl. 1, fig. 2.

- Type locality: The author gave it as “Lake Zazurnia, in the mountain range known as Khamar Daban, eastern shore of the Lake Baikal”. Kruglov & Starobogatov [1984a] suggested that the true type locality of the species is the Snezhnoye Lake near Vydrino station, Republic of Buryatia (approximately 51°27’N, 104°38’E). I. Bolotov [pers. comm.] hypothesized that the type series was collected in the Sobolinoye Lake situated southwards from Vydrino (51°17’50’’N, 104°41’15’’E). The physical-geographical properties of this lake [Skovitina & Shchetnikov, 1999] correspond well to the Mozley’s [1936] description of the type habitat. Although the holotype was designated in the original publication (as “type”), the lot in the type collection of USNM under the catalogue number 470709 contains a single specimen labeled as syntype on a later printed label. Since the specimen matches the original illustration it is probably the holotype [Kantor *et al.*, 2010].

- Holotype: USNM No. 470709.
- Global distribution: Northern and Central Asia.
- Distribution in the former USSR: Throughout northern Siberia from the Ural mountains to the Chukchi Peninsula, Altay, mountain parts of the Transbaikalia, northern part of the Amur River basin and eastern slopes of the Sikhotealin’ Ridge, the Baikal Lake [Kruglov & Starobogatov, 1993b; Sitnikova *et al.*, 2004; Starobogatov *et al.*, 2004].
- Subregions: WS, ES, BL, NF, SF.
- Bionomics: Lives in permanent waterbodies [Kruglov, 2005].
- IUCN conservation status: Not assessed.

Genus *Orientogalba* Kruglov et Starobogatov, 1985

[= *Lenagalba* Kruglov et Starobogatov, 1985; *Viridigalba* Kruglov et Starobogatov, 1985]

Type species: *Lymnaea heptapotamica* Lazareva, 1967 (OD)

**427(541). *Orientogalba hookeri*
(Reeve, 1850)**

[= *Limnaeus pervius* Martens, 1867; *Limnea davidii* Deshayes, 1870, partim; *Lymnaea heptapotamica* Lazareva, 1967]

Lymnaea hookeri Reeve, 1850: 49.

- Type locality: “Thibetan or north side of the Sikkim Himalaya, at 18,000 feet elevation”.
- Syntypes: BMNH. The “type” is illustrated by Hubendick [1951, pl. IV, fig. 18].
- Global distribution: Central Asia.
- Distribution in the former USSR: Eastern part of Central Asia, south-eastern Kazakhstan, Altay, the Transbaikalia, the Amur drainage including the Khanka Lake and the southern Primorye Territory [Lazareva, 1967b; Kruglov & Starobogatov, 1993b; Starobogatov *et al.*, 2004]. Possibly also in Kyrgyzstan [Glöer *et al.*, 2014].
- Subregions: WS, ES, CA, SF.
- Bionomics: Lives in small temporary waterbodies [Kruglov, 2005].
- IUCN conservation status: LC (least concern).

**428(542). *Orientogalba lenaensis*
(Kruglov et Starobogatov, 1985)**

Lymnaea lenaensis Kruglov & Starobogatov, 1985b: 31, fig. 1 (7); 2 (8).

- Type locality: Russia, Irkutsk Region, the lower Lena basin, the River Anga valley (in a pasture).
- Types: ZIN, Nos. 2, 4, 5 and 7 in systematic catalogue. The type series includes the holotype and six paratypes.
- Global distribution: Eastern part of Asiatic Russia.
- Distribution in the former USSR: The Eastern Siberia and the Primorye Territory [Sitnikova *et al.*, 2014].

- Subregions: ES, SF.
- Bionomics: Lives in small waterbodies of different kind, including floodplain ones [Kruglov, 2005; Sitnikova *et al.*, 2014].
- IUCN conservation status: Not assessed.

**429(543). *Orientogalba viridis*
(Quoy et Gaimard, 1832)**

[= *Limnaea davidii* Deshayes, 1870, partim; *Limnaea shantungensis* Jones et Preston, 1904; *Limnaea blaisei* Dautzenberg et Fischer, 1905]

Lymnaea viridis Quoy & Gaimard, 1832: 204, pl. 58, figs. 16-18.

- Type locality: The Pacific, the Marian Archipelago, Guam Island.
- Types: MNHN. The type series includes 3 syntypes.
- Global distribution: Eastern Asia and Pacific region.
- Distribution in the former USSR: The Primorye Territory, the southern Sakhalin, the southern Kurile Islands [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in small temporary waterbodies [Kruglov, 2005].
- IUCN conservation status: Not assessed.

**429(544). *Orientogalba ollula*
(Gould, 1859)**

Limnaea ollula Gould, 1859: 40.

- Type locality: China, streams and marshes of Hong Kong Island.
- Lectotype: USNM 831 [Johnson, 1964].
- Global distribution: Eastern Asia [Kruglov, 2005].
- Distribution in the former USSR: The Southern Primorye Region [Kruglov & Starobogatov, 1993b].
- Subregions: SF.
- Bionomics: Lives in temporary waterbodies [Kruglov, 2005].
- IUCN conservation status: Not assessed.
- Remark: Conchologically, this species is very similar to *O. viridis* and, perhaps, can be conspecific with the latter.

Genus *Cerasina* Kobelt, 1881

Type species: *Limnaea bulla* Kobelt, 1881 (OD)

430(545). *Cerasina impura* (Troschel, 1837)

Limnaeus impurus Troschel, 1837: 172.

- Type locality: Not stated directly. From the title of the work – India, the Ganges River.
- Types: Not traced. We failed to find the type material in ZMB where other types of Troschel's species are housed.
- Global distribution: Central and Southern Asia.
- Distribution in the former USSR: Tajikistan, southern Uzbekistan and Turkmenistan [Kruglov & Starobogatov, 1993b; Kruglov, 2005].
- Subregions: CA.
- Bionomics: Lives in permanent and temporary waterbodies [Kruglov, 2005].
- IUCN conservation status: Not assessed.
- Remark: Hubendick [1951] considered this species as a synonym of *Lymnaea luteola* Lamarck, 1822. Subba Rao [1989] treated it as a “distinct” intraspecific form of the latter.

Family Physidae Fitzinger, 1833

(Physoidea Fitzinger, 1833: 110)

Type genus: *Physa* Draparnaud, 1801

The family has worldwide distribution and comprises not less than 23 genera and 80 species, most of which occur in Pacific drainages of North and Central America [Taylor, 2003]. Two subfamilies (Physinae s.str. and Aplexinae Starobogatov, 1967) are recognized, both of which are present in the fauna of the RAC. There are at least 15 valid species (including non-indigenous taxa) of Phys-

idae in the fauna of the former USSR [Starobogatov *et al.*, 1989] though the physid diversity may be overestimated by the Russian authors as compared to works of their Western European counterparts (Table 14). The most important taxonomic works on Palearctic Physidae are those by Starobogatov *et al.* [1989] and Taylor [2003]. The holotypes of the species recently described from the RAC area are illustrated by Sitnikova *et al.* [2014c].

Subfamily Physinae Fitzinger, 1833

Genus *Physa* Draparnaud, 1801

[= *Bulla* Linnaeus, 1758, partim; *Bulinus* O.F. Müller, 1781, partim; *Exydra* Hübner, 1810; *Physina* Rafinesque, 1815; *Rivicola* Fitzinger, 1833; *Echemythes* Gistel, 1848; *Mediterraneophysa* Starobogatov et Budnikova, 1976; *Ussuriphysa* Starobogatov et Prozorova in Starobogatov, Prozorova et Zatravkin, 1989]

Type species: *Bulla fontinalis* Linnaeus, 1758 (SD Children, 1823; ICZN Opinion 94, 1958)

431(546). *Physa fontinalis* (Linnaeus, 1758)

[= *Planorbis gelatinus* O.F. Müller, 1774; *Turbo adversus* Da Costa, 1778; *Bulinus perla* O.F. Müller, 1781; *Helix pellucida* Razoumowsky, 1789; *Helix bullaoides* Donovan, 1803; *Physa fluviatilis* T. Brown, 1827; *Bulinus fontinalis* var. *obtusata* Beck, 1837; *Bulinus fontinalis* var. *producta* Beck, 1837; *Bulinus fontinalis* var. *subacuta* Beck, 1837; *Physa fontinalis* var. *lepida* Moquin-Tandon, 1855; *Physa fontinalis* var. *minor* Moquin-Tandon, 1855; *Physa fontinalis* var. *albina* Jeffreys, 1862; *Physa fontinalis* var. *inflata* Jeffreys, 1862; *Physa fontinalis* var. *oblonga* Jeffreys, 1862; *Physa minima* Brusina, 1866; *Physa fontinalis* var. *curta* Van den Broeck, 1869; *Physa fontinalis* var. *typica* Westerlund, 1871; *Physa semiglobosa* Westerlund, 1871; *Physa stabilei* Lessona, 1880; *Physa fontinalis* var. *major* Locard, 1880; *Physa fontinalis* var. *rufula* Servain, 1880; *Physa coronadoi* Servain, 1881; *Physa*

Table 14. Different views on the systematics of the European physid snails

Western European system [Glöer, 2002a; Welte-Schultes, 2012]		Russian system [Starobogatov <i>et al.</i> , 1989, 2004]		
Genus	Species	Genus	Subgenus	Species
<i>Physa</i> Draparnaud, 1801	<i>Ph. fontinalis</i> (L., 1758)	<i>Physa</i>	<i>Physa</i> s. str.	<i>Ph. adversa</i> (Da Costa, 1778) <i>Ph. fontinalis</i>
			<i>Mediterraneophysa</i> Starobogatov et Budnikova, 1976	<i>Ph. bulla</i> O.F. Müller, 1774
<i>Physella</i> Haldeman, 1843	<i>Ph. acuta</i> (Draparnaud, 1805)*	<i>Costatella</i> Dall, 1870	—	<i>C. acuta</i>
	<i>Ph. gyrina</i> (Say, 1821)*			—
	<i>Ph. heterostrophia</i> (Say, 1817)*.**			<i>C. integra</i> (Haldeman, 1841)
<i>Aplexa</i> Fleming, 1820	<i>A. hypnorum</i> (L., 1758)	<i>Aplexa</i>	<i>Aplexa</i> s. str.	<i>A. hypnorum</i> <i>A. turrita</i> (O.F. Müller, 1774)
			<i>Paraplexa</i> Starobogatov in Starobogatov, Prozorova et Zatravkin, 1989	<i>A. ataxiaca</i> Fagot, 1883

*Welter-Schultes [2012] placed this species to the genus *Physa*

**Welter-Schultes [2012] considered this species as a synonym of *Physa acuta*.

acutespira Servain, 1882; *Physa taciti* Servain, 1882; *Physa fontinalis* var. *flava* Cockerell, 1893; *Physa fontinalis* var. *junior* Astre, 1921; *Physa fontinalis* var. *subflava* Clench, 1926]

Bulla fontinalis Linnaeus, 1758: 727.

- Type locality: Taylor [2003: 220] wrote: «Linnaeus specified only “Habitat in Lacuum plantis subaquaticis” in his description of 1758, but cited the *Fauna Suecica* (1746, no. 1302) where he stated “Habitat ... praesertim Upsaliae.” The type locality therefore can be accepted as the vicinity of Uppsala [59°52'N 17°38'E], Sweden».
- Types: No longer extant [Taylor, 2003].
- Global distribution: Europe, Siberia, Mongolia.

- Distribution in the former USSR: The European part of RAC, the Western Siberia [Starobogatov *et al.*, 1989, 2004], southern part of the Eastern Siberia (Baikal Region, the Transbaikalia) [Prozorova *et al.*, 2009].
- Subregions: NE, SE, WS, ES.
- Bionomics: A stagnophilous species inhabiting different lentic waterbodies, i.e. ponds, channels, pools, shallow zones of slowly flowing rivers and so on [Stadnichenko, 1990].
- IUCN conservation status: LC (least concern).
- Remark: Another species of the genus *Physa*, *Ph. adversa* (Da Costa, 1778), was included to the lists of the Russian freshwater mollusks [Starobogatov *et al.*,

1989, 2004]. The examination of intraspecific variation of *Ph. fontinalis* s. l. has shown that *Ph. adversa* sensu Starobogatov *et al.* [1989] is a synonym of the latter [Khokhutkin & Vinarski, 2013]. The binomen *Ph. adversa* was recently used by Glöer & Diercking [2010] for designation of a species that, most probably, should be identified as *Ph. taslei*.

**432(547). *Physa arachleica*
Starobogatov et Prozorova in
Starobogatov, Prozorova et
Zatravkin, 1989**

Physa (Mediterraneophysa) arachleica Starobogatov *et al.*, 1989: 72, fig. 3(4); 4(4).

- Type locality: Russia, the Zabaikalsky Territory, the Arakhley Lake (approximately 52°12'N, 112°52'E).
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series contains holotype and 12 paratypes.
- Global distribution: Endemic to Asiatic Russia (Transbaikalia).
- Distribution in the former USSR: Known only from the type locality [Starobogatov *et al.*, 2004].
- Subregions: ES.
- Bionomics: Found in a large lake on vegetation [Starobogatov *et al.*, 1989; Sitnikova *et al.*, 2014c].
- IUCN conservation status: Not assessed.

**433(548). *Physa hankensis*
Starobogatov et Prozorova in
Starobogatov, Prozorova et
Zatravkin, 1989**

Physa (Ussuriphysa) hankensis Starobogatov *et al.*, 1989: 72, fig. 3(5); 4(5, 6).

- Type locality: Russia, the Khabarovsk Territory, a pool near “Kaktokovskoye” (= Kantonovskoye; see Bogatov & Zatravkin, 1990) Lake in Khabarovsk City.
- Holotype: ZIN, No 1. in systematic catalogue.

- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The type locality and the Khanka Lake [Sitnikova *et al.*, 2014c].
- Subregions: SF.
- Bionomics: Lives in clear lakes with well developed submerged vegetation [Sitnikova *et al.*, 2014c].
- IUCN conservation status: Not assessed.
- Remark: Taylor [2003] listed two species of *Physa* (*Ussuriphysa*) described by Starobogatov *et al.* [1989] that he regarded as synonyms of *Ph. hankensis* (see below).

**433(549). *Physa jarochnovitschae*
Starobogatov et Zatravkin in
Starobogatov, Prozorova et
Zatravkin, 1989**

Physa (Beringophysa) jarochnovitschae Starobogatov *et al.*, 1989: 73, fig. 3(7); 4(7).

- Type locality: Russia, Republic of Yakutia (Sakha), the delta of the Kolyma River at Pokhodsk (approximately 69°06'N 160°59'E).
- Types: ZIN, Nos. 1 and 2 in systematic catalogue.
- Global distribution: Endemic to Yakutia.
- Distribution in the former USSR: Known only from the delta of the Kolyma River [Starobogatov *et al.*, 2004].
- Subregions: ES.
- Bionomics: Lives in stagnant waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

**433(550). *Physa khabarovskiensis*
Starobogatov et Zatravkin in
Starobogatov, Prozorova et
Zatravkin, 1989**

Physa (Beringophysa) khabarovskiensis Starobogatov *et al.*, 1989: 73, fig. 3(6).

- Type locality: Russia, the Khabarovsk Territory, a pool near the “Kaktokovskoye” (= Kantonovskoye; see Bogatov & Zatravkin, 1990) Lake in Khabarovsk City.

- Holotype: ZIN, No 1. in systematic catalogue.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: Known only from the type locality [Sitnikova *et al.*, 2014c].
- Subregions: SF.
- Bionomics: Lives in small temporary waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

434(551). *Physa skinneri* Taylor, 1954

Physa skinneri Taylor, 1954: 9.

- Type locality: USA, “SE. cor. sec. 6, T.5 N., R. 28 E., Beaver Co., Oklahoma” (Pleistocene deposits).
- Holotype: Museum of Zoology, University of Michigan, No. 181292.
- Global distribution: North America and extreme North-East of Asia (findings from other regions of Eurasia are doubtful).
- Distribution in the former USSR: Chaun lowland river basin (north-east of Siberia) [Starobogatov *et al.*, 2004]. Since 2004, this species has been reported several times from different regions of the former USSR, including Ukraine, Siberia, northern part of the European Russia [Taylor & Sitnikova, 2004; Son, 2007; Degtyarenko & Anistratenko, 2011]. However, shells of “*Physa skinneri*” from Ukraine [Son, 2007; Degtyarenko & Anistratenko, 2011] are almost definitely identical to shells of *Physa taslei* Bourguignat. Khokhutkin & Vinarski [2013] regarded all records of *Ph. skinneri* from the Eastern Europe and Siberia as belonging to the latter species.
- Subregions: NF.
- Bionomics: In the northern Siberia, *Ph. skinneri* lives in thermokarst waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

435(552). *Physa streletzkae* Starobogatov et Budnikova, 1976

Physa (Physa) streletzkae Starobogatov & Budnikova, 1976: 84, fig. 5(II).

- Type locality: Russia, the Chukchi Peninsula, Lake No. 6 near Vakarevo Settlement (approximately 64°53'N 171°37'E).
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and a single paratype.
- Global distribution: Endemic to Asiatic Russia (the northern Far East).
- Distribution in the former USSR: Basins of the Yana and Anadyr' rivers [Starobogatov *et al.*, 2004].
- Subregions: ES, NF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 1989].
- IUCN conservation status: Not assessed.

436(553). *Physa taslei* Bourguignat, 1860

[= *Physa bulla* O.F. Müller, 1774 sensu Starobogatov *et al.*, 1989; *Ph. skinneri* Taylor, 1954, partim]

Physa taslei Bourguignat, 1860b: 70, pl. 1, fig. 19-20.

- Type locality: France, Brittany, near Vannes Town (“très commune dans un petit ruisseau provenant de la fontaine de Limoges, à 2 kilomètres de Vannes”). [fide Taylor, 2003].
- Syntypes: MNHN. There are 2 syntype shells in the type series (one is almost destroyed). The intact syntype was illustrated by Khokhutkin & Vinarski [2013, fig. 48 A].
- Global distribution: Europe (except its northern part), the Western Siberia, south of the Eastern Siberia, northern Mongolia.
- Distribution in the former USSR: The European part of RAC, except its nor-

thern part, the Western Siberia [Khokhutkin & Vinarski, 2013], the Baikal Region (Taylor & Sitnikova [2004] recorded this species as *Ph. skinneri*).

- Bionomics: Lives in stagnant and lotic habitats of different types [Starobogatov *et al.*, 1989].
- Subregions: SE, WS, ES.
- IUCN conservation status: Not assessed.
- Remark: Starobogatov & Budnikova [1976] were the first authors to include this species in the fauna of the former USSR. Later, Starobogatov *et al.* [1989] proposed to consider it as the junior synonym of *Ph. bulla* (O.F. Müller, 1774), and this binomen was used in the most recent Russian publications [Starobogatov *et al.*, 2004; Kantor & Sysoev, 2005]. Khokhutkin & Vinarski [2013] proposed to call this species *Ph. taslei* again since there are some reasons to believe that *Ph. bulla* sensu Müller is identical with *Physella acuta*. Examination of syntypes of *Ph. bulla* (kept in ZMUC) has shown that the specimens are identical with *Ph. fontinalis* [Nekhaev *et al.*, 2015].

Addition to the genus *Physa*. One more nominal species of the genus, *Ph. sartlandinensis*, was described by Mozley [1934] from the Sartlan Lake situated in the Western Siberia (Novosibirsk Region). Taylor [2003] synonymized *Ph. sartlandinensis* with *Ph. dalmatina* Küster, 1844 (type locality: Croatia). The latter species is known from the south Europe, and its alleged occurrence in the Western Siberia and even in northern part of Mongolia [see Taylor & Sitnikova, 2004] is very doubtful. We could not find the type materials of *Ph. sartlandinensis* in USNM, where other types of Mozley are kept. Besides, one of us

(M. V.) failed to collect any *Physa* from the Sartlan Lake (in August of 2005), and, thus, the taxonomic identity of *Ph. sartlandinensis* remains unclear.

Genus *Beringophysa*

Starobogatov et Budnikova, 1976

[= *Physa* Draparnaud, 1801, partim]

Type species: *Physa ampullacea chukchensis* Starobogatov et Budnikova, 1976 (OD)

Remark: Originally described as a subgenus of the genus *Physa*. Taylor [2003] ranked it as a genus.

437(554). *Beringophysa jennessi* (Dall, 1919)

Physa jennessi Dall, 1919: 3A, 4A, 12A, 18A, 20A, pl. 2, fig. 2.

- Type locality: Canada, ponds near Bernard Harbour (68°47'N 114°47'N), District of Mackenzie, North-west Territories [fide Taylor, 2003].
- Types: NMC, Nos. 4019 and 4020. The type series includes the holotype and three paratypes.
- Global distribution: Canada, USA (Alaska), extreme North-East of Asia [Taylor, 2003; Starobogatov *et al.*, 2004].
- Distribution in the former USSR: The Chukchi Peninsula and westward to the lower Kolyma Basin [Starobogatov *et al.*, 2004].
- Subregions: ES, NF.
- Bionomics: In Russia, *B. jennessi* lives in thermokarst waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Taylor [2003] listed three species of *Physa* (*Beringophysa*) described by the Russian authors as synonyms of *B. jennessi* (see below).

**437(555). *Beringophysa chukchensis*
(Starobogatov et Budnikova, 1976)**

Physa (Beringophysa) ampullacea chukchensis
Starobogatov & Budnikova, 1976: 84, fig. 5, 1.

- Type locality: Russia, the Chukchi Peninsula, vicinity of Ust'-Chaun Settlement (approximately 68°47'N, 170°30'E).
- Types: ZIN, Nos. 1–5 in systematic catalogue. The type series includes the holotype and 32 paratypes.
- Global distribution: Endemic to the Russian Northern Far East.
- Distribution in the former USSR: The Northern Far East from the Chukchi Peninsula to the lower reaches of the Kolyma River [Starobogatov *et al.*, 2004].
- Subregions: ES, NF.
- Bionomics: Lives in thermokarst waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

**437(556). *Beringophysa kuvaevi*
(Starobogatov et Prozorova in
Starobogatov, Prozorova et
Zatravkin, 1989)**

Physa (Beringophysa) kuvaevi Starobogatov *et al.*, 1989: 74, fig. 3(8); 4(8).

- Type locality: Russia, the Chukchi Peninsula, a lake near Anadyr' airport (approximately 64°45'N 177°29'E).
- Types: Three shells from the type series are kept in ZIN under No 1. in systematic catalogue. However, there is a problem with identification of the holotype of *B. kuvaevi* (see Sitnikova *et al.* [2014c] for details)
- Global distribution: Endemic to the Russian northern Far East.
- Distribution in the former USSR: Known only from the type locality [Starobogatov *et al.*, 2004].
- Subregions: NF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

**437(557). *Beringophysa tei*
(Starobogatov et Prozorova in
Starobogatov, Prozorova et
Zatravkin, 1989)**

Physa (Beringophysa) tei Starobogatov *et al.*, 1989: 74, fig. 3(8); 4(8).

- Type locality: Russia, the Chukchi Peninsula, a lake near Anadyr' airport (approximately 64°45'N 177°29'E).
- Holotype: ZIN, No 1. in systematic catalogue.
- Global distribution: Beringia (North of the Russian Far East and Alaska) [Starobogatov *et al.*, 1989, 2004].
- Distribution in the former USSR: Basin of the Anadyr' River [Starobogatov *et al.*, 2004].
- Subregions: NF.
- Bionomics: Lives in thermokarst lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

Genus *Physella* Haldeman, 1843

[= *Physa* Draparnaud, 1801, partim; *Physodon* Haldeman, 1843; *Petrophysa* Pilsbry, 1926; *Haitia* Clench et Aguayo, 1932, partim]

Type species: *Physa globosa* Haldeman, 1841 (M)

Subgenus *Physella* s. str.

**438(558). *Physella (Physella) nuttallii*
(Lea, 1864)**

Physa nuttallii Lea, 1864: 116.

- Type locality: USA, "Lewis' River, Oregon" (= the Snake River, Idaho; fide Taylor [2003])
- Holotype: USNM No. 170770.
- Global distribution: North America, north of the Russian Far East.
- Distribution in the former USSR: The Chukchi Peninsula, Krest Bay coast [Starobogatov *et al.*, 2004].
- Subregions: NF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 1989].
- IUCN conservation status: Not assessed.
- Remark: Taylor [2003] believed that *Ph. nuttallii* is a junior synonym of *Ph. gyrina*.

Subgenus *Costatella* Dall, 1870

[= *Physa* Draparnaud, 1801, partim; *Physella* Haldeman, 1843, partim; *Costella* Meek, 1876; *Acutiana* Fagot, 1883; *Petrophysa* Pilsbry, 1926; *Haitia* Clench et Aguayo, 1932, partim]

Type species: *Physa costata* Newcomb, 1861 (OD)

Remark: Taylor [2003] regarded *Costatella* as a monotypic genus to include the only Nearctic species *C. costata* (Newcomb, 1861), but this opinion was criticized by subsequent authors, who studied physid taxonomy by means of molecular methods [Wethington & Lydeard, 2007]. Here we follow opinion of Starobogatov *et al.* [2004], who placed more taxa into *Costatella*, including Palearctic *C. acuta* and some invasive species of North American origin. However, we accept *Costatella* as a subgenus of the genus *Physella* as it was proposed by some authors [Burch, 1989; Wethington & Lydeard, 2007]. Taylor [2003] considered *Ph. acuta* and related species to be members of the genus *Haitia* Clench et Aguayo, 1932.

439(559). *Physella (Costatella) acuta* (Draparnaud, 1805)

[= *Physa fluviatilis* Férussac, 1807; *Bulla rivalis* Maton et Rackett, 1807; *Physa subopaca* Lamarck, 1822; *Physa borbonica* Férussac, 1827; *Bulinus acutus* f. *minuta* Beck, 1837; *Bulinus acutus* f. *normalis* Beck, 1837; *Bulinus fontinalis* f. *subacuta* Beck, 1837; *Physa nana* Potiez et Michaud, 1838; *Physa cubensis* Pfeiffer, 1839; *Physa rivularis* Dupuy, 1849; *Physa elliptica* Dupuy, 1850; *Physa buschii* Küster, 1850; *Physa charpentieri* Küster, 1850; *Physa acuta* var. *gibbosa* Moquin-Tandon, 1855; *Physa acuta* var. *minor* Moquin-Tandon, 1855; *Physa acuta* var. *subacuta* Moquin-Tandon, 1855; *Physa acuta* var. *ventricosa* Moquin-Tandon, 1855; *Physa pisana* Issel, 1866; *Physa acuta* var. *acutior* Gassies, 1867; *Physa seychellana* Martens, 1869; *Physa tenerifae* Mousson, 1872; *Physa tenerifae* var. *fuerteventurae* Mousson, 1872; *Physa tenerifae*

var. *gomerana* Mousson, 1872; *Physa tenerifae* var. *grancanariae* Mousson, 1872; *Physa tenerifae* var. *palmaensis* Mousson, 1872; *Physopsis letouneuxi* Bourguignat, 1879; *Physopsis lhotellieri* Bourguignat, 1879; *Physa acuta* var. *fusca* Kobelt, 1880; *Physa acuta* var. *septentrionalis* Kobelt, 1880; *Physa acuta* var. *major* Locard, 1880; *Physa martorelli* Servain, 1880; *Physa achaiae* Westerlund, 1881; *Physa solidior* A. Costa, 1882; *Physa acuta* var. *brevispira* Paulucci, 1882; *Physa acroxa* Fagot, 1883; *Physa saint-simonis* Fagot, 1883; *Physa acuta* var. *minima* Cockerell, 1893; *Physa gallica* Locard, 1893; *Physa massoti* Locard, 1893; *Physa salteli* Locard, 1893; *Physa subopaca* var. *nilotica* Pallary, 1902; *Physa castanea* var. *globosa* Germain, 1903; *Physa castanea* var. *major* Germain, 1903; *Physa gibbosa rubella* Germain, 1903; *Physa acuta* var. *bulla* Schlesch, 1907; *Physa acuta* var. *castanea* Schlesch, 1907; *Physa syriaca* Germain, 1911; *Physa acuta* var. *thermalis* Boettger, 1913]

Physa acuta Draparnaud, 1805: 55, pl. 3, figs. 10-11.

- Type locality: France, the Garonna River and its tributaries.

- Types: The holotype of this species in Draparnaud's collection (NHMV) is kept under museum number 102796 [Taylor, 2003].

- Global distribution: This species was described from France and subsequently has been found in many European countries and North America. Most American authors assumed *C. acuta* to be a species of Nearctic origin that invaded other continents [Dillon *et al.*, 2002; Taylor, 2003]. Invasive populations of *C. acuta* are known from Europe, Asia, Africa, Australia, and South America (the Titicaca Lake) [Brown, 1994; Dillon *et al.*, 2002; Paraense & Pointier, 2003; Taylor, 2003; Albrecht *et al.*, 2009]. Dillon *et al.* [2002: 233] nominated it as "the world's most cosmopolitan freshwater gastropod".

- Distribution in the former USSR: The Ciscaucasia, the Transcaucasia, Central Asia, the Lowe Volga basin, the south-

ern Primorye, South Ukraine [Izzatul-lae, 1972; Starobogatov *et al.*, 2004; Son, 2007], Northern and Central Kazakhstan [Frolova, 1969].

- Subregions: SE, CT, CA, SF.
- Bionomics: Lives in lentic waterbodies and in slowly running rivers, in shallow zones of large lakes [Glöer, 2002a].
- IUCN conservation status: LC (least concern).
- Remark: Kadolsky [2011] proposed to place this species in the subgenus *Acutiana* Fagot, 1883.

**440(560). *Physella* (*Costatella*)
integra (Haldeman, 1841)**

[= *Physa brevispira* Lea, 1864; *Physa billingsii* Heron, 1880; *Ph. walkeri* Crandall, 1901; *Ph. oneida* F.C. Baker, 1919; *Ph. michiganensis* Clench, 1926]

Physa integra Haldeman, 1841: cover p. 3.

- Type locality: USA, Indiana; “sent by Mrs. Say, hence likely from the vicinity of New Harmony [38°07′47″N, 87°56′06″W], Posey County” [Taylor, 2003: 226].
- Types: ANSP No. 280023.
- Global distribution: North America (Canada, the Great Lakes region and Dakota), introduced to Europe [Burch, 1989; Taylor, 2003], the Western Siberia and the Russian Far East [Starobogatov *et al.*, 2004; Khokhutkin & Vinarski, 2013].
- Distribution in the former USSR: The Volga delta, the Ciscaucasia, Central Asia, the southern Primorye, also in cooling reservoirs of electric power plants located in Europe, the South Urals, south of the Western Siberia [Bogatov & Zatravkin, 1990; Starobogatov *et al.*, 2004; Khokhutkin & Vinarski, 2013].
- Subregions: SE, CT, CA, WS, SF.
- Bionomics: A stagnophilous species

inhabiting lentic waterbodies enriched by vegetation [Glöer, 2002a]. In Eastern Europe and Siberia dwells in cooling reservoirs of electric plants only [Khokhutkin & Vinarski, 2013].

- IUCN conservation status: Not assessed.
- Remark: Dillon *et al.* [2002] synonymized *C. integra* with *C. acuta* since the two species proved to be not reproductively isolated under laboratory conditions.

Addition to the subgenus *Costatella*. The taxonomic status of Nearctic species of *Costatella* (or *Physella*) that invaded the European waterbodies is not established unambiguously. The Western European authors [Falkner *et al.*, 2001; Glöer, 2002a] placed them into two species: *Physella heterostropha* (Say, 1817) and *Ph. gyrina* (Say, 1821), whereas in the Russian literature a single invasive species is recorded, *C. integra* (Say, 1821) [Starobogatov *et al.*, 2004; Khokhutkin & Vinarski, 2013]. Son [2007] mentioned *Ph. heterostropha* from waterbodies of Moldova and southern Ukraine. *Ph. gyrina* has not yet been recorded from the RAC territory. Judging from descriptions and illustrations published in the literature [Burch, 1989; Glöer, 2002a; Son, 2007], it is not impossible that *Ph. heterostropha* sensu Glöer, 2002 is conspecific with *C. integra* of Russian authors, therefore we do not include *Ph. heterostropha* to the list of RAC freshwater mollusks. Besides, Dillon *et al.* [2002] and Taylor [2003] believed that *Ph. heterostropha* is identical with *C. acuta*. Further study is needed to clarify the species content and generic position of invasive Nearctic physids.

Subfamily Aplexinae

Starobogatov, 1967

(Aplexinae Starobogatov, 1967: 289)

Genus *Aplexa* Fleming, 1820

[= *Bulla* Linnaeus, 1758, partim; *Nauta* Leach in Turton, 1831; *Aplexus* Gray in Turton, 1840; *Amplexa* T. Brown, 1844; *Apecta* Hermannsen, 1846, non Guenée, 1838 (Lepidoptera); *Hypnoriama* Fagot, 1883; *Paraplexa* Starobogatov in Starobogatov, Prozorova et Zatravkin, 1989]

Type species: *Bulla hypnorum* Linnaeus, 1758 (SD Hermannsen, 1846)

**441(561). *Aplexa hypnorum*
(Linnaeus, 1758)**

[= *Helix achatina* Gmelin, 1791; *Helix marmorata* Gmelin, 1791; *Physa hypnorum* var. *fasciata* Küster, 1844; *Aplexa hypnorum* f. *rhenanus* Beck, 1837; *Physa hypnorum* var. *pulchella* Moquin-Tandon, 1855; *Aplexus hypnorum* var. *minor* De Malzine, 1867; *Physa hypnorum* var. *rubra* Van der Broeck, 1871; *Physa hypnorum* f. *major* Westerlund, 1885; *Physa hypnorum* f. *minor* Westerlund, 1885; *Physa alixiana* Servain, 1887; *Physa hypnicola* Chatenier, 1888; *Physa thermalis* Locard, 1893; *Physa hypnorum* f. *albescens* Westerlund, 1897]

Bulla hypnorum Linnaeus, 1758: 727.

- Type locality: “Habitat in Europae Muscis humentibus” (= “dwells in Europe, in wet mosses”³⁴) [Linnaeus, 1758: 728].
- Types: Not present neither in LSL [Taylor, 2003] nor in UUZM [Wallin, 2001]; probably lost.
- Global distribution: The Western and Northern Europe, eastward to the Western Siberia [Taylor, 2003]. Records of this species from North America [Dall, 1905; Brooks, 1935; Clarke, 1981] should

almost definitely be attributed to some species of the genus *Sibirenauta*.

- Distribution in the former USSR: The European part of RAC, southern part of the Western Siberia [Starobogatov *et al.*, 1989, 2004].
- Subregions: NE, SE, WS.
- Bionomics: Lives in small temporary and semi-permanent waterbodies [Beriozkina & Starobogatov, 1988; Stadnichenko, 1990; Khokhutkin & Vinarski, 2013].
- IUCN conservation status: Not assessed.
- Remarks: *A. hypnorum* with relatively more slender shells is sometimes regarded as a distinct species, *A. turrita* (O.F. Müller, 1774). Possibly, it is merely a morphotype of *A. hypnorum* (see below).

**441(562). *Aplexa turrita*
(O.F. Müller, 1774)**

[= *Physa acuta* var. *perissiana* Dupuy, 1849]

Planorbis turritus O.F. Müller, 1774: 169.

- Type locality: Central Europe, in waterbodies of Denmark and Germany (“agri Fridrichsdalensis... Saxonia... ripa Danubii” = in the land of Fridrichsdal, Saxony, on the banks of the Danube River) [O.F. Müller, 1774: 169]. Fridrichsdal is a suburb of Copenhagen.
- Types: ZMC, No. GAS-677 in systematic catalogue.
- Global distribution: The Western (Denmark) and Eastern Europe, the Western Siberia [Starobogatov *et al.*, 2004; Khokhutkin & Vinarski, 2013].
- Distribution in the former USSR: The European part of RAC, the Western Siberia north to the Polar Circle [Starobogatov *et al.*, 1989, 2004; Vinarski *et al.*, 2013c].
- Subregions: NE, SE, WS.
- Bionomics: Lives in temporary waterbodies [Starobogatov *et al.*, 2004; Khokhutkin & Vinarski, 2013].
- IUCN conservation status: Not assessed.

³⁴ Most probably, Linnaeus knew this species from empty shells only and believed it to be a terrestrial snail.

• Remark: The differences between *A. hypnorum* sensu Starobogatov et al., 1989 and *A. turrita* are relatively slight, and Taylor [2003] regarded the latter as a synonym of *Bulla hypnorum* Linnaeus.

Addition to the genus *Aplexa*. Starobogatov et al. [1989] described a new subgenus *Paraplexa* with the type species *Physa ataxiaca* Fagot, 1883. Taylor [2003] ranked this taxon as a separate genus within Aplexinae though he stated that true *Paraplexa* inhabit Western Europe only. According to Taylor, '*Aplexa ataxiaca*' from the Leningrad Region dissected and illustrated by Starobogatov et al. [1989] is "doubtless *Aplexa hypnorum*" [Taylor, 2003: 50]. It is still unclear whether there is another species of *Aplexa* (except of *A. hypnorum* s. l.) in the malacofauna of RAC.

Genus *Amuraplexa* Starobogatov et Prozorova in Starobogatov, Prozorova et Zatravkin, 1989

Type species: *Aplexa amurensis* Starobogatov et Prozorova in Starobogatov, Prozorova et Zatravkin, 1989 (OD)

Remark: Originally described as a subgenus of the genus *Aplexa*. Taylor [2003] ascribed the generic rank to this taxon.

442(563). *Amuraplexa amurensis* (Starobogatov et Prozorova in Starobogatov, Prozorova et Zatravkin, 1989)

Aplexa amurensis Starobogatov et al., 1989: 65, fig. 1(4); 2(4).

- Type locality: Russia, the Khabarovsk Territory (Far East), a swamp near settlement Konstantinovka (approximately 48°35'N, 135°27'E).
- Holotype: ZIN, No 1 in systematic

catalogue. The paratypes are not designated in ZIN collection though there are some specimens that probably served as paratypes [see Sitnikova et al., 2014c for details].

- Global distribution: Endemic to the south-eastern part of Asiatic Russia. Probably occurs also in Northern Mongolia.
- Distribution in the former USSR: The Amur basin and the Primorye Territory, the Baikal Region and the upper Yenisei (northeastern Tuva) basin [Starobogatov et al., 1989, 2004].
- Subregions: ES, SF.
- Bionomics: Lives in temporary waterbodies [Starobogatov et al., 2004; Prozorova et al., 2009].
- IUCN conservation status: Not assessed.
- Remark: Taylor [2003] listed three species of *Aplexa* (*Amuraplexa*) described by Starobogatov et al. [1989] which he regarded as synonyms of *A. amurensis* (see below).

442(564). *Amuraplexa aphillica* (Starobogatov et Zatravkin in Starobogatov, Prozorova et Zatravkin, 1989)

Aplexa moskvichevae aphillica Starobogatov et al., 1989: 66, fig. 1(7).

- Type locality: Russia, the Primorye Territory, Khanka District, a channel in a rice field in vicinity of Vladimiro-Petrovka village (approximately 44°40'N 132°06'E).
- Types: ZIN, No. 203 in systematic catalogue [kept under taxonomic name *Aplexa hypnorum*; see Sitnikova et al., 2014c for details].
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Primorye Territory, Khanka lowland, probably also in the Amur basin [Starobogatov et al., 2004].
- Subregions: SF.

- Bionomics: Lives in temporary waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

442(565). *Amuraplexa moskvichevae*
(Starobogatov et Zatravkin in
Starobogatov, Prozorova et
Zatravkin, 1989)

Aplexa moskvichevae moskvichevae Starobogatov *et al.*, 1989: 66, fig. 1(6); 2(6).

- Type locality: Russia, the Primorye Territory, the Artyomovka River in vicinities of Artyom Town (approximately 43°22'N, 132°13'E).
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and two paratypes [Sitnikova *et al.*, 2014c].
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Primorye Territory, the Khanka lowland, probably also in the Amur basin [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in temporary waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

442(566). *Amuraplexa orientalis*
(Starobogatov et Prozorova in
Starobogatov, Prozorova et Zatravkin,
1989)

Aplexa orientalis Starobogatov *et al.*, 1989: 66, fig. 1(5); 2(5).

- Type locality: Russia, the Khabarovsk Territory, a swamp near settlement Konstantinovka (approximately 48°35'N, 135°27'E).
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Primorye Territory and the Amur basin [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in temporary waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

Genus *Sibirenauta*

Starobogatov et Streletzkaja, 1967

[= *Aplexa* Fleming, 1820, partim]

Type species: *Physa kultukiana* B. Dybowski, 1913 (OD)

443(567). *Sibirenauta elongata*
(Say, 1821)

[= *Physa glabra* De Kay, 1843; *Physa hypnorum* var. *depressior* Middendorff, 1851; *Physa elongatina* Lewis, 1855; *Bulinus tryoni* Currier, 1867; *Physa hypnorum* var. *polaris* Westerlund, 1876; *Physa elongata* var. *arctica* Clessin, 1885; ? *Physa kultukiana* B. Dybowski, 1913; *Aplexa hypnorum pilsbryi* Brooks, 1935]

Physa elongata Say, 1821: 171.

- Type locality: USA, Illinois, shores of the Mississippi River opposite to St. Louis (38°38'N, 90°11'W), Missouri [fide Taylor, 2003].
- Types: ANSP, No. 21208.
- Global distribution: North America, Asiatic Russia [Taylor, 2003; Starobogatov *et al.*, 2004]. Taylor [2003] believed that all Siberian records of *Sibirenauta elongata* actually belong to other species of the genus.
- Distribution in the former USSR: From northern part of the Western Siberia to the Chukchi Peninsula, the upper Amur basin [Starobogatov & Streletzkaja, 1967; Bogatov & Zatravkin, 1990; Starobogatov *et al.*, 2004].
- Subregions: WS, ES, NF, SF.
- Bionomics: Lives in small temporary habitats, in floodplains [Bogatov & Zatravkin, 1990].
- IUCN conservation status: Not assessed.
- Remark: In the Russian literature, this species is known as *Sibirenauta elongata* [Starobogatov & Streletzkaja, 1967; Starobogatov *et al.*, 1989; Khokhutkin & Vinarski, 2013]. Taylor [2003] used another spelling, *S. elongatus*, since the

generic name *Sibirenauta* is of masculine gender (the Latin word *Nauta* means 'a sailor'). However, the authors of the genus, Starobogatov et Streletzkaja [1967], stated that the gender of this name is feminine. Therefore the spelling *Sibirenauta elongata* is the only permissible.

**444(568). *Sibirenauta sibirica*
(Westerlund, 1877)**

[= ? *Physa kultukiana* B. Dybowski, 1913; ? *Sibirenauta aenigma* sensu Starobogatov et al., 1989, non Westerlund, 1876]

Physa sibirica Westerlund, 1877: 100.

- Type locality: Russia, the Taimyr Peninsula, Sopochynaya Karga bay ["In Sibiria, prope Jenissei as Sopotschnaja Korga (lat. 71°40')"]; Westerlund, 1876: 100].
- Types: The lectotype (designated and illustrated by Vinarski et al. [2013b]) and three paralectotypes are in SMNH (Nos. 1651 and 12:31), other ten paralectotypes from the same locality are kept in NMG (No. 3877).
- Global distribution: Asiatic Russia, Alaska [Starobogatov et al., 2004].
- Distribution in the former USSR: The Southern Urals, southern part of the Western Siberia, the Altay Mountains, the Eastern Siberia [Sitnikova et al., 2010; Khokhutkin & Vinarski, 2013; Vinarski et al., 2013a; Nekhaev, 2015]; the Wrangel Island [Vinarski et al., 2015].
- Subregions: WS, ES, NF.
- Bionomics: Lives in small temporary habitats [Khokhutkin & Vinarski, 2013].
- IUCN conservation status: Not assessed.
- Remark: In the Russian literature, this species is known as *Sibirenauta sibirica* [Starobogatov et al., 1989; Khokhutkin

& Vinarski, 2013]. Taylor [2003] used another spelling, *S. sibiricus* that is apparently incorrect (see remark to *S. elongata*).

**445(569). "*Sibirenauta*" *tuwaensis*
Starobogatov et Zatravkin in
Starobogatov, Prozorova et
Zatravkin, 1989**

Sibirenauta tuwaensis Starobogatov et al., 1989: 68, fig. 1(9); 2(8).

- Type locality: Russia, Republic of Tuva, Toora-Khem settlement (approximately 52°28'N 96°09'E).
- Types: The holotype and 15 paratypes are in ZIN, Nos. 1–3 in systematic catalogue (see Sitnikova et al., 2014c for details).
- Global distribution: The Southern Siberia and northern Mongolia [Taylor, 2003; Starobogatov et al., 2004].
- Distribution in the former USSR: Republic of Tuva [Starobogatov et al., 2004].
- Subregions: ES.
- Bionomics: Lives in small temporary habitats [Starobogatov et al., 2004].
- IUCN conservation status: Not assessed.
- Remark: Taylor [2003: 57] believed that this species actually does not belong to *Sibirenauta* as indicated by "the enormous sarcobelum (W/L about .6), and the penis that widens in its distal half to more than twice the width of the proximal half, ending in a blunt, rounded tip".

Addition to the genus *Sibirenauta*.

Three more nominal species of this genus were recorded from Siberia and the Russian Far East by different researchers but we refrain to include them into our list of freshwater mollusks of Russia

as there are serious and still unresolved problems concerned with their taxonomic and/or nomenclatorial status.

1. *Sibirenauta depressior* (Middendorff, 1851). Taylor [2003] used this taxonomic name for designation of all records of *S. elongata* from Russia. However, the type series of *Physa hypnorum* var. *depressior* described from the Taimyr Peninsula is lost, and there is no way to establish the true identity of this taxon.

2. *S. pictus* (Krause, 1883). According to Taylor [2003], this species inhabits Chukchi Peninsula, Alaska, and north Canada. *S. pictus* was mentioned from Russia by Starobogatov & Budnikova [1976], but later this species was synonymized with *S. sibirica* [Starobogatov *et al.*, 1989].

3. *S. aenigma* (Westerlund, 1876). This name was used for designation of a physid species inhabiting South Siberia by Starobogatov *et al.* [1989] without examination of the type series. Later, Taylor [2003] had shown that the holotype of *Ph. aenigma* represents nothing but a sinistral shell of a certain species of land snail (most probably belonging to the genus *Cochlicopa* Férussac, 1821) and, thus, this taxonomic name is not available for any physid species. This opinion was supported by Vinarski *et al.* [2013b]. Khokhutkin & Vinarski [2013] considered *S. aenigma* sensu Starobogatov *et al.* [1989] as a synonym of *S. sibirica*.

Taxonomy of the genus *Sibirinauta* is very tangled. There are several deep contradictions between systems proposed by Starobogatov *et al.* [1989] and Taylor [2003]. It is impossible to resolve these contradictions until a new revision of the genus with re-examination of materials collected in North America and Siberia.

Family Planorbidae Rafinesque, 1815

[= Orygoceratidae Brusina, 1882]

(Planorbia Rafinesque, 1815: 143)

Type genus: *Planorbis* O.F. Müller, 1773

This large group of aquatic pulmonates is distributed almost worldwide [Starobogatov, 1970; Banarescu, 1990] and includes several subfamilies, more than 30 genera and not less than 250 species [Strong *et al.*, 2008] being thus the most diverse family of basommatophoran snails [Banarescu, 1990]. The taxonomy of Planorbidae is very confusing. The classical works devoted to its systematization [Baker, 1945; Hubendick, 1955; Starobogatov, 1958, 1967, 1970] were based on the study of shell characters and especially on thorough examination of reproductive anatomy of the snails. Recently, several papers based on molecular phylogenetic studies have appeared [Morgan *et al.*, 2002; Albrecht *et al.*, 2007; Walther *et al.*, 2006, 2010; von Oheimb *et al.*, 2013], but none of them deals with the family in its entirety, and a large portion of taxa are still not studied genetically. Besides, new data on the morphology of Planorbidae enriching our knowledge of taxonomic significance of some structures have been published [Hodgson & Healy, 1998; Soldatenko & Petrov, 2009, 2012; Soldatenko & Shatrov, 2013]. Due to absence of generally adopted classification, the taxonomic scheme used here is very provisional. We divide the family into several subfamilies, many of which were previously ranked as tribes [Bouchet & Rocroi, 2005]. Surely, new insights in planorbid taxonomy and phylogeny will be reached in the nearest future. The most important works on taxonomy,

zoogeography, and phylogeny of Palearctic Planorbidae are those by Baker [1945], Hubendick [1955, 1970, 1978], Starobogatov [1957, 1967, 1970, 1977c], Stadnichenko [1990], Kruglov & Soldatenko [1997, 2000], Prozorova [2003], Albrecht *et al.* [2007]. The type specimens of numerous species of Planorbidae described by Ya.I. Starobogatov are reviewed and illustrated by Sitnikova *et al.* [2014b].

Subfamily Planorbinae Rafinesque, 1815

Genus *Planorbis* O.F. Müller, 1773

[= *Planorbigenus* Renier, 1807; *Tropidiscus* Stein, 1850; *Umbilicatiana* Servain, 1888]

Type species: *Helix planorbis* B. Dybowski, 1913 (SD ICZN Opinion 335, 1955)

Subgenus *Planorbis* s.str.³⁵

446(570). *Planorbis* (*Planorbis*) *planorbis* (Linnaeus, 1758)

[= *Helix limbata* Da Costa, 1778; *Helix complanata* Schröter, 1779, non Linnaeus, 1758; *Planorbis carinatus* Studer, 1789, non O.F. Müller, 1774; *Planorbis lapicida* Bolten, 1798; *Planorbis acutus* Poiret, 1801; *Planorbis marginatus* Draparnaud, 1805; *Helix cochlea* Brown, 1818; *Helix rhombea* Turton, 1819; *Planorbis sheppardi* Leach, 1831; *Planorbis intermedius* Charpentier, 1837; *Planorbis linnei* Malm, 1855, partim; *Planorbis umbilicatus* auct., partim]

Helix planorbis Linnaeus, 1758: 769.

- Type locality: Europe, in stagnant waterbodies (“Habitat in Europeae stagnis”; Linnaeus, 1758: 769).
- Types: Probably syntypes are in UUZM, Nos. 1177 a-b.

³⁵ Another subgenus of *Planorbis* – *Crasiplanorbis* Meier-Brook, 1976 – is not represented in the RAC malacofauna.

- Global distribution: Europe, Northern Africa, and Siberia [Brown, 1994; Glöer, 2002a].
- Distribution in the former USSR: The European part of RAC, the Western Siberia (except of extreme north), the Altay Mountains [Soldatenko & Starobogatov, 2000].
- Subregions: NE, SE, WS.
- Bionomics: Lives in temporary habitats [Soldatenko & Starobogatov, 2000].
- IUCN conservation status: Not assessed.

446(571). *Planorbis* (*Planorbis*) *umbilicatus* O.F. Müller, 1774

Planorbis umbilicatus O.F. Müller, 1774: 160-161.

- Type locality: Denmark.
- Types: Syntypes of *P. umbilicatus* are dispersed among three separate lots kept in ZMUC: No. GAS-591 (2 specimens) from “Dania” [Denmark] labelled “Specimina original. O. Mülleri”, No. GAS-574 (8 specimens), and No. GAS-592 (2 specimens), the two last mentioned lots are from the collection of Fabricius, no exact locality given. Three specimens of this species probably received from Müller and stored in the LSL collection together with *Helix planorbis* Linnaeus 1758 were reported by Kennard & Woodward [1920].
- Global distribution: Europe and Siberia [Soldatenko & Starobogatov, 2000].
- Distribution in the former USSR: The European part of RAC, the Western Siberia (except for Arctic region), and tributaries of the southern part of the Baikal Lake [Soldatenko & Starobogatov, 2000].
- Subregions: NE, SE, WS, ES.
- Bionomics: Lives in permanent waterbodies among plants [Soldatenko & Starobogatov, 2000].
- IUCN conservation status: Not assessed.
- Remark: The examination of the syntypes of *P. umbilicatus* has shown that these specimens are most likely conspecific with *P. planorbis* and thus *P. umbilicatus* sensu Soldatenko & Starobogatov may be not identi-

cal with *P. umbilicatus* sensu O.F. Müller [Nekhaev *et al.*, 2015]. The Western European authors did not accept *P. umbilicatus* as a valid species [Glöer, 2002a; Welter-Schultes, 2012].

447(572). *Planorbis (Planorbis) carinatus* O.F. Müller, 1774

[= *Planorbis limbata* Da Costa, 1778; *Helix planata* Turton, 1807; *Planorbis umbilicatus* Studer, 1820 non O.F. Müller, 1774; *Planorbis lutescens* Jeffreys, 1830; *Planorbis linnei* Malm, 1855, partim; *Planorbis pervius* Locard, 1893]

Planorbis carinatus O.F. Müller, 1774: 157-158.

- Type locality: Denmark and Italy [see Nekhaev *et al.*, 2015 for details].
- Types: Syntypes are dispersed among three separate lots in the ZMUC collection: No. GAS-576 contains 4 subadult specimens from “Dania” [Denmark] labeled “Exemplaria orig. O. Mülleri”; No. GAS-582 and ZMUC-GAS-583 are from the collection of Fabricius and contain 6 and 8 specimens respectively, no exact locality is given [Nekhaev *et al.*, 2015].
- Global distribution: Europe.
- Distribution in the former USSR: The European part of the RAC area, the Transcaucasia (the Sevan Lake), the southern Urals [Soldatenko & Starobogatov, 2000; Khokhutkin & Vinarski, 2013].
- Subregions: NE, SE, CT.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

447(573). *Planorbis (Planorbis) dubius* Hartmann, 1821

Planorbis marginatus β *dubius* Hartmann, 1821: 254-255.

- Type locality: Switzerland, canals of the Rhein and in the Katzenssee in Zürich Kanton.
- Types: Naturmuseum St. Gallen (Switzerland), No. M299.

- Global distribution: Europe [Soldatenko & Starobogatov, 2000].
- Distribution in the former USSR: The Baltic Sea Region and the Ciscaucasia [Soldatenko & Starobogatov, 2000].
- Subregions: NE, SE, CT.
- Bionomics: Lives in permanent waterbodies among plants [Soldatenko & Starobogatov, 2000].
- IUCN conservation status: Not assessed.
- Remark: The Western European malacologists did not accept *P. dubius* as a valid species distinct from *P. carinatus* [Glöer, 2002a; Welter-Schultes, 2012]. Glöer & Pešič [2010] reported that the type series of *P. marginatus* var. *dubius* is a mixture of shells belonging to *P. planorbis* and *P. carinatus* and, hence, *P. dubius* sensu Soldatenko & Starobogatov may be not identical with *P. dubius* sensu Hartmann.

448(574). *Planorbis (Planorbis) intermixtus* Mousson, 1874

[= *Planorbis persicus* Ancey, 1900; *Planorbis sieversi* sensu Likharev & Starobogatov, 1967, partim].

Planorbis (Gyraulus) intermixtus Mousson, 1874: 45.

- Type locality: Iraq, the Euphrat River at Es-Samava Town (approximately 31°19'00"N; 45°17'00"E).
- Lectotype: ZMZ No. 521255, designated and illustrated by Meier-Brook [1976].
- Global distribution: The South-eastern Europe, Middle East and Central Asia.
- Distribution in the former USSR: Lowland regions of Central Asia, the eastern Transcaucasia, Daghestan and western part of the Volga Delta [Soldatenko & Starobogatov, 2000]; Kyrgyzstan [Glöer & Pešič, 2010].
- Subregions: SE, CT, CA.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

**448(575). *Planorbis (Planorbis) sieversi*
Mousson, 1873**

Planorbis sieversi Mousson, 1873: 221-222, pl. 7, fig. 9.

- Type locality: Armenia, "Daralagher" = the Daralagez Ridge, approximately 39°45'N; 45°04'–45°22'E [fide Soldatenko & Starobogatov, 2000].
- Syntype: ZMZ No. 521151.
- Global distribution: Central Asia and the Caucasian region [Soldatenko & Starobogatov, 2000].
- Distribution in the former USSR: Type locality and the Issyk-Kul' Lake basin (subfossil only) [Soldatenko & Starobogatov, 2000].
- Subregions: CT, CA(?).
- Bionomics: Not studied.
- IUCN conservation status: Not assessed.
- Remark: Akramowski [1976] believed that *P. sieversi* is a subspecies of *P. planorbis*. Glöer & Pešič [2010] reported that the syntype of *P. sieversi* is virtually identical to shells of *P. intermixtus* but the absence of data on the anatomical structure of the former makes it impossible to judge on its identity definitely.

**448(576). *Planorbis (Planorbis)*
tangitarenensis Germain, 1918**

[*Planorbis sieversi* sensu Likharev & Starobogatov, 1967, partim]

Planorbis planorbis var. *tangitarenensis* Germain, 1918: 276.

- Type locality: "Tangitar, dans la Kachgarie (Turkestan Oriental)". Most likely, it is Tangitar Gorge in Xinjiang Uyghur Autonomous Region of China.
- Types: MHNH [fide Subba Rao, 1989].
- Global distribution: Mountain regions of Central Asia, Afghanistan [Soldatenko & Starobogatov, 2000], Northern India [Subba Rao, 1989].
- Distribution in the former USSR: Mountains of Central Asia [Soldatenko & Starobogatov, 2000].
- Subregions: CA.
- Bionomics: Lives in small permanent waterbodies [Soldatenko & Starobogatov, 2000].

- IUCN conservation status: Not assessed.
- Remark: Glöer & Pešič [2010] considered this species as conspecific with *P. intermixtus*.

**449(577). *Planorbis (Planorbis)*
kubanicus Soldatenko et
Starobogatov, 1998**

Planorbis kubanicus Soldatenko & Starobogatov, 1998: 59-60, 62, figs. 1A, 2

- Type locality: Russia, Krasnodar Region, the Kuban' River, Akhtarsk group of limans.
- Holotype: ZIN No. 1 in systematic catalogue.
- Global distribution: Endemic to the southern part of the European Russia.
- Distribution in the former USSR: South of the European Russia including the Ciscaucasia and Northern Caucasus [Sitnikova *et al.*, 2014b].
- Subregions: SE, CT.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Soldatenko & Starobogatov [1998, 2000] believed that this species was earlier described from Germany by Clessin under the name *Planorbis carinatus* var. *dilatatus* (non Gould, 1841). Glöer & Pešič [2010] studied the topotypes of *P. carinatus* var. *dilatatus* (Königsee in Bavaria) and found that these have nothing to do with *P. kubanicus*.

**450(578). *Planorbis (Planorbis)*
philippianus Monterosato
in Caziot, 1902**

[= *Planorbis umbilicatus* var. *subangulatus* Philippi, 1844, non Lamarck, 1807; *Planorbis philippi* Germain, 1908]

Planorbis philippianus Caziot, 1902: 262 (nom. nov. pro *Planorbis subangulatus* Philippi, 1844, non Lamarck, 1807).

- Type locality: Italy, Sicily, "in rivulis

prope Panormum frequens (ad Nicaem Liguria legit cl. Kunze)” [Philippi, 1844: 119].

- Types: Not traced.
- Global distribution: The Southern Europe.
- Distribution in the former USSR: Ukraine, the Ciscaucasia and the Transcaucasia [Stadnichenko, 1990; Soldatenko & Starobogatov, 2000].
- Subregions: SE, CT.
- Bionomics: Lives in small permanent waterbodies [Starobogatov *et al.*, 2004] as well as in rivers, pools, and small ponds [Stadnichenko, 1990].
- IUCN conservation status: Not assessed.

Genus *Anisus* Studer, 1820

[= *Gyrorbis* Agassiz, 1837, non Fitzinger, 1833, partim; *Spirorbis* Swainson, 1840, non Daudin, 1800 (Polychaeta); *Omalodiscus* Benson, 1855; *Diplodiscus* Westerlund, 1897, non Diesing, 1835; *Spiralina* Martens, 1899, non Chaster, 1898; *Paraspira* Dall, 1905]

Type species: *Helix spirorbis* Linnaeus, 1758 (SD Gray, 1847)

Remark: In the 1970-2000s, the Russian authors usually accepted this genus in its widest sense, as including the subgenera *Bathyomphalus* Charpentier, 1837 and *Gyraulus* Charpentier, 1837 [Stadnichenko, 1990; Prozorova, 2003; Starobogatov *et al.*, 2004]. Here, we consider the two latter taxa as separate genera as it was accepted by Akramowski [1976], Meier-Brook [1983], Glöer [2002a], and Khokhutkin & Vinarski [2013].

Subgenus *Anisus* s.str.

[= *Rotundatusiana* Germain, 1903]

451(579). *Anisus (Anisus) spirorbis* (Linnaeus, 1758)

Helix spirorbis Linnaeus, 1758: 770.

- Type locality: Europe, in lakes (“...in Europae Lacubus, magnitudine Sem. Anethi”; Linnaeus, 1758: 770). According to Glöer & Meier-Brook [2008], the type locality of *Helix spirorbis* is Sweden.
- Types: Not traced. Not in LSL [Hanley, 1855] neither in UUZM [Wallin, 2001].
- Global distribution: Europe, Northern Africa, Middle Asia, Siberia.
- Distribution in the former USSR: The European part of RAC, the Western Siberia (except of extreme north), Armenia [Akramowski, 1976; Stadnicneko, 1990; Khokhutkin & Vinarski, 2013].
- Subregions: NE, SE, CT, WS.
- Bionomics: Lives in small temporary ponds and wetlands [Beran & Horsák, 2002].
- IUCN conservation status: Not assessed.

451(580). *Anisus (Anisus) dazuri* (Mörch, 1868)

Planorbis dazuri Mörch, 1868: 27 (nom. nov. pro *Planorbis spirorbis* sensu Rossmässler, 1835, non Linnaeus, 1758).

- Type locality: Rossmässler [1835a: 106] mentioned several localities of *P. spirorbis* (non Linnaeus, 1758) situated in Germany (Cassel and Leipzig), France, and Sweden.
- Types: Not traced.
- Global distribution: Europe.
- Distribution in the former USSR: The European part of RAC, except northern regions [Stadnichenko, 1990]. *A. dazuri* had been reported several time also from Siberia [Westerlund, 1887; Frolova, 1984; Karimov, 2005], however these findings are very doubtful, and Khokhutkin & Vinarski [2013] considered it premature to include this species in the Siberian fauna.

- Subregions: NE, SE.
- Bionomics: Lives in lentic waterbodies but occasionally may be found in slowly running streams [Stadnichenko, 1990].
- IUCN conservation status: Not assessed.
- Remark: Earlier this taxon had been regarded as a variety of *A. spirorbis* [Geyer, 1927; Zhadin, 1952; Grossu, 1955], whereas modern Western European authors excluded it from their check-lists [Falkner *et al.*, 2001; Welter-Schultes, 2012]. Some authors working in the ex-USSR countries also considered *A. dazuri* as a “doubtful” species [Uvaeva, 2007]. The definite judgement on its taxonomic identity is almost impossible now due to absence of data on the anatomical structure of this snail. Furthermore, Mörch [1868: 32] noted that “his” *Planorbis dazuri* is very similar to *P. arcticus* Beck, a planorbid species with type locality situated in Southern Greenland. Having collected the topotypes of the latter species in July of 2014, one of the authors (M.V.) found that *P. arcticus* should be placed in the genus *Gyraulus*, not in *Anisus*, and, thus, *P. dazuri* sensu Mörch may be quite different from *Anisus dazuri* as it is treated by recent malacologists [Stadnichenko, 1990; Prozorova, 2003].

**451(581). *Anisus (Anisus) nikolensis*
(B. Dybowski, 1913)**

Gyraulus dazuri var. *nikolensis* B. Dybowski, 1913: 194, pl. 5, fig. 23.

- Type locality: Russia, the Baikal Lake, Bolshoi Posol'skiy Sor.
- Types: Not traced.
- Global distribution: Asiatic Russia.
- Distribution in the former USSR: The Central and Eastern Siberia, the Baikal Lake and its vicinities, coast of the Sea of Okhotsk (lower reaches of the Uda River) [Prozorova, 2003; Sitnikova *et al.*, 2004; Starobogatov *et al.*, 2004; Prozorova *et al.*, 2009].
- Subregions: ES, BL, SF.
- Bionomics: Lives in small temporary waterbodies [Starobogatov *et al.*, 2004], also registered from the shallow zone of the Baikal Lake at depths lower than 0.5 m [Sitnikova *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Kozhov [1936] considered this snail as a intraspecific form of *A. leucostoma* (Millet, 1813).

**452(582). *Anisus (Anisus) leucostoma*
(Millet, 1813)**

[= *Planorbis rotundatus* Moquin-Tandon, 1855, non Poiret, 1801; *Planorbis leucostoma* var. *gracilis* Gredler, 1859]

Planorbis leucostoma Millet, 1813: 16-17.

- Type locality: France, St Georges de Boix ca. 150 km apart from Angers, department Charente-Maritime (the sampling site of the neotype, see Glöer & Meier-Brook [2008]).
- Neotype: Zoological Museum Hamburg, No. ZMH 51204 [designated by Glöer & Meier-Brook, 2008].
- Global distribution: Europe, Middle Asia, Siberia.
- Distribution in the former USSR: Europe and the Western Siberia, eastward to the Lena and Nizhnyaya Tunguska rivers [Prozorova, 2003; Starobogatov *et al.*, 2004; Sitnikova *et al.*, 2004; M. Vinarski, unpublished]; Armenia [Akramowski, 1976].
- Subregions: NE, SE, CT, WS, ES.
- Bionomics: Lives in small temporary ponds and wetlands [Beran & Horsák, 2002].
- IUCN conservation status: LC (least concern).

**452(583). *Anisus (Anisus) perezii*
(Graells in Dupuy, 1850)**

Planorbis perezii Dupuy, 1850: 441, pl. 25, fig. 6.

- Type locality: Several localities in France: vicinities of Arles and Troyes, the Raismes Forest.
- Types: Not traced.
- Global distribution: Europe.
- Distribution in the former USSR: Basins of the Black and Baltic seas [Stadnichenko, 1990; Starobogatov *et al.*, 2004].

- Subregions: NE, SE.
- Bionomics: Lives in shallow temporary waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: This snail has usually been regarded as a variety of *A. leucostoma* [Geyer, 1927; Zhadin, 1952; Grossu, 1955], however in the Russian literature it is still accepted as a good species [Prozorova, 2003; Starobogatov *et al.*, 2004]. Though, sometimes it is marked as a “doubtful” taxon [Uvaeva, 2007]. *A. perezii* is not included to the checklists compiled by the Western European malacologists [Falkner *et al.*, 2001, 2002; Welter-Schultes, 2012].

**453(584). *Anisus* (*Anisus*)
septemgyratus (Ziegler in
Rossmässler, 1835)**

Planorbis septemgyratus Rossmässler, 1835a: 106, pl. 2, fig. 64.

- Type locality: Northern Italy, Bolzano [fide Glöer & Meier-Brook, 2008].
- Types: Lost [R. Jannsen, pers. comm.].
- Global distribution: Europe.
- Distribution in the former USSR: Ukraine [Stadnichenko, 1990]. The range of *A. septemgyratus* on a distribution map provided by Welter-Schultes [2012: 59] covers also Lithuania and Western Byelorussia. The findings of this species reported from the south of the Western Siberia [Starobogatov *et al.*, 2004] are very doubtful [Vinarski, 2014b].
- Subregions: NE, SE.
- Bionomics: Lives in shallow temporary waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: In the recent Western European literature, this species has sometimes been cited under the name *Anisus calculiformis* (Sandberger, 1874) [Falkner *et al.*, 2001; Glöer, 2002a; Glöer & Meier-Brook, 2003]. Glöer & Meier-

Brook [2008] provided solid arguments to retain the binomen *A. septemgyratus* for designation of this snail.

**Subgenus *Costorbis*
Lindholm, 1926**

Type species: *Planorbis strauchianus* Clessin, 1884 (M)

**454(585). *Anisus* (*Costorbis*)
strauchianus (Clessin, 1884)**

Planorbis strauchianus Clessin, 1884a: 204-205, pl. 31, fig. 5.

- Type locality: “Russland Ukiow”. This bizarre toponyme (“Ukiow”) should, most probably, be deciphered as “near Kiev” (“u” means “near” in Russian).
- Types: Not traced and probably lost. Clessin’s collection was in Stuttgart Museum but totally destroyed during 1939-1945 war [Dance, 1986].
- Global distribution: Endemic to Eastern Europe (within the ex-USSR boundaries).
- Distribution in the former USSR: The European part of RAC except of north [Stadnichenko, 1990; Starobogatov *et al.*, 2004; Palatov & Vinarski, 2014].
- Subregions: NE, SE.
- Bionomics: Lives in temporary waterbodies [Starobogatov *et al.*, 2004; Palatov & Vinarski, 2014].
- IUCN conservation status: DD (data deficient).

**Subgenus *Disculifer*
C.R. Boettger, 1944**

[= *Gyrorbis* Agassiz, 1837, non Fitzinger, 1833, partim; *Vortexiana* Servain, 1888; *Diplodiscus* Westerlund, 1897, non Diesing, 1835, partim; *Spiralina* von Martens, 1899, partim; *Vorticosisiana* Germain, 1903; *Wuestia* Honigmann, 1909, partim]

Type species: *Helix vortex* Linnaeus, 1758 (OD)

455(586). *Anisus (Disculifer) vortex* (Linnaeus, 1758)

[= *Planorbis tenellus* Studer, 1789; *Planorbis compressus* Michaud, 1831 non Serres, 1818; *Planorbis nummulus* Held, 1837; *Planorbis discus* Rossmässler, 1859; *Planorbis vortex* var. *discoidea* Reinhardt, 1870; *Planorbis goesii* Westerlund, 1873; *Planorbis vortex* var. *poulsenii* Westerlund, 1875; *Planorbis hypocyrthus* Servain, 1888; *Planorbis vorticosus* Locard, 1893; *Planorbis vortex* var. *carinea* Westerlund, 1897; *Planorbis johanseni* Mozley, 1934]

Helix vortex Linnaeus, 1758: 770.

- Type locality: Europe.
- Types: Not traced and probably lost. The UUZM collection does not contain the type series [Wallin, 2001].
- Global distribution: Europe and Siberia.
- Distribution in the former USSR: The European part of RAC, the Western and Central Siberia [Vinarski *et al.*, 2007; Kantor *et al.*, 2010; Khokhutkin & Vinarski, 2013].
- Subregions: NE, SE, WS, ES.
- Bionomics: Lives mainly in permanent waterbodies of different kind; sometimes may be found also in small temporary habitats [Stadnichenko, 1990; Khokhutkin & Vinarski, 2013].
- IUCN conservation status: Not assessed.
- Remark: It was proposed to split the species *Anisus vortex* s. l. into a series of six separate species differing from each other by slight conchological differences [Prozorova, 2003; Starobogatov *et al.*, 2004]. These species are: *A. vortex* s.str., *A. carinea* (Westerlund, 1897), *A. discoidea* (Reinhardt, 1870), *A. hypocyrthus* (Servain, 1888), *A. johanseni* (Mozley, 1934), and *A. nummulus* (Held, 1837). The latest studies by Khokhutkin & Vinarski [2013] and Vinarski [2014b] has shown that these alleged species are junior synonyms of *A. vortex*.

Subgenus *Vorticulus*

Prozorova et Starobogatov, 1997

[= *Gyrorbis* Agassiz, 1837 non Fitzinger, 1833, partim; *Diplodiscus* Westerlund, 1897 non Diesing, 1835, partim; *Spiralina* von Martens, 1899, partim; *Wuestia* Honigmann, 1909, partim]

Type species: *Planorbis vorticulus* Troschel, 1834 (OD)

456(587). *Anisus (Vorticulus) vorticulus* (Troschel, 1834)

[= *Planorbis acies* A. Schmidt, 1856; *Planorbis pauluccianus* Caroti, 1880; *Planorbis vorticulus* var. *helveticus* Clessin, 1880; *Planorbis charteus* var. *bavaricus* Westerlund, 1885]

Planorbis vorticulus Troschel, 1834: 51.

- Type locality: Not stated, possibly in vicinities of Berlin, Germany (“Exemplaria, quibus usus sum, debeo viro harum rerum curiosissimo Graffio, mechanico Berolinensi”), see Glöer [2002a].
- Types: Not traced and probably lost. We failed to find them in ZMB where other types of Troschel’s species are kept.
- Global distribution: Europe and the Western Siberia.
- Distribution in the former USSR: The European part of RAC, the Western Siberia except its northern part [Vinarski *et al.*, 2007; Khokhutkin & Vinarski, 2013].
- Subregions: NE, SE, WS.
- Bionomics: Lives mainly in lakes [Starobogatov *et al.*, 2004]. In many European countries it has become a rare and threatened species now [Terrier *et al.*, 2006; Glöer & Groh, 2007].
- IUCN conservation status: DD (data deficient).
- Remark: Some authors [Prozorova, 2003; Starobogatov *et al.*, 2004] accepted one more species of the subgenus *Vorticulus* – *A. bavaricus* (Westerlund, 1885). The latest studies by Khokhutkin

& Vinarski [2013] had shown that this species is identical to *A. vorticulus*.

456(588). *Anisus (Vorticulus) charteus* (Held, 1837)

Planorbis charteus Held, 1837: 305.

- Type locality: Germany, Bavaria (judging from the title of the Held's article).
- Types: Held's types were destroyed during the World War II [G. Falkner, pers. comm.].
- Global distribution: Europe.
- Distribution in the former USSR: The European part of RAC, except of its north [Stadnichenko, 1990; Starobogatov *et al.*, 2004].
- Subregions: NE, SE.
- Bionomics: Lives in temporary waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: This species was accepted as valid by Westerlund [1885] and by some modern Russian authors [Prozorova, 2003; Starobogatov *et al.*, 2004] though their Western European counterparts considered it as a junior synonym of *A. vorticulus* [Glöer, 2002a; Welter-Schultes, 2012]. Soldatenko [2004] reported certain anatomical differences between *A. vorticulus* and *A. charteus*.

Genus *Armiger* Hartmann, 1843

[= *Nautilus* Linnaeus, 1758, partim; *Turbo* Linnaeus, 1758, partim; *Nautilina* Stein, 1850; *Spiniformis* Germin, 1903; *Atropoarmiger* B. Dybowski et Grochmalicki, 1920; *Cristoarmiger* B. Dybowski et Grochmalicki, 1920; *Nautilioarmiger* B. Dybowski et Grochmalicki, 1920]

Type species: *Planorbis cristatus* Draparnaud, 1805 (M)

Remark: Since Meier-Brook [1983], this taxon is usually regarded as a subgenus of the genus *Gyraulus* despite profound conchological differences between these taxa. In the Russian literature, *Armiger* is still accepted as a genus of its own [Starobogatov *et al.*, 2004; Khokhutkin & Vinarski, 2013].

457(589). *Armiger crista* (Linnaeus, 1758)

[= *Turbo nautilus* Linnaeus, 1758, partim; *Planorbis imbricatus* O.F. Müller, 1774, partim; *Planorbis cristatus* Draparnaud, 1805, partim; *Planorbis crista* var. *spinulosus* Clessin, 1884; *Planorbis crista* var. *inermis* Lindholm, 1926, partim]

Nautilus crista Linnaeus, 1758: 709.

- Type locality: Germany.
- Types: Not traced. Absent in UUZM [Wallin, 2001].
- Global distribution: Europe and Northern Asia.
- Distribution in the former USSR: The European part of the RAC area, the Western and Eastern Siberia, Central Asia, possibly in the Baikal and Sevan lakes [Akramowski, 1976; Sitnikova *et al.*, 2004; Vinarski *et al.*, 2007; Prozorova *et al.*, 2009].
- Subregions: NE, SE, CT (?), WS, ES, BL (?).
- Bionomics: Lives in permanent waterbodies, both lentic and slowly running [Glöer, 2002; Starobogatov *et al.*, 2004].
- IUCN conservation status: LC (least concern).

458(590). *Armiger annandalei* (Germain, 1918)

Planorbis (Armiger) annandalei Germain, 1918: 282-283, pl. 5, figs. 2-4.

- Type locality: China, Xinjiang Uyghur Autonomous Region, Yarkend District (without exact indication of the type locality – the type specimens were found dry within apertures of Lymnaeidae shells collected in Yarkend; see Germain, 1923).
- Types: Possibly in MHNH.
- Global distribution: Endemic to Central Asia.
- Distribution in the former USSR: Mountains of Central Asia, including the

Tere-Khol' Lake, Republic of Tuva [Starobogatov *et al.*, 2004].

- Subregions: CA, ES.
- Bionomics: Lives in large lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: DD (data deficient).

**459(591). *Armiger bielzi*
(Kimakowicz, 1884)**

[= *Armiger vitoldianus* B. Dybowski et Grochmalicki, 1922; *A. paravitoldianus* B. Dybowski et Grochmalicki, 1922; *Planorbis crista* var. *inermis* Lindholm, 1926, partim]

Planorbis crista var. *bielzi* Kimakowicz, 1884: 79.

- Type locality: "Hammersdorf" = Romania, vicinities of Sibiu City (Hammersdorf is now a suburb of Sibiu).
- Types: Not traced.
- Global distribution: Europe and Siberia.
- Distribution in the former USSR: The entire European part of RAC, southern parts of the Western and Central Siberia, and the basins of Lena, Yana, Indigirka, and Kolyma rivers [Dolgin, 2001; Starobogatov *et al.*, 2004; Vinarski *et al.*, 2007; Prozorova *et al.*, 2009].
- Subregions: NE, SE, WS, ES.
- Bionomics: Lives in permanent lentic and slowly running waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: This species can be distinguished from *A. crista* by conchological features; nevertheless, in the Western European literature *A. bielzi* was not accepted as a distinct species [Glöer, 2002a; Welter-Schultes, 2012]. Several species of *Armiger* conchologically similar to *A. bielzi* were listed in the Prozorova & Starobogatov [1996] work, but their taxonomic distinctness should be corroborated.

**459(592). *Armiger eurasiaticus*
Prozorova et Starobogatov, 1996**

Armiger eurasiaticus Prozorova & Starobogatov, 1996: 172, fig. 3D.

- Type locality: Estonia, eastward from the Võrtsjärv Lake [Sitnikova *et al.*, 2014b].
- Types: ZIN. Nos. 1 and 2 in systematic catalogue (the holotype and a single paratype).
- Global distribution: Northern Eurasia.
- Distribution in the former USSR: The European part of RAC, Siberia and the Far East [Prozorova & Starobogatov, 1996; Sitnikova *et al.*, 2014b].
- Subregions: NE, SE, WS, ES, NF, SF.
- Bionomics: Lives in permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: The structure of the taxonomically significant anatomical organs of *A. eurasiaticus* has been not studied, and there remains a possibility that this species is identical with a certain other species of the genus *Armiger*.

**459(593). *Armiger jankowskajae*
Izzatullaev, 1984**

Armiger jankowskajae Izzatullaev, 1984a: 405, fig. A.

- Type locality: Tajikistan, Eastern Pamir Mts., Shaimak thermal spring, 3800 meters a. s. l.
- Types: According to Izzatullaev [1984a], the holotype and six paratypes are kept in ZIN, but we failed to find them there. Possibly, this part of the type series is lost. Other several paratypes were placed in the collection of the Institute of Zoology of the Tajikistan Academy of Sciences [Izzatullaev, 1984a]. Their fate is unknown to us.
- Global distribution: Endemic to the Pamir Mountains.
- Distribution in the former USSR: Tajikistan, the Eastern Pamir [Starobogatov *et al.*, 2004].

- Subregions: CA.
- Bionomics: Not studied.
- IUCN conservation status: Not assessed.

**459(594). *Armiger khoresmicus*
Prozorova et Starobogatov, 1996**

Armiger khoresmicus Prozorova & Starobogatov, 1996: 174, fig. 4D.

- Type locality: Uzbekistan, Khorezm Region, Khiva District, the Korp-Kul' Lake.
- Types: ZIN. Nos. 1 and 2 in systematic catalogue (the holotype and a single paratype).
- Global distribution: Endemic to Uzbekistan.
- Distribution in the former USSR: Type locality [Sitnikova *et al.*, 2014b].
- Subregions: CA.
- Bionomics: Not studied.
- IUCN conservation status: Not assessed.

**459(595). *Armiger schamaricus*
Izzatullaev, 1972**

Armiger schamaricus Izzatullaev, 1972: 47-48, fig. 1 (10 a-b).

- Type locality: Tajikistan, Tajikabad District, the Shamar lake.
- Types: ZIN. Nos. 1 and 2 in systematic catalogue (the holotype and a single paratype).
- Global distribution: Endemic to Tajikistan.
- Distribution in the former USSR: Type locality [Starobogatov *et al.*, 2004].
- Subregions: CA.
- Bionomics: Not studied.
- IUCN conservation status: Not assessed.

**Genus *Bathyomphalus*
Agassiz in Charpentier, 1837**

[= *Polygyrus* Charpentier, 1837; *Discoidina* Stein, 1850; *Contortiana* Servain, 1888]

Type species: *Helix contorta* Linnaeus, 1758 (M)

**460(596). *Bathyomphalus contortus*
(Linnaeus, 1758)**

[= *Planorbis contortus* var. *albida* Jeffreys, 1862;

Planorbis contortus var. *difformis* Westerlund, 1885; *Planorbis rayi* Locard, 1893]

Helix contorta Linnaeus, 1758: 770.

- Type locality: Europe.
- Types: Not traced. Absent in UUZM [Wallin, 2001]. Hanley [1855: 367] reported that a specimen of "*Planorbis contortus* of Draparnaud" was in LSL collection, but its present state and nomenclatorial significance are not clear for us.
- Global distribution: Europe and Siberia.
- Distribution in the former USSR: The entire European part of RAC, Siberia, the Ciscaucasia [Akramowski, 1976; Vinarski *et al.*, 2007; Khokhutkin & Vinarski, 2013; Vinarski, 2014b].
- Subregions: NE, SE, CT, WS, ES.
- Bionomics: Lives in permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: LC (least concern).
- Remark: It was proposed to split the species *Bathyomphalus contortus* s. l. into a series of five separate species differing from each other by slight conchological differences [Prozorova, 2003; Starobogatov *et al.*, 2004]. These species are: *B. contortus* s. str., *B. agardhi* (Starobogatov in Prozorova, 2003), *B. crassus* (Da Costa, 1778), *B. dispar* (Westerlund, 1871), and *B. spondylioides* (Weinland, 1883). However, the taxonomic distinctness of these species should be corroborated since the anatomical differences able to substantiate their status have not been provided. None of the Western European malacologists accepted these alleged species.

**460(597). *Bathyomphalus agardhi*
(Starobogatov in Prozorova, 2003)**

Anisus (*Bathyomphalus*) *agardhi* "Starobogatov,

1996" – Prozorova, 2003: 100 (nom. nov. pro *Planorbis contortus* var. *labiatus* Westerlund, 1875, non Benson, 1850).

- Type locality: Sweden, Öland Island, Borgholm [Sitnikova *et al.*, 2014b].
- Types: The type series of *P. contortus* var. *labiatus* contains more than 150 specimens dispersed among NMG, SMNH and ZIN collections [Vinarski *et al.*, 2013b; Sitnikova *et al.*, 2014b]. Actually, some of the syntypes belong to other taxa of aquatic Gastropoda [Vinarski *et al.*, 2013b].
- Global distribution: Europe.
- Distribution in the former USSR: The European Russia southward to Samara City [Sitnikova *et al.*, 2014b].
- Subregions: NE, SE.
- Bionomics: Lives in permanent and semi-permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

**460(598). *Bathyomphalus crassus*
(Da Costa, 1778)**

[= *Planorbis* (*Bathyomphalus*) *contortus* sensu Lindholm, 1909, non Linnaeus, 1758]

Helix crassa Da Costa, 1778: 66, pl. 4, fig. 11.

- Type locality: England, in several localities (the Thames near London; rivulets about Peterborough-house, Westminster).
- Types: Not traced, probably lost.
- Global distribution: Europe and Siberia.
- Distribution in the former USSR: The European part of RAC and Siberia, including the Baikal Lake [Sitnikova *et al.*, 2004; Starobogatov *et al.*, 2004].
- Subregions: NE, SE, WS, ES, BL.
- Bionomics: Lives in permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

**460(599). *Bathyomphalus dispar*
(Westerlund, 1871)**

Planorbis dispar Westerlund, 1871: 131.

- Type locality: Sweden, "Forsmark, Ruddammen". The name "Ruddammen" is not in itself a geographical name, but means the pond [dammen = the pond] in which ruda =

crucian carp – *Carassius carassius* (L.) is kept. This is probably one of the large ponds at the manor Forsmark that is situated in the province Uppland in Middle Sweden [Vinarski *et al.*, 2013b].

- Lectotype: MNG, No. 3960 [designated by Vinarski *et al.*, 2013b].
- Global distribution: Europe and Siberia.
- Distribution in the former USSR: The European part of RAC [Stadnichenko, 1990]. Records of this species from the Western Siberia need a confirmation. The species is not included to the most recent lists of the the Western Siberian malacofauna [Vinarski *et al.*, 2007; Khokhutkin & Vinarski, 2013].
- Subregions: NE, SE.
- Bionomics: Lives in permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

**460(600). *Bathyomphalus spondyloides*
(Weinland, 1883)**

Planorbis contortus var. *spondyloides* Weinland, 1883: 123, fig. 1, 2.

- Type locality: Germany, Baden-Württemberg, Schöntal.
- Types: Not traced.
- Global distribution: Europe.
- Distribution in the former USSR: The Baltic Sea basin [Starobogatov *et al.*, 2004].
- Subregions: NE.
- Bionomics: Lives in permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

**Genus *Choanomphalus*
Gerstfeldt, 1859**

[= *Achoanomphalus* Lindholm, 1909; *Sulcifer* Lindholm, 1909; *Baicaloarmiger* B. Dybowski et Grochmalicki, 1920; *Biangulatus* B. Dybowski et Grochmalicki, 1925, non Meek et Warthen, 1866; *Cryptomphalus* B. Dybowski et Grochmalicki, 1925, non Charpentier, 1837; *Platybasalis* B. Dybowski et Grochmalicki, 1925; *Valvatomphalus* B. Dybowski et Grochmalicki, 1925; *Omphalocrypta* Tomlin, 1929; *Antichoanomphalus* Beckman et Starobogatov, 1975; *Baicaloplanorbis* Beckman et Starobogatov, 1975; *Kozho-*

visulcifer Beckman et Starobogatov, 1975; *Vitreoplanorbis* Moskvicheva in Zatravkin, 1985]

Type species: *Choanomphalus maacki* Gerstfeldt, 1859 (M)

Remarks: Two European planorbid species, *Planorbis riparius* Westerlund, 1865 and *P. rossmaessleri* Auerswald in A. Schmidt, 1852, were placed in the subgenus *Lamorbis* Starobogatov, 1967 of the genus *Choanomphalus* by Starobogatov [1967, 1977c]. The Russian authors still hold this opinion [Prozorova & Starobogatov, 1999; Starobogatov *et al.*, 2004]. The Western European authors followed Meier-Brook [1983] and classified *Lamorbis* as a subgenus of *Gyraulus* [Glöer, 2002a; Welter-Schultes, 2012]. Some authors reported substantial differences in the penis stylet structure in *Choanomphalus* (*Lamorbis*) and *Gyraulus* [see Soldatenko, 2009; Soldatenko & Sitnikova, 2009 for details] that, in their opinion, warrants the placement of *Lamorbis* into the genus *Choanomphalus*. On the other hand, genetically the alleged European representatives of *Choanomphalus* are far from the Baikalian species of *Choanomphalus* being closer to the European *Gyraulus* snails [von Oheimb *et al.*, 2013]. In this situation, we provisionally accept *Lamorbis* as a separate genus within the subfamily Planorbinae [see also Uvaeva, 2007]. The future molecular phylogenetic studies will possibly clarify the question of its proper position in the Planorbidae system.

Thus, the genus *Choanomphalus* is restricted here to species of exclusively Northern Asiatic distribution, i.e. inhabiting the Baikal Lake, the Baikalian Region, Mongolia, and the Far East [Prozorova & Starobogatov, 1999]. The in-

ternal structure of the genus is controversial. Some authors separate up to ten subgenera, including those with extra-Baikalian distribution [Lindholm, 1909; Kozhov, 1936; Beckman & Starobogatov, 1975; Prozorova & Starobogatov, 1999; Starobogatov *et al.*, 2004]. On the other hand, Sitnikova *et al.* [2004], in their catalogue of the Baikalian gastropods did not use subgeneric divisions at all. The molecular study based on COI sequences has shown that only two subgroups may be distinguished within the Baikalian and Khubsugulian species of the genus [Papusheva *et al.*, 2003] that contradicts the morphology-based taxonomy. The taxonomy of the whole genus needs to be revised (T.Ya. Sitnikova, pers. comm.). In this situation, we decided to follow Sitnikova *et al.* [2004] and do not use the subgeneric taxa in the catalogue.

461(601). *Choanomphalus maacki* Gerstfeldt, 1859

Choanomphalus maacki Gerstfeldt, 1859: 24, fig. 31.

- Type locality: Russia, Irkutsk Region, “the Baikal Lake and the Angara River” (from the lectotype’s label).
- Lectotype: ZIN, No. 67 systematic catalogue.
- Global distribution: The Baikalian region.
- IUCN conservation status: LC (least concern).
- Remark: Three subspecies of *Ch. maacki* have been recognized [Sitnikova *et al.*, 2004].

461(601a). *Choanomphalus maacki maacki* Gerstfeldt, 1859

[= *Choanomphalus bicarinatus* W. Dybowski, 1901]

- Distribution in the former USSR: The

southern Baikal Lake, the Angara River [Sitnikova *et al.*, 2004].

- Subregions: ES, BL.
- Bionomics: Lives on stony substrates at depths between 1.5 and 20 m (sometimes deeper) [Sitnikova *et al.*, 2004].

461(601b). *Choanomphalus maacki andrussowianus* Lindholm, 1909

[= *Choanomphalus elatospiralis* B. Dybowski et Grochmalicki, 1925, *Choanomphalus andrussowianus* B. Dybowski et Grochmalicki, 1925]

Choanomphalus andrussowianus Lindholm, 1909: 13, pl. 2, figs. 28-30.

- Type locality: Russia, western coast of the Baikal Lake, Tolsty Cape, southward to headwaters of the Angara River.
- Types: 64 syntypes are kept in ZIN under No. 1 in systematic catalogue. There is no indication of the existence of the lectotype though Sitnikova *et al.* [2004] state it is housed in ZIN.
- Distribution in the former USSR: Western coast of the southern Baikal Lake [Sitnikova *et al.*, 2004].
- Subregions: BL.
- Bionomics: Lives on stones in the littoral zone [Sitnikova *et al.*, 2004].

461(601c). *Choanomphalus maacki elatior* Lindholm, 1909

Choanomphalus korotnevi elatior Lindholm, 1909: 13, pl. 2, figs. 25-27.

- Type locality: Russia, the Baikal Lake, Maloye More (border between the central and northern Baikal).
- Types: Not traced, possibly in ZIN [Sitnikova *et al.*, 2004].
- Distribution in the former USSR: The northern Baikal Lake and Maloye More [Sitnikova *et al.*, 2004].
- Subregions: BL.
- Bionomics: Not studied; possibly lives on stones in the littoral zone [Sitnikova *et al.*, 2004].

462(602). *Choanomphalus amauronius* Bourguignat, 1860

Choanomphalus amauronius Bourguignat, 1860c: 529, pl. 23, figs. 6-10.

- Type locality: Russia, Irkutsk Region, the Baikal Lake and the Angara River.
- Syntypes: MHNG, No. 7164. The type series consists of six syntypes [Sitnikova *et al.*, 2012].
- Global distribution: The Baikalian region.
- IUCN conservation status: Not assessed.
- Remark: Three subspecies of *Ch. amauronius* have been recognized [Sitnikova *et al.*, 2004].

462(602a). *Choanomphalus amauronius amauronius* Bourguignat, 1860

- Distribution in the former USSR: The southern Baikal Lake, the Angara River [Kozhov, 1936; Sitnikova *et al.*, 2004].
- Subregions: ES, BL.
- Bionomics: Lives on stones and boulders at depths between 1 and 20 m [Sitnikova *et al.*, 2004].

462(602b). *Choanomphalus amauronius angulatus* (B. Dybowski et Grochmalicki, 1925)

Valvatomphalus angulatus B. Dybowski & Grochmalicki, 1925: 878, figs. 29-31.

- Type locality: The southern Baikal.
- Types: Not traced, possibly in the Zoological Museum of Lvov University, Ukraine [Sitnikova *et al.*, 2004].
- Distribution in the former USSR: The southern Baikal Lake, the Angara River in vicinities of Irkutsk City [Sitnikova *et al.*, 2004].
- Subregions: ES, BL.
- Bionomics: Lives on aquatic plants at depths between 1.5 and 20 m [Sitnikova *et al.*, 2004].

- Remark: COI-based phylogenetic data presented by Papusheva *et al.* [2003] indicated that *Ch. amauronius angulatus* may represent a separate species.

462(602c). *Choanomphalus amauronius westerlundianus* Lindholm, 1909

Choanomphalus (*Achoanomphalus*) *westerlundianus* Lindholm, 1909: 20, pl. 2, fig. 1-3.

- Type locality: Russia, Irkutsk Region, Kultuk (SW coast of the southern Baikal Lake) [Sitnikova *et al.*, 2004].
- Types: Three syntypes are in ZIN, No. 1 in systematic catalogue. Sitnikova *et al.* [2004] state that the lectotype was designated but there is no indication of this fact in the ZIN hand-written catalogue.
- Distribution in the former USSR: The Baikal Lake, southeastern coast [Kozhov, 1936].
- Subregions: BL.
- Bionomics: Lives on sandy substrates at depths between 2 and 40 m [Sitnikova *et al.*, 2004].

463(603). *Choanomphalus annuliformis* Kozhov, 1936

Choanomphalus (*Sulcifer*) *annuliformis* Kozhov, 1936: 182, pl. 6, figs. 42, 43, 59, 66-68, 68a.

- Type locality: Russia, the Baikal Lake, Ongureny (western coast of the Baikal, northward to Olhonskiye Vorota Strait).
- Types: ZIN, No. 4 in systematic catalogue (the lectotype).
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The northern Baikal Lake and Maloye More.
- Subregions: BL.
- Bionomics: Lives on stony substrates at depths between 1.5 and 10 m [Sitnikova *et al.*, 2004].
- IUCN conservation status: Not assessed.

464(604). *Choanomphalus anomphalus* W. Dybowski, 1901

[= *Choanomphalus* (*Achoanomphalus*) *dybowski-anus* Lindholm, 1909]

Choanomphalus anomphalus W. Dybowski, 1901a: 123.

- Type locality: Russia, Irkutsk Region, Angara River.
- Types: Zoological Museum in Lemberg (nowadays Lvov, Ukraine) [fide W. Dybowski, 1901a].
- Global distribution: The Baikalian region.
- Distribution in the former USSR: The Baikal Lake and the Angara River.
- Subregions: ES, BL.
- Bionomics: Lives on sandy and sandy-mud substrates, between 3 and 35 m of depth [Sitnikova *et al.*, 2004].
- IUCN conservation status: DD (data deficient).

465(605). *Choanomphalus aorus* Bourguignat, 1860

Choanomphalus aorus Bourguignat, 1860c: 530, pl. 23, figs. 11-15.

- Type locality: Russia, the Baikal Lake.
- Syntypes: MHNG, No. 7165. The type series consists of three syntypes [Sitnikova *et al.*, 2012].
- Global distribution: The Baikalian region.
- Distribution in the former USSR: The Baikal Lake and the Angara River downstream to Bratsk City [Sitnikova *et al.*, 2012].
- Subregions: ES, BL.
- Bionomics: Lives on stony substrates, between 1.5 and 20 m of depth [Sitnikova *et al.*, 2004].
- IUCN conservation status: Not assessed.

466(606). *Choanomphalus bathybius* Beckman et Starobogatov, 1975

Choanomphalus (*Kozhovisulcifer*) *bathybius*

bathybius Beckman & Starobogatov, 1975: 104, fig. 4A.

- Type locality: Russia, the northern Baikal Lake, Sosnovka Bay.
- Holotype: ZIN No. 1 in systematic catalogue.
- Global distribution: Endemic to the Baikal Lake.
- IUCN conservation status: Not assessed.
- Remark: Two subspecies of *Ch. amauronius* have been recognized [Sitnikova et al., 2004].

466(606a). *Choanomphalus bathybius bathybius* Beckman et Starobogatov, 1975

- Distribution in the former USSR: Type locality [Sitnikova et al., 2004].
- Subregions: BL.
- Bionomics: The holotype was found at 400 m of depth [Sitnikova et al., 2004].

466(606b). *Choanomphalus bathybius meridianus* Beckman et Starobogatov, 1975

Choanomphalus (*Kozhovisulcifer*) *bathybius meridianus* Beckman & Starobogatov, 1975: 105, fig. 4Б.

- Type locality: Russia, Irkutsk Region, the Baikal Lake near Slyudyanka Settlement.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Distribution in the former USSR: Type locality [Sitnikova et al., 2004].
- Subregions: BL.
- Bionomics: The holotype was found at 170 m of depth [Sitnikova et al., 2004].

467(607). *Choanomphalus cryptomphalus* W. Dybowski, 1901

Choanomphalus cryptomphalus W. Dybowski, 1901a: 123.

- Type locality: Russia, Irkutsk Region, the Angara River.

- Types: Zoological Museum in Lemberg (nowadays Lvov, Ukraine) [fide W. Dybowski, 1901a].
- Global distribution: The Baikalian region.
- Distribution in the former USSR: The Baikal Lake and the Angara River [Starobogatov et al., 2004]. Sitnikova et al. [2004] did not include *Ch. cryptomphalus* into their list of the Baikalian snails.
- Subregions: ES, BL.
- Bionomics: Lives on gravel and sandy substrates [Starobogatov et al., 2004].
- IUCN conservation status: DD (data deficient).

468(608). *Choanomphalus eurystomus* Lindholm, 1909

[= *Choanomphalus* (*Choanomphalus*) *amauronius* f. *eurystomus* Kozhov, 1936]

Choanomphalus (*Achoanomphalus*) *eurystomus* Lindholm, 1909: 16, pl. 11, figs. 22-24.

- Type locality: Russia, Southern Baikal Lake near Solzan Settlement (approximately 51°30'10"N; 104°13'40"E).
- Lectotype: ZIN [fide Sitnikova et al., 2004].
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The entire Baikal Lake [Sitnikova et al., 2004].
- Subregions: BL.
- Bionomics: Lives on sandy and stony substrates between 3 and 35 m of depth [Sitnikova et al., 2004].
- IUCN conservation status: DD (data deficient).

469(609). *Choanomphalus gerstfeldtianus* Lindholm, 1909

[= *Choanomphalus* (*Choanomphalus*) *gerstfeldtianus* var. *striatus* Kozhov, 1936]

Choanomphalus (*Achoanomphalus*) *gerstfeldtianus* Lindholm, 1909: 20, pl. 2, figs. 15-17.

- Type locality: Russia, the southern Baikal Lake near Baranchiki and Solzan Settlement (fide Sitnikova *et al.* [2004]; Lindholm [1909] listed several other localities of *Ch. gerstfeldtianus*).
- Syntypes: ZIN [fide Sitnikova *et al.*, 2004].
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The entire Baikal Lake [Sitnikova *et al.*, 2004].
- Subregions: BL.
- Bionomics: Lives on rocks and stones between 1.5 and 10 m of depth [Sitnikova *et al.*, 2004].
- IUCN conservation status: Not assessed.

**470(610). *Choanomphalus grachevi*
Sitnikova et Röpstorf, 1999**

Choanomphalus (Baicaloplanorbis) grachevi Sitnikova & Röpstorf, 1999: 123, 124, 126, figs. 2–5.

- Type locality: Russia, western coast of the central Baikal Lake, Talanka Bay.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: Central parts of the Baikal Lake [Sitnikova *et al.*, 2004].
- Subregions: BL.
- Bionomics: Collected from stony substrates between 10 and 12 m of depth [Sitnikova *et al.*, 2004].
- IUCN conservation status: Not assessed.

**471(611). *Choanomphalus huzhirensis* Beckman et
Starobogatov, 1975**

Choanomphalus (Kozhovisulcifer) huzhirensis Beckman & Starobogatov, 1975: 106, fig. 4Г.

- Type locality: Russia, the Baikal Lake,

Maloye More against Khuzhiry Settlement.

- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and four paratypes.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The Baikal Lake, in several localities (listed by Sitnikova *et al.* [2014b]).
- Subregions: BL.
- Bionomics: “Found on stone and sand at a depth zone of 3–170 m” [Sitnikova *et al.*, 2014b: 44].
- IUCN conservation status: Not assessed.

**472(612). *Choanomphalus hyaliniiformis* Moskvicheva in
Dvoriadkin, 1980**

Choanomphalus hyaliniiformis Dvoriadkin, 1980: 31, fig. 7.

- Type locality: Russia, the Primorye Territory, the Khanka Lake, 1 km southward from Astrakhanka village.
- Types: ZIN, Nos. 1–11 in systematic catalogue. The type series includes the holotype and 30 paratypes.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: Central and lower parts of the Amur basin, the Primorye Territory [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in small permanent and semipermanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

**473(613). *Choanomphalus incertus*
Lindholm, 1909**

Choanomphalus incertus Lindholm, 1909: 12, pl. 2, figs. 31–33.

- Type locality: Russia, the Baikal Lake, in several localities (Ayaya Bay, Bezymyannaya Bight, Boguchan Island, Boguchanskaya Bight).
- Syntypes: ZIN No. 1, 3, 8–10 in systematic catalogue. The type series includes 20 syntypes.
- Global distribution: The Baikalian Region.
- IUCN conservation status: Not assessed.
- Remark: Two subspecies of *Ch. incertus* have been recognized [Starobogatov *et al.*, 2004]. Sitnikova *et al.* [2004] did not include this species into their list of the Baikalian Gastropoda, whereas Papusheva *et al.* [2003] regard it as a subspecies of *Ch. maacki*.

473(613a). *Choanomphalus incertus incertus* Lindholm, 1909

- Distribution in the former USSR: The Baikal Lake [Starobogatov *et al.*, 2004].
- Subregions: BL.
- Bionomics: Lives on stones [Starobogatov *et al.*, 2004].

473(613b). *Choanomphalus incertus mesospiralis* B. Dybowski et Grochmalicki, 1925

Choanomphalus mesospiralis B. Dybowski & Grochmalicki, 1925: 878, figs. 4, 5, 11, 14.

- Type locality: Not stated.
- Types: Not traced.
- Distribution in the former USSR: The southern Baikal, the Angara River downstream to Irkutsk [Starobogatov *et al.*, 2004].
- Subregions: BL.
- Bionomics: Lives on stones [Starobogatov *et al.*, 2004].

474(614). *Choanomphalus korotnevi* Lindholm, 1909

[= *Choanomphalus planospiralis* B. Dybowski et Grochmalicki, 1925]

Choanomphalus korotnevi Lindholm, 1909: 13, pl. 2, figs. 25–27.

- Type locality: Russia, the Baikal Lake, Maloye More (border between the central and northern Baikal).
- Types: According to Sitnikova *et al.* [2004], the lectotype is housed in ZIN. Actually, there is a single sample of this species with 24 shells (possible syntypes) in ZIN labeled as “Baikal near Kurma Cape”. The locality corresponds to one of localities cited in the original description (“Maloje More beim Uluss Kurma”; Lindholm, 1909: 13).
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The Baikal: Maloye More and SW coast of the northern part of the lake [Sitnikova *et al.*, 2004].
- Subregions: BL.
- Bionomics: Lives on sand and stones between 1 and 15 m of depth [Sitnikova *et al.*, 2004].
- IUCN conservation status: Not assessed.

475(615). *Choanomphalus kozhovi* Beckman et Starobogatov, 1975

Choanomphalus (Baicaloplanorbis) kozhovi Beckman & Starobogatov, 1975: 106, fig. 4E.

- Type locality: Russia, western coast of the northern Baikal Lake, near Bolshaya Kosa Cape.
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and a single paratype.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The northern Baikal Lake, western coast [Sitnikova *et al.*, 2004].
- Subregions: BL.
- Bionomics: Lives on sandy-stone substrates between 12 and 70 m of depth [Sitnikova *et al.*, 2004].

- IUCN conservation status: Not assessed.

**476(616). *Choanomphalus lindholmi*
Beckman et Starobogatov, 1975**

Choanomphalus (*Kozhoviusulcifer*) *lindholmi*
Beckman & Starobogatov, 1975: 105, fig. 4B.

- Type locality: Russia, western coast of the northern Baikal Lake, near Zavorotnyi Cape.
- Types: ZIN, Nos. 1–3 in systematic catalogue. The type series includes the holotype and 18 paratypes.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The northern Baikal Lake, near capes Zavorotnyi and Bol'shaya Kosa [Sitnikova *et al.*, 2004].
- Subregions: BL.
- Bionomics: Lives on sandy-stone substrates between 12 and 70 m of depth [Sitnikova *et al.*, 2004].
- IUCN conservation status: DD (data deficient).

**477(617). *Choanomphalus*
microtrochus Lindholm, 1909**

Choanomphalus (*Achoanomphalus*) *microtrochus*
Lindholm, 1909: 22, pl. 2, figs. 10–11.

- Type locality: Russia, western coast of the northern Baikal Lake, Ayaya and Dagarskaya bays.
- Types: According to Sitnikova *et al.* [2004], the lectotype is housed in ZIN. Actually, there are two samples of syntypes (Nos. 1 and 2 in systematic catalogue of ZIN collection) containing in total 28 specimens. There is no data about the lectotype in the hand-written catalogue of ZIN collection.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The northern Baikal Lake, eastern coast [Sitnikova *et al.*, 2004].

- Subregions: BL.
- Bionomics: Lives on sandy between 10 and 12 m of depth, sometimes may be found deeper [Sitnikova *et al.*, 2004].
- IUCN conservation status: DD (data deficient).

**478(618). *Choanomphalus*
omphalotus W. Dybowski, 1901**

Choanomphalus omphalotus W. Dybowski,
1901a: 122.

- Type locality: Russia, Irkutsk Region, the Angara River.
- Types: Zoological Museum in Lemberg (nowadays Lvov, Ukraine), more than 250 syntypes [fide W. Dybowski, 1901a].
- Global distribution: The Baikalian region.
- Distribution in the former USSR: The Baikal Lake and the Angara River [Sitnikova *et al.*, 2004].
- Subregions: ES, BL.
- Bionomics: Lives on stony substrates with admixture of sand, between 2 and 15 m of depth [Sitnikova *et al.*, 2004].
- IUCN conservation status: DD (data deficient).

**479(619). *Choanomphalus parvus*
Kozhov, 1936**

Choanomphalus (*Choanomphalus*) *dybowskianus*
var. *parvus* Kozhov, 1936: 178, pl. 4, figs. 35–36.

- Type locality: Russia, the northern Baikal Lake.
- Types: Not traced; absent in ZIN.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The northern and central Baikal Lake, Maloye More.
- Subregions: BL.
- Bionomics: Lives on sandy and muddy substrates at depths between 5 and 25 m [Sitnikova *et al.*, 2004].

- IUCN conservation status: Not assessed.

480(620). *Choanomphalus patulaeformis* Lindholm, 1909

Choanomphalus patulaeformis Lindholm, 1909: 19, pl. 2, figs. 18-20.

- Type locality: Russia, the Baikal Lake, near cape Kurma in Maloye More [fide Sitnikova *et al.*, 2004]. Lindholm [1909: 19] listed other localities of this species.
- Types: According to Sitnikova *et al.* [2004], the lectotype is housed in ZIN. Actually, there are several samples of syntypes (Nos. 2–4 and 7–8 in systematic catalogue) containing, in total, 30 specimens. There is no data about the lectotype in the hand-written catalogue of ZIN collection.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The Baikal Lake, in different localities [Sitnikova *et al.*, 2004].
- Subregions: BL.
- Bionomics: Lives on stones between 2 and 30 m of depth [Sitnikova *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: COI-based phylogenetic data presented by Papusheva *et al.* [2003] indicated that *Ch. patulaeformis* is a probable synonym of *Ch. maacki*.

481(621). *Choanomphalus planorbiformis* Beckman et Starobogatov, 1975

Choanomphalus (Antichoanomphalus) planorbiformis Beckman & Starobogatov, 1975: 107; fig. 4 ж.

- Type locality: Russia, the northern Baikal Lake, Sosnovka Bay.
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and three paratypes.

- Global distribution: Endemic to the Baikal Lake.

- Distribution in the former USSR: Type locality and some localities in the central Baikal [Sitnikova *et al.*, 2004].

- Subregions: BL.

- Bionomics: Lives on underwater hills between 120 and 580 m of depth [Sitnikova *et al.*, 2004].

- IUCN conservation status: Not assessed.

482(622). *Choanomphalus pygmaeus* Lindholm, 1909

Choanomphalus (Achoanomphalus) pygmaeus Lindholm, 1909: 22, pl. 2, figs. 4-6.

- Type locality: Russia, western coast of the central Baikal Lake, near Berkhin (“Byrkin”).

- Types: Not traced.

- Global distribution: Endemic to the Baikal Lake.

- Distribution in the former USSR: Type locality and Maloye More [Sitnikova *et al.*, 2004].

- Subregions: BL.

- Bionomics: Lives on sandy substrates between 5 and 25 m of depth [Sitnikova *et al.*, 2004].

- IUCN conservation status: DD (data deficient).

483(623). *Choanomphalus schrenkii* W. Dybowski, 1875

Choanomphalus schrenkii W. Dybowski, 1875: 60, pl. 2, figs. 27-33.

- Type locality: Russia, Irkutsk Region, Kultuk (SW coast of the southern Baikal Lake) [fide Sitnikova *et al.*, 2004].

- Types: According to Sitnikova *et al.* [2004], the lectotype is housed in ZIN. Actually, there is a single sample of syntypes (No. 1 in systematic catalogue) containing seven specimens labelled as “Baikal”. There is no data about the lec-

holotype in the hand-written catalogue of ZIN collection.

- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: Southern and central part of the Baikal; also in Maloye More Strait [Sitnikova *et al.*, 2004].
- Subregions: BL.
- Bionomics: Lives on stony or sandy substrates, between 2 and 20 m of depth (sometimes deeper) [Sitnikova *et al.*, 2004].
- IUCN conservation status: Not assessed.

484(624). *Choanomphalus valvatooides* W. Dybowski, 1875

[= *Choanomphalus intermedius* W. Dybowski, 1901]

Choanomphalus valvatooides W. Dybowski, 1875: 58, pl. 2, fig. 19, 26; pl. 6, fig. 6.

- Type locality: Russia, Irkutsk Region, Kultuk (SW coast of the southern Baikal Lake) [fide Sitnikova *et al.*, 2004].
- Types: According to Sitnikova *et al.* [2004], the lectotype is housed in ZIN. Actually, there is a single sample of syntypes (No. 1 in systematic catalogue) containing 20 specimens labelled as "Baikal". There is no data about the lectotype in the hand-written catalogue of ZIN collection.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: Occurs in Maloye More and, rarely, in other parts of the lake [Sitnikova *et al.*, 2004].
- Subregions: BL.
- Bionomics: Lives on sandy substrates, between 1.5 and 20 m of depth [Sitnikova *et al.*, 2004].
- IUCN conservation status: Not assessed.

Genus *Gyraulus* Agassiz in Charpentier, 1837

[= *Planaria* T. Brown, 1827, non O.F. Müller, 1774; *Trochlea* Haldeman, 1842; *Glyptaniscus* Iredale, 1943; *Plananiscus* Iredale, 1943]

Type species: *Planorbis albus* O.F. Müller, 1774 (SD Dall, 1870)

Remark: A large series of species of *Gyraulus* from Asiatic Russia has recently been described on the basis of slight conchological differences [Prozorova & Starobogatov, 1997; Prozorova, 2003]. The anatomical structure of most of these species remains not known that poses a great obstacle for determination of their proper taxonomic position and validity. Possibly, some of these species are in fact synonyms of widespread Palearctic species of *Gyraulus* such as *G. albus*, *G. borealis* and so on. The universally accepted species of *Gyraulus* are characterized by more or less prominent peculiarities in their reproductive morphology [Meier-Brook, 1983; Kruglov & Soldatenko, 2000; Glöer & Vinarski, 2009]. Three subgenera of *Gyraulus* are accepted here: *Gyraulus* s. str., *Microaniscus* Dvoriadkin, 1980, and *Torquis* Dall, 1905.

Subgenus *Gyraulus* s. str.

485(625). *Gyraulus (Gyraulus) albus* (O.F. Müller, 1774)

[= *Planorbis villosus* Poiret, 1801; *Planorbis hispidus* Draparnaud, 1805; *Planorbis fuscus* Fitzinger, 1833; *Planorbis lemniscatus* Hartmann, 1841, partim; *Planorbis albus* var. *cinctus* Westerlund, 1875, partim; *Planorbis albus* var. *gothicus* Westerlund, 1875; *Planorbis albus* var. *spurius* Westerlund, 1879; *Planorbis socius* Westerlund, 1881; *Planorbis albus* var. *alatus* Westerlund, 1885; *Planorbis crosseanus* Locard, 1893].

Planorbis albus O.F. Müller, 1774: 164.

- Type locality: Denmark, "in plantis

aquatis amnis Fridrichsdalensis” (= on water plants in the river of Fridrichsdal, a suburb of Copenhagen). Most probably, “amnis Fridrichsdalensis” corresponds to the modern Mølleåen channel in the vicinity of Fridrichsdal [Nekhaev *et al.*, 2015].

- Lectotype: ZMUC, No. GAS-303. The type series includes the lectotype and two paralectotypes [designated by Nekhaev *et al.*, 2015].

- Global distribution: Northern Palearctic.

- Distribution in the former USSR: The European part of RAC, the Western Siberia and Transcaucasia [Akramowski, 1976; Starobogatov *et al.*, 2004].

- Subregions: NE, SE, CT, WS.

- Bionomics: Lives in large ponds, lakes and rivers, on vegetation [Starobogatov *et al.*, 2004].

- IUCN conservation status: LC (least concern).

485(626). *Gyraulus* (*Gyraulus*) *concinus* (Westerlund, 1881)

Planorbis (*Gyraulus*) *concinus* Westerlund, 1881: 63.

- Type locality: Originally stated as “Suecia ad Ronneby; Norvegia in reg. Gudbrandsdal” [= Sweden at Ronneby (province of Blekinge, South Sweden); Norway, in the region of the Gudbrandsdalen valley which is situated in the province Oppland Fylke in SE Norway]. The locus typicus of the lectotype is “Ronneby, Tørneryd”. Tørneryd is a small group of farms, situated approximately 2,5 km WSW of the centre of the city Ronneby (see Vinarski *et al.*, 2013b for details).

- Types: The lectotype and 54 paralectotypes kept in NMG (No. 4011). 12 paralectotypes collected in Ronneby are in SMNH collection (No. 12: 78). Nine shells of *G. concinns* from the Westerlund collection (? paralectotypes) are in ZIN, No. 1 in systematic catalogue.

- Global distribution: Europe.

- Distribution in the former USSR: The Baltic Sea basin [Prozorova, 2003].

- Subregions: NE.

- Bionomics: Lives in permanent waterbodies on vegetation [Starobogatov *et al.*, 2004].

- IUCN conservation status: Not assessed.

- Remark: The locus typicus of *G. concinns* is situated in Scandinavia, nevertheless the species is not included in modern reviews of the Planorbidae of Northern Europe [Økland, 1990; Glöer, 2002a; Welter-Schultes, 2012]. Conchologically, it is similar to *G. albus* and may represent its junior synonym.

485(627). *Gyraulus* (*Gyraulus*) *draparnaudi* (Sheppard, 1823)

[= *Planorbis limophilus* Clessin, 1884; *Gyraulus draparnaldi* auct.]

Helix draparnaudi Sheppard, 1823: 158-159.

- Type locality: England, Suffolk County, Holbrook mill-pond. Killeen [1992] gave more information about this locality.

- Types: Not traced.

- Global distribution: Europe and Siberia.

- Distribution in the former USSR: The European part of RAC, southern part of Siberia eastward to Republic of Tuva [Prozorova, 2003; Vinarski *et al.*, 2007].

- Subregions: NE, SE, WS, ES.

- Bionomics: Lives in permanent waterbodies on vegetation [Starobogatov *et al.*, 2004].

- IUCN conservation status: Not assessed.

- Remark: *G. draparnaudi* is usually regarded as a junior synonym of *G. albus* [Kennard & Woodward, 1920]. Kruglov & Soldatenko [2000] reported some anatomical and conchological differences between these species. It should be noted that sometimes the species epithet of this taxon is misspelled (*draparnaldi* instead of *draparnaudi*).

485(628). *Gyraulus* (*Gyraulus*) *kruglowiae* (Johansen, 1937)

Planorbis kruglowiae Johansen, 1937: 191, figs. 1-3.

- Type locality: Russia, Republic of Altay, the Tenginskoye Lake.

- Types: Not traced. There is a sample of

this species collected from the type locality in ZMMU, No. LC-4480 (determined by Johansen). It contains 5 empty shells (probable syntypes).

- Global distribution: Endemic to Altay.
- Distribution in the former USSR: The mountain Altay Region [Kantor *et al.*, 2010].
- Subregions: WS.
- Bionomics: Not studied. Found in large lakes.
- IUCN conservation status: Not assessed.
- Remark: Some conchological peculiarities of *G. kruglowiae* are prominent enough to distinguish it from *G. albus*. Nevertheless, the reproductive anatomy of *G. kruglowiae* is still not known that raises doubts concerning its validity.

**485(629). *Gyraulus* (*Gyraulus*)
stelmachoeitius (Bourguignat, 1860)**

[= *Planorbis stelmachoeitius* var. *assimilis* Westerlund, 1885; *Planorbis stelmachoeitius* var. *notatus* Westerlund, 1885]

Planorbis stelmachoeitius Bourguignat, 1860d: 139-140, pl. 2, fig. 10-13.

- Type locality: France, Brittany, “dans un petit ruisseau de la vallée ferrugineuse, près de Dinan” [Bourguignat, 1860d: 140]. There are at least two settlements named Dinan in Brittany.
- Types: MHNG No. 7562. The type series includes 18 syntypes [Sitnikova *et al.*, 2012].
- Global distribution: Europe, Siberia and Central Asia (Mongolia) [Sitnikova *et al.*, 2012].
- Distribution in the former USSR: The European part of RAC, south of Siberia eastward to the Transbaikalia [Sitnikova *et al.*, 2012].
- Subregions: NE, SE, WS, ES.
- Bionomics: Lives in permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: DD (data deficient).
- Remark: Bourguignat [1860d] characterized this species as a closely allied to *G. albus* but differing from it by some slight conchological peculiarities. *G. stelmachoeitius* have been not considered by most re-

cent taxonomic publications on the European Planorbidae [Meier-Brook, 1983; Glöer, 2002a; Welter-Schultes, 2012] except those by Russian authors [Starobogatov, 1977c; Kruglov & Soldatenko, 2000; Prozorova, 2003].

**486(630). *Gyraulus* (*Gyraulus*)
acronicus (Férussac, 1807)**

[= *Planorbis deformis* Férussac, 1807; *Anisus corneus* Studer, 1820; *Planorbis devians* Porro, 1834; *Planorbis subcarinatus* Charpentier, 1837; *Planorbis lemniscatus* Hartmann, 1841, partim; *Planorbis tenellus* Hartmann, 1841, non Studer, 1789; *Planorbis gredleri* Bielz in Gredler, 1859, partim; *Planorbis devians* var. *euphratica* Mousson, 1874; *Planorbis albus* var. *cinctus* Westerlund, 1873, partim; *Planorbis deformis* var. *cavatus* Westerlund, 1885; *Planorbis tenellus* var. *firmus* Westerlund, 1885; *Planorbis rossmässleri* Hartwich, 1914, non A. Schmidt, 1852]

Planorbis acronicus Férussac, 1807: 105.

- Type locality: Germany, the Überlinger Lake (= Acronicus lacus), i.e. the northern part of the Bodensee Lake [P. Glöer, pers. communication].
- Types: Not traced.
- Global distribution: The Northern Palearctic.
- Distribution in the former USSR: The European part of RAC, Siberia eastward to the Nizhnyaya Tunguska River, and the Transcaucasia [Akramowski, 1976; Starobogatov *et al.*, 2004]. Meier-Brook [1983] mentioned the finding of this species from the Kamchatka Peninsula (Paratunka), but the Russian authors [Prozorova, 2003; Starobogatov *et al.*, 2004] believed that *G. acronicus* does not live in the northern Far East of Russia.
- Subregions: NE, SE, CT, WS, ES, NF(?)
- Bionomics: Lives in permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: This species had been treated as a race of *G. albus* inhabiting the

Bodensee Lake [Mermod, 1930]. Since Meier-Brook [1964], most malacologists accepted it as a valid species. In many old malacological works *G. acronicus* was mentioned under the name *Planorbis* (or *Gyraulus*) *gredleri* [see, for example, Geyer, 1922; Zhadin, 1933, 1952].

**486(631). *Gyraulus* (*Gyraulus*)
substroemi (Starobogatov
et Budnikova, 1976)**

Anisus (*Gyraulus*) *substroemi* Starobogatov & Budnikova, 1976: 85-86, fig. 5, V.

- Type locality: Russia, the Chukchi Peninsula, Anadyr' District, a pool near Vakarevo Settlement (approximately 64°53'00"N; 171°13'00"E).
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and a single paratype.
- Global distribution: Extreme northeast of Asiatic Russia.
- Distribution in the former USSR: The Chukchi and Kamchatka Peninsulars [Sitnikova *et al.*, 2014b].
- Subregions: NF.
- Bionomics: Lives in small permanent and semipermanent waterbodies [Prozorova, 2003].
- IUCN conservation status: DD (data deficient).
- Remark: The authors of the species [Starobogatov & Budnikova, 1976] reported that it is similar to *G. acronicus* and also to Nearctic *G. deflectus* (Say, 1824). Prozorova *et al.* [2009] hypothesized that *G. substroemi* may be identical with *G. angasolensis* (B. Dybowski). The true identity of *G. substroemi* needs to be clarified in future.

**487(632). *Gyraulus* (*Gyraulus*)
borealis (Lovén in Westerlund, 1875)**

[= *Planorbis gredleri* Bielz in Gredler, 1859, partim; *Planorbis rossmaessleri* Westerlund, 1871, non A. Schmidt, 1852; *Planorbis borealis* var. *angigyryus* Westerlund, 1885; *Planorbis borealis* var. *frigidus* Westerlund, 1885]

Planorbis borealis Westerlund, 1875: 112-113, pl. 2, figs. 23-25.

- Type locality: Originally stated as “Norwegia, Lapponia & Fennia” [Westerlund, 1875: 113]. Locus typicus of the neotype (see below) is: “Lapp. Finland., Kamasjokki” (Finland, province of Lappland, the Kaamasjoki River) [Vinarski *et al.*, 2013b].
- Types: Vinarski *et al.* [2013b] failed to find the original Lovén's materials of this species either in NMG or in SMNH collections. The authors designated the neotype of *Planorbis borealis* (kept in NMG, No. 3993).
- Global distribution: Northern Eurasia.
- Distribution in the former USSR: Northern Eurasia, eastward to Kamchatka, the Baikal Lake [Prozorova, 2003; Sitnikova *et al.*, 2004; Starobogatov *et al.*, 2004].
- Subregions: NE, WS, ES, BL, NF.
- Bionomics: Lives in permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: The Western European malacologists did not accept validity of this species and regarded it as a synonym of *G. acronicus* [Meier-Brook, 1983; Glöer, 2002a; Welter-Schultes, 2012], whereas in the Russian literature *G. borealis* is listed as a “good” species [Prozorova, 2003; Sitnikova *et al.*, 2004; Khokhutin & Vinarski, 2013; Vinarski, 2014b]. Sitnikova & Takhteev [2006] reported that there are no anatomical differences between *G. borealis* from Siberia and the published description of *G. acronicus* sensu Meier-Brook [1983]. It should be noted, though, that Meier-Brook himself pointed out that *G. borealis* is “... persistently different in shell characters from the temperate European forms of *G. acronicus*” [1983: 46] that may be

considered as an additional evidence of the distinctness of the two species. A series of conchologically similar species of *Gyraulus* inhabiting the Eastern Siberia and the Russian Far East has been described in the 1990-2000s [Prozorova & Starobogatov, 1997, 1998b; Prozorova, 2003]. In most cases, the anatomical structure of these species is still not studied that allows one to suspect them to be identical with *G. borealis* [see also remarks in Prozorova *et al.*, 2009: 179].

487(633). *Gyraulus (Gyraulus) amuricus* (Starobogatov et Prozorova, 1998)

Anisus (Gyraulus) amuricus Prozorova & Starobogatov, 1998b: 57, fig. 1D.

- Type locality: Russia, the Khabarovsk Territory, a lake in the floodplain of the Bureya River, 3 km downstream from the mouth of the Chekunda River.
- Types: ZIN, Nos. 1–3 in systematic catalogue; some paratypes are kept in IBSS. The type series includes the holotype and 52 paratypes.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The lower and middle Amur basin; the northern Sakhalin Island [Prozorova & Starobogatov, 1998b].
- Subregions: SF.
- Bionomics: Lives in rivers and floodplain lakes [Prozorova & Starobogatov, 1998b].
- IUCN conservation status: Not assessed.

487(634). *Gyraulus (Gyraulus) angasolensis* (B. Dybowski, 1913)

Planorbis (Gyraulus) angasolensis B. Dybowski, 1913: 197, pl. 5, fig. 25.

- Type locality: Russia, Irkutsk Region, vicinities of Kultuk (SW coast of the southern Baikal Lake) [Prozorova *et al.*, 2009].
- Types: According to Prozorova *et al.* [2009], the lectotype is housed in ZIN. Actually, there are two samples in ZIN (Nos. 1 and 2) containing, in total, 16 shells of syntypes.

- Global distribution: Endemic to Northern Asia.
- Distribution in the former USSR: The Eastern Siberia and the Russian Far East eastward to the shore of the Sea of Okhotsk [Prozorova *et al.*, 2009].
- Subregions: ES, BL, NF.
- Bionomics: Lives in small temporary and semi-permanent waterbodies [Prozorova *et al.*, 2009].
- IUCN conservation status: Not assessed.
- Remark: This species with type locality situated in the Baikal Lake was not included into the most recent check-list of the Baikalian gastropods [Sitnikova *et al.*, 2004] as well as to the subsequent catalogues [Kantor & Sysoev, 2005; Kantor *et al.*, 2010]. Prozorova *et al.* [2009: 179] reported high morphological similarity between *G. angasolensis* and *G. borealis*.

487(635). *Gyraulus (Gyraulus) baicalicus* (B. Dybowski, 1913)

Planorbis (Gyraulus) baicalicus B. Dybowski, 1913: 200, pl. 5, fig. 26.

- Type locality: Russia, the southern Baikal Lake.
- Lectotype: ZIN, No. 1 in systematic catalogue [Starobogatov & Streletzkaia, 1967].
- Global distribution: Endemic to Siberia.
- Distribution in the former USSR: The Yenisei River basin, the northern Baikal Lake area, the Baikal Lake [Sitnikova *et al.*, 2004; Kantor *et al.*, 2010]. The findings of this species in the Western Siberia [Karimov, 2005; Vinarski *et al.*, 2007] are doubtful; most probably, shells of “*G. baicalicus*” found in the Ob’ basin belonged to juvenile individuals of *G. borealis* [Khokhutkin & Vinarski, 2013].
- Subregions: ES, BL.
- Bionomics: Lives in permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

487(636). *Gyraulus (Gyraulus) buriaticus* (Prozorova et Starobogatov, 1997)

Anisus (Gyraulus) buriaticus Prozorova & Starobogatov, 1997: 44, fig. 2A.

- Type locality: Russia, Republic of Buryat-

ia, a pool in the Tsagal-Gol River floodplain, vicinity of Gusinoozyorsk Town [fide Sitnikova *et al.*, 2014b].

- Types: ZIN, Nos. 1–3 in systematic catalogue. The type series includes the holotype and 62 paratypes.
- Global distribution: The Transbaikalia and the Russian Far East.
- Distribution in the former USSR: Buryatia, the Khabarovsk and Primorye Territories [Sitnikova *et al.*, 2014b].
- Subregions: ES, SF.
- Bionomics: Lives in rivers and floodplain lakes [Prozorova & Starobogatov, 1998b].
- IUCN conservation status: Not assessed.

487(637). *Gyraulus (Gyraulus) centrifugops* (Prozorova et Starobogatov, 1997)

Anisus (Gyraulus) centrifugops Prozorova & Starobogatov, 1997: 49–50 (nom. nov. pro *Anisus centrifugus* sensu Bogatov et Zatravkin, 1990, non Westerlund, 1897).

- Type locality: Russia, the Amur River [fide Sitnikova *et al.*, 2014b].
- Holotype: ZIN. The type series includes the holotype and a single paratype [see Sitnikova *et al.*, 2014b for details].
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Amur River basin, the Primorye Territory and the Sakhalin Island [Sitnikova *et al.*, 2014b].
- Subregions: SF.
- Bionomics: Lives in permanent and semi-permanent waterbodies [Prozorova, 2003].
- IUCN conservation status: LC (least concern).

487(638). *Gyraulus (Gyraulus) chereshevi* (Prozorova et Starobogatov, 1997)

Anisus (Gyraulus) chereshevi Prozorova & Starobogatov, 1997: 48, fig. 3B.

- Type locality: Russia, the Chukchi Peninsula, hot springs in the valley of the Gilmimliveyem River at the outlets of thermal waters.
- Types: ZIN, Nos. 1–3 in systematic cata-

logue. The type series includes the holotype and 114 paratypes.

- Global distribution: Extreme northeast of Asia.
- Distribution in the former USSR: The Chukchi Peninsula [Sitnikova *et al.*, 2014b].
- Subregions: NF.
- Bionomics: Lives in hot springs and other warm waterbodies [Sitnikova *et al.*, 2014b].
- IUCN conservation status: Not assessed.

487(639). *Gyraulus (Gyraulus) ignotellus* (B. Dybowski, 1913)

Planorbis (Gyraulus) ignotellus B. Dybowski, 1913: 204, pl. 5, fig. 28.

- Type locality: Russia, Irkutsk Region, Kultuk (SW coast of the southern Baikal Lake) [Sitnikova *et al.*, 2004].
- Types: ZIN, No. 1 in systematic catalogue (a single specimen). According to Sitnikova *et al.* [2004], this specimen is the lectotype; in the catalogue it is marked as the holotype.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: Type locality and Mukhor Bay in Maloye More [Sitnikova *et al.*, 2004].
- Subregions: BL.
- Bionomics: Lives on muddy-sand substrates, registered from 3–5 and 110 m of depth [Sitnikova *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Kozhov [1936: 149] treated this species as a synonym of *G. borealis*. Prozorova *et al.* [2009] state that the type material is represented by juvenile specimens resembling juvenile individuals of *G. stroemi* (Westerlund, 1881).

487(640). *Gyraulus (Gyraulus) infraliratus* (Westerlund, 1877)

Planorbis infraliratus Westerlund, 1877: 59–60.

- Type locality: Russia, Krasnoyarsk Territory, Turukhansk District, vicinity of former village Nizhne-Imbatsk [= “Jenissey, Nischnij Imbatsk (lat. 63°50′)”; Westerlund, 1877: 60].
- Types: The syntypes of *P. infraliratus* were dispersed among three museum collections:

NMG (4 specimens; No. 3972), SMNH (2 specimens, No. 12: 61), and ZIN (a single specimen; No. 1 in systematic catalogue).

- Global distribution: Siberia and north-eastern Mongolia.
- Distribution in the former USSR: Siberia: from the Yenisei River basin to Chukotka Tuva [Kantor & Sysoyev, 2005].
- Subregions: ES, NF.
- Bionomics: Lives in permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

487(641). *Gyraulus (Gyraulus) iturupensis* (Prozorova et Starobogatov, 1997)

Anisus iturupensis Prozorova & Starobogatov, 1997: 48-49, fig. 3C.

- Type locality: Russia, the Kurile Archipelago, the Iturup Island, the Solnechnoye Lake (possibly, Sopochnoye Lake, northern part of Iturup).
- Types: ZIN, No. 1 (the holotype); IBSS (29 paratypes).
- Global distribution: Endemic to the Kurile Archipelago.
- Distribution in the former USSR: The Southern Kurile Islands [Sitnikova *et al.*, 2014b].
- Subregions: SF.
- Bionomics: Lives in permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: DD (data deficient).

487(642). *Gyraulus (Gyraulus) khabarovskiensis* (Prozorova et Starobogatov, 1997)

Anisus khabarovskiensis Prozorova & Starobogatov, 1997: 45, fig. 2D.

- Type locality: Russia, the Khabarovsk Territory, the Innokentievskoye Lake in the Amur drainage area).
- Types: ZIN, Nos. 1 and 2. The type series includes the holotype and four paratypes.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: Middle

and lower parts of the Amur River basin [Starobogatov *et al.*, 2004].

- Subregions: SF.
- Bionomics: Lives in permanent or semi-permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

487(643). *Gyraulus (Gyraulus) kussakini* (Prozorova et Starobogatov, 1997)

Anisus kussakini Prozorova & Starobogatov, 1997: 46, fig. 2F.

- Type locality: Russia, Chukchi Autonomous District, a branch of the Anadyr' River with slightly brackish water, entering the Ugol'naya Inlet.
- Holotype: ZIN. The holotype is kept under the name *Anisus jacuticus* Prozorova et Starobogatov, No. 1 in systematic catalogue. The species *A. jacuticus* has never been described [see also Sitnikova *et al.*, 2014b].
- Global distribution: Endemic to North-eastern Asia.
- Distribution in the former USSR: Sitnikova *et al.* [2014b] listed several localities of *G. kussakini* situated in Irkutsk Region (the Eastern Siberia), the Khabarovsk Territory, and the Chukchi Peninsula.
- Subregions: ES, SF, NF.
- Bionomics: Lives in semipermanent waterbodies [Sitnikova *et al.*, 2014b].
- IUCN conservation status: DD (data deficient).

487(644). *Gyraulus (Gyraulus) sibiricus* (Dunker, 1848)

Planorbis sibiricus Dunker, 1848: 42.

- Type locality: Siberia.
- Types: Not traced.
- Global distribution: Endemic to Northern Asia.
- Distribution in the former USSR: The Yenisei River basin and northern part of the Russian Far East [Starobogatov *et al.*, 2004].
- Subregions: ES, NF.
- Bionomics: Lives in small semipermanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

**487(645). *Gyraulus (Gyraulus)*
sretenskiensis (Prozorova et
Starobogatov, 1997)**

Anisus sretenskiensis Prozorova & Starobogatov, 1997: 44-45, fig. 2B.

- Type locality: Russia, the Zabaikalsky Territory, vicinity of Sretensk Town, the Shilka River drainage area, small inflow of the Margul stream [fide Sitnikova *et al.*, 2014b].
- Types: ZIN, Nos. 1-3 in systematic catalogue. The type series includes the holotype and 68 paratypes.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Amur basin, including the basins of Onon, Ingoda and Never Rivers [Sitnikova *et al.*, 2014b].
- Subregions: SF.
- Bionomics: Lives in large permanent and semipermanent waterbodies [Prozorova & Starobogatov, 1997].
- IUCN conservation status: Not assessed.

**487(646). *Gyraulus (Gyraulus)*
terekholicus (Prozorova et
Starobogatov, 1997)**

Anisus terekholicus Prozorova & Starobogatov, 1997: 45, fig. 2C.

- Type locality Russia, Republic of Tuva, the Tere-Khol' Lake (50°38'15"N, 97°24'45"E).
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and 25 paratypes.
- Global distribution: Endemic to Central Asia (Mongolia and Tuva).
- Distribution in the former USSR: Type locality [Sitnikova *et al.*, 2014b].
- Subregions: ES.
- Bionomics: Lives in large lakes such as Hövsgöl and Tere-Khol', on offshore stones and pebbles [Sitnikova *et al.*, 2014b].
- IUCN conservation status: DD (data deficient).

**487(647). *Gyraulus (Gyraulus)*
thermochukchensis (Prozorova et
Starobogatov, 1997)**

Anisus thermochukchensis Prozorova & Starobogatov, 1997: 46-47, fig. 3A.

- Type locality: Russia, the Chukchi Peninsula, hot springs in the valley of the Gilmimliveyem River at the outlets of thermal waters.
- Types: ZIN, Nos. 1–4 in systematic catalogue. The type series includes the holotype and 34 paratypes.
- Global distribution: Extreme northeast of Asia.
- Distribution in the former USSR: Type locality [Sitnikova *et al.*, 2014b].
- Subregions: NF.
- Bionomics: Recorded in a hot spring with water temperature up to 42°C [Sitnikova *et al.*, 2014b].
- IUCN conservation status: DD (data deficient).

**487(648). *Gyraulus (Gyraulus)*
tugurensis (Prozorova et
Starobogatov, 1997)**

Anisus tugurensis Prozorova & Starobogatov, 1997: 45-46, fig. 2E.

- Type locality: Russia, the Khabarovsk Territory, the Tugur River valley.
- Types: ZIN, Nos. 1–3 in systematic catalogue. The type series includes the holotype and three paratypes.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: Type locality [Sitnikova *et al.*, 2014b].
- Subregions: SF.
- Bionomics: Lives in permanent and semipermanent waterbodies [Sitnikova *et al.*, 2014b].
- IUCN conservation status: DD (data deficient).

**487(649). *Gyraulus (Gyraulus)*
zelenensis (Prozorova et
Starobogatov, 1997)**

Anisus zelenensis Prozorova & Starobogatov, 1997: 49, fig. 3D.

- Type locality: Russia, the Kurile Archipelago, the Zelenyi Island, the Utinoye Lake.
- Types: ZIN, Nos. 1–3 in systematic catalogue. The type series includes the holotype and three paratypes.

- Global distribution: Endemic to the Kurile Archipelago.
- Distribution in the former USSR: Type locality [Sitnikova *et al.*, 2014b].
- Subregions: SF.
- Bionomics: Lives in permanent and semi-permanent waterbodies [Sitnikova *et al.*, 2014b].
- IUCN conservation status: Not assessed.

488(650). *Gyraulus (Gyraulus) chinensis* (Dunker, 1848)

Planorbis chinensis Dunker, 1848: 41.

- Type locality: China, Hong Kong, in a river (“in rivula ad Hong Kong in China”; Dunker, 1848: 41).
- Types: Not traced and, probably, lost [fide Meier-Brook, 1983].
- Global distribution: Eastern, Central and Southern Asia, introduced widely into Western Africa and Europe, including the northern European countries where may occur in greenhouses [Brown *et al.*, 1999; Beran & Glöer, 2006; Welter-Schultes, 2012].
- Distribution in the former USSR: Kyrgyzstan [Glöer *et al.*, 2014]. Perhaps, *G. chinensis* will be found in other Central Asian countries of the former USSR.
- Subregions: CA.
- Bionomics: In Kyrgyzstan, the species is “common in shallow water bodies such as ponds and river floodplains at altitudes up to 2,000 m” [Glöer *et al.*, 2014: 78].
- IUCN conservation status: Not assessed.

487(649). *Gyraulus (Gyraulus) issykulensis* Clessin, 1907

Gyraulus issykulensis Clessin, 1907: 8.

- Type locality: Kyrgyzstan, the Issyk-Kul' Lake.
- Types: Clessin's collection was in Stuttgart Museum but totally destroyed during 1939-1945 war [Dance, 1986]. A single shell

of *G. issykulensis* labeled as “paratypoid” is kept in ZMB, No. 59621.

- Global distribution: Endemic to the Issyk-Kul' Lake.
- Distribution in the former USSR: Type locality [Izzatullaev, 1972].
- Subregions: CA.
- Bionomics: Not studied.
- IUCN conservation status: Not assessed.

489(652). *Gyraulus (Gyraulus) convexiusculus* (Hutton, 1849)

[= *Planorbis saigonensis* Crosse et Fischer, 1864; *Planorbis compressus* Martens, 1867, non Serres, 1818, nec Michaud, 1831; *Planorbis demissus* Westerlund, 1885]

Planorbis convexiusculus Hutton, 1849: 657.

- Type locality: Afghanistan, in different localities (“...at Candahar in tanks, at Quettah and the Kojuck Pass in marshes, and along the marsh lands of the river Helmind at Girishk”; Hutton, 1849: 657). Meier-Brook [1983] considered Candahar as the *locus typicus*.
- Types: Not traced and, probably, lost [fide Meier-Brook, 1983].
- Global distribution: Central and Southern Asia from Iran to Philippines [Subba Rao, 1989].
- Distribution in the former USSR: Tajikistan, the Vaksh River valley [Izzatullaev, 1972].
- Subregions: CA.
- Bionomics: Euryecous species living in lakes, ditches, ponds and rice fields [Subba Rao, 1989].
- IUCN conservation status: Not assessed.

490(653). *Gyraulus (Gyraulus) eichwaldi* (Grimm in W. Dybowski, 1888)

[= *Planorbis micromphalus* Grimm, 1876, non Fuchs, 1870]

Planorbis eichwaldi W. Dybowski, 1888: 49-50, pl. 2, fig. 11a-c, pl. 3, fig. 10 a-c.

- Type locality: The Caspian Sea.
- Types: Not traced. One specimen (probable syntype) from the Grimm's collection is kept in ZIN under No. 1 in systematic catalogue. It was collected in Caspian Sea off Baku.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: Middle and southern Caspian Sea [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs at depths between 30 and 200 m [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.
- Remark: Logvinenko & Starobogatov [1968] mention the subspecies *G. e. infundibularis* (Logvinenko et Starobogatov, 1966), however, this taxon is absent in recent handbooks on the Caspian Sea malacofauna [Kantor & Sysoev, 2005; Bogutskaya *et al.*, 2013], and its taxonomic position is unclear for us.

491(654). *Gyraulus (Gyraulus) illibatus* (Westerlund, 1883)

Planorbis (Gyraulus) illibatus Westerlund, 1883: 53.

- Type locality: Japan, Honshu Island, Onuyo, Saitama Prefecture.
- Syntypes: SMNH (see Habe, 1984 for details).
- Global distribution: Japan and the Russian Far East.
- Distribution in the former USSR: The southern Kuriles: Iturup and Zelenyi islands [Prozorova, 2003].
- Subregions: SF.
- Bionomics: Lives in permanent and semi-permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

492(655). *Gyraulus (Gyraulus) infirmus* (Mori, 1938)

Anisus (Gyraulus) laevis infirmus Mori, 1938: 280, 284, 298, pl. 18, fig. 16.

- Type locality: Tisima (i.e. former Japan province embraced the Sakhalin Island and part of the Kurile Archipelago), a river flowing into Itubisinai-ko.
- Types: Not traced.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The southern Sakhalin Island, the southern Kuriles (Kunashir and Zelenyi Islands) [Prozorova, 2003; Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in cold springs and lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

493(656). *Gyraulus (Gyraulus) kolesnikovi* (Logvinenko et Starobogatov, 1966)

[= *Planorbis eichwaldi* var. *dybowski* Kolesnikov, 1947; *Anisus kolesnikovi sublitoralis* Logvinenko et Starobogatov, 1966]

Anisus kolesnikovi Logvinenko & Starobogatov, 1966b: 1473-1474, figs. 5, 6.

- Type locality: Caspian Sea, 40°37'N, 50°52'E, 115 m.
- Types: ZIN, Nos. 1–32 in systematic catalogue. The type series includes the holotype and several hundreds of paratypes.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: Middle and southern Caspian Sea [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs at depths between 30 and 200 m [Logvinenko & Starobogatov, 1968].

- IUCN conservation status: LC (least concern).

**494(657). *Gyraulus (Gyraulus)*
ladacensis (Nevill, 1878)**

[= *Gyraulus ehrenbergi* sensu Zhadin, 1952, non Beck, 1837; *Gyraulus laevis* sensu Zhadin, 1950, non Alder, 1833]

Planorbis (Gyraulus) laevis var. *ladacensis* Nevill, 1878: 10-11.

- Type locality: Northern India, "Leh in Ladak".
- Syntypes: Zoological Survey of India, No. M 17822/3 [fide Subba Rao, 1989]. Also, 23 shells of this species marked as "paratypoids" are kept in ZMB, Nos. 27486 and 30153.
- Global distribution: Central Asia, including India and Tibet [Subba Rao, 1989].
- Distribution in the former USSR: Tajikistan [Izzatullaev, 1972].
- Subregions: CA.
- Bionomics: Not studied.
- IUCN conservation status: Not assessed.

**495(658). *Gyraulus (Gyraulus)*
noziriensis (Mori, 1938)**

Anisus (Gyraulus) albus noziriensis Mori, 1938a: 280, 284, 296, pl. 17, fig. 14.

- Type locality: Japan, Honshu Island, Noziri (or Nojiri) Lake in Nagano Prefecture (36°49'20"N; 138°13'42"E).
- Types: Not traced.
- Global distribution: The Far East (Japan and Russia).
- Distribution in the former USSR: The southern Sakhalin Island, the Southern Kurile Archipelago (Kunashir and Zelenyi Islands) [Prozorova, 2003; Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in permanent and semipermanent waterbodies [Starobogatov *et al.*, 2004].

- IUCN conservation status: DD (data deficient).

• Remark: This taxon was established as a subspecies of *G. albus*. Meier-Brook [1983] and Prozorova [2003] considered improbable for European *G. albus* to inhabit Japan and the Kurile Islands.

**496(659). *Gyraulus (Gyraulus)*
spirillus (Gould, 1859)**

Planorbis spirillus Gould, 1859: 40.

- Type locality: Japan, Ryukyu Archipelago, the Amami-O-Shima Island.
- Lectotype: USNM 1557 [fide Johnson, 1964].
- Global distribution: The Far East, including Japan, Korea, and Taiwan [Meier-Brook, 1983].
- Distribution in the former USSR: The southern Kurile Islands and the southern Sakhalin Island [Prozorova, 2003].
- Subregions: SF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

**497(660). *Gyraulus (Gyraulus)*
stroemi (Westerlund, 1881)**

Planorbis strömi Westerlund, 1881: 63.

- Type locality: Norway (locality of the lectotype).
- Lectotype: NMG, No. 3987. The type series includes the lectotype and a single paralectotype [see Vinarski *et al.*, 2013b for details].
- Global distribution: Northern Eurasia, Scandinavia to the Kamchatka Peninsula [Glöer & Vinarski, 2009].
- Distribution in the former USSR: Northern Siberia and Asiatic Russia, including the Baikal Lake [Glöer & Vinarski, 2009; Kantor *et al.*, 2010; Vinarski *et al.*, 2013e].

- Subregions: NE, WS, ES, BL, NF, SF.
- Bionomics: Lives in permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: LC (least concern).
- Remark: The species has usually been considered as a synonym of *G. acronicus* [Meier-Brook, 1983].

497(661). *Gyraulus (Gyraulus) centrifugus* (Westerlund, 1897)

Planorbis centrifugus Westerlund, 1897b: 141-142.

- Type locality: Russia, Republic of Yakutia (Sakha), Verkhnekolymsk Settlement (approximately 65°43'05"N; 150°50'00"E).
- Types: ZIN, Nos. 1–3 in systematic catalogue. The type series kept in ZIN contains the lectotype and three paralectotypes. Two paralectotypes are kept in NMG, No. 3968 (see Vinarski *et al.*, 2013b for details).
- Global distribution: Endemic to the North-eastern Asia.
- Distribution in the former USSR: The Kolyma, Indigirka, Yana and Lena rivers basins, except their upper parts, and the Tau Inlet river basin (the Okhotsk Sea) [Kantor *et al.*, 2010]. Shells from several samples collected in the Southern Siberia and Mongolia (ZIN collection) and labeled as *Anisus centrifugus* do not differ from *G. stroemi* shells. Alleged presence of *G. centrifugus* in the southern parts of the Eastern Siberia [Prozorova *et al.*, 2009] is thus doubtful [Vinarski *et al.*, 2013e].
- Subregions: ES, NF.
- Bionomics: Lives in permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: LC (least concern).

497(662). *Gyraulus (Gyraulus) kamtschaticus* (Westerlund, 1897)

[= *Planorbis borealis* var. *dershavini* Rozen, 1927]

Planorbis (Gyraulus) kamtschaticus Westerlund, 1897b: 127.

- Type locality: Russia, the Kamchatka Peninsula, the Kamchatka River.
- Types: A single broken shell (a syntype)

from the original Westerlund collection labeled as "*Planorbis kamtschaticus*" is stored in ZIN, No. 1 in systematic catalogue [Vinarski *et al.*, 2013b]. Originally, the type series consisted of three syntypes [Westerlund, 1897b].

- Global distribution: Endemic to North-eastern Asia.
- Distribution in the former USSR: North-eastern Asia from the Lena River basin in the west and the Amur River basin in the south [Prozorova, 2003].
- Subregions: ES, NF, SF.
- Bionomics: Lives in permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: LC (least concern).

497(663). *Gyraulus (Gyraulus) zhirmunskii* (Prozorova, 2003)

Anisus zhirmunskii Prozorova, 2003: 103-104, textfig.

- Type locality: Russia, Peter the Great Bay of the Japan Sea, the Bol'shoy Pelis Island, the Bol'shoy Pelis Lake.
- Types: ZIN (the holotype, No. 1 in systematic catalogue); IBSS (five paratypes).
- Global distribution: The Far East (North-western China, Korea, Russia) [Prozorova, 2003].
- Distribution in the former USSR: South-western part of the Primorye Territory [Prozorova, 2003].
- Subregions: SF.
- Bionomics: Lives in small permanent waterbodies [Prozorova, 2003].
- IUCN conservation status: DD (data deficient).
- Remark: Conchologically, this species is characterized by certain characters common with *G. stroemi* and may be identical to the latter. The anatomical structure of *G. zhirmunskii* is not known.

498(664). *Gyraulus (Gyraulus) subfiliaris* (Moskvicheva in Dvoriadkin, 1980)

Anisus (Gyraulus) subfiliaris Dvoriadkin, 1980: 25, fig. 2.

- Type locality: Russia, the Chukchi Peninsula, Anadyr' District, a pool near Vakarevo Settlement (approximately 64°53'00"N; 171°13'70"E).
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and a single paratype.
- Global distribution: Extreme northeast of Asiatic Russia.
- Distribution in the former USSR: The Chukchi and Kamchatka Peninsulars [Sitnikova *et al.*, 2014b].
- Subregions: NF.
- Bionomics: Lives in small permanent and semipermanent waterbodies [Prozorova, 2003].
- IUCN conservation status: LC (least concern).

**499(665). *Gyraulus (Gyraulus)*
sulcatus (Logvinenko et
Starobogatov, 1966)**

Anisus sulcatus Logvinenko & Starobogatov, 1966b: 1474, fig. 7.

- Type locality: The Caspian Sea, 42°45'N, 48°29'E, 79 m.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to the Caspian Sea.
- Distribution in the former USSR: The Middle Caspian Sea [Logvinenko & Starobogatov, 1968].
- Subregions: CS.
- Bionomics: Occurs at depths between 75 and 150 m [Logvinenko & Starobogatov, 1968].
- IUCN conservation status: Not assessed.

**500(666). *Gyraulus (Gyraulus)*
umbiliciferus (Kozhov, 1936)**

Planorbis (Gyraulus) umbiliciferus Kozhov, 1936: 150, pl. 6, figs. 44-47.

- Type locality: Russia, the Baikal Lake, Maloye More.

- Types: According to Sitnikova *et al.* [2004], the lectotype of *G. umbiliciferus* is housed in ZIN. Actually, there are two samples of syntypes (Nos. 1 and 2 in systematic catalogue) containing three specimens, one of them collected in the type locality. There is no data about the lectotype in the hand-written catalogue of ZIN collection.
- Global distribution: Endemic to the Baikal Lake.
- Distribution in the former USSR: The northern Baikal Lake and Maloye More [Sitnikova *et al.*, 2004].
- Subregions: BL.
- Bionomics: Lives in litoral zone, on stones covered by algae [Sitnikova *et al.*, 2004].
- IUCN conservation status: Not assessed.

Addition to the subgenus *Gyraulus*
s. str. Prozorova [1996(1997)a] mentioned one more species, *G. japonicus* (Martens, 1867), from the southern Kurile Islands. This species was described from vicinities of Yokohama [Martens, 1867]³⁶, and its presence in the Kurile waterbodies is quite possible. However, in her later publication Prozorova [2003] did not list this species in the enumeration of the *Gyraulus* species of Russia, and also Starobogatov *et al.* [2004] do not mention it.

Subgenus *Microanisis*
Moskvicheva in Zatravkin, 1985

Type species: *Anisus minusculus* Moskvicheva in Dvoriadkin, 1980 (OD)

³⁶ The type series is kept in ZMB (No. 8901). Originally described as *Planorbis compressus* var. *japonicus*.

501(667). *Gyraulus (Microanisis) minusculus* (Moskvicheva in Dvoriadkin, 1980)

Anisus (Microanisis) minusculus Dvoriadkin, 1980: 25, fig. 3.

- Type locality: Russia, the Khabarovsk Territory, the Amgun' River basin, the Semitka River in the vicinities of the settlement Imeni Poliny Osipenko.
- Types: ZIN, Nos. 1-13 in systematic catalogue. The type series includes the holotype and 289 paratypes.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Amur River basin and the Primorye Territory [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in temporary and semipermanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

Subgenus *Torquis* Dall, 1905

Type species: *Planorbis parvus* Say, 1817 (OD)

502(668). *Gyraulus (Torquis) laevis* (Alder, 1838)

[= *Planorbis regularis* Hartmann, 1841; *Planorbis glaber* Jeffreys, 1862; *Planorbis thermalis* Westerlund, 1885; *Planorbis laevis* var. *brondelii* Germain, 1931]

Planorbis laevis Alder, 1838: 337.

- Type locality: England, vicinities of Newcastle City, in a pond at Whitley Quarries.
- Types: Not traced.
- Global distribution: Europe and the Western Siberia.
- Distribution in the former USSR: The European part of RAC [Stadnichenko, 1990; Starobogatov *et al.*, 2004]; the

Transcaucasia [Akramowski, 1976]; southwestern part of the Western Siberian Plain [Khokhutkin & Vinarski, 2013].

- Subregions: NE, SE, CT, WS.
- Bionomics: Lives in springs and other minor waterbodies [Stadnichenko, 1990; Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: An invasive Nearctic species *Gyraulus parvus* (Say, 1817), which is closely allied to *G. laevis*, is registered in many countries of Central and Western Europe [Meier-Brook, 1983; Glöer, 2002a; Welter-Schultes, 2012]. To the best of our knowledge, *G. parvus* has never been reported from the RAC territory though its "cryptic" presence here is quite possible.

502(669). *Gyraulus (Torquis) correctus* (Westerlund, 1897)

Planorbis correctus Westerlund, 1897a: 123-124

- Type locality: Finland, "Fennia ad Harjula in Kuopio" [Westerlund, 1897a: 124].
- Syntypes: NMG, No. 4005 (12 syntypes) and ZIN, No. 1 in systematic catalogue (two syntypes).
- Global distribution: The Northern Europe.
- Distribution in the former USSR: The Baltic Sea basin [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in springs [Starobogatov *et al.*, 2004].
- IUCN conservation status: DD (data deficient).
- Remark: Though this species was described from northern Europe, the Western European malacologists did not regard it as a separate species distinct from *G. laevis* [Falkner *et al.*, 2001; Glöer, 2002a; Welter-Schultes, 2012].

Genus *Lamorbis*
Starobogatov, 1967

Type species: *Planorbis riparius* Westerlund, 1865 (OD)

Subgenus *Lamorbis* s. str.**503(670). *Lamorbis (Lamorbis) riparius* (Westerlund, 1865)***Planorbis riparius* Westerlund, 1865: 106.

- Type locality: Sweden, “Förekommer fästad på trästycken, stenar o. s. v. på östra stranden af Härstorps sjö vid Ronneby” (“On stones and pieces of wood on the east shore of Lake Härstorpasjön, Ronneby, province Blekinge”). Härstorpasjön is situated about 1 km W of the centre of the town Ronneby.
- Types: NMG, No. 4026. The type series consists of 23 syntypes [Vinarski *et al.*, 2013b]. Three more shells of *G. riparius* labeled as “cotypes” are kept in ZMB, No. 14306.
- Global distribution: Europe and the Western Siberia.
- Distribution in the former USSR: The European part of RAC, the Western Siberia eastward to Altay [Starobogatov *et al.*, 2004; Khokhutkin & Vinarski, 2013; Vinarski *et al.*, 2013b].
- Subregions: NE, SE, WS.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004; Khokhutkin & Vinarski, 2013].
- IUCN conservation status: Not assessed.

Subgenus *Pseudogyraulus*

Prozorova et Starobogatov, 1997

Type species: *Planorbis rossmaessleri* Auerwald in A. Schmidt, 1852 (OD)**504(671). *Lamorbis (Pseudogyraulus) rossmaessleri* (Auerwald in A. Schmidt, 1852)**[= *Planorbis (Gyraulus) planoconcavus* Westerlund, 1897]*Planorbis rossmaessleri* A. Schmidt, 1852: 179.

- Type locality: Germany, vicinities of Leipzig.
- Types: Not traced.
- Global distribution: Europe and Siberia.
- Distribution in the former USSR: The European part of RAC, except its north, Siberia, eastward to the left bank of the Lena river [Starobogatov *et al.*, 2004; Vinarski *et al.*, 2006].
- Subregions: NE, SE, WS, ES.
- Bionomics: Lives in temporary waterbodies [Starobogatov *et al.*, 2004; Vinarski *et al.*, 2006].
- IUCN conservation status: Not assessed.
- Remark: Sometimes the author of this species is cited as A. Schmidt, 1851. Bank [2011] argued that the proper authorship should be referred to as Auerwald, 1852.

505(672). *Lamorbis (Pseudogyraulus) okhoticus* (Prozorova et Starobogatov, 1997)*Choanomphalus okhoticus* Prozorova & Starobogatov, 1997a: 43-44, fig. 1G.

- Type locality: Russia, Khabarovsk Territory, Tugur River valley.
- Holotype: No. 1 in systematic catalogue.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: Type locality [Sitnikova *et al.*, 2014b].
- Subregions: SF.
- Bionomics: Not studied. The holotype was found in a small permanent waterbody [Sitnikova *et al.*, 2014b].
- IUCN conservation status: Not assessed.
- Remark: Since the reproductive anatomy (especially the structure of the stylet) of this species is not known, its placement to the genus *Lamorbis* can be

considered as only provisional [Sitnikova *et al.*, 2014b]. Conchologically, it is very similar to *Gyraulus*.

Genus *Promenetus*
F.C. Baker, 1935

Type species: *Planorbis exacuus* Say, 1821 (OD)

506(673). *Promenetus exacuus*
(Say, 1821)

Planorbis exacuus Say, 1821: 165.

- Type locality: The Lake Champlain (situated on the USA-Canada border with largest part belonging to USA territory).
- Types: ANSP.
- Global distribution: North America and Asiatic part of Beringia [Burch, 1989; Starobogatov *et al.*, 2004].
- Distribution in the former USSR: The Chukchi Peninsula – shells of this species were found in stomach of fish caught in the central part of the Anadyr' River [Starobogatov *et al.*, 2004].
- Subregions: NF.
- Bionomics: Lives in ponds, marshes and slow streams [Taylor, 1981].
- IUCN conservation status: Not assessed.

Subfamily Ancylinae
Rafinesque, 1815

[= Ferrissiinae Walker, 1917; Pseudancylinae Walker, 1923; Ancyloplanorbidae Hubendick, 1978, partim]

Type genus: *Ancylus* O.F. Müller, 1773

Remark: Sometimes this taxon is ranked as the family of its own [Hubendick, 1970; Taylor, 1981; Sitnikova *et al.*, 2012]. Bouchet & Rocroi [2005] listed it as a tribe of the family Planorbidae.

Genus *Ancylus* O.F. Müller, 1773

[= *Ancylastrum* Bourguignat, 1853, partim; *Pseudancylylus* Walker, 1921]

Type species: *Ancylus fluviatilis* O.F. Müller, 1774 (OD)

Remark: The Western European authors [Welter-Schultes, 2012; Bank, 2014] treated all *Ancylus* limpets inhabiting the RAC area as belonging to the same species *A. fluviatilis* s. l. Welter-Schultes [2012], though, regarded *A. fluviatilis* s. l. as a complex containing “various reproductive lineages”. The Russian authors [Soldatenko & Starobogatov, 2004; Starobogatov *et al.*, 2004] believed that not less than eight distinct species of the genus lives in the former USSR waterbodies. It is quite possible that at least some morphologically divergent *Ancylus* of Caucasus may represent valid species (or “reproductive lineages” sensu Welter-Schultes, 2012). Clessin [1907] described four (!) new species of the genus *Ancylastrum* from the same locality, the Issyk-Kul' Lake in Kyrgyzstan³⁷. Their taxonomic status is unclear. Hubendick [1970] regarded them as synonyms of *A. fluviatilis* s. l., whereas Soldatenko & Starobogatov [2004] in their revision of the genus *Ancylus* did not discuss the four Clessin's species at all.

507(674). *Ancylus fluviatilis*
O.F. Müller, 1774

[= *Ancylus deperditus* Desmarest, 1814; *Ancylus riparius* Desmarest, 1814; *Ancylus sinuosus* Brard, 1815; *Ancylus costatus* Férussac, 1822;

³⁷ *Ancylastrum dextrorsum* Clessin, 1907, *A. issykulense* Clessin, 1907, *A. ovatum* Clessin, 1907, and *A. turkestanicus* Clessin, 1907. We studied the syntype of *A. turkestanicus* kept in ZMB (No. 59625). This is doubtless an *Ancylus* but its species identity is unclear for us. The location of type specimens of the rest three species is still unknown.

Ancylus hermanni Férussac, 1822; *Ancylus pileolus* Férussac, 1822; *Ancylus rotundatus* Férussac, 1822; *Ancylus rupicola* Boubée, 1832; *Ancylus striatus* Quoy et Gaimard, 1834; *Ancylus meridionalis* Beck, 1837; *Ancylus tinei* Bivona, 1839; *Ancylus obtusus* Morelet, 1845; *Ancylus aduncus* Gould, 1846; *Ancylus frayssianus* Dupuy, 1851; *Ancylus deshayesianus* Bourguignat, 1853; *Ancylus moreleti* Bourguignat, 1853; *Ancylus orbignyanus* Bourguignat, 1853; *Ancylus raymondi* Bourguignat, 1853; *Ancylus strigatus* Bourguignat, 1853; *Ancylus albus* Moquin-Tandon, 1855; *Ancylus bireflexus* Moquin-Tandon, 1855; *Ancylus fluviatilis* var. *dimidiatus* Colbeau, 1859; *Ancylus fluviatilis* var. *rivularis* Colbeau, 1859; *Ancylus fluviatilis* var. *senior* Colbeau, 1859; *Ancylus radiolatus* Mousson, 1859; *Ancylus brondeli* Bourguignat, 1862; *Ancylus caliculatus* Bourguignat, 1862; *Ancylus epipedus* Bourguignat, 1862; *Ancylus peraudieri* Bourguignat, 1862; *Ancylus platylenus* Bourguignat, 1862; *Ancylus radiolatus* var. *janinensis* Bourguignat, 1862; *Ancylus simplex* Bourguignat, 1862; *Ancylus tiberianus* Bourguignat, 1862; *Ancylus fluviatilis* var. *djurjurenensis* Debeaux, 1863; *Ancylus costulatus* var. *subriparia* Bourguignat, 1864; *Ancylus niger* Brusina, 1866; *Ancylus recurvus* Martens, 1873; *Ancylus abyssinicus* Jickeli, 1874; *Ancylus compressus* Jickeli, 1874; *Ancylus dickinianus* Benoid, 1881; *Ancylus rothi* Kobelt, 1881; *Ancylus sandbergeri* Kobelt, 1881; *Ancylus ellipticus* Clessin, 1882; *Ancylus fluviatilis* var. *cornu* Clessin, 1882; *Ancylus striatulus* Clessin, 1882; *Ancylus fluviatilis* var. *phrygius* Clessin, 1882; *Ancylus hamacenicus* Bourguignat, 1883; *Ancylus amnicola* Stefani, 1883; *Ancylus libanicus* Naegele, 1897; *Ancylus guidoni* Caziot, 1902; *Ferrissia platyrhynchus* Walker, 1914; *Ancylus argenteus* Connolly, 1941]

Ancylus fluviatilis O.F. Müller, 1774: 201-202.

- Type locality: Germany, Saxony, from loamy coast of the Ilm river ("in ripa sabulosa fluvii Ilm Saxoniae"; O.F. Müller, 1774: 202).
- Types: ZMUC, No. GAS-661. The type series contains two syntypes collected in Weimar. This town is located on the Ilm river and thus this information does not contradict the original description.

- Global distribution: Europe, Northern Africa and north-western Asia.
- Distribution in the former USSR: The European part of RAC eastward to the Urals, southern part of the Western Siberia [Hubendick, 1970; Soldatenko & Starobogatov, 2004; Khokhutkin & Vinarski, 2013]. The presence of the species in the Issyk-Kul' Lake [Clessin, 1907] needs to be verified.
- Subregions: NE, SE, WS, CA (?)
- Bionomics: Lives in rivers and springs [Starobogatov *et al.*, 2004]
- IUCN conservation status: Not assessed.

507(675). *Ancylus expansilabris* Clessin, 1882

Ancylus expansilabris Clessin, 1882b: 51, pl. 6, fig. 12.

- Type locality: Germany and Belgium ("Deutschland ... Waldes, Falkenstein, im Regenfluss. Belgien"; Clessin, 1882b: 51).
- Types: Not traced. Clessin's collection was in Stuttgart Museum but totally destroyed during WWII [Dance, 1986].
- Global distribution: Northern Europe.
- Distribution in the former USSR: North of the European part of RAC [Soldatenko & Starobogatov, 2004].
- Subregions: NE.
- Bionomics: Lives in lotic habitats [Soldatenko & Starobogatov, 2004].
- IUCN conservation status: Not assessed.
- Remark: Clessin [1882b] himself quoted two earlier described taxa in the synonymy of *A. expansilabris* (*Ancylus fluviatilis* var. *depressus* Colbeau, 1859 and *A. fluviatilis* var. *lepidus* Colbeau, 1859). These names have the formal priority before *A. expansilabris* Clessin, 1882. The Western European malacologists [Hubendick, 1970; Welter-Schultes, 2012] did not accept *A. expansilabris* as a valid species.

507(676). *Ancylus orbicularis* Held, 1837

[= *Ancylus cyclostoma* Bourguignat, 1853; *A. vitraceus* Morelet, 1845]

Ancylus orbicularis Held, 1837: 305.

- Type locality: Germany, Bavaria (judging from the title of Held's paper).
- Types: Not traced. Held's collection was totally destroyed during WWII [G. Falkner, pers. comm.].
- Global distribution: Europe, except north [Clessin, 1882b; Starobogatov *et al.*, 2004].
- Distribution in the former USSR: Western Ukraine [Starobogatov *et al.*, 2004].
- Subregions: SE.
- Bionomics: Lives in streams and springs with rapid flow [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: The Western European malacologists [Hubendick, 1970; Glöer, 2002a; Welter-Schultes, 2012] did not accept *A. orbicularis* as a valid species.

**507(677). *Ancylus subcircularis*
Clessin, 1882**

Ancylus subcircularis Clessin, 1882b: 33.

- Type locality: Czech Republic, Liberec Town (= "Reichenberg in Böhmen"; Clessin, 1882b).
- Types: Not traced. Clessin's collection was in Stuttgart Museum but totally destroyed during WWII [Dance, 1986].
- Global distribution: Europe.
- Distribution in the former USSR: Soldatenko & Starobogatov [2004] reported two localities of this species situated near Sankt-Petersburg.
- Subregions: NE.
- Bionomics: Lives in lotic habitats [Soldatenko & Starobogatov, 2004].
- IUCN conservation status: Not assessed.
- Remark: The Western European malacologists [Hubendick, 1970; Glöer, 2002a; Welter-Schultes, 2012] did not accept *A. subcircularis* as a valid species. It should be noted that Starobogatov *et al.* [2004] did not include this species in their key, whereas Soldatenko & Starobogatov [2004] discussed it in detail.

**508(678). *Ancylus benoitianus*
Bourguignat, 1862**

Ancylus benoitianus Bourguignat, 1862b: 180-181.

- Type locality: Italy, Sicily.
- Types: MHNG, Bourguignat collection, No. 6010. The lot contains four syntypes [Sitnikova *et al.*, 2012].
- Global distribution: Southern Europe eastwards to the Caucasus.
- Distribution in the former USSR: The Western Transcaucasia, northern Ossetia, southern Daghestan [Soldatenko & Starobogatov, 2004; Starobogatov *et al.*, 2004].
- Subregions: CT
- Bionomics: Lives above water level in mountain springs [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: This species is usually considered as a synonym of *A. fluviatilis* [Hubendick, 1970], but the morphological data provided by Soldatenko & Starobogatov [2004] and Sitnikova *et al.* [2012] hint that it may constitute a distinct species.

**509(679). *Ancylus capuloides*
Jan in Porro, 1838**

[= *Ancylus fluviatilis* var. *capuliformis* Moquin-Tandon, 1855]

Ancylus capuloides Porro, 1838: 87-88, pl. 1, fig. 7.

- Type locality: Italy, in several locations: "lago di Como al prato Pasquee ed allo sbocco de torrente Breccia; ... torrente Bevera in Brianza".
- Types: Not traced.
- Global distribution: Southern Europe eastwards to the Caucasus.
- Distribution in the former USSR: The Cis- and Transcaucasia [Starobogatov *et al.*, 2004].
- Subregions: CT
- Bionomics: Lives in rivers and springs [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

• Remark: This species is usually considered as a synonym of *A. fluviatilis* [Hubendick, 1970], but the morphological data provided by Soldatenko & Starobogatov [2004] hint that it may constitute a distinct species. Three more species of *Ancylus* living in the Caucasian region and accepted by Russian malacologists as valid are conchologically similar to *A. capuloides* and, probably, are its juniors synonyms (see below).

**509(680). *Ancylus armenia*
Boettger, 1881**

Ancylus fluviatilis var. *armenia* Boettger, 1881b: 128.

- Type locality: The Transcaucasia: vicinities of Erevan City and the Khozapini (or Kartsakhi) Lake (situated on the Georgian-Turkey boundary).
- Types: "Lectotype" SMF No. 14976a, "paralectotypes" Nos. 14976b/3, 149674/4.
- Global distribution: Endemic to the Caucasian region.
- Distribution in the former USSR: Armenia [Soldatenko & Starobogatov, 2004] and Georgia [Boettger, 1881b].
- Subregions: CT.
- Bionomics: Lives in mountain springs [Soldatenko & Starobogatov, 2004].
- IUCN conservation status: Not assessed.

**509(681). *Ancylus gibbosus*
Bourguignat, 1853**

Ancylus gibbosus Bourguignat, 1853: 186.

- Type locality: Northern France, in several localities: "département de l'Oise (Baudon), des environs de Verdun (Liénard), enfin de plusieurs petits russeaux de Vendeuvre-sur-Barge (Aule)".
- Types: MHNG, Bourguignat collection, Nos. 6022, 6026, 6027, 6028, 6029, 6030, and 6031. There are 72 syntypes of *A. gibbosus* in MHNG [fide Sitnikova *et al.*, 2012].
- Global distribution: Southern Europe eastwards to Caucasus.

- Distribution in the former USSR: The cis- and Transcaucasia [Starobogatov *et al.*, 2004].
- Subregions: CT
- Bionomics: Lives in mountain rivers [Soldatenko & Starobogatov, 2004].
- IUCN conservation status: Not assessed.

**509(682). *Ancylus janii*
Bourguignat, 1853**

[= *Ancylus fluviatilis* sensu Akramowski, 1976, non Linnaeus, 1758]

Ancylus janii Bourguignat, 1853: 185.

- Type locality: To determine the type locality of this species is not easy. Bourguignat [1853] himself considered it as identical to *A. capuloides* Jan and introduced the new name for it as if the name *A. capuloides* was unavailable. Bourguignat stated that this species was for the first time discovered by Jan in Lombardy (North Italy). Some authors [Kantor *et al.*, 2010; Sitnikova *et al.*, 2012] accepted Lombardy as the *locus typicus* of *A. janii*. However, Bourguignat [1853] mentioned much more localities of this species situated beyond Lombardy (Sicily, France, Spain) and most of its syntypes were, in fact, collected far from Lombardy [fide Sitnikova *et al.*, 2012]. Possibly, the type locality of *A. janii* should be stated as "south-eastern Europe".
- Types: MHNG, Bourguignat collection. There are 24 lots of probable syntypes in MHNG [fide Sitnikova *et al.*, 2012].
- Global distribution: Southern Europe eastwards to the Caucasus.
- Distribution in the former USSR: The Cis- and Transcaucasia, including Armenia, Azerbaijan, Georgia, and Krasnodar Region of Russia [Soldatenko & Starobogatov, 2004].
- Subregions: CT
- Bionomics: Lives in mountain rivers, brooks and waterfalls [Soldatenko & Starobogatov, 2004].
- IUCN conservation status: Not assessed.
- Remark: Sitnikova *et al.* [2012] failed to find significant differences between the syntypes of *A. gibbosus* and *A. janii* and hypothesized that the two species may be identical.

509(683). *Ancylus major* Issel, 1865

Ancylus jani var. *major* Issel, 1865: 428, pl. 3, figs. 58-61.

- Type locality: Armenia, Erevan Fortress.
- Types: Not traced.
- Global distribution: Endemic to the Caucasian Region.
- Distribution in the former USSR: Armenia [Soldatenko & Starobogatov, 2004].
- Subregions: CT
- Bionomics: Lives in mountain streams [Soldatenko & Starobogatov, 2004].
- IUCN conservation status: Not assessed.

Genus *Ferrissia* Walker, 1903

[= *Gundlachia* L. Pfeiffer, 1850, partim; *Kincaidilla* Hannibal, 1912; *Watsonula* Mirolli, 1960]

Type species: *Ancylus rivularis* Say, 1817 (OD)

Remark: Brown [1965] placed this genus into the family Ferrissiidae Walker, 1917.

510(684). *Ferrissia fragilis* (Tryon, 1863)

[= *Watsonula wautieri* Mirolli, 1960]

Ancylus fragilis Tryon, 1863b: 149, pl. 1, fig. 15.

- Type locality: USA, California, Laguna Honda.
- Types: Not traced.
- Global distribution: The native part of the range is situated in North America (USA, S Ontario, S Quebec, SW British Columbia) [Welter-Schultes, 2012]. The species is widely distributed now in the Old World due to aquarium trade. It has been registered in many European countries as well as in Israel and Syria [Falkner & von Proschwitz, 1995] and south-eastern Asia [Walther *et al.*, 2006].
- Distribution in the former USSR: Introduced to waterbodies of the European part of RAC and to southern part of the Western Siberia, the Transcaucasia

and Central Asia [Stadnichenko, 1990; Starobogatov *et al.*, 2004; Son, 2007; Sharapova, 2008; Khokhutkin & Vinarski, 2013].

- Subregions: NE, SE, CT, WS, CA (introduced).
- Bionomics: Lives in waterbodies of different types, mainly in lentic ones. In Siberia and North Europe may live only in waterbodies with artificially changed temperature regime [Khokhutkin & Vinarski, 2013].
- IUCN conservation status: Not assessed.
- Remark: *F. fragilis* is among the most successful and widespread invasive species of aquatic pulmonates throughout the Globe. Since 1960, it has been mentioned in the European literature under the name *Ferrissia wautieri* (Mirolli, 1960), though the authors from the former USSR used other binomial names for it, for example, *Pettancylus petterdi* (Johnston, 1879) [Kafanov & Starobogatov, 1971], or *P. australicus* (Tate, 1880) [Stadnichenko, 1990]. The identity between *F. wautieri* and the Nearctic species *F. fragilis* was established about ten years ago by means of molecular methods [Walther *et al.*, 2006, 2010] and now it is accepted by most researchers. Topotypes of *F. wautieri* also proved to be identical with North American snails [Albrecht *et al.*, 2014b].

Subfamily Biomphalariinae**H. Watson, 1954**

[= Acrorbini Starobogatov, 1958; Drepanotrema-tini Zilch, 1959; Taphiinae Harry & Hubendick, 1964]

Type genus: *Biomphalaria* Preston, 1910

Remark: This subfamily corresponds to C-clade in Albrecht *et al.* [2007] molecule-based hypothesis of phylogenetic relationships within Planorboidea. Most

species of *Biomphalaria* registered within RAC boundaries are non-indigenous snails able to colonize new localities due to aquarium trade.

Genus *Biomphalaria* Preston, 1910

[= *Planorbina* Haldeman, 1842; *Taphius* H. et A. Adams, 1855; *Armigerus* Clessin, 1884; *Australorbis* Pilsbry, 1934]³⁸

Type species: *Biomphalaria smithi* Preston, 1910 (OD)

511(685). *Biomphalaria glabrata* (Say, 1818)

[= *Planorbis lutescens* Lamarck, 1822; *Planorbis guadaloupensis* Sowerby, 1822; *Planorbis albescens* A.J. Wagner, 1828; *Planorbis ferrugineus* A.J. Wagner, 1828; *Planorbis lugubris* A.J. Wagner, 1828; *Planorbis nigricans* A.J. Wagner, 1828; *Planorbis olivaceus* A.J. Wagner, 1828; *Planorbis viridis* A.J. Wagner, 1828; *Planorbis striatulus* Beck, 1837; *Planorbis antillarum* Beck, 1838; *Planorbis lundii* Beck, 1838; *Planorbis concavospira* Anton, 1839; *Planorbis bolivianus* Dunker, 1850; *Planorbis cumingianus* Dunker, 1850; *Planorbis bahiensis* Dunker, 1850; *Planorbis becki* Dunker, 1850; *Planorbis refulgens* Dunker, 1853; *Planorbis dentifer* Moricand, 1853; *Planorbis xerampelinus* Drouët, 1859; *Planorbis antiguensis* Sowerby, 1877; *Planorbis blauneri* Germain, 1921; *Planorbis confusus* Lutz, 1923; *Planorbis immunis* Lutz, 1923; *Planorbis glabratus christopherensis* Pilsbry, 1934]

Planorbis glabratus Say, 1818: 280.

- Type locality: Originally stated as USA, South Carolina. Pilsbry [1934] regarded this statement as erroneous; he suggested that, in reality, the shells served Say to describe a new species were collected in Guadeloupe Island.

³⁸ ICZN 0.735: ruled under the plenary powers to be given precedence over *Planorbina* Haldeman, 1842, *Taphius* Adams & Adams, 1855, and *Armigerus* Clessin, 1884 whenever it and any of the other genera are considered synonyms (ICZN 1987: 55) [taken from www.animalbase.org].

- Types: Not traced.
- Global distribution: The native part of the range is restricted to Central and South America [Paraense, 2001]. Introduced to some Old World countries, for example, to Egypt [Yousif *et al.*, 1996].
- Distribution in the former USSR: Introduced to waterbodies of Odessa Region, South Ukraine [Son, 2007].
- Subregions: SE (introduced).
- Bionomics: All species of *Biomphalaria* live in varied habitats, including small pools, lakes, streams and irrigation channels [Brown, 1994].
- IUCN conservation status: Not assessed.
- Remark: Son [2007] gave only picture of shell of *Biomphalaria glabrata* found by him in Odessa Region without providing any information on its reproductive anatomy. Given that the anatomy is more reliable tool for identification of snails of this genus [Jarne *et al.*, 2010], it cannot be ruled out that, in fact, the snails registered in Ukraine may belong to other species, for example, to *B. tenagophila* (d'Orbigny, 1835) recently found in Romania [Majoros *et al.*, 2008].

Genus *Menetus*

H. et A. Adams, 1855

Type species: *Planorbis opercularis* Gould, 1847 (SD Dall, 1870)

Subgenus *Dilatata* Clessin, 1885

[= *Micromenetus* F.C. Baker, 1945]

Type species: *Planorbis dilatatus* Gould, 1841 (SD Falkner *et al.*, 2002)

512(686). *Menetus (Dilatata) dilatatus* (Gould, 1841)

[= *Planorbis brogniartianus* Lea, 1842; *Planorbis alabamensis* Pilsbry, 1895]

Planorbis dilatatus Gould, 1841: 280.

- Type locality: USA, in different localities (“... island of Nantucket ... Baltimore ... at Hingham, in a small pool, southeast of the Old Colony House”; Gould, 1841: 211).
- Types: Not traced.
- Global distribution: North America (New England to Florida and Texas), introduced to Germany, Czech Republic, Poland and since the 1860s to Britain (Wales, England) [Welter-Schultes, 2012].
- Distribution in the former USSR: Introduced to waterbodies of Ukraine [Stadnichenko, 2014].
- Subregions: SE (introduced).
- Bionomics: In Ukraine, the species has been registered from water reservoirs serving as cooling ponds for electric power stations [Stadnichenko, 2014].
- IUCN conservation status: LC (least concern).
- Remark: The species is sometimes referred to as *Micromenetus dilatatus* [Thompson, 1983; Stadnichenko, 1990, 2014; Johnson *et al.*, 2013]. However, as Falkner *et al.* [2002] pointed out, *Micromenetus* is nothing but a junior synonym of the subgenus *Dilatata* Clessin, 1885.

Genus *Planorbella* Haldeman, 1843

[= *Helisoma* Swainson, 1840, partim; *Adula* H. Adams, 1861, non H. et A. Adams, 1857; *Ancaeus* H. Adams, 1869, non Fauvel, 1863; *Hypsogyra* Lindholm, 1927]

Type species: *Planorbis campanulatus* Say, 1821 (SM Haldeman, 1844)

513(687). *Planorbella anceps* (Menke, 1830)

Planorbis anceps Menke, 1830: 36.

- Type locality: Not stated. Menke [1830] quoted a figure of a planorbid

shell depicted by Lister *et al.* [1686, pl. 139, fig. 44]. The locality of Lister’s original shell is unknown.

- Types: Not traced.
- Global distribution: Mexico to central Canada (southern Hudson Bay), occasionally introduced to European waters [Welter-Schultes, 2012].
- Distribution in the former USSR: Introduced to waterbodies of the Middle Urals and the Western Siberia [Yanygina & Vinarski, 2010; Khokhutkin & Vinarski, 2013].
- Subregions: WS (introduced).
- Bionomics: In Siberia, this species has been registered from water reservoirs serving as cooling ponds for electric power stations [Khokhutkin & Vinarski, 2013].
- IUCN conservation status: Not assessed.
- Remark: The species is sometimes placed into the genus *Helisoma* Swainson [Welter-Schultes, 2012; Johnson *et al.*, 2013]. Burch [1989] accepted two subspecies of *H. anceps*. According to Glöer [2002a], the European waterbodies are inhabited by the nominotypic subspecies.

514(688). *Planorbella duryi* (Wetherby, 1879)

Planorbis (Helisoma) duryi Wetherby, 1879: 99, fig. 4.

- Type locality: USA, Florida (Everglades and Miami country).
- Types: Not traced.
- Global distribution: Originally described from Florida (USA), introduced to Northern, Eastern and South Africa, Peru, Brazil, Hawaii, in Europe reported from isolated spots in various countries [Alexandrowicz, 2003; Welter-Schultes, 2012; Lotfy & Lotfy, 2015].
- Distribution in the former USSR: In-

roduced to waterbodies of Odessa Region (south of Ukraine) [Son, 2007] and the Angara River basin (the Eastern Siberia) [Sitnikova *et al.*, 2010].

- Subregions: SE, ES (introduced).
- Bionomics: Lives in waterbodies of different type, including streams and irrigation channels [Son, 2007; Sitnikova *et al.*, 2010].
- IUCN conservation status: Not assessed.
- Remark: This species was mentioned by Starobogatov *et al.* [2004] as *Seminolina eudiscus* (Pilsbry, 1934). Usually, this taxon is regarded as a subspecies of *P. duryi* or as one of its intraspecific forms [Alexandrowicz, 2003]. Johnson *et al.* [2013] did not accept it as a valid species or subspecies. Glöer [2002a] used the taxonomic name *P. duryi duryi* for designation of European (introduced) populations of this species.

**515(689). *Planorbella hornii*
(Tryon, 1865)**

Planorbis hornii Tryon, 1865: 231, pl. 22, fig. 16.

- Type locality: Stated as “Fort Simpson, British America”. There is some confusion as to whether this meant Fort Simpson on the Mackenzie River in the Northwest Territories, or Fort Simpson, British Columbia [Dall 1905].
- Types: Not traced.
- Global distribution: North America and northeastern Asia.
- Distribution in the former USSR: The Chukchi Peninsula, vicinities of Anadyr’ Town [Starobogatov *et al.*, 2004].
- Subregions: NF.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: DD (data deficient).
- Remark: Burch [1989] and Johnson *et al.*

al. [2013] did not include this species into their lists of North American freshwater mollusks. Some old authors regarded it as a subspecies of *P. trivolvis* (Say, 1817) [Pilsbry, 1899; Henderson & Daniels, 1917]. Possibly, shells of this species were reported by Lindholm [1932b] from Pleistocene deposits on Kolyma River.

**Subfamily Bulininae
P. Fischer et Crosse, 1880**

[= Laevapicinae Hannibal, 1912; Isidorinae Annandale, 1922; Gundlachiinae Starobogatov, 1967]

Type genus: *Bulinus* O.F. Müller, 1781

Remark: The genus *Planorbarius* Duméril, 1805 has usually been classified within the family Bulinidae in the Russian literature [Starobogatov & Prozorova, 1990; Starobogatov *et al.*, 2004]. According to molecular phylogenetic data provided by Albrecht *et al.* [2007], it is incorrect, and *Planorbarius* should be placed within subfamily Coretinae Gray, 1847 (= Camptoceratinae Dall, 1870).

Genus *Culmenella* Clench, 1927

[= *Glyptophysa* Crosse, 1872; *Culmenellina* Starobogatov et Prozorova, 1990]

Type species: *Bulinus hirasei* Clench, 1927 (M)

**516(690). *Culmenella rezvoji*
(Lindholm, 1929)**

Glyptophysa rezvoji Lindholm, 1929b: 305-306.

- Type locality: Russia, the Primorye Territory, Yakovlevka village at the Daubikhe River.
- Types: ZIN, Nos. 1–4 in systematic catalogue. The type series contains the

lectotype (No. 3) and three paralecotypes.

- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Primorye Territory (except its north-eastern part) and the Amur River basin.
- Subregions: SF.
- Bionomics: Lives in shallow permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: DD (data deficient).
- Remark: Two conchologically similar species were described by Starobogatov & Prozorova [1990] from the same type locality. Their validity needs to be checked.

**517(691). *Culmenella buldowskii*
Starobogatov et Prozorova, 1990**

Culmenella buldowskii Starobogatov & Prozorova, 1990: 33-34, fig. 1 (8), 2 (5).

- Type locality: Russia, the Primorye Territory, the Khanka Lake near Astrakhanka village (approximately 44°44'30"N; 132°04'00"E).
- Types: ZIN, Nos. 1–7 in systematic catalogue. The type series consists of the holotype and 15 paratypes.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The lower Amur basin and the Primorye Territory [Sitnikova *et al.*, 2014b].
- Subregions: SF.
- Bionomics: Lives in permanent mesotrophic waterbodies [Sitnikova *et al.*, 2014b].
- IUCN conservation status: Not assessed.

**516(692). *Culmenella lindholmi*
Starobogatov et Prozorova, 1990**

Culmenella lindholmi Starobogatov & Prozorova, 1990: 31-33, fig. 1 (2), 2 (4).

- Type locality: Russia, the Primorye Territory, the Khanka Lake near Astrakhanka vil-

lage (approximately 44°44'30"N; 132°04'00"E).

- Types: ZIN, Nos. 1–12 in systematic catalogue. The type series consists of the holotype and 39 paratypes.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The lower Amur basin and the Primorye Territory [Sitnikova *et al.*, 2014b].
- Subregions: SF.
- Bionomics: Lives in permanent mesotrophic waterbodies [Sitnikova *et al.*, 2014b].
- IUCN conservation status: Not assessed.

Subfamily Coretinae Gray, 1847

[= Pompholicinae Dall, 1866; Camptoceratinae Dall, 1870; Megasystrophinae Tyron, 1871; Pompholycodeinae Lindholm, 1927; Helisomatinae F.C. Baker, 1928; Bayardellini Starobogatov et Prozorova, 1990; Planorbariini Starobogatov et Prozorova, 1990]

Type genus: *Coretus* Gray, 1847 = *Planorbarius* Duméril, 1805

Genus *Planorbarius* Duméril, 1805

[= *Planorbis* O.F. Müller, 1774, partim; *Coretus* Gray, 1847; *Spirodiscus* Stein, 1850; *Deserticoretus* Starobogatov et Prozorova, 1990]

Type species: *Helix cornea* Linnaeus, 1758 (SM)

Remark: Traditionally, all representatives of this genus living in the RAC area were treated as a single species *P. corneus* (L., 1758) with a few varieties [Zhadin, 1933, 1952]. Since 1973, Soviet malacologists used much more detailed classification with acceptance of four to eight species of *Planorbarius* [Krivosheina & Starobogatov, 1973; Starobogatov, 1977c; Stadnichenko, 1990; Starobogatov *et al.*, 2004]. Recent studies based on allozymic data [Mezh-

zherin *et al.*, 2005] as well as on results of statistical treatments of shell variation [Khokhutkin & Vinarski, 2013] have shown that real species diversity of *Planorbarius* is significantly lower, and many of species accepted by Starobogatov *et al.* [2004] are nothing but forms of intraspecific variation of *P. corneus* s.l. However, the question of how many species of *Planorbarius* live in ex-USSR still remains open.

**517(693). *Planorbarius corneus*
(Linnaeus, 1758)**

[= *Planorbis purpura* O.F. Müller, 1774; *Planorbis similis* O.F. Müller, 1774; *Helix nana* Pennant, 1777; *Helix cornu arietis* Da Costa, 1778; *Planorbis corneus* var. *albinos* Moquin-Tandon, 1855; *Planorbis anthracius* Bourguignat, 1859; *Planorbis banaticus* Bourguignat, 1859; *Planorbis elophilus* Bourguignat, 1859; *Planorbis etruscus* Bourguignat, 1859; *Planorbis nordenskiöldi* Bourguignat, 1859; *Planorbis corneus* var. *minor* Bielz, 1863; *Planorbis corneus* var. *pumila* Mörch, 1864; *Planorbis mabiliei* Bourguignat, 1870; *Planorbis megistus* Bourguignat, 1870; *Planorbis penchinati* Bourguignat, 1870; *Planorbis corneus* var. *ammonoceras* Westerlund, 1871; *Planorbis conemoni* Letourneux, 1881; *Planorbis praeclarus* Letourneux, 1881; *Planorbis tacitei* Letourneux, 1881; *Planorbis metatarsius* Servain, 1881; *Planorbis corneus* var. *pinguis* Westerlund, 1885; *Planorbis helophilus* Lo-card, 1893]

Helix cornea Linnaeus, 1758: 770.

- Type locality: Europe (“Habitat in Europae aquis dulcibus”; Linnaeus, 1758: 770).
- Types: Not traced. Absent in LSL [Hanley, 1855] and UUZM [Wallin, 2001] and probably lost.
- Global distribution: Europe and the Western Siberia.
- Distribution in the former USSR: The European part of RAC, the Western Siberia [Stadnichenko, 1990; Vinarski *et al.*, 2007]. An old record of this species from the Baikal Lake [B. Dybowski,

1913] raises serious doubts, therefore *P. corneus* is not included into the most recent check-list of the Baikalian snails [Sitnikova *et al.*, 2004].

- Subregions: NE, SE, WS.
- Bionomics: Lives in large permanent waterbodies, both lotic and lentic [Starobogatov *et al.*, 2004].
- IUCN conservation status: LC (least concern).
- Remark: Mezhzherin *et al.* [2005] treated *P. purpura* (O.F. Müller, 1774) sensu Starobogatov, 1977 and *P. banaticus* (Bourguignat, 1859) sensu Starobogatov, 1977 as synonyms of *P. corneus*.

**517(694). *Planorbarius adelosius*
(Bourguignat, 1859)**

Planorbis adelosius Bourguignat, 1859: 518, pl. 19, figs. 13-15.

- Type locality: Italy, in Toscana and environs of Pisa.
- Syntypes: MHNG, Nos. 7367 and 7368 [see Sitnikova *et al.*, 2012 for details].
- Global distribution: Europe and the Western Siberia.
- Distribution in the former USSR: The European part of RAC and south of the Western Siberia [Sitnikova *et al.*, 2012; Khokhutkin & Vinarski, 2013].
- Subregions: NE, SE, WS.
- Bionomics: Lives in small permanent waterbodies [Sitnikova *et al.*, 2012].
- IUCN conservation status: Not assessed.
- Remark: Though the type locality of this species is situated in Italy, *P. adelosius* is not included into most recent European check-lists and keys [Falkner *et al.*, 2001; Glöer, 2002a; Welter-Schultes, 2012]. Khokhutkin & Vinarski [2013] reported that there are no significant anatomical differences between *P. adelosius* and *P. corneus* s. l. though the two species can be distinguished on the basis of their shell proportions. *P. adelosius* has been not genetically assessed in study of Mezhzherin *et al.* [2005], and its validity needs to be verified.

**517(695). *Planorbarius grandis*
(Dunker, 1850)**

Planorbis grandis Dunker, 1850: 35, pl. 7, figs. 1-3.

- Type locality: Not stated. Locality of type specimen(s) was unknown for the author himself [Dunker, 1850].
- Types: Not stated.
- Global distribution: Europe.
- Distribution in the former USSR: Northwestern part of the Black Sea maritime area, possibly also in the Baltic Sea basin [Starobogatov *et al.*, 2004].
- Subregions: SE.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Despite some morphological differences between *P. grandis* and *P. corneus*, Western European authors did not distinguish these two species regarding *P. grandis* as a junior synonym of *P. corneus* [Glöer, 2002a; Welter-Schultes, 2012]. Mezhzherin *et al.* [2005] also failed to find any substantial differences between the two taxa.

Addition to the genus *Planorbarius*. One more species of this genus, *P. stenostoma* (Bourguignat in Servain, 1881), has been included in the most recent handbooks and determination keys of the ex-USSR mollusks [Starobogatov *et al.*, 2004; Kantor & Sysoev, 2005]. Its alleged distribution in RAC includes steppe areas of south Europe and the Western Siberia to Altay [Starobogatov *et al.*, 2004]. Having examined several representative malacological collections (ZIN, ZMMU, ZMB, NMG, NHMV), we failed to find any specimen of *P. stenostoma* collected from the former USSR territory. All shells of this species from the museum collections were sampled in Transylvania (Romania), near the type locality. Stadnichenko [1990] did not record *P. stenostoma* from the territory of Ukraine, including its steppe

regions. We decided not to include this species to the list of RAC malacofauna until reliable findings of it will become available.

**Subfamily Segmentininae
F.C. Baker, 1945**

Type genus: *Segmentina* Fleming, 1818

Remark: The rank of this taxon is not established unanimously. Bouchet & Rocroi [2005] regarded it as a tribe of the family Planorbidae, whereas the molecular genetic data presented by Albrecht *et al.* [2007] indicated it to be a sister group for the clade containing the genera *Anisus*, *Planorbis*, and *Gyraulus*. Hence, it seems to be proper to regard this taxon as a subfamily within Planorbidae s. l.

Genus *Segmentina* Fleming, 1818

[= *Parasegmentina* Kruglov et Soldatenko, 1997;
Subsegmentina Kruglov et Soldatenko, 1997]

Type species: *Nautilus lacustris* Lightfoot, 1788 = *Planorbis nitidus* O.F. Müller, 1774 (M)

Remark: There are two drastically different approaches to estimating the species richness of this genus. Beyond ex-USSR countries, all representatives of *Segmentina* are usually united under a single polymorphic species, *S. nitida* (O.F. Müller, 1774) [Falkner *et al.*, 2001, 2002; Glöer, 2002a; Welter-Schultes, 2012]. On the other hand, Kruglov & Soldatenko [1997] proposed to split *Segmentina* in a series of taxa, including three subgenera and not less than 14 separate species, some of which are characterized by more or less prominent conchological and anatomical differences. It is quite possible that there are more

than one valid species of *Segmentina* in Europe, but in most cases additional evidences are needed. Here, we accept provisionally three species of the genus corresponding to the three subgenera distinguished by Kruglov & Soldatenko [1997]. The status of other nominal species of *Segmentina* accepted by the Russian malacologists [Starobogatov *et al.*, 2004] is unclear and they well may represent junior synonyms of *S. nitida* s. l.

**518(696). *Segmentina nitida*
(O.F. Müller, 1774)**

[= *Planorbis microcephalus* Moquin-Tandon, 1855]

Planorbis nitidus Müller, 1774: 163-164.

- Type locality: Denmark [see Nekhaev *et al.*, 2015 for details].
- Types: A single lot, ZMUC-GAS-585, containing seven specimens from the collection of Fabricius, no exact locality is given. Kennard & Woodward [1920] reported three other specimens of this species probably donated by Müller and kept in collections of LSL.
- Global distribution: Europe and the Western Siberia.
- Distribution in the former USSR: The European part of RAC, except for its extreme north-east, southern parts of the Urals and the Western Siberia [Starobogatov *et al.*, 2004; Khokhutkin & Vinarski, 2013].
- Subregions: NE, SE, WS.
- Bionomics: Lives in small permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

**518(697). *Segmentina avencenninae*
Izzatullaev, 1980**

Segmentina avencenninae Izzatullaev, 1980: 406, fig. 1, A, B, a, b, e.

- Type locality: Turkmenistan, Kerkichi, right bank of the Amu-Darya River.

- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to Central Asia.
- Distribution in the former USSR: Type locality [Izzatullaev, 1980].
- Subregions: CA.
- Bionomics: Unknown.
- IUCN conservation status: DD (data deficient).
- Remark: The species was described on the basis of a single empty shell and thus its taxonomic identity is unclear.

**518(698). *Segmentina caucasica*
Kruglov et Soldatenko, 1997**

Segmentina caucasica Kruglov & Soldatenko, 1997: 126, figs. 4D, 7D, 11B.

- Type locality: Russia, the northern Caucasus, Northern Ossetia Republic, road to Alagir near Gizel' village, a puddle (approximately 43°02'00"N; 44°33'00"E).
- Types. Nos. 1 and 2 in systematic catalogue. According to Kruglov & Soldatenko [1997], the type series includes the holotype and six paratypes. Actually, only the holotype and two paratypes are kept in ZIN.
- Global distribution: Endemic to the Caucasus.
- Distribution in the former USSR: Type locality [Kruglov & Soldatenko, 1997].
- Subregions: CT.
- Bionomics: Lives in temporary waterbodies [Kruglov & Soldatenko, 1997].
- IUCN conservation status: DD (data deficient).

**518(699). *Segmentina inniae*
Kruglov et Soldatenko, 1997**

Segmentina inniae Kruglov & Soldatenko, 1997: 117-118, fig. 3C.

- Type locality: Latvia, Skrunda district, fish farm "Rita Ausma", pond No. 33.
- Types. According to Kruglov & Soldatenko [1997], the type series includes the holotype and 10 paratypes. Actually, only the holotype is kept in ZIN (under No. 1 in systematic catalogue).
- Global distribution: Endemic to the Baltic Sea region.

- Distribution in the former USSR: Type locality [Kruglov & Soldatenko, 1997].
- Subregions: NE.
- Bionomics: Lives in temporary waterbodies [Kruglov & Soldatenko, 1997].
- IUCN conservation status: Not assessed.
- Remark: Though the type locality of this species is situated in Eastern Europe, *S. inniae* is not included to the most recent check-lists of European malacofauna [Welter-Schultes, 2012; Bank, 2014].

**518(700). *Segmentina lineata*
Kruglov et Soldatenko, 1997**

Segmentina lineata Kruglov & Soldatenko, 1997: 121-122, figs. 3F, 6D, 10A.

- Type locality: The locality of the holotype — Russia, Smolensk Region, Dorogobuzh District, a pond in Ushakovo village (54°44'20"N; 33°28'27"E). The paratypes originated from the same locality as well as from the European Russia, Latvia, Bosnia-Herzegovina and Bavaria (Erlangen).
- Types. ZIN, Nos. 1–9 in systematic catalogue. The type series includes the holotype and 20 paratypes.
- Global distribution: The Central and Eastern Europe.
- Distribution in the former USSR: The European part of Russia, except of south; Latvia [Kruglov & Soldatenko, 1997].
- Subregions: NE.
- Bionomics: Lives in shallow permanent waterbodies [Kruglov & Soldatenko, 1997].
- IUCN conservation status: Not assessed.
- Remark: Though localities of this species reported in the original description are situated in the Central and Eastern Europe, *S. lineata* is not included in the most recent check-lists of European malacofauna [Falkner *et al.*, 2001; Welter-Schultes, 2012; Bank, 2014].

**518(701). *Segmentina malkae*
Kruglov et Soldatenko, 1997**

Segmentina malkae Kruglov & Soldatenko, 1997: 126-128, figs. 4E, 8A, 11C.

- Type locality: Russia, the Northern Caucasus, Republic of Kabardino-Balkaria, the

Malka River near village Ekaterinogradskaya (approximately 43°44'50"N; 44°13'30"E).

- Types. ZIN, Nos. 1 and 2 in systematic catalogue. According to Kruglov & Soldatenko [1997], the type series includes the holotype and nine paratypes. Actually, only the holotype and two paratypes are kept in ZIN.
- Global distribution: Endemic to the Caucasus.
- Distribution in the former USSR: Type locality [Kruglov & Soldatenko, 1997].
- Subregions: CT.
- Bionomics: Lives in temporary waterbodies [Kruglov & Soldatenko, 1997].
- IUCN conservation status: DD (data deficient).

**518(702). *Segmentina molytes*
(Westerlund, 1885)**

Planorbis nitidus var. *molytes* Westerlund, 1885: 86.

- Type locality: Germany, near Heidelberg and Vege sack.
- Types. NMG, No. 4030. There is a single shell (syntype) in the type series [Vinarski *et al.*, 2013b].
- Global distribution: Europe and the Western Siberia.
- Distribution in the former USSR: The European part of RAC, except its extreme north, northern Kazakhstan, probably the Altay [Kruglov & Soldatenko, 1997].
- Subregions: NE, SE, WS.
- Bionomics: Lives in shallow permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Though the type locality of this species is situated in Germany, *S. molytes* is not included in the most recent check-lists of European malacofauna [Glöer, 2002a; Welter-Schultes, 2012; Bank, 2014].

**518(703). *Segmentina montgazoniana*
Bourguignat in Servain, 1881**

Segmentina montgazoniana Servain, 1881: 89-90.

- Type locality: France, Aube Department, in different localities ("dans les mares des villages de la Villeneuve, la Ville-au-Bois, la Loge-aux-Chèvres, etc"; Servain, 1881: 90).

- Types. Not traced.
- Global distribution: Europe.
- Distribution in the former USSR: The European part of RAC, except its southern regions [Kruglov & Soldatenko, 1997].
- Subregions: NE, SE.
- Bionomics: Lives in shallow permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Though the type locality of this species is situated in France, *S. montgazoniana* is not included in the most recent check-lists of European malacofauna [Falkner *et al.*, 2002; Glöer, 2002a; Welter-Schultes, 2012; Bank, 2014]. However, Westerlund [1885] treated it as a species of its own distinct from *S. nitida*.

**518(704). *Segmentina oelandica*
(Westerlund, 1885)**

Planorbis nitidus var. *oelandicus* Westerlund, 1885: 86.

- Type locality: Sweden, Borgholm Town in the Öland Island.
- Types. NMG, No. 4031. The type series includes six syntypes [see Vinarski *et al.*, 2013b for details].
- Global distribution: Europe and the Western Siberia.
- Distribution in the former USSR: The European part of RAC, except its extreme north, south of the Western Siberia [Vinarski *et al.*, 2007; Khokhutkin & Vinarski, 2013].
- Subregions: NE, SE, WS.
- Bionomics: Lives in permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Though the type locality of this species is situated in Sweden, *S. oelandica* is not included in the most recent check-lists of European malacofauna [Glöer, 2002a; Welter-Schultes, 2012; Bank, 2014].

**518(705). *Segmentina petropolitana*
Kruglov et Soldatenko, 1997**

Segmentina petropolitana Kruglov & Soldatenko, 1997: 124-126, figs. 4C, 7C, 11A.

- Type locality: The locality of the holotype — Ukraine, Vinnitsa Region, environs of Vin-

nitsa City (approximately 49°14'N; 28°28'E). Paratypes originated from two localities situated in vicinities of Sankt-Petersburg and Smolensk Region of Russia [see Kruglov & Soldatenko, 1997 for details].

- Types. ZIN, Nos. 1 and 2 in systematic catalogue. According to Kruglov & Soldatenko [1997], the type series includes the holotype and three paratypes. Actually, only the holotype and two paratypes are kept in ZIN.
- Global distribution: The Central and Eastern Europe.
- Distribution in the former USSR: The European part of RAC, except of south [Kruglov & Soldatenko, 1997].
- Subregions: NE, SE.
- Bionomics: Lives in shallow permanent waterbodies [Kruglov & Soldatenko, 1997].
- IUCN conservation status: DD (data deficient).
- Remark: Though localities of this species reported in the original description are situated in Eastern Europe, *S. petropolitana* is not included in the most recent check-lists of European malacofauna [Falkner *et al.*, 2001; Welter-Schultes, 2012; Bank, 2014].

**518(706). *Segmentina servaini*
Bourguignat in Servain, 1881**

Segmentina servaini Servain, 1881: 86-87.

- Type locality: Hungary and Croatia — the Balaton Lake and environs of Krapina Town.
- Types. Not traced.
- Global distribution: Europe and the Western Siberia.
- Distribution in the former USSR: The European part of RAC, except north-east, the Irtysh River basin (the Western Siberia) [Kruglov & Soldatenko, 1997; Vinarski *et al.*, 2007; Khokhutkin & Vinarski, 2013].
- Subregions: NE, SE, WS.
- Bionomics: Lives in shallow permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: DD (data deficient).
- Remark: Though the type locality of this species is situated in Eastern Europe, *S. servaini* is not included in the most recent check-lists of European malacofauna [Falkner

et al., 2001; Glöer, 2002a; Welter-Schultes, 2012; Bank, 2014].

**518(707). *Segmentina starobogatovi*
Kruglov et Soldatenko, 1997**

Segmentina starobogatovi Kruglov & Soldatenko, 1997: 124-126, figs. 4C, 7C, 11A.

- Type locality: The locality of the holotype — Russia, Kalinigrad Region, Rybachiy settlement, a puddle on a meadow. The paratypes originate from the same locality as well as from Germany (Ochsenfurt, Bavaria) and the European Russia (several localities in Moscow and Vladimir regions) [see Kruglov & Soldatenko, 1997 for details].
- Types. ZIN, Nos. 1–5 in systematic catalogue. The type series includes the holotype and 124 paratypes.
- Global distribution: The Central and Eastern Europe.
- Distribution in the former USSR: The European part of RAC, except of south [Kruglov & Soldatenko, 1997].
- Subregions: NE.
- Bionomics: Lives in shallow permanent and semipermanent waterbodies [Kruglov & Soldatenko, 1997].
- IUCN conservation status: DD (data deficient).
- Remark: Though localities of this species reported in the original description are situated in the Central and Eastern Europe (Germany, Russia), *S. starobogatovi* is not included in the most recent check-lists of European malacofauna [Falkner *et al.*, 2001; Welter-Schultes, 2012; Bank, 2014].

**519(708). *Segmentina clessini*
(Westerlund, 1873)**

Planorbis clessini Westerlund, 1873: 613-614.

- Type locality: Sweden, the Öland Island, in a brook south of the village Kolstad (modern spelling) near Borgholm City.
- Types: Vinarski *et al.* [2013b] failed to find specimens of *S. clessini* from the type locality both in NMG and SMNH.

A sample labeled as “Collectio Molluscorum Typica” (NMG, No. 4029) and containing 12 juvenile shells is from Blekinge, the small province of Sweden adjacent south of the south-eastern part of the Småland province. Thus, the type series is most probably lost.

- Global distribution: Europe and the Western Siberia.
- Distribution in the former USSR: The European part of RAC, except its northern regions, north of Kazakhstan and Altay Region [Kruglov & Soldatenko, 1997].
- Subregions: NE, SE, WS.
- Bionomics: Lives in shallow permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.
- Remark: Clessin [1884b] accepted *S. clessini* as a separate species, whereas Ehrmann [1933] and Grossu [1955] synonymized it with *S. distinguenda*. Kruglov & Soldatenko [1997] separated this species in a subgenus of its own, *Subsegmentina* Kruglov et Soldatenko, 1997.

**520(709). *Segmentina distinguenda*
(Gredler, 1859)**

Planorbis nitidus var. *distinguenda* Gredler, 1859: 217.

- Type locality: Poland, Wrocław City.
- Types: Not traced. According to Dance's [1986] Gredler's type materials are housed partly in Fernandeum at Innsbruck, partly at the Bozen Gymnasium (Austria).
- Global distribution: Europe.
- Distribution in the former USSR: The European part of RAC, except its extreme northern part; a single finding in Eastern Kazakhstan [Kruglov & Soldatenko, 1997; Starobogatov *et al.*, 2004].
- Subregions: NE, SE, WS.

- Bionomics: Lives in small permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: LC (least concern).
- Remark: Conchologically this species differs from *S. nitida* s. l., and some older malacogists accepted it as a distinct variety or as a member of the “Formenkreise” of *S. nitida* [Geyer, 1927; Ehrmann, 1933; Grossu, 1955]. Kruglov & Soldatenko [1997] separated this species in a subgenus of its own, *Parasegmentina* Kruglov et Soldatenko, 1997.

Genus *Helicorbis* Benson, 1855

Type species: *Planorbis umbilicalis* Benson, 1850 (SD F.C. Baker, 1945)

521(710). *Helicorbis bactriana* Izzatullaev, 1980

Helicorbis bactriana Izzatullaev, 1980: 408-409, fig. 2, A, a, б, в.

- Type locality: Turkmenistan, Kerki-chi, right bank of the Amu-Darya River.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to Central Asia.
- Distribution in the former USSR: Mountain areas of Central Asia [Starobogatov *et al.*, 2004].
- Subregions: CA.
- Bionomics: Not studied.
- IUCN conservation status: Not assessed.

521(711). *Helicorbis kushanica* Izzatullaev, 1980

Helicorbis kushanica Izzatullaev, 1980: 410, fig. 2, Б, а, б, в.

- Type locality: Turkmenistan, Kerkichi, right bank of the Amu-Darya River.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to Central Asia.

- Distribution in the former USSR: Type locality [Izzatullaev, 1980].
- Subregions: CA.
- Bionomics: Not studied.
- IUCN conservation status: Not assessed.
- Remark: The species was described on the basis of a single empty shell collected from the same locality as the holotype of *H. bactriana*. Possibly, the two species are identical.

522(712). *Helicorbis kozhovi* Starobogatov et Streletzkaja, 1967

Helicorbis kozhovi Starobogatov & Streletzkaja, 1967: 239-240, fig. 36.

- Type locality: Russia, Republic of Buryatia, the Kotokel' Lake, Mostovaya Inlet (approximately 52°48'30"N; 108°09'00"E).
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and two paratypes.
- Global distribution: Endemic to Siberia.
- Distribution in the former USSR: The Eastern Siberia, including the Transbaikalia, the Yana, Indigirka and Kolyma rivers basins [Dolgin, 2001; Starobogatov *et al.*, 2004]; one finding in Tomsk Region (eastern part of the Western Siberia) [Vinarski, 2015].
- Subregions: WS, ES.
- Bionomics: Lives in permanent and semipermanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

523(713). *Helicorbis sujfunensis* Starobogatov, 1957

Helicorbis sujfunensis Starobogatov, 1957: 1004-1005, figs. Ж-П.

- Type locality: Russia, the Primorye Territory, vicinities of Ussuriysk (formerly Voroshilov) City (43°47'50"N; 131°57'10"E).

- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and 15 paratypes.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Far East of Russia, including the Amur River basin and the Primorye Territory; vicinities of Chita City [Sitnikova *et al.*, 2014b].
- Subregions: ES, SF.
- Bionomics: Lives in temporary waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

**523(714). *Helicorbis shilkaensis*
Starobogatov, 1996**

Helicorbis shilkaensis Starobogatov, 1996b: 1427-1428, textfig. (1).

- Type locality: Russia, the Zabaikalsky Territory, vicinities of Sretensk Town (approximately 52°15'00"N, 117°43'00"E).
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and 19 paratypes
- Global distribution: Endemic to the Amur River Basin.
- Distribution in the former USSR: Type locality [Sitnikova *et al.*, 2014b].
- Subregions: SF.
- Bionomics: Not studied [Sitnikova *et al.*, 2014b].
- IUCN conservation status: DD (data deficient).
- Remark: Conchologically this species is somewhat similar to *H. sujfunensis* and, possibly, is identical with the latter.

Addition to the genus *Helicorbis*.

Two more species of this genus are presented in the Russian keys and checklists [Starobogatov *et al.*, 2004; Kantor & Sysoev, 2005]: *Helicorbis levanidovae* Zatravkin et Moskvicheva in Zatravkin, 1985, and *H. rara* Moskvicheva in Zatravkin, 1985. Both species were

described on the basis of empty shells found in the Amur River near Khabarovsk City [Starobogatov *et al.*, 2004]. Most probably, the snails were living in upper courses of the Sungari River situated in China [Zatravkin, 1985b]. Their actual occurrence in Russia's waterbodies has been not approved yet.

Genus *Hippeutis* Charpentier, 1837

Type species: *Helix complanatus* Linnaeus, 1758 (SD F.C. Baker, 1945)

**524(715). *Hippeutis complanatus*
(Linnaeus, 1758)**

[= *Planorbis fontana* Lightfoot, 1786; *Hippeutis lenticularis* Hartmann, 1821; *Planorbis diaphanellus* Bourguignat, 1864; *Planorbis euphaeus* Bourguignat, 1864; *Planorbis kolchicus* Lindholm, 1913]

Helix complanatus Linnaeus, 1758: 769.

- Type locality: Europe ("Habitat in Europae aquis dulcibus"; Linnaeus, 1758: 769).
- Types: Hanley [1855: 362] mentioned the presence of this shell (a syntype?) in LSL but its current state is unknown. There is no data on the types of *H. complanatus* in UZM [Wallin, 2001].
- Global distribution: Europe and the Western Siberia.
- Distribution in the former USSR: The European part of RAC, the Transcaucasia and the Western Siberia [Zhadin, 1952; Akramowski, 1976; Stadnichenko, 1990; Vinarski *et al.*, 2007]. The presence of this species in the waterbodies of the Yenisei River basin [Zhadin, 1952] is doubtful.
- Subregions: NE, SE, CT, WS.
- Bionomics: Lives in swamps, puddles and oxbows [Zhadin, 1952].
- IUCN conservation status: LC (least concern).
- Remark: Krivosheina & Starobogatov

[1973] stated that *Helix complanatus* sensu Linnaeus [1758] really did not belong to the genus *Hippeutis* and used the oldest available name, *H. fontanus*, for its designation. Besides, two other conchologically similar species, *H. diaphanella* (Bgt.) and *H. euphaea* (Bgt.) were distinguished by the authors³⁹. Since 1973, almost all malacologists of the former USSR followed this classification [Starobogatov, 1977c; Stadnichenko, 1990; Starobogatov *et al.*, 2004; Vinarski *et al.*, 2007] though their Western European counterparts did not accept it [Falkner *et al.*, 2001; Glöer, 2002a; Welter-Schultes, 2012]. In fact, Krivosheina & Starobogatov [1973] did not present any substantial evidence for replacing *H. complanatus* with *H. fontana*, and the anatomical differences between the three alleged species are hitherto not revealed. The conchological differences among them are rather slight and prone to significant interspecific variation [Khokhutkin & Vinarski, 2013]. It seems reasonable to return to using the taxonomic name *H. complanata* for designation of the European representatives of *Hippeutis*.

Genus *Kolhymorbis* Starobogatov
et Streletzkaja, 1967

Type species: *Kolhymorbis shadini* Starobogatov et Streletzkaja, 1967 (OD)

525(716). *Kolhymorbis shadini*
Starobogatov et Streletzkaja, 1967

Kolhymorbis shadini Starobogatov & Streletzkaja, 1967: 237, fig. 32.

³⁹ Krivosheina & Starobogatov [1973] placed all three species in the genus *Segmentina*. Later on, Starobogatov [1977c] classified them within *Hippeutis*.

- Type locality: Russia, Republic of Yakutia (Sakha), the delta of the Kolyma River at Pokhodsk settlement (approximately 69°06'N 160°59'E).
- Types: ZIN, Nos. 1–3 in systematic catalogue. The type series includes the holotype and two paratypes.
- Global distribution: Endemic to North-eastern Asia.
- Distribution in the former USSR: Type locality and the Vakareva River basin in Anadyr' Region [Sitnikova *et al.*, 2014b].
- Subregions: ES, NF.
- Bionomics: Lives in small permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: DD (data deficient).

526(717). *Kolhymorbis angarensis*
(B. Dybowski et Grochmalicki, 1925)

[= *Kolhymorbis maacki* Starobogatov et Streletzkaja, 1967]

Segmentina nitida f. *angarensis* B. Dybowski et Grochmalicki, 1925: 881.

- Type locality: Not known.
- Types: Not traced.
- Global distribution: Endemic to North-eastern Asia.
- Distribution in the former USSR: The Central and Eastern Siberia, from the Khatanga basin to the Kolyma River; the Amur River basin [Dolgin, 2001; Starobogatov *et al.*, 2004].
- Subregions: ES, NF, SF.
- Bionomics: Lives in temporary and semipermanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

527(718). *Kolhymorbis bogatovi*
Zatravkin et Moskvicheva in
Zatravkin, 1985

Kolhymorbis bogatovi Zatravkin, 1985: 40, fig. 1.

- Type locality: Russia, the Khabarovsk Territory, a puddle in the upstream of the river Manoma, tributary of the Anyui River.
- Types: ZIN, Nos. 1–5 in systematic catalogue. The type series contains the holotype and 51 paratypes.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: Central and lower parts of the Amur River basin [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in small semi-permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: DD (data deficient).

**528(719). *Kolhymorbis dildorae*
Izzatullaev, 1980**

Kolhymorbis dildora (lapsus calami!) Izzatullaev, 1980: 408, fig. 1, B, a, b, c.

- Type locality: Uzbekistan, Tashkent Region, Akkurgan water reservoir, Balykchi.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to Central Asia.
- Distribution in the former USSR: Type locality [Izzatullaev, 1980].
- Subregions: CA.
- Bionomics: Not studied.
- IUCN conservation status: DD (data deficient).

Genus *Polypylis* Pilsbry, 1906

Type species: *Planorbis largillierti* Dunker, 1867 (OD)

**529(720). *Polypylis almaatina*
Starobogatov et Mamilova, 1970**

Polypylis almaatina Starobogatov & Mamilova, 1970: 62–63, fig. 1, 2.

- Type locality: Kazakhstan, Alma-Ata Region, eastward from Alma-Ata City, spring at the territory of collective farm “Zarya Vostoka”.
- Types: ZIN, Nos. 1–3 in systematic catalogue. The type series includes the holotype and 87 paratypes.
- Global distribution: Endemic to Central Asia.
- Distribution in the former USSR: Type locality [Starobogatov & Mamilova, 1970].
- Subregions: CA.
- Bionomics: Not studied. The type series was collected from a spring.
- IUCN conservation status: Not assessed.

**530(721). *Polypylis likharevi*
Starobogatov et Streletzkaja, 1967**

Polypylis likharevi Starobogatov & Streletzkaja, 1967: 238–239, fig. 35.

- Type locality: Russia, Republic of Yakutia (Sakha), the Kolhyma River basin, a lake on the former river bed in the floodplain of the Malyi Anyui River.
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and two paratypes.
- Global distribution: Endemic to north-eastern Asia.
- Distribution in the former USSR: The Central and Eastern Siberia, the Russian Far East northwards to the Kamchatka Peninsula and the Chaun Lowland [Sitnikova *et al.*, 2014b].
- Subregions: ES, NF, SF.
- Bionomics: Lives in small permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

**531(722). *Polypylis nitidella*
(Martens, 1877)**

[= *Polypylis (Segmentina) mica* Westerlund, 1883]

Planorbis nitidellus Martens, 1877: 112.

- Type locality: Japan, vicinities of Yokohama City, Mukosima and Hakodate.
- Types: ZMB, No. 8900 (two syntypes from Yokohama) and No. 109784 (three syntypes from Mukosima).
- Global distribution: Japan and the Kurile Archipelago [Starobogatov *et al.*, 2004].
- Distribution in the former USSR: The southern Kurile Islands [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in lentic waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

**532(723). *Polypylis semiglobosa*
Moskvicheva in Dvoriadkin, 1980**

Polypylis semiglobosa Dvoriadkin, 1980: 28-30, fig. 5

- Type locality: Russia, the Primorye Territory, the Khanka Lake, Astrakhan-ka village, a channel.
- Types: ZIN. Nos. 1–45 in systematic catalogue. There are the holotype and 1283 paratypes in ZIN collection.
- Global distribution: Endemic to the Russian Far East.
- Distribution in the former USSR: The Primorye Territory and the Amur River basin [Starobogatov *et al.*, 2004].
- Subregions: SF.
- Bionomics: Lives in small permanent waterbodies [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

**533(724). *Polypylis sibirica*
Starobogatov et Streletzkaia, 1967**

Polypylis sibirica Starobogatov & Streletzkaia, 1967: 238, fig. 34.

- Type locality: Russia, eastern coast of the Baikal Lake, a lake on the Oblom Cape.
- Types: ZIN, Nos. 1–3 in systematic

catalogue. The type series includes the holotype and 13 paratypes.

- Global distribution: The Eastern Siberia and northern Mongolia.
- Distribution in the former USSR: The Central and Eastern Siberia [Sitnikova *et al.*, 2014b].
- Subregions: ES.
- Bionomics: Lives in lakes [Starobogatov *et al.*, 2004].
- IUCN conservation status: Not assessed.

**534(725). *Polypylis starobogatovi*
Izzatullaev, 1973**

Polypylis starobogatovi Izzatullaev, 1973a: 65-66, fig. A (1, 2, 3).

- Type locality: Tajikistan, “Tigrovaya balka” Nature Reserve, central cordon, shore deposits of the Goluboye Lake.
- Holotype: ZIN, No. 1 in systematic catalogue.
- Global distribution: Endemic to Central Asia.
- Distribution in the former USSR: Type locality [Izzatullaev, 1973a].
- Subregions: CA.
- Bionomics: Unknown.
- IUCN conservation status: Not assessed.

Genus *Trochorbis* Benson, 1855

Type species: *Planorbis trochoideus* Benson, 1855 (OD)

**535(726). *Trochorbis anastasiae*
Izzatullaev, 1973**

Trochorbis anastasiae Izzatullaev, 1973a: 67-68, fig. B (1, 2, 3).

- Type locality: Tajikistan, “Tigrovaya balka” Nature Reserve, central cordon, shore deposits of the Goluboye Lake.
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and two paratypes.

- Global distribution: Endemic to Central Asia.
- Distribution in the former USSR: Tajikistan [Izzatullaev, 1973a].
- Subregions: CA.
- Bionomics: Unknown.
- IUCN conservation status: Not assessed.

**535(727). *Trochorbis tadjikistanica*
Izzatullaev, 1973**

Trochorbis tadjikistanica (lapsus calami) Izzatullaev, 1973a: 66-67, fig. Å (1, 2, 3).

- Type locality: Tajikistan, "Tigrovaya balka" Nature Reserve, central cordon, shore deposits of Goluboye Lake.
- Types: ZIN, Nos. 1 and 2 in systematic catalogue. The type series includes the holotype and two paratypes.
- Global distribution: Endemic to Central Asia.
- Distribution in the former USSR: Type locality [Izzatullaev, 1973a].
- Subregions: CA.
- Bionomics: Not studied.
- IUCN conservation status: Not assessed.
- Remark: Conchologically this species is

similar to *T. anastasiae* and, possibly, is identical with the latter. In addition, it should be noted that the two species have the same type locality, and their anatomical structure is not studied.

**536(728). *Trochorbis calathus*
(Benson, 1850)**

Planorbis calathus Benson, 1850: 348-349.

- Type locality: India, Uttar Pradesh State, Moradabad [fide Subba Rao, 1989].
- Types: Not traced.
- Global distribution: Northern India and adjacent areas of Central Asia.
- Distribution in the former USSR: Found in Tajikistan, "Tigrovaya balka" Nature Reserve [Izzatullaev, 1973a].
- Subregions: CA.
- Bionomics: Unknown.
- IUCN conservation status: LC (least concern).
- Remark: Subba Rao [1989] classified this species as belonging to the subgenus *Polypylis* of the genus *Segmentina*.

CONCLUSIONS

In this concluding chapter, some zoogeographical observations based on quantitative analysis of species occurrences in various subregions of the RAC territory are given. We do not dare either to present the complete zoogeographical analysis here or to acclaim our observations to be the definitive ones. It is quite impossible to make such a definitive analysis now due to the fact that many species of the RAC malacofauna were described very recently, often on the basis of limited series of specimens, and their true ranges are still not outlined exactly. Therefore we declined to use the scheme of zoogeographical zonation of the former USSR territory on the basis of the freshwater mollusks distribution proposed by Starobogatov [1970, 1986]⁴⁰. This author divides the USSR area into several tens zoogeographical provinces, but for most of them the complete species lists are not available.

Moreover, a large portion of such taxa of the species and subspecies rank still await their validation by means of modern techniques of taxonomical inquiry. Some of nominal taxa presented in our catalogue may turn out to be synonyms. That's why the conclusions provided here are of provisional character and should be viewed as rough observations rather than as a finished study.

As it is explained in the introductory part of this book, we tried to take into account different views on the systematic status of the ex-USSR continental

Mollusca stated in works of researchers belonging to particular scientific schools in taxonomy. Thus, two parallel lists of taxa have been compiled. The first of them (list A) includes the species and subspecies accepted by most taxonomists irrespectively of the methodological grounds they follow. In a sense, list A represents the "conservative" estimate of the taxonomic diversity of the RAC continental malacofauna, though its conservatism should not be overrated. A host of taxa placed into this list may well proved to be synonyms but these were included here simply because they were not formally revised since their description, and no independent researcher did express ones opinion on their validity.

A large body of nominal taxa endemic to the Baikal Lake and the Caspian Sea belong to this group of formally not revised taxa. The situation is especially critical with the Caspian species of Gastropoda most of which were described on the basis of empty shells and still are not known beyond their type localities. The overwhelming majority of such taxa have never been studied by foreign malacologists [but see Zettler, 2007] and thus may be considered as "commonly accepted" only conditionally. It means that the list A may be greatly reduced in the course of future studies.

The list B includes all nominal species and subspecies of continental aquatic Mollusca indigenous for the RAC area that have been not formally synonymized. In this case, we followed the "valid until synonymized" principle (see Introduction).

In calculations, the invasive taxa as well as those species whose presence in

⁴⁰ The English version of this scheme is presented in Kruglov & Starobogatov [1993a].

Table 15. Species richness of the continental aquatic Mollusca of the former USSR

Class	List A	List B
Bivalvia	139	424
Gastropoda	536	728
Total	675	1152

Table 16. Species richness of the continental aquatic Mollusca in the subregions of the RAC area

Subregion	Bivalvia		Gastropoda		All mollusks	
	List A	List B	List A	List B	List A	List B
NE	42	136	64	140	106	276
SE	47	143	105	181	152	324
CT	12	23	53	73	65	96
CS	31	31	91	91	122	122
WS	29	90	90	132	119	222
ES	28	59	94	109	122	168
BL	18	30	161	166	179	196
CA	32	52	97	115	129	167
SF	43	126	81	116	124	242
NF	14	31	42	56	56	87

a particular subregion is doubtful were not included. Also, we treated species and subspecies equally, and below they are regarded as “species”.

The overall diversity of the continental aquatic Mollusca of the former USSR may be estimated today as lying between 675 and 1152 species and subspecies (Table 15; see also Appendix 1, 2). The most species rich subregions are the south of the European part of RAC (SE), the Baikal Lake (BL), and southern part of the Russian Far East (SF) (Table 16). The lowest diversity is observed in the Caucasian-Transcaucasian-subregion (CT) and in the northern part of the Russian Far East (NF).

The overall species richness of aquatic Mollusca estimated by us greatly exceeds species numbers given in accounts devoted to the European malacofauna

[Falkner *et al.*, 2001; Welter-Schultes, 2012; Bank, 2014] but fades as compared with hyper-diverse malacofaunas of the tropic or even some temperate climatic regions. One may contrast our estimates with species richness of the New Caledonia deep waters, where a single family of gastropods (Turridae) is represented by more than 1400 (morpho-) species, most of which are still not described by taxonomists [Bouchet & Strong, 2010]. Another striking example of high species diversity is presented by the land snail fauna of New Zealand, where “single litter samples containing 60-70 species have been collected ... from areas of a square metre or two” [Solem *et al.*, 1981: 454].

Though the taxonomic diversity of Mollusca in the marine, terrestrial and freshwater domains may hardly be com-

pared directly, the magnitude of the differences is striking.

Cluster analysis has become the almost standard tool for the regionalization of biota in current biogeography. It has been exploited in the “freshwater” malacology [Vinarski *et al.*, 2012c], including studies dealing with the fossil taxa [Neubauer *et al.*, 2015]. Here, we attempt to outline roughly the highest level biogeographical regions on the basis of distribution of freshwater Mollusca species among the RAC subregions.

The choice of a quantitative measure of faunistic similarity is not trivial because several tens different measures have been introduced [Pesenko, 1982]. The most popular similarity indices are those of Jaccard and Czekanowski, though some malacologists prefer to use the alternative measures such as Preston’s index [Starobogatov, 1970]. There has been a long discussion about comparative efficacy of the indices [Huhta, 1979; Bloom, 1981; Wolda, 1981; Pesenko, 1982; Malyshev, 2001]. Here, we use *Ochiai similarity index (IOCH)* recommended by Malyshev [2001]. As distinct from the Jaccard and Czekanowski indices, *IOCH* is calculated on the basis of geometric (not arithmetic) mean and thus is more appropriate for comparison between taxa lists of non-equal length [Bolton, 1991; Malyshev, 2001].

This index is calculated as follows:

$$I_{OCH} = \frac{a}{\sqrt{(a+b)(a+c)}}, \text{ where}$$

a – number of shared species (taxa) in two faunas under comparison;

b and c – number of species (taxa) occurring only in either fauna.

Tables 17–22 contain the primary data for the cluster analyses, i.e. values of *IOCH*

between all pairs of subregions calculated on the basis of either list A or list B.

The results of the cluster analyses of the data from Tables 17–22 are presented in figs. 2–4.

On most dendrograms, three large clusters may be found. The first one includes two European subregion regions (NE, SE) and the Western Siberia. Sometimes, Eastern Siberia is nested here (see Fig. 4 B). The second prominent cluster is encompassing three subregions situated in southern Asiatic part of the RAC area, from the Caucasus to Central Asia (CT, CS, and CA). This cluster is found in most graphs, except of 2 B and 3 A. At last, the third cluster includes the Russian Far East, the Baikal Lake, and, sometimes, the Eastern Siberia. Generally speaking, the BL and ES subregions are characterized by the most unstable position in our dendrograms that may indicate the “transient” character of their fauna (especially of ES), i.e. mixture of the species of European and Far Eastern origin with a portion of endemic taxa.

Thus, the RAC territory may be roughly divided into three large areas characterized by internal faunistic similarity of their malacofaunas:

1. European part. Covers all the European part of RAC and the Western Siberia. The inclusion of the the Western Siberian region to the European group reflects the fact that initially the Western Siberian malacofauna is of boreal European origin [Starobogatov, 1970], and its endemism level is still relatively low [Vinarski *et al.*, 2012c].

2. Northern Asiatic part. Includes the Eastern Siberia, the Baikal Lake, and all the territory of the Russian Far East.

3. Central Asian part. Includes the Caucasus and Transcaucasia, the Caspi-

Table 17. I_{OCH} -based similarity of the bivalve faunas (list A) of the RAC subregions

	NE	SE	CT	CA	WS	ES	BL	CA	SF	NF
NE	1	0.79	0.22	0.06	0.8	0.64	0.4	0.21	0.28	0.41
SE	0.79	1	0.25	0.1	0.68	0.52	0.31	0.28	0.22	0.31
CT	0.22	0.25	1	0.1	0.21	0.16	0.14	0.26	0.09	0.08
CS	0.06	0.1	0.1	1	0.03	0.03	0.04	0.06	0	0
WS	0.8	0.68	0.21	0.03	1	0.81	0.48	0.26	0.34	0.5
ES	0.64	0.52	0.16	0.03	0.81	1	0.58	0.23	0.29	0.56
BL	0.4	0.31	0.14	0.04	0.48	0.58	1	0.21	0.22	0.31
CA	0.21	0.28	0.26	0.06	0.26	0.23	0.21	1	0.16	0.08
SF	0.28	0.22	0.09	0	0.34	0.29	0.22	0.16	1	0.33
NF	0.41	0.31	0.08	0	0.05	0.56	0.31	0.08	0.33	1

Table 18. I_{OCH} -based similarity of the bivalve faunas (list B) of the RAC subregions

	NE	SE	CT	CA	WS	ES	BL	CA	SF	NF
NE	1	0.77	0.56	0.08	0.65	0.39	0.09	0.17	0.03	0.2
SE	0.77	1	0.11	0.02	0.51	0.26	0.05	0.22	0.01	0.12
CT	0.56	0.11	1	0.04	0.09	0.08	0	0.09	0.02	0.04
CS	0.08	0.02	0.04	1	0	0	0	0.03	0	0
WS	0.65	0.51	0.09	0	1	0.55	0.1	0.16	0.05	0.23
ES	0.39	0.26	0.08	0	0.55	1	0.29	0.15	0.07	0.34
BL	0.09	0.05	0	0	0.1	0.29	1	0	0.03	0.13
CA	0.17	0.22	0.09	0.03	0.16	0.15	0	1	0.01	0.03
SF	0.03	0.01	0.02	0	0.05	0.07	0.03	0.01	1	0.03
NF	0.2	0.12	0.04	0	0.23	0.34	0.13	0.03	0.03	1

Table 19. I_{OCH} -based similarity of the gastropod faunas (list A) of the RAC subregions

	NE	SE	CT	CA	WS	ES	BL	CA	SF	NF
NE	1	0.73	0.31	0	0.66	0.35	0.11	0.08	0.13	0.15
SE	0.73	1	0.31	0.11	0.51	0.22	0.06	0.09	0.06	0.07
CT	0.31	0.31	1	0	0.23	0.14	0.05	0.11	0.08	0.08
CS	0	0.11	0	1	0.03	0	0	0.11	0	0
WS	0.66	0.51	0.23	0.03	1	0.48	0.12	0.22	0.22	0.28
ES	0.35	0.22	0.14	0	0.48	1	0.24	0.09	0.24	0.43
BL	0.11	0.06	0.05	0	0.12	0.24	1	0.02	0.08	0.1
CA	0.08	0.09	0.11	0.11	0.22	0.09	0.02	1	0.06	0.06
SF	0.13	0.06	0.08	0	0.22	0.24	0.08	0.06	1	0.24
NF	0.15	0.07	0.08	0	0.28	0.43	0.1	0.06	0.24	1

Table 20. I_{OCH} -based similarity of the gastropod faunas (list B) of the RAC subregions

	NE	SE	CT	CA	WS	ES	BL	CA	SF	NF
NE	1	0.65	0.21	0	0.56	0.23	0.08	0.04	0.04	0.07
SE	0.65	1	0.26	0.09	0.52	0.2	0.05	0.08	0.03	0.03
CT	0.21	0.26	1	0	0.14	0.09	0.03	0.12	0.03	0.03
CS	0	0.09	0	1	0.03	0	0	0.1	0	0
WS	0.56	0.52	0.14	0.03	1	0.43	0.12	0.18	0.11	0.19
ES	0.23	0.2	0.09	0	0.43	1	0.26	0.07	0.22	0.41
BL	0.08	0.05	0.03	0	0.12	0.26	1	0.02	0.06	0.07
CA	0.04	0.08	0.12	0.1	0.08	0.07	0.02	1	0.04	0.04
SF	0.04	0.03	0.03	0	0.11	0.22	0.06	0.04	1	0.19
NF	0.07	0.03	0.03	0	0.19	0.41	0.07	0.04	0.19	1

Table 21. I_{OCH} -based similarity of the malacofaunas (Bivalvia + Gastropoda) (list A) of the RAC subregions

	NE	SE	CT	CA	WS	ES	BL	CA	SF	NF
NE	1	0.75	0.28	0.02	0.69	0.43	0.16	0.13	0.1	0.23
SE	0.75	1	0.29	0.11	0.54	0.31	0.1	0.14	0.14	0.13
CT	0.28	0.29	1	0.02	0.23	0.15	0.07	0.11	0.08	0.08
CS	0.02	0.11	0.02	1	0.03	0.01	0	0.1	0	0
WS	0.69	0.54	0.23	0.03	1	0.56	0.18	0.23	0.24	0.33
ES	0.43	0.31	0.15	0.01	0.56	1	0.29	0.13	0.26	0.46
BL	0.16	0.1	0.07	0	0.18	0.29	1	0.05	0.1	0.13
CA	0.13	0.14	0.11	0.1	0.23	0.13	0.05	1	0.09	0.08
SF	0.1	0.14	0.08	0	0.24	0.26	0.1	0.09	1	0.26
NF	0.23	0.13	0.08	0	0.33	0.46	0.13	0.08	0.26	1

Table 22. I_{OCH} -based similarity of the malacofaunas (Bivalvia + Gastropoda) (list B) of the RAC subregions

	NE	SE	CT	CA	WS	ES	BL	CA	SF	NF
NE	1	0.75	0.18	0.005	0.59	0.31	0.08	0.1	0.06	0.14
SE	0.75	1	0.21	0.06	0.51	0.21	0.07	0.15	0.04	0.07
CT	0.18	0.21	1	0.01	0.12	0.09	0.03	0.1	0.03	0.03
CS	0.005	0.06	0.01	1	0.02	0	0	0.08	0	0
WS	0.59	0.51	0.12	0.02	1	0.63	0.12	0.18	0.09	0.2
ES	0.31	0.21	0.09	0	0.63	1	0.3	0.1	0.16	0.4
BL	0.08	0.07	0.03	0	0.12	0.3	1	0.02	0.05	0.08
CA	0.1	0.15	0.1	0.08	0.18	0.1	0.02	1	0.02	0.04
SF	0.06	0.04	0.03	0	0.09	0.16	0.05	0.02	1	0.12
NF	0.14	0.07	0.03	0	0.2	0.4	0.08	0.04	0.12	1

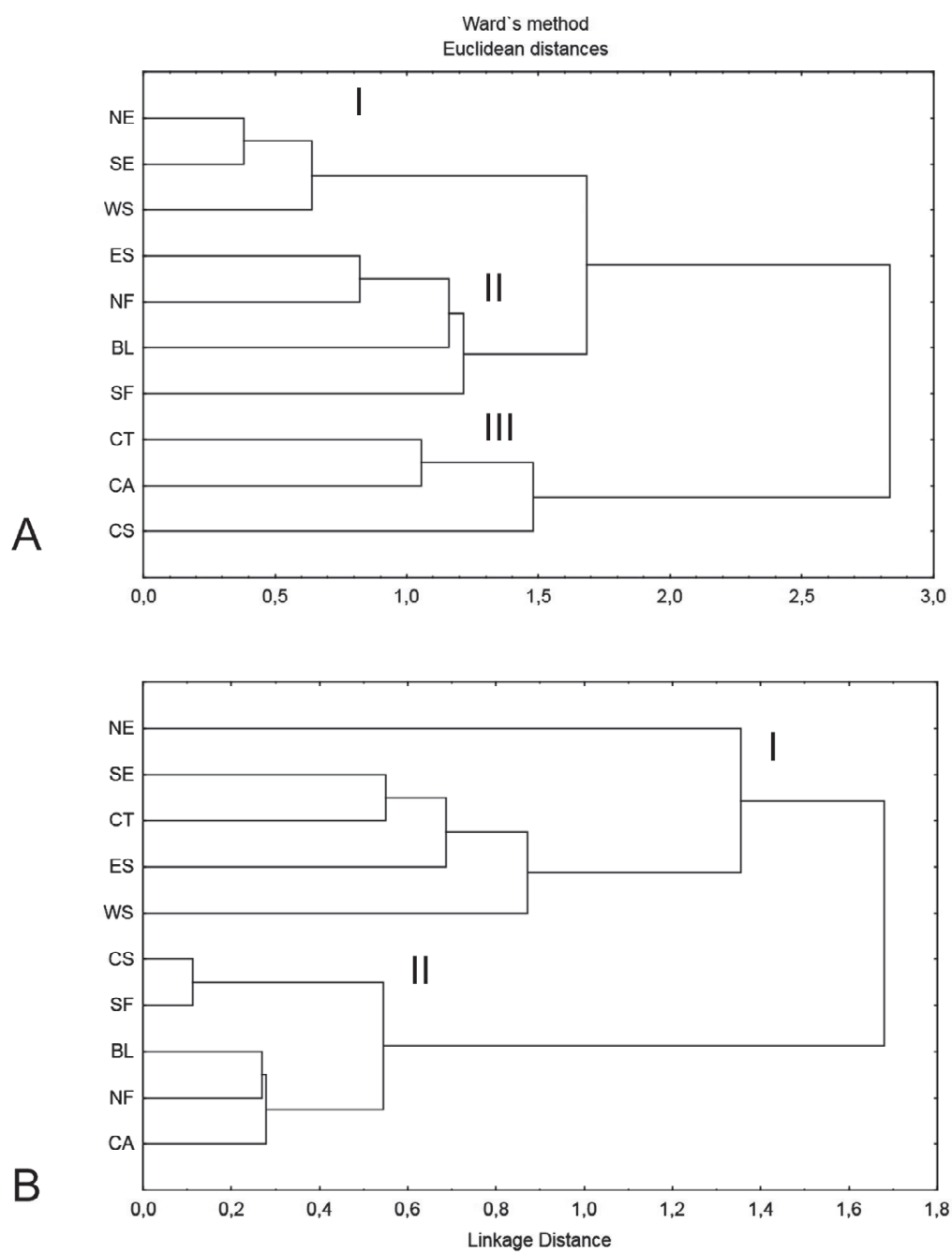


Fig. 2. Cluster analysis of data on distribution of species of *Bivalvia* among the RAC subregions. A. Based on the list A. B. Based on the list B (see explanations in the text). The Roman numerals correspond to the most prominent subclusters (see explanation in the text).

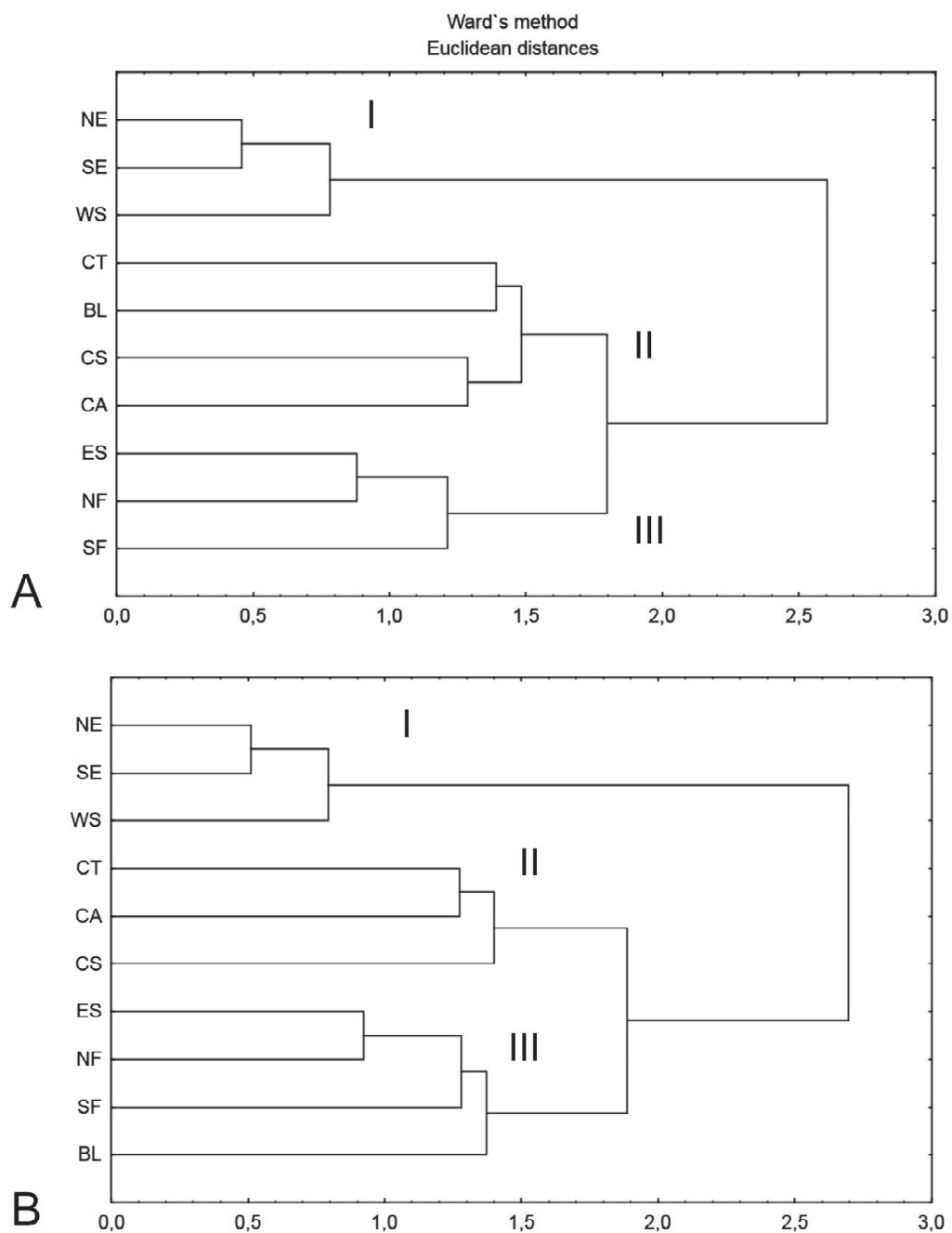


Fig. 3. Cluster analysis of data on distribution of species of Gastropoda among the RAC subregions. A. Based on the list A. B. Based on the list B (see explanations in the text). The Roman numerals correspond to the most prominent subclusters (see explanation in the text).

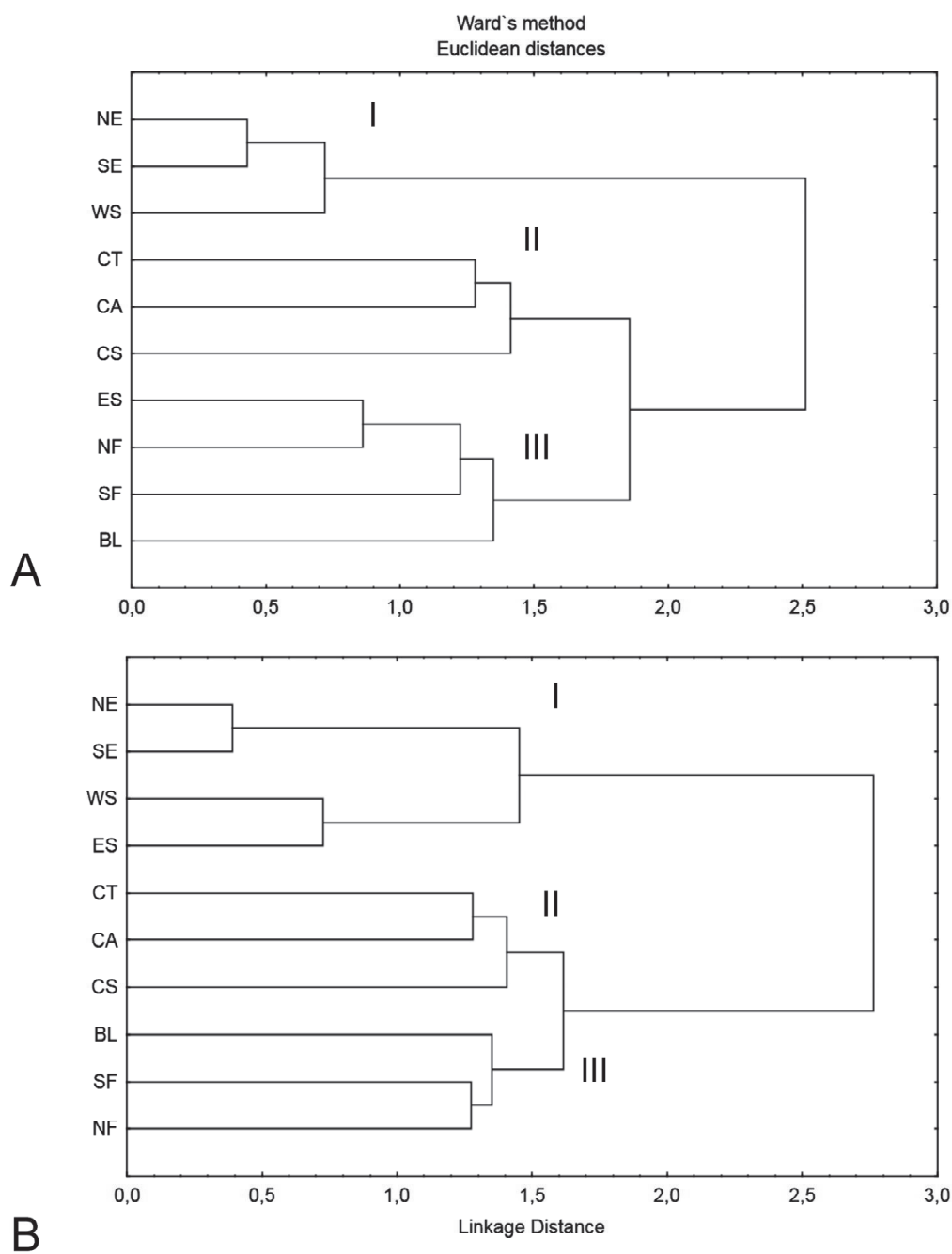


Fig. 4. Cluster analysis of data on distribution of species of all Mollusca (Bivalvia + Gastropoda) among the RAC subregions. A. Based on the list A. B. Based on the list B (see explanations in the text). The Roman numerals correspond to the most prominent subclusters (see explanation in the text).

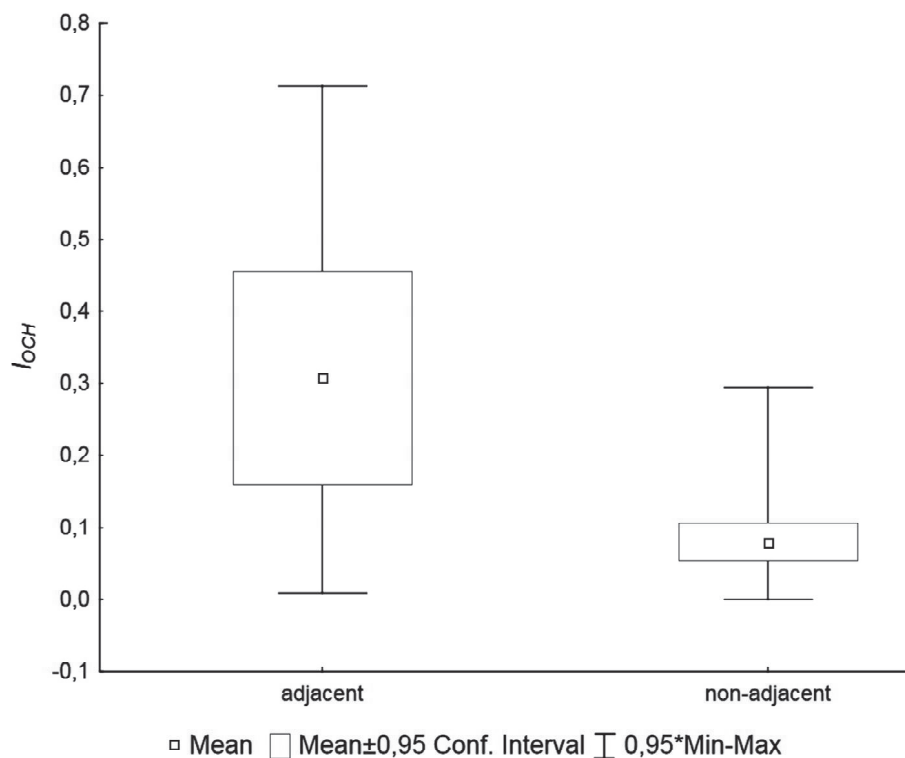


Fig. 5. Values of I_{QCH} between pair of adjacent and non-adjacent subregions. The difference of the means is statistically significant (Mann-Whitney test: $Z = 3.31$; $p = 0.001$)

an Sea and all countries of the former Soviet Central Asia.

It should be noted that we do not assign any hierarchical rank (subrealm, superprovince and so on) to these territorial units as it is adopted in biogeographical studies [Starobogatov, 1970, 1986]. In this respect, our scheme contradicts Starobogatov's hierarchical zonation of the ex-USSR territory. According to Starobogatov [1986; Kruglov & Starobogatov, 1993a], all this area belongs to three "regions" of the same rank:

- Palearctic (Europe, Siberia, Central Asia; northern part of the Russian Far East);
- Baikalian (the Baikal Lake);

– Sino-Indian (Lower courses of the Amur River basin, the Primorye Territory).

The three "regions" of Starobogatov has a rather low correspondence with the three "subclusters" outlined by us above. The apparent cause of the difference is the fact that our calculations were not based on "weighting" of the endemism level, i.e. we considered all species as having the same value in the occurrence-absence matrices. Starobogatov [1970, 1986] took into account also the taxonomic rank of endemics, for example, the presence of unique families and genera in the Baikalian malacofauna as well as tight phylogenetic relation-

ships between the faunas of the Primorye and south-eastern Asia (Korea, China).

The similarity approach exploited by us allows one to hypothesize about the effect of geographical distance on faunistic resemblance between subregions. Fig. 5 illustrates a phenomenon known in biogeography as the distance decay of faunistic similarity [Nekola & White, 1999; Poulin & Morand, 1999; Oliva & González, 2005]. The malacofaunas of spatially adjacent subregions of RAC are significantly more similar to each other as compared to the non-adjacent ones.

We must stress again that the zoo-geographical inferences presented in this section are of preliminary character and should be updated in future by means of more sophisticated methods of research such, for example, as PAE – parsimony analysis of endemism [Morrone, 2014]. Much more work is needed also to clarify the species' distribution ranges within the RAC area as well as to check the taxonomic validity of many taxa described during last several decades and still being the object of debates among taxonomists.

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Appendix 1

List of species of Bivalvia of the RAC continental waterbodies with their distribution in subregions. Species considered here as belonging to the list A are marked by bold. Species invasions are marked by asterisks (*)

[illegible]

[illegible]

№	Species	RAC subregions									
		NE	SE	CT	CS	WS	ES	BL	CA	SF	NT
20(79)	<i>A. (B.) starobogatovi</i>									+	
20(80)	<i>A. (B.) sujfunensis</i>									+	
20(81)	<i>A. (B.) suputinensis</i>									+	
21(82)	<i>Beringiana beringiana</i>										+
21(83)	<i>B. chereshnevi</i>										+
21(84)	<i>"B. compressa"</i>										+
21(85)	<i>B. derzhavini</i>										+
21(86)	<i>B. kamchatica</i>										+
21(87)	<i>B. yuocanensis</i>						+				+
22(88)	<i>B. japonica</i>									+	
22(89)	<i>B. compressa</i>									+	
22(90)	<i>B. coptzevi</i>									+	
22(91)	<i>B. haconensis</i>									+	
22(92)	<i>B. iturupica</i>									+	
22(93)	<i>B. iwakawai</i>									+	
22(94)	<i>B. sinanodontoides</i>									+	
22(95)	<i>B. taranetsi</i>									+	
22(96)	<i>B. zarjaensis</i>									+	
22(97)	<i>B. zimini</i>									+	
23(98)	<i>Sinanodonta woodiana</i>		*						?	?	
23(99)	<i>S. amurensis</i>									+	
23(100)	<i>S. crassitesta</i>									+	
23(101)	<i>S. gibba</i>								*		
23(102)	<i>S. likharevi</i>									+	
23(103)	<i>S. manchurica</i>										
23(104)	<i>S. orbicularis</i>								*		
23(105)	<i>S. primorjensis</i>									+	
23(106)	<i>S. puerorum</i>								*		
23(107)	<i>S. schrencki</i>									+	
24(108)	<i>S. fukudai</i>									+	
25(109)	<i>Potomida komarowi</i>			+							
25(110)	<i>P. armeniaca</i>			+							
26(111)	<i>Margaritifera margaritifera</i>	+									
27(112)	<i>Dahurinaia dahurica</i>									+	
27(113)	<i>D. komarovi</i>									+	
27(114)	<i>D. prozorovae</i>									+	
27(115)	<i>D. sujfunensis</i>									+	
27(116)	<i>D. tumovae</i>									+	
27(117)	<i>D. ussuriensis</i>									+	
28(118)	<i>D. laevis</i>									+	
28(119)	<i>D. kurilensis</i>									+	
28(120)	<i>D. zatravkini</i>									+	
29(121)	<i>D. middendorffi</i>										+
29(122)	<i>D. kamchatica</i>										+
30(123)	<i>Adacna (Adacna) lae-viuscula</i>				+						

№	Species	RAC subregions									
		NE	SE	CT	CS	WS	ES	BL	CA	SF	NT
30(124)	<i>A. (A.) fragilis</i>		+								
31(125a)	<i>A. (A.) minima minima</i>								+		
31(125b)	<i>A. (A.) m. ostroumovi</i>				+						
32(126a)	<i>A. (A.) vitrea vitrea</i>				+						
32(126b)	<i>A. (A.) v. glabra</i>				+						
32(126c)	<i>A. (A.) v. bergi</i>								+		
33(127)	<i>A. (Monodacna) acuticosta</i>				+						
34(128)	<i>A. (M.) albida</i>				+						
35(129)	<i>A. (M.) angustirostrata</i>		+								
36(130a)	<i>A. (M.) caspia caspia</i>				+						
36(130b)	<i>A. (M.) c. filatovae</i>				+						
36(130c)	<i>A. (M.) c. knipowitschi</i>				+						
37(131)	<i>A. (M.) grossui</i>		+								
38(132)	<i>A. (M.) colorata</i>		+		*				*		
39(133)	<i>A. (M.) ialpugensis</i>		+								
40(134)	<i>A. (M.) luciae</i>		+								
41(135)	<i>A. (M.) polymorpha</i>				+						
42(136)	<i>A. (M.) semipellucida</i>				+						
43(137)	<i>Cerastoderma glaucum</i>				+						
43(138)	<i>C. isthmicus</i>								+		
44(139)	<i>C. rhomboides</i>				+				+		
45(140)	<i>Didacna trigonoides</i>				+						
46(141)	<i>D. baeri</i>				+						
47(142)	<i>D. barbotdemarnyi</i>				+						
48(143)	<i>D. longipes</i>				+						
49(144)	<i>D. parallela</i>				+						
50(145)	<i>D. profundicola</i>				+						
51(146)	<i>D. protracta</i>				+						
52(147)	<i>D. pyramidata</i>				+						
53(148a)	<i>Hypanis plicata plicata</i>				+						
53(148b)	<i>H. p. relict</i>		+								
54(149)	<i>H. sidorovi</i>								+		
55(150a)	<i>Dreissena (Dreissena) polymorpha polymorpha</i>	+	+						+		
55(150b)	<i>D. (D.) p. andrusovi</i>				+						
55(150c)	<i>D. (D.) p. aralensis</i>								+		
55(150d)	<i>D. (D.) p. obtusecarinata</i>								+		
56(151a)	<i>D. (D.) caspia caspia</i>				+						
56(151b)	<i>D. (D.) c. pallas</i>								+		
57(152)	<i>D. (D.) elata</i>				+						
58(153a)	<i>D. (Pontodreissena) rostriformis compressa</i>				+						
58(153b)	<i>D. (P.) r. distincta</i>				+						
58(153c)	<i>D. (P.) r. grimmi</i>				+						

№	Species	RAC subregions									
		NE	SE	CT	CS	WS	ES	BL	CA	SF	NT
58(153d)	<i>D. (P.) r. pontocaspica</i>				+						
59(154)	<i>D. (P.) bugensis</i>		+		*						
60(155)	<i>Mytilopsis leuco- phaeata</i>		*		*						
61(156)	<i>Abra segmentum</i>		+		*				*		
62(157)	<i>Corbicula fluminalis</i>		+						+		
62(158)	<i>C. cor</i>		+						+		
62(159)	<i>C. purpurea</i>		+						+		
63(160)	<i>C. amurensis</i>									+	
64(161)	<i>C. elatior</i>									+	
65(162)	<i>C. finitima</i>									+	
66(163)	<i>C. fluminea</i>		*								
67(164)	<i>C. japonica</i>									+	
68(165)	<i>C. lindholmi</i>									+	
69(166)	<i>C. neveskoyi</i>									+	
70(167)	<i>C. producta</i>									+	
70(168)	<i>C. ferghanensis</i>								+		
71(169)	<i>C. sirotskii</i>									+	
72(170)	<i>C. tibetensis</i>								+		
73(171)	<i>Sphaerium (Sphaeri- um) corneum</i>	+	+			+			+		
73(172)	<i>Sph. (Sph.) capidulife- rum</i>						+	+			
73(173)	<i>Sph. (Sph.) dybowskii</i>							+			
73(174)	<i>Sph. (Sph.) kozhovi</i>							+			
73(175)	<i>Sph. (Sph.) levinodis</i>					+	+	+			
73(176)	<i>Sph. (Sph.) mamillanum</i>	+				+					
73(177)	<i>Sph. (Sph.) scaldianum</i>	+	+			+					
73(178)	<i>Sph. (Sph.) westerlundi</i>	+				+	+	+			+
74(179)	<i>Sph. (Sph.) baicalense</i>							+			
74(180)	<i>Sph. (Sph.) marisminus</i>							+			
75(181)	<i>Sph. (Cyrenastrum) solidum</i>	+				+					
75(182)	<i>Sph. (C.) draparnaldii</i>	+	+								
75(183)	<i>Sph. (C.) galitzini</i>	+									
75(184)	<i>Sph. (C.) subsolidum</i>	+									
76(185)	<i>Sph. (C.) asiaticum</i>	+				+	+				
76(186)	<i>Sph. (C.) caperatum</i>	+				+	+				
76(187)	<i>Sph. (C.) korotniewii</i>							+			
76(188)	<i>Sph. (C.) transversale</i>	+				+	+				
77(189)	<i>Sph. (Nucleocyclus) nucleus</i>	+	+			+					
78(190)	<i>Sph. (N.) ovale</i>	+	+			+	+				
78(191)	<i>Sph. (N.) falsinucleus</i>					+					
79(192)	<i>Sph. (Parasphaerium) nitidum</i>	+				+	+				
79(193)	<i>Sph. (P.) rectidens</i>	+				+	+			+	+

№	Species	RAC subregions									
		NE	SE	CT	CS	WS	ES	BL	CA	SF	NT
80(194)	<i>Sph. (Rivicoliana) rivicola</i>	+	+			+					
80(195)	<i>Sph. (R.) boettgerianum</i>	+	+								
80(196)	<i>Sph. (R.) bourguignati</i>	+	+								
80(197)	<i>Sph. (R.) morini</i>	+	+								
81(198)	<i>Musculium (Musculium) lacustre</i>	+	+			+					
81(199)	<i>M. (M.) clessini</i>		+			+	+		+		
81(200)	<i>M. (M.) compressum</i>					+	+			+	
81(201)	<i>M. (M.) creplini</i>	+	+			+	+		+	+	
81(202)	<i>M. (M.) hungaricum</i>	+	+	+		+	+		+		
81(203)	<i>M. (M.) johanseni</i>						+				
81(204)	<i>M. (M.) mucronulatum</i>		+								
81(206)	<i>M. (M.) ryckholti</i>	+	+	+							
81(206)	<i>M. (M.) steinii</i>	+									
81(207)	<i>M. (M.) strictum</i>	+	+	+							
81(208)	<i>M. (M.) tervierianum</i>	+	+								
82(209)	<i>M. (M.) amurense</i>									+	
82(210)	<i>M. (M.) jurievi</i>									+	
82(211)	<i>"M. (M.) moussoni"</i>									+	
83(212)	<i>M. (M.) heterodon</i>									+	
83(213)	<i>M. (M.) kafanovi</i>									+	
83(214)	<i>M. (M.) likharevi</i>									+	
84(215)	<i>M. (M.) miyadai</i>									+	
84(216)	<i>M. (M.) morii</i>									+	
85(217)	<i>M. (Paramusculium) inflatum</i>					+	+				
86(218)	<i>M. (P.) limanicum</i>									+	
87(219)	<i>Pisidium (Pisidium) amnicum</i>	+	+			+	+	+		+	
87(220)	<i>P. (P.) inflatum</i>	+	+								
88(221)	<i>P. (P.) amurense</i>									+	
89(222)	<i>P. (P.) baicalense</i>							+			
89(223)	<i>P. (P.) decurtatum</i>						+	+		+	
90(224)	<i>P. (P.) orientale</i>									+	
91(225)	<i>P. (Europisidium) tenuilineatum</i>	+									
91(226)	<i>P. (Eu.) alpinum</i>	+	+			+					
91(227)	<i>P. (Eu.) stelfoxi</i>	+	+								
92(228)	<i>P. (Kuiperipisidium) sogdianum</i>		+	?					+		
92(229)	<i>P. (K.) issykkulense</i>								+		
92(230)	<i>P. (K.) polytimeticum</i>			+					+		
92(231)	<i>P. (K.) terekense</i>			+					+		
93(232)	<i>P. (K.) khorensae</i>									+	
94(233)	<i>P. (Neopisidium) moitessierianum</i>	+	+								

№	Species	RAC subregions									
		NE	SE	CT	CS	WS	ES	BL	CA	SF	NT
94(234)	<i>P. (N.) torquatum</i>	+	+								
94(235)	<i>P. (N.) trigonum</i>	+	+								
95(236)	<i>P. (Odhneripisidium) stewarti</i>								+		
95(237)	<i>P. (O.) kungejense</i>								+		
95(238)	<i>P. (O.) prashadi</i>								+		
96(239)	<i>P. (O.) behningi</i>								+		
97(240)	<i>P. (O.) chatyrkulense</i>								+		
98(241)	<i>P. (O.) dancei</i>								+		
99(242)	<i>P. (O.) gafurovi</i>								+		
100(243)	<i>P. (O.) pamirensis</i>								+		
101(244)	<i>P. (O.) popovae</i>						+				
101(245)	<i>P. (O.) terekholicum</i>						+				
101(246)	<i>P. (O.) tuvaense</i>						+				
102(247)	<i>Euglesa (Euglesa s.str.) personata</i>	+	+								
102(248)	<i>Eu. (Eu.) eichwaldi</i>		+								
102(249)	<i>Eu. (Eu.) latiumbonata</i>		+								
103(250)	<i>Eu. (Eu.) casertana</i>		+								
103(251)	<i>Eu. (Eu.) altiumbonata</i>									+	
103(252)	<i>Eu. (Eu.) ambigua</i>									+	
103(253)	<i>Eu. (Eu.) buchtarmensis</i>	+	+			+			?		
103(254)	<i>Eu. (Eu.) crassicardo</i>					+					
103(255)	<i>Eu. (Eu.) crimeana</i>		+								
103(256)	<i>Eu. (Eu.) curta</i>	+	+				+		+		
103(257)	<i>Eu. (Eu.) depressissima</i>						+				
103(258)	<i>Eu. (Eu.) elliptica</i>									+	
103(259)	<i>Eu. (Eu.) hokkaidoensis</i>									+	
103(260)	<i>Eu. (Eu.) hoyeri</i>	+									
103(261)	<i>Eu. (Eu.) inflata</i>									+	
103(262)	<i>Eu. (Eu.) intermedia</i>		+						+		
103(263)	<i>Eu. (Eu.) irtyschensis</i>	?				+					
103(264)	<i>Eu. (Eu.) jaudouiniana</i>		+						+		
103(265)	<i>Eu. (Eu.) klucharevae</i>									+	
103(266)	<i>Eu. (Eu.) koltshemense</i>									+	
103(267)	<i>Eu. (Eu.) likharevi</i>	+	+								
103(268)	<i>Eu. (Eu.) miyadaii</i>									+	
103(269)	<i>Eu. (Eu.) montana</i>					+					
103(270)	<i>Eu. (Eu.) nikkoensis</i>									+	
103(271)	<i>Eu. (Eu.) obensis</i>	+	+			+					
103(272)	<i>Eu. (Eu.) obliquata</i>	+	+						+		
103(273)	<i>Eu. (Eu.) platyponderosa</i>	+									
103(274)	<i>Eu. (Eu.) ponderosa</i>	+	+			+					
103(275)	<i>Eu. (Eu.) rivularis</i>	+	+			+					
103(276)	<i>Eu. (Eu.) rotundovata</i>					+					

№	Species	RAC subregions									
		NE	SE	CT	CS	WS	ES	BL	CA	SF	NT
103(277)	<i>Eu. (Eu.) steenbuchi</i>	+				+	+				+
103(278)	<i>Eu. (Eu.) subcinerea</i>									+	
103(279)	<i>Eu. (Eu.) subdepressa</i>									+	
103(280)	<i>Eu. (Eu.) subfossarina</i>									+	
103(281)	<i>Eu. (Eu.) subinflata</i>									+	
103(282)	<i>Eu. (Eu.) subplanata</i>									+	
103(283)	<i>Eu. (Eu.) subponderosa</i>	+	+			+					
104(284)	<i>Eu. (Eu.) cavatica</i>			+							
105(285)	<i>Eu. (Eu.) granum</i>						+	+			
106(286)	<i>Eu. (Eu.) korotnevi</i>							+			
107(287)	<i>Eu. (Eu.) ljevushkini</i>		+								
108(288)	<i>Eu. (Eu.) minuta</i>							+			
109(289)	<i>Eu. (Eu.) platuvalva</i>							+			
110(290)	<i>Eu. (Eu.) subgranum</i>							+			
111(291)	<i>Eu. (Eu.) subterranea</i>			+							
112(292)	<i>Eu. (Eu.) turkestanica</i>								+		
113(293)	<i>Eu. (Eu.) zugmayeri</i>								+		
114(294)	<i>Eu. (Amureuglesa) khurbaensis</i>									+	
114(295)	<i>Eu. (A.) kruglovi</i>									+	
115(296)	<i>Eu. (Cingulipisidium) nitida</i>	+	+			+	+		+		
115(297)	<i>Eu. (C.) cingulata</i>	+	+			+					
115(298)	<i>Eu. (C.) crassa</i>	+	+			+					
115(299)	<i>Eu. (C.) depressinitida</i>	+	+			+					
115(300)	<i>Eu. (C.) fedderseni</i>	+	+			+			+		
115(301)	<i>Eu. (C.) feroense</i>	+	+			+			+		
115(302)	<i>Eu. (C.) khurdumensis</i>		+								
115(303)	<i>Eu. (C.) kozhovi</i>						+	+			
115(304)	<i>Eu. (C.) pulchricingulata</i>									+	
115(305)	<i>Eu. (C.) rotundicostata</i>						+				
115(306)	<i>Eu. (C.) shadini</i>					+					
115(307)	<i>Eu. (C.) splendens</i>	+	+			+					
115(308)	<i>Eu. (C.) tanuga</i>	+									
116(309)	<i>Eu. (Conventus) conventa</i>	+	+			+	+				+
116(310)	<i>Eu. (C.) akkesiensis</i>									+	
116(311)	<i>Eu. (C.) iturupensis</i>									+	
116(312)	<i>Eu. (C.) occulta</i>									+	
116(313)	<i>Eu. (C.) subconventus</i>						+				
116(314)	<i>Eu. (C.) subtilis</i>									+	
116(315)	<i>Eu. (C.) urinator</i>	+	+			+	+				+
117(316)	<i>Eu. (C.) raddei</i>						+	+			
117(317)	<i>Eu. (C.) dybowski</i>							+			
117(318)	<i>Eu. (C.) lamuanus</i>							+			
118(319)	<i>Eu. (Cyclocalyx) obtusale</i>	+	+			+	+		+		+

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№	Species	RAC subregions									
		NE	SE	CT	CS	WS	ES	BL	CA	SF	NT
126(365)	<i>Eu. (H.) supina</i>	+	+								
126(366)	<i>Eu. (H.) baudonii</i>	+	+								
126(367)	<i>Eu. (H.) conica</i>	+	+						+		
126(368)	<i>Eu. (H.) infracostata</i>									+	
126(369)	<i>Eu. (H.) tenuicostulata</i>	+	+			+			+		
127(370)	<i>Eu. (H.) trigonoides</i>							+			
128(371)	<i>Eu. (H.) waldeni</i>	+	+			+	+				
129(372)	<i>Eu. (Hiberneuglesa) hibernica</i>	+	+								
129(373)	<i>Eu. (Hi.) anjuica</i>	?	+				?				
129(374)	<i>Eu. (Hi.) bodamica</i>	+				+					
129(375)	<i>Eu. (Hi.) kolhymensis</i>						+				
129(376)	<i>Eu. (Hi.) kuiperi</i>						+				+
129(377)	<i>Eu. (Hi.) lindholmi</i>						+				
129(378)	<i>Eu. (Hi.) normalis</i>	+	+								
129(379)	<i>Eu. (Hi.) jacutica</i>	+	+			+					
129(380)	<i>Eu. (Hi.) portentosa</i>	+	+			+					
129(381)	<i>Eu. (Hi.) subhibernica</i>	+				+					
130(382)	<i>Eu. (Pseudeupera) subtruncata</i>	+	+			+	+		+		
130(383)	<i>Eu. (P.) alta</i>									+	
130(384)	<i>Eu. (P.) altaica</i>					+					
130(385)	<i>Eu. (P.) arcidens</i>	+	+			+					
130(386)	<i>Eu. (P.) humerosa</i>	+	+								
130(387)	<i>Eu. (P.) humiliumbo</i>	+	+			+					
130(388)	<i>Eu. (P.) mucronata</i>	+	+					+			+
130(389)	<i>Eu. (P.) ovatotrigona</i>					+					
130(390)	<i>Eu. (P.) pallida</i>	+	+			+			+		
130(391)	<i>Eu. (P.) parallelodon</i>	+	+			+					
130(392)	<i>Eu. (P.) pirogovi</i>	+	+			+					
130(393)	<i>Eu. (P.) poltavica</i>		+								
130(394)	<i>Eu. (P.) rotundotrigona</i>	+	+			+					
130(395)	<i>Eu. (P.) starobogatovi</i>	+				+					
130(396)	<i>Eu. (P.) subalta</i>									+	
130(397)	<i>Eu. (P.) subcuneata</i>	+	+			+					
130(398)	<i>Eu. (P.) supiniformis</i>		+								
130(399)	<i>Eu. (P.) talievi</i>						+	+			
130(400)	<i>Eu. (P.) tenuicardo</i>					+					
130(401)	<i>Eu. (P.) tenuisculpta</i>	+	+								
130(402)	<i>Eu. (P.) turanica</i>								+		
130(403)	<i>Eu. (P.) turgida</i>	+	+								
130(404)	<i>Eu. (P.) volgensis</i>	+	+			+					
131(405)	<i>Eu. (Pseudosphaerium) pseudosphaerium</i>	+	+								
131(406)	<i>Eu. (Ps.) favrei</i>	?	+								
132(407)	<i>Eu. (Pulchelleuglesa) pulchellum</i>	+	+			+	+				

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№	Species	RAC subregions									
		NE	SE	CT	CS	WS	ES	BL	CA	SF	NF
21(35)	<i>M. (C.) roseni</i>								+		
21(36)	<i>M. (C.) starostini</i>								+		
21(37)	<i>M. (C.) transcaspica</i>								+		
21(38)	<i>M. (C.) zarudnyi</i>								+		
22(39)	<i>Fagotia (Fagotia) esperi</i>		+								
23(40)	<i>F. (Microcolpia) acicularis</i>		+								
24(41)	<i>Juga amgunica</i>									+	
25(42)	<i>J. amurensis</i>									+	
26(43)	<i>J. buettneri</i>									+	
27(44)	<i>J. calculus</i>									+	
28(45)	<i>J. chankensis</i>									+	
29(46)	<i>J. czerskii</i>									+	
30(47)	<i>J. extensa</i>									+	
31(48)	<i>J. heukelomiana</i>									+	
32(49)	<i>J. nodosa</i>									+	
33(50)	<i>J. starobogatovi</i>									+	
34(51)	<i>J. tegulata</i>									+	
35(52)	<i>J. tugurensis</i>									+	
36(53)	<i>Melanoides kaina- rensis</i>								+		
37(54)	<i>M. pamiricus</i>								+		
38(55)	<i>M. shahdaraensis</i>								+		
39(56)	<i>M. tuberculata</i>		*			*					
40(57)	<i>Thiara granifera</i>		*								
41(58)	<i>Akiyoshia sacha- linensis</i>									+	
42(59)	<i>Kolhymamnicola kolhymensis</i>						+				+
43(60)	<i>K. miyadaii</i>										+
44(61)	<i>K. ochotica</i>									+	
45(62)	<i>K. wasiliewae</i>						+			+	
46(63)	<i>Marstoniopsis scholtzi</i>	+									
47(64)	<i>M. steini</i>	+	+								
48(65)	<i>Bythinella adsharica</i>			+							
49(66)	<i>B. austriaca</i>		+								
50(67)	<i>B. hungarica</i>		+								
51(68a)	<i>Baicalia carinata carinata</i>							+			
51(68b)	<i>B. c. fuchsiana</i>							+			
51(68c)	<i>B. c. hoernesiana</i>							+			
52(69)	<i>B. carinatocostata</i>							+			
53(70a)	<i>B. dybowskiana dybowskiana</i>							+			
53(70b)	<i>B. d. carinatoides</i>							+			
54(71)	<i>B. rugosa</i>							+			

№	Species	RAC subregions									
		NE	SE	CT	CS	WS	ES	BL	CA	SF	NF
55(72)	<i>B. turiformis</i>							+			
56(73a)	<i>Godlewskia godlewskii</i> <i>godlewskii</i>							+			
56(73b)	<i>G. g. speciosa</i>							+			
57(74)	<i>G. bacilliformis</i>							+			
58(75)	<i>G. columella</i>							+			
59(76a)	<i>G. pulchella pulchella</i>							+			
59(76b)	<i>G. p. intermedia</i>							+			
60(77a)	<i>G. wrzesniowski</i> <i>wrzesniowski</i>							+			
60(77b)	<i>G. w. olchonensis</i>							+			
60(77c)	<i>G. w. profunda</i>							+			
61(78a)	<i>Korotnewia korotnevi</i> <i>korotnevi</i>							+			
61(78b)	<i>K. k. gracilis</i>							+			
61(78c)	<i>K. k. selengensis</i>							+			
62(79)	<i>K. angigyra</i>							+			
63(80a)	<i>K. semenkewitschi</i> <i>semenkewitschi</i>							+			
63(80b)	<i>K. s. nitida</i>							+			
64(81)	<i>Liobaicalia stiedae</i>							+			
65(82)	<i>Maackia (Maackia)</i> <i>costata</i>							+			
66(83)	<i>M. (Eubaicalia)</i> <i>angarensis</i>						+	+			
67(84)	<i>M. (Eu.) bythiniopsis</i>							+			
68(85a)	<i>M. (Eu.) herderiana</i>							+			
68(85b)	<i>M. (Eu.) h. parvula</i>							+			
68(85c)	<i>M. (Eu.) h. semico-</i> <i>stulata</i>							+			
69(86)	<i>M. (Eu.) pusilla</i>							+			
70(87)	<i>M. (Eu.) raphidia</i>						+				
71(88)	<i>M. (Eu.) umbilicifera</i>							+			
72(89)	<i>M. (Eu.) variesculpta</i>							+			
73(90)	<i>M. (Eu.) werest-</i> <i>schagini</i>							+			
74(91)	<i>Parabaicalia florii</i>							+			
75(92)	<i>P. dubiosa</i>							+			
76(93)	<i>P. elata</i>							+			
77(94)	<i>P. kobeltiana</i>							+			
78(95)	<i>P. milaschewitschi</i>							+			
79(96)	<i>P. oviformis</i>							+			
80(97)	<i>Pseudobaicalia</i> <i>(Pseudobaicalia)</i> <i>jentteriana</i>							+			
81(98)	<i>Ps. (Ps.) cancellata</i>							+			
82(99)	<i>Ps. (Ps.) contabulata</i>							+			
83(100)	<i>Ps. (Ps.) elegantula</i>							+			

№	Species	RAC subregions									
		NE	SE	CT	CS	WS	ES	BL	CA	SF	NF
84(101)	<i>Ps. (Ps.) zachvatkini</i>							+			
85(102a)	<i>Ps. (Microbaicalia) pulla pulla</i>							+			
85(102b)	<i>Ps. (M.) p. tenuicosta</i>							+			
86(103)	<i>Ps. subcilindrica</i>							+			
87(104)	<i>Teratobaicalia (Tera-tobaicalia) macrostoma</i>							+			
88(105a)	<i>T. (Trichiobaicalia) duthiersii duthiersii</i>						+	+			
88(105b)	<i>T. (T.) d. angarensis</i>						+				
88(105c)	<i>T. (T.) d. pachypleura</i>							+			
89(106)	<i>T. (T.) ciliata</i>						+	+			
90(107)	<i>T. (Baicaliella) nana</i>							+			
91(108)	<i>T. (B.) clandestina</i>							+			
92(109)	<i>T. (B.) humerosa</i>							+			
93(110)	<i>T. (B.) producta</i>							+			
94(111)	<i>Pyrgobaicalia aenigma</i>								+		
95(112)	<i>Bithynia (Bithynia) tentaculata</i>	+	+			+					
95(113)	<i>B. (B.) curta</i>	+	+			+					
95(114)	<i>B. (B.) decipiens</i>	+	+			+					
95(115)	<i>B. (B.) producta</i>	+	+			+					
96(116)	<i>B. (Codiella) leachii</i>	+	+								
96(117)	<i>B. (C.) kickxii</i>	+									
96(118)	<i>B. (Digyrcidum) bourguignati</i>	+	+			+					
96(119)	<i>B. (D.) starobogatovi</i>	+				+					
97(120)	<i>B. (Opistorchophorus) troschelii</i>	+	+			+					
97(121)	<i>B. (O.) abakumovae</i>					+					
97(122)	<i>B. (O.) baudoniana</i>	+	+			+					
97(123)	<i>B. (O.) hispanica</i>		+			?	+				
97(124)	<i>B. (O.) valvatooides</i>		+								
98(125)	<i>B. (Praelona) boissieri</i>		+								
99(126)	<i>B. (P.) hellenica</i>		+								
99(127)	<i>B. (P.) faussekii</i>		+								
99(128)	<i>B. (P.) milachevitchi</i>		+			+					
99(129)	<i>B. (P.) socialis</i>		+			+					
100(130)	<i>Allocinma caspica</i>				+						
101(131a)	<i>Boreaelona caeruleans caeruleans</i>								+		
101(131b)	<i>Boreaelona c. moltschanovi</i>								+		
102(132)	<i>B. contortrix</i>					+	+			+	
103(133)	<i>B. ehrmanni</i>									+	
104(134)	<i>B. lindholmiana</i>					+					

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№	Species	RAC subregions									
		NE	SE	CT	CS	WS	ES	BL	CA	SF	NF
146(176)	<i>S. shadini</i>								+		
147(177)	<i>Tadhikamnicola pavlovskii</i>								+		
148(178)	<i>T. likharevi</i>								+		
149(179)	<i>Turkmenamnicola lindholmi</i>								+		
150(180)	<i>T. raddei</i>								+		
151(181)	<i>T. smaragdovae</i>								+		
152(182)	<i>Valvatamnicola archangelskii</i>								+		
153(183)	<i>V. schahimardanica</i>								+		
154(184)	<i>Chirgisiala archaensis</i>								+		
155(185)	<i>Pseudamnicola brusiniana</i>				+						
156(186)	<i>P. depressispira</i>				+						
157(187)	<i>P. exigua</i>				+						
158(188)	<i>P. prasina</i>								+		
159(189)	<i>P. sphaerion</i>				+						
160(190)	<i>Caspia baerii</i>				+						
161(191)	<i>C. brotzkajae</i>				+						
162(192)	<i>C. gmelinii</i>				+						
163(193)	<i>C. knipovitchi</i>		+		+						
164(194)	<i>C. logvinenkoi</i>		+								
165(195)	<i>C. makarovi</i>		+								
166(196)	<i>C. stanislavi</i>		+								
167(197)	<i>Caspiohydrobia eichwaldiana</i>		+		+						
168(198)	<i>C. aralensis</i>								+		
169(199)	<i>C. behningi</i>					+			+		
170(200)	<i>C. bergi</i>					+			+		
171(201)	<i>C. borealis</i>					+					
172(202)	<i>C. chrysopsis</i>				+	+			+		
173(203)	<i>C. conica</i>				+	+					
174(204)	<i>C. coniformis</i>					+			+		
175(205)	<i>C. convexa</i>		+		+				+		
176(206)	<i>C. curta</i>				+				+		
177(207)	<i>C. cylindrica</i>				+				+		
178(208)	<i>C. dubia</i>				+				+		
179(209)	<i>C. elongata</i>								+		
180(210)	<i>C. gemmata</i>				+				+		
181(211)	<i>C. grimmi</i>				+	+			+		
182(212)	<i>C. husainovae</i>					+			+		
183(213)	<i>C. johanseni</i>					+					
184(214)	<i>C. kazakhstanica</i>					+			+		
185(215)	<i>C. ljaurica</i>								+		
186(216)	<i>C. nikitinskii</i>					+			+		

№	Species	RAC subregions									
		NE	SE	CT	CS	WS	ES	BL	CA	SF	NF
187(217)	<i>C. nikolskii</i>					+			+		
188(218)	<i>C. obrutchevi</i>								+		
189(219)	<i>C. oviformis</i>				+						
190(220)	<i>C. parva</i>				+				+		
191(221)	<i>C. pavlovskii</i>								+		
192(222)	<i>C. sadorovi</i>					+			+		
193(223)	<i>C. sogdiana</i>					+			+		
194(224)	<i>C. subconvexa</i>				+				+		
195(225)	<i>C. tadzhikistanica</i>					+			+		
196(226)	<i>C. turrita</i>				+						
197(227)	<i>Euxinipyrgula milachevitchi</i>		+								
198(228)	<i>Eu. azovica</i>		+								
199(229)	<i>Eu. borysthenica</i>		+								
200(230)	<i>Eu. grigorievi</i>		+								
201(231)	<i>Eu. limanica</i>		+								
202(232)	<i>Eu. lincta</i>		+								
203(233)	<i>Eu. ostroumovi</i>		+								
204(234)	<i>Eu. ukrainica</i>		+								
205(235)	<i>Pyrgula abichi</i>				+						
206(236)	<i>P. aenigma</i>				+						
207(237)	<i>P. bakuana</i>				+						
208(238a)	<i>P. basalis basalis</i>				+						
208(238b)	<i>P. b. laticarinata</i>				+						
209(239)	<i>P. behningi</i>				+						
210(240)	<i>P. cincta</i>				+						
211(241)	<i>P. columna</i>				+						
212(242)	<i>P. concinna</i>				+						
213(243)	<i>P. curta</i>				+						
214(244)	<i>P. derzhavini</i>				+						
215(245)	<i>P. dimidiata</i>				+						
216(246)	<i>P. dubia</i>				+						
217(247)	<i>P. ebersini</i>				+						
218(248)	<i>P. eulimellula</i>				+						
219(249)	<i>P. fedorovi</i>				+						
220(250)	<i>P. grimmi</i>				+						
221(251)	<i>P. isseli</i>				+						
222(252)	<i>P. kolesnikoviana</i>				+						
223(253)	<i>P. kowalewskii</i>				+						
224(254)	<i>P. lencoranica</i>				+						
225(255)	<i>P. lirata</i>				+						
226(256)	<i>P. marginata</i>				+						
227(257)	<i>P. nana</i>				+						
228(258)	<i>P. nossovi</i>				+						
229(259)	<i>P. pallasii</i>				+						
230(260)	<i>P. pseudobacuana</i>				+						
231(261)	<i>P. pseudodimidiata</i>				+						

№	Species	RAC subregions									
		NE	SE	CT	CS	WS	ES	BL	CA	SF	NF
232(262)	<i>P. pseudospica</i>				+						
233(263)	<i>P. pulla</i>				+						
234(264)	<i>P. rudis</i>				+						
235(265)	<i>P. schorygini</i>				+						
236(266)	<i>P. (?) sieversi</i>			+							
237(267)	<i>P. similis</i>				+						
238(268)	<i>P. simplex</i>				+						
239(269)	<i>P. sowinskyi</i>				+						
240(270)	<i>P. turkmenica</i>				+						
241(271)	<i>P. ulskii</i>				+						
242(272)	<i>P. uralensis</i>				+						
243(273)	<i>Turricaspia turricula</i>				+						
244(274)	<i>T. andrussowi</i>				+						
245(275)	<i>T. astrachanica</i>		+								
246(276)	<i>T. bogatscheviana</i>				+						
247(277)	<i>T. boltovskoji</i>		+		+						
248(278)	<i>T. caspia</i>				+						
249(279)	<i>T. chersonica</i>		+								
250(280a)	<i>T. conus conus</i>				+						
250(280b)	<i>T. c. lindholmiana</i>		+								
251(281)	<i>T. dagestanica</i>				+						
252(282)	<i>T. derbentina</i>				+						
253(283)	<i>T. eburnea</i>				+						
254(284)	<i>T. elegantula</i>				+						
255(285)	<i>T. ismailensis</i>		+								
256(286)	<i>T. martensii</i>		+		+						
257(287)	<i>T. meneghiana</i>				+						
258(288)	<i>T. ovum</i>				+						
259(289)	<i>T. pseudotriton</i>		+		+						
260(290)	<i>T. pullula</i>				+						
261(291)	<i>T. sajenskova</i>				+						
262(292)	<i>T. spasskii</i>				+						
263(293)	<i>T. spica</i>		+		+						
264(294)	<i>T. triton</i>		+		+						
265(295)	<i>T. trivialis</i>				+						
266(296)	<i>T. variabilis</i>		+		+						
267(297)	<i>T. vinogradovi</i>		+		+						
268(298)	<i>Shadinia terpoghassiani</i>			+							
269(299)	<i>Sh. akramowskii</i>			+							
270(300a)	<i>Lithoglyphus naticoides naticoides</i>		+								
270(300b)	<i>L. n. berolinensis</i>	+									
271(301)	<i>L. apertus</i>		+								
272(302)	<i>L. pyramidatus</i>		+								
273(303)	<i>Benedictia (Benedictia) fragilis</i>							+			

№	Species	RAC subregions									
		NE	SE	CT	CS	WS	ES	BL	CA	SF	NF
274(304a)	<i>B. (B.) distinguenda distinguenda</i>							+			
274(305a)	<i>B. (B.) d. lamuana</i>							+			
275(305)	<i>B. (B.) kotyensis</i>							+			
276(306a)	<i>B. (B.) limnaeoides limnaeoides</i>							+			
276(306b)	<i>B. (B.) l. litoralis</i>							+			
276(306c)	<i>B. (B.) l. ongurensis</i>							+			
277(307)	<i>B. (B.) nana</i>							+			
278(308a)	<i>B. (B.) pulchella pulchella</i>							+			
278(308b)	<i>B. (B.) p. sarmensis</i>							+			
279(309)	<i>B. (Baicalocochlea) baicalensis</i>							+			
280(310a)	<i>B. (B.) maxima maxima</i>							+			
280(310b)	<i>B. (B.) m. marisminus</i>							+			
281(311)	<i>B. (B.) pumyla</i>							+			
282(312)	<i>B. (B.) shadini</i>							+			
283(313)	<i>Kobeltocochlea martensiana</i>							+			
284(314)	<i>K. falsipumyla</i>							+			
285(315)	<i>K. lindholmiana</i>							+			
286(316)	<i>K. olchonensis</i>							+			
287(317)	<i>Pseudobenedictia michnoi</i>							+			
288(318)	<i>Yaroslaviella eximia</i>							+			
289(319)	<i>Sibirobythinella kuznetzkiana</i>					+					
290(320)	<i>S. almaatina</i>								+		
291(321)	<i>Valvata (Valvata) cristata</i>	+	+			+					
291(322)	<i>V. (V.) planorbulina</i>	+	+								
291(323)	<i>V. (V.) spirorbis</i>	+	+								
292 (324)	<i>V. (V.) trochoidea</i>	+	+			+					
292(325)	<i>V. (V.) andreaei</i>	+	+			+					
292(326)	<i>V. (V.) geyeri</i>	+	+			+					
292(327)	<i>V. (V.) latior</i>	+									
292(328)	<i>V. (V.) lietuvensis</i>	+									
292(329)	<i>V. (V.) nana</i>	+									
292(330)	<i>V. (V.) pusilla</i>	+	+								
292(331)	<i>V. (V.) vystitiensis</i>	+									
293(332)	<i>V. (Atropidina) macrostoma</i>	+	+								
293(333)	<i>V. (Atropidina) depressa</i>	+	+			+					
293(334)	<i>V. (A.) pulchella</i>	+	+			+					
294(335)	<i>V. (A.) discors</i>	+	+			+					

№	Species	RAC subregions									
		NE	SE	CT	CS	WS	ES	BL	CA	SF	NF
294(336)	<i>V. (A.) kliniensis</i>	+	+			+					
295(337)	<i>V. (Cincinna) piscinalis</i>	+	+	+		+					
295(338)	<i>V. (C.) dilatata</i>	+	+			+					
295(339)	<i>V. (C.) falsifluviatilis</i>	+	+			+					
295(340)	<i>V. (C.) lilljeborgi</i>	+	+			+					
295(341)	<i>V. (C.) obtusa</i>	+	+			+					
295(342)	<i>V. (C.) skorikovi</i>	+	+			+					
296(343)	<i>V. (C.) ambigua</i>	+	+			+					
296(344)	<i>V. (C.) chersonica</i>		+			+					
297(345)	<i>V. (C.) antiqua</i>	+	+			+					
297(346)	<i>V. (C.) antiquilina</i>					+					
297(347)	<i>V. (C.) contorta</i>	+	+								
298(348)	<i>V. (Pamirovalvata) pamirensis</i>								+		
299(349)	<i>V. (P.) gafurovi</i>								+		
300(350)	<i>V. (Pseudomegalovalvata) bathybia</i>							+			
301(351)	<i>V. (Ps.) laethmophila</i>							+			
302(352)	<i>V. (Ps.) olkhonica</i>							+			
303(353)	<i>V. (Ps.) profundicola</i>							+			
304(354)	<i>V. (Ps.) tenagobia</i>							+			
305(355)	<i>V. (Sibirovalvata) confusa</i>					+	+				+
306(356)	<i>V. (S.) aliena</i>					+	+				
307(357)	<i>V. (S.) brevicula</i>					+	+	+			
308(358)	<i>V. (S.) chereshevi</i>										+
309(359)	<i>V. (S.) japonica</i>									+	
309(360)	<i>V. (S.) amurensis</i>									+	
309(361)	<i>V. (S.) chishimana</i>									+	
309(362)	<i>V. (S.) klucharevae</i>									+	
309(363)	<i>V. (S.) simusyuensis</i>									+	+
309(364)	<i>V. (S.) sirotskii</i>									+	
310(365)	<i>V. (S.) korotnevi</i>						+	+			
311(366)	<i>V. (S.) lewisi</i>										+
311(367)	<i>V. (S.) helicoidea</i>					+	+				+
312(368)	<i>V. (S.) mergella</i>										+
313(369)	<i>V. (S.) sibirica</i>	+				+	+	+		?	+
313(370)	<i>V. (S.) burensis</i>									+	
313(371)	<i>V. (S.) hankensis</i>									+	
313(372)	<i>V. (S.) hokkaidoensis</i>									+	
313(373)	<i>V. (S.) iturupensis</i>									+	
313(374)	<i>V. (S.) kamchatica</i>						+			+	
313(375)	<i>V. (S.) middendorffi</i>									+	
313(376)	<i>V. (S.) saghalinensis</i>									+	
314(377)	<i>V. (S.) sorensis</i>					+	+	+		+	+

№	Species	RAC subregions									
		NE	SE	CT	CS	WS	ES	BL	CA	SF	NF
314(378)	<i>V. (S.) tymiensis</i>									+	
315(379)	<i>V. (S.) sujfunensis</i>									+	
316(380)	<i>Megalovalvata baicalensis</i>						+	+			
317(381)	<i>M. demersa</i>							+			
318(382)	<i>M. kozhovi</i>							+			
319(383)	<i>M. lauta</i>							+			
320(384)	<i>M. parvula</i>							+			
321(385a)	<i>M. piligera piligera</i>							+			
321(385b)	<i>M. p. minor</i>							+			
321(385c)	<i>M. p. nudicarinata</i>							+			
322(386)	<i>Borysthenia naticina</i>	+	+			*					
322(387)	<i>B. alligans</i>	+	+								
322(388)	<i>B. jelskii</i>		+								
322(389)	<i>B. menkeana</i>	+	+								
323(390)	<i>Tenellia adspersa</i>				*						
324(391)	<i>Acroloxus (Acroloxus) lacustris</i>	+	+			+					
324(392)	<i>A. (A.) caucasicus</i>		+	+							
324(393)	<i>A. (A.) lindholmi</i>	+									
324(394)	<i>A. (A.) oblongus</i>	+	+			+					
324(395)	<i>A. (A.) okaensis</i>	+	+								
324(396)	<i>A. (A.) rossicus</i>	+	+	+							
324(397)	<i>A. (A.) shadini</i>	+	+			+					
325(398)	<i>A. (A.) arachleicus</i>						+				
326(399)	<i>A. (A.) baicalensis</i>						+	+		+	
327(400)	<i>A. (A.) kolhymensis</i>						+				
327(401)	<i>A. (A.) regelae</i>						+				
328(402)	<i>A. (A.) likharevi</i>									+	
329(403)	<i>A. (A.) hassanicus</i>									+	
330(404)	<i>A. (A.) klucharevae</i>									+	
331(405)	<i>A. (A.) orientalis</i>									+	
332(406)	<i>A. (A.) ussuriensis</i>									+	
333(407)	<i>A. (A.) victori</i>						+			+	
334(408)	<i>A. (A.) zarjaensis</i>									+	
335(409)	<i>Baicalancylus laricensis</i>							+			
336(410)	<i>B. boettgerianus</i>							+			
337(411)	<i>B. kobelti</i>						+	+			
338(412)	<i>B. njurgonica</i>							+			
339(413)	<i>Gerstfeldtiancylus (Gerstfeldtiancylus) re-nardii</i>							+			
340(414)	<i>G. (G.) kotyensis</i>							+			
341(415)	<i>G. (G.) ushunensis</i>							+			
342(416)	<i>G. (Kozhoviancylus) benedictiae</i>							+			

№	Species	RAC subregions									
		NE	SE	CT	CS	WS	ES	BL	CA	SF	NF
343(417)	<i>G. (K.) caputiformis</i>							+			
344(418)	<i>G. (K.) pileolus</i>							+			
345(419)	<i>G. (K.) porfirievae</i>							+			
346(420)	<i>G. roepstorfi</i>							+			
347(421)	<i>Pseudancylastrum</i> (<i>Pseudancylastrum</i>) <i>sibiricum</i>							+			
348(422)	<i>P. (Ps.) aculiferum</i>							+			
349(423)	<i>P. (Ps.) beckmanae</i>							+			
350(424)	<i>P. (Ps.) cornu</i>							+			
351(425)	<i>P. (Ps.) dybowski</i>							+			
352(426)	<i>P. (Ps.) korotnevi</i>							+			
353(427)	<i>P. (Ps.) olgae</i>							+			
354(428)	<i>P. (Ps.) poberezhnyi</i>							+			
355(429)	<i>P. (Ps.) troschelii</i>							+			
356(430)	<i>P. (Ps.) werestschagini</i>							+			
357(431)	<i>P. (Frolikhancylus)</i> <i>frolikhae</i>							+			
358(432)	<i>P. (Parancylastrum)</i> <i>dorogostajskii</i>							+			
359(433)	<i>P. (P.) irindaense</i>							+			
360(434a)	<i>Lymnaea (Lymnaea)</i> [<i>stagnalis</i>] <i>stagnalis</i>	+	+	?							
360(434b)	<i>L. (L.) [stagnalis]</i> <i>acicularis</i>	+	+	+		+	+	+	+	+	+
361(435a)	<i>L. (Kazakhlymnaea)</i> <i>taurica taurica</i>		+	+							
361(435b)	<i>L. (K.) t. kazakensis</i>		+			+			+		
362(436)	<i>Stagnicola (Stagni-</i> <i>cola) palustris</i>	+	+	+		+					
362(437)	<i>S. (S.) archangelica</i>	+				?					
362(438)	<i>S. (S.) atra</i>	+	+								
363(439)	<i>S. (S.) callomphala</i>	+	+								
364(440a)	<i>S. (S.) fuscus fuscus</i>	+	+	+							
364(440b)	<i>S. (S.) fuscus mari-</i> <i>timus</i>	+									
364(441)	<i>S. (S.) pachyta</i>		+								
365(442)	<i>S. (S.) gloeeri</i>	+				+					
366(443)	<i>S. (S.) iliensis</i>					+			+		
367(444)	<i>S. (S.) saridalensis</i>		+			+			+		
368(445)	<i>S. (S.) turricula</i>	+	+								
368(446)	<i>S. (S.) badia</i>		+								
368(447)	<i>S. (S.) berlani</i>		+	+							
369(448)	<i>S. (S.) ventricosella</i>					+	+	+			
370(449)	<i>S. (S.) zebrella</i>	+				+	+	+			
371(450)	<i>S. (Corvusiana) corvus</i>	+	+								
371(451)	<i>S. (C.) gueretiniana</i>	+	+								
372(452)	<i>Omphiscola glabra</i>	+	+								

[illegible]

№	Species	RAC subregions									
		NE	SE	CT	CS	WS	ES	BL	CA	SF	NF
398(493)	<i>R. (R.) kurilensis</i>									+	
399(494)	<i>R. (R.) mongolica</i>									+	
400(495)	<i>R. (R.) obliquata</i>						+		+		
401(496)	<i>R. (R.) pacifampla</i>									+	
402(497)	<i>R. (R.) parapsilia</i>	+	+			+	+		+	+	+
403(498)	<i>R. (R.) persica</i>			+					+		
404(499)	<i>R. (R.) rectilabrum</i>								+		
405(500)	<i>R. (R.) schelechovi</i>										+
406(501)	<i>R. (R.) sirikulensis</i>								+		
407(502)	<i>R. (R.) solidissima</i>								+		
408(503)	<i>R. (R.) subdisjuncta</i>								+		
409(504)	<i>R. (R.) tenera</i>								+		
410(505)	<i>R. (R.) zarenkovi</i>									+	
411(506)	<i>R. (Peregriana) peregra</i>	+	+	+		+					
411(507)	<i>R. (P.) bakowskyana</i>		+	+							
411(508)	<i>R. (P.) blauneri</i>			+							
411(509)	<i>R. (P.) fulva</i>		+	+							
412(510)	<i>R. (P.) aberrans</i>						+				+
413(511)	<i>R. (P.) ampla</i>	+	+			+	+				
413(512)	<i>R. (P.) hartmanni</i>	+	+								
413(513)	<i>R. (P.) monnardi</i>	+	+								
414(514)	<i>R. (P.) amurensis</i>									+	
414(515)	<i>R. (P.) dvoriadkini</i>									+	
414(516)	<i>R. (P.) manomaensis</i>									+	
414(517)	<i>R. (P.) sihotealinica</i>									+	
415(518)	<i>R. (P.) balthica</i>	+	+	+		+	+	+			
415(519)	<i>R. (P.) ampullacea</i>	+	+			+	+	+			
415(520)	<i>R. (P.) carelica</i>	+									
415(521)	<i>R. (P.) igarkae</i>					+	+				
415(522)	<i>R. (P.) intermedia</i>	+	+			+	+	+			
415(523)	<i>R. (P.) nogoonica</i>					+	+				
415(524)	<i>R. (P.) tsalolikhini</i>						+				
416(525)	<i>R. (P.) dipkunensis</i>					+				+	
416(526)	<i>R. (P.) novikovi</i>					+	+				
416(527)	<i>R. (P.) teletzkiana</i>					+				+	
417(528)	<i>R. (P.) dolgini</i>					+	+				
417(529)	<i>R. (P.) gundrizeri</i>					+					
417(530)	<i>R. (P.) ulaganica</i>					+					
418(531)	<i>R. (P.) jacutica</i>					+	+			+	+
419(532)	<i>R. (P.) kafanovi</i>									+	
420(533)	<i>R. (P.) kamtschatica</i>						+				+
421(534)	<i>R. (P.) lagotis</i>	+	+			+	+	+	+		
421(535)	<i>R. (P.) mucronata</i>	+	+								
422(536)	<i>R. (P.) middendorffi</i>						+				+
423(537)	<i>R. (P.) mongolitumida</i>						+				
424(538)	<i>R. (P.) torquilla</i>						+				

№	Species	RAC subregions									
		NE	SE	CT	CS	WS	ES	BL	CA	SF	NF
425(539)	<i>R. (P.) tumida</i>	+	+			+	+	+			
426(540)	<i>R. (P.) zazurnensis</i>					+	+	+		+	+
427(541)	<i>Orientogalba hookeri</i>					+	+		+	+	
428(542)	<i>O. lenaensis</i>						+			+	
429(543)	<i>O. viridis</i>									+	
429(544)	<i>O. ollula</i>									+	
430(545)	<i>Cerasina impura</i>								+		
431(546)	<i>Physa fontinalis</i>	+	+			+	+				
432(547)	<i>Ph. arachleica</i>						+				
433(548)	<i>Ph. chankensis</i>									+	
433(549)	<i>Ph. jarochnovitschae</i>						+				
433(550)	<i>Ph. khabarovskensis</i>									+	
434(551)	<i>Ph. skinneri</i>										+
435(552)	<i>Ph. streletzkae</i>						+				+
436(553)	<i>Ph. taslei</i>		+			+	+				
437(554)	<i>Beringophysa jennessi</i>						+				+
437(555)	<i>B. chukchensis</i>						+				+
437(556)	<i>B. kuvaevi</i>										+
437(557)	<i>B. tei</i>										+
438(558)	<i>Physella (Physella) nuttalli</i>										+
439(559)	<i>Ph. (Costatella) acuta</i>		*	*					*	*	
440(560)	<i>Ph. (C.) integra</i>		*	*		*			*	*	
441(561)	<i>Aplexa hypnorum</i>	+	+			+					
441(562)	<i>A. turrita</i>	+	+			+					
442(563)	<i>Amuraplexa amurensis</i>						+			+	
442(564)	<i>A. aphallica</i>									+	
442(565)	<i>A. moskvichevae</i>									+	
442(566)	<i>A. orientalis</i>									+	
443(567)	<i>Sibirenauta elongata</i>					+	+			+	+
444(568)	<i>S. sibirica</i>					+	+				+
445(569)	<i>"S". tuwaensis</i>						+				
446(570)	<i>Planorbis (Planorbis) planorbis</i>	+	+			+					
446(571)	<i>P. (P.) umbilicatus</i>	+	+			+	+				
447(572)	<i>P. (P.) carinatus</i>	+	+	+							
447(573)	<i>P. (P.) dubius</i>	+	+	+							
448(574)	<i>P. (P.) intermixtus</i>		+	+					+		
448(575)	<i>P. (P.) sieversi</i>			+					?		
448(576)	<i>P. (P.) tangitarensis</i>								+		
449(577)	<i>P. (P.) kubanicus</i>		+	+							
450(578)	<i>P. (P.) philippianus</i>		+	+							
451(579)	<i>Anisus (Anisus) spirorbis</i>	+	+	+		+					
451(580)	<i>A. (A.) dazuri</i>	+	+								
451(581)	<i>A. (A.) nikolensis</i>						+	+		+	
452(582)	<i>A. (A.) leucostoma</i>	+	+	+		+	+				

№	Species	RAC subregions									
		NE	SE	CT	CS	WS	ES	BL	CA	SF	NF
452(583)	<i>A. (A.) perezii</i>	+	+								
453(584)	<i>A. (A.) septemgyratus</i>	+	+								
454(585)	<i>A. (Costorbis) strauchianus</i>	+	+								
455(586)	<i>A. (Disculifer) vortex</i>	+	+			+	+				
456(587)	<i>A. (Vorticulus) vorticulus</i>	+	+			+					
456(588)	<i>A. (V.) charteus</i>	+	+								
457(589)	<i>Armiger crista</i>	+	+	?		+	+	?			
458(590)	<i>A. annandalei</i>						+		+		
459(591)	<i>A. bielzi</i>	+	+			+	+				
459(592)	<i>A. eurasiaticus</i>	+	+			+	+			+	+
459(593)	<i>A. jankowskajae</i>								+		
459(594)	<i>A. khoresmicus</i>								+		
459(595)	<i>A. schamaricus</i>								+		
460(596)	<i>Bathyomphalus contortus</i>	+	+	+		+	+				
460(597)	<i>B. agardhi</i>	+	+								
460(598)	<i>B. crassus</i>	+	+			+	+	+			
460(599)	<i>B. dispar</i>	+	+								
460(600)	<i>B. spondylioides</i>	+									
461(601a)	<i>Choanomphalus maacki maacki</i>						+	+			
461(601b)	<i>Ch. m. andrusowianus</i>							+			
461(601c)	<i>Ch. m. elatior</i>							+			
462(602a)	<i>Ch. amauronius amauronius</i>						+	+			
462(602b)	<i>Ch. a. angulatus</i>						+	+			
462(602c)	<i>Ch. a. westerlundianus</i>							+			
463(603)	<i>Ch. annuluformis</i>							+			
464(604)	<i>Ch. anomphalus</i>						+	+			
465(605)	<i>Ch. aorus</i>						+	+			
466(606a)	<i>Ch. bathybius bathybius</i>							+			
466(606b)	<i>Ch. b. meridianus</i>							+			
467(607)	<i>Ch. cryptomphalus</i>						+	+			
468(608)	<i>Ch. eurystomus</i>							+			
469(609)	<i>Ch. gertfeldtianus</i>							+			
470(610)	<i>Ch. grachevi</i>							+			
471(611)	<i>Ch. huzhirensis</i>							+			
472(612)	<i>Ch. hyaliniiformis</i>									+	
473(613a)	<i>Ch. incertus incertus</i>							+			
473(613b)	<i>Ch. i. mesospiralis</i>							+			
474(614)	<i>Ch. korotnevi</i>							+			
475(615)	<i>Ch. kozhovi</i>							+			
476(616)	<i>Ch. lindholmi</i>							+			
477(617)	<i>Ch. microtrochus</i>							+			

№	Species	RAC subregions									
		NE	SE	CT	CS	WS	ES	BL	CA	SF	NF
478(618)	<i>Ch. omphalotus</i>						+	+			
479(619)	<i>Ch. parvus</i>							+			
480(620)	<i>Ch. patulaeformis</i>							+			
481(621)	<i>Ch. planorbiformis</i>							+			
482(622)	<i>Ch. pygmaeus</i>							+			
483(623)	<i>Ch. schrenkii</i>							+			
484(624)	<i>Ch. valvatoides</i>							+			
485(625)	<i>Gyraulus (G.) albus</i>	+	+			+	+				
485(626)	<i>G. (G.) concinnus</i>	+									
485(627)	<i>G. (G.) draparnaudi</i>	+	+			+	+				
485(628)	<i>G. (G.) kruglowiae</i>					+					
485(629)	<i>G. (G.) stelmachotius</i>	+	+	+		+	+				
486(630)	<i>G. (G.) acronicus</i>	+	+	+		+	+				
486(631)	<i>G. (G.) substroemi</i>										+
487(632)	<i>G. (G.) borealis</i>	+				+	+	+			+
487(633)	<i>G. (G.) amuricus</i>										
487(634)	<i>G. (G.) angasolensis</i>						+	+		+	
487(635)	<i>G. (G.) baicalicus</i>					?	+	+			
487(636)	<i>G. (G.) buriaticus</i>						+			+	
487(637)	<i>G. (G.) centrifugops</i>									+	
487(638)	<i>G. (G.) chereshevi</i>										+
487(639)	<i>G. (G.) ignotellus</i>							+			
487(640)	<i>G. (G.) infraliratus</i>						+				+
487(641)	<i>G. (G.) iturupensis</i>									+	
487(642)	<i>G. (G.) khabarovskiensis</i>									+	
487(643)	<i>G. (G.) kussakini</i>						+			+	+
487(644)	<i>G. (G.) sibiricus</i>						+				+
487(645)	<i>G. (G.) sretenskiensis</i>									+	
487(646)	<i>G. (G.) terekholicus</i>						+				
487(647)	<i>G. (G.) thermochukchensis</i>										+
487(648)	<i>G. (G.) tugurensis</i>									+	
487(649)	<i>G. (G.) zelenensis</i>									+	
488(650)	<i>G. (G.) chinensis</i>								+		
488(651)	<i>G. (G.) issykulensis</i>								+		
489(652)	<i>G. (G.) convexiusculus</i>								+		
490(653)	<i>G. (G.) eichwaldi</i>				+						
491(654)	<i>G. (G.) illibatus</i>									+	
492(655)	<i>G. (G.) infirmus</i>									+	
493(656)	<i>G. (G.) kolesnikovi</i>				+						
494(657)	<i>G. (G.) ladacensis</i>								+		
495(658)	<i>G. (G.) noziensis</i>									+	
496(659)	<i>G. (G.) spirillus</i>									+	
497(660)	<i>G. (G.) stroemi</i>	+				+	+	+		+	+
497(661)	<i>G. (G.) centrifugus</i>						+				+
497(662)	<i>G. (G.) kamtschaticus</i>						+			+	+

№	Species	RAC subregions									
		NE	SE	CT	CS	WS	ES	BL	CA	SF	NF
497(663)	<i>G. (G.) zhirmunskii</i>									+	
498(664)	<i>G. (G.) subfiliaris</i>										+
499(665)	<i>G. (G.) sulcatus</i>				+						
500(666)	<i>G. (G.) umbiliciferus</i>							+			
501(667)	<i>G. (Microanisis) minusculus</i>									+	
502(668)	<i>G. (Torquis) laevis</i>	+	+	+		+					
502(669)	<i>G. (T.) correctus</i>	+									
503(670)	<i>Lamorbis (Lamorbis) riparius</i>	+	+			+					
504(671)	<i>L. (Pseudogyraulus) rossmaessleri</i>	+	+			+	+				
505(672)	<i>L. (Ps.) okhoticus</i>									+	
506(673)	<i>Promenetus exacuon</i>										+
507(674)	<i>Ancylus fluviatilis</i>	+	+			+			?		
507(675)	<i>A. expansilabris</i>	+									
507(676)	<i>A. orbicularis</i>		+								
507(677)	<i>A. subcircularis</i>	+									
508(678)	<i>A. benoitianus</i>			+							
509(679)	<i>A. capuloides</i>			+							
509(680)	<i>A. armenia</i>			+							
509(681)	<i>A. gibbosus</i>			+							
509(682)	<i>A. jani</i>			+							
509(683)	<i>A. major</i>			+							
510(684)	<i>Ferrissia fragilis</i>	*	*	*		*			*		
511(685)	<i>Biomphalaria glabrata</i>		*								
512(686)	<i>Menetus dilatatus</i>		*								
513(687)	<i>Planorbella anceps</i>					*					
514(688)	<i>P. duryi</i>		*				*				
515(689)	<i>P. hornii</i>										+
516(690)	<i>Culmenella rezvoji</i>									+	
516(691)	<i>C. buldowskii</i>									+	
516(692)	<i>C. lindholmi</i>									+	
517(693)	<i>Planorbarius corneus</i>	+	+			+					
517(694)	<i>P. adelosius</i>	+	+			+					
517(695)	<i>P. grandis</i>		+								
518(696)	<i>Segmentina nitida</i>	+	+			+					
518(697)	<i>S. avecenninae</i>								+		
518(698)	<i>S. caucasica</i>			+							
518(699)	<i>S. inniae</i>	+									
518(700)	<i>S. lineata</i>	+									
518(701)	<i>S. malkae</i>			+							
518(702)	<i>S. molytes</i>	+	+			+					
518(703)	<i>S. montgazoniana</i>	+	+								
518(704)	<i>S. oelandica</i>	+	+			+					
518(705)	<i>S. petropolitana</i>	+	+								
518(706)	<i>S. servaini</i>	+	+			+					

[illegible]

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In **bold** the accepted in this catalogue combinations are given, in normal – proper synonyms.
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Maxim VINARSKI

Born in 1978. Doctor of Science (zoology), professor of the Saint-Petersburg State University where he is at the head of the Laboratory of Macroecology and Biogeography of Invertebrates. His scientific interests cover various fields of malacology (mainly freshwater mollusc studies) as well as theoretical questions of biological systematics and the history of zoology. The current work of M. Vinarski is focused on phylogeography, molecular phylogeny and integrative taxonomy of lymnaeid snails of the World. Authored some 160 scientific publications.

Yuri KANTOR

Born in 1956. Doctor of Science (zoology), leading researcher in A.N. Severtsov Institute of Ecology and Evolution of Russian Academy of Sciences. Scientific interests include different fields of malacology, mainly morphology and phylogeny of marine predatory gastropods. Participated in numerous fieldworks and international expeditions in different regions of the Indo-Pacific and north Pacific. Member of the editorial boards of several international malacological journals and is the publishing Editor of *Ruthenica*, *Russian Malacological journal*. Authored some 160 research papers, several monographs and popular books.

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