

**RUSSIAN CONTRIBUTIONS TO STUDIES OF VIETNAMESE BIVALVES  
PART 2.  
LIST OF SPECIES RECORDED BY RUSSIAN AUTHORS  
OR STORED IN MUSEUMS**

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**ABSTRACT**

A complete listing of species names of bivalve molluscs recorded by Russian authors for Vietnamese waters is given. In addition to published information, the Zoological Institute (Russian Academy of Sciences, St-Petersburg) catalogue cards were reviewed in order to compile species list. In total, 367 species names are enumerated. Two largest Russian collections of Vietnamese bivalves are in the Zoological Institute (243 species) and the Zoological Museum, Far East State University (Vladivostok) (83 species). Some species are provided with comments on their current taxonomic status. A list of eleven new species described by Russian malacologists from Vietnam is given with comments and full label data; photographs of syntypes of eight species are published for the first time.

**INTRODUCTION**

There are three major sources of species records for various parts of Vietnam, which we tried to use in order to compile a list of bivalves. First, quite a comprehensive listing of the ZISP collection (abbreviations are the same as in Part 1 of this paper but they

are spelt out additionally below) identified by O.A. Scarlato and I.P. Zorina and published by Gurjanova (1972) and Zorina (1975). However, as already mentioned in Part 1, these authors presented only part of the information, namely, 104 species from 30 families in Gurjanova (1972) and 140 species from seven families in Zorina (1975). Gurjanova (1972), additionally included in the list, species collected from the intertidal of Hainan and the data of Serène (1937) and Dawydoff (1952) so the actual number of species in her list collected by Soviet-Vietnamese expeditions and identified at that time is 74. For this reason, we asked the ZISP to provide us with copies of catalogue cards of the Vietnamese and South Chinese collection, and through the extreme kindness of Dr. A.V. Martynov, we were able to extract 243 species names recorded for Vietnam (Table 1). These are molluscs collected exclusively in northern Vietnam. Another collection of Vietnamese molluscs is stored in the ZMFU and consists mainly of occasional samplings by different Russian scientists who worked in Vladivostok, and other persons (including even sailors of Soviet commercial ships basing in Vladivostok)

Serene (1937) and Dawydoff (1952)*	Gurjanova (1972)* (only Tonkin Gulf)	Present paper		
		Stored in ZISP**	Stored in ZMFU	In total
308	104	243	83	367

Table 1 Number of species names of bivalve molluscs from Vietnam based on different sources (\*) Including species identified to the genus level. (\*\*) Including ten species of Anadarinae from the ZISP collection mentioned by Evseev & Lutaenko (1998).

who visited Vietnam during last decades; this collection was chiefly identified by G.A. Evseev and partly by K.A. Lutaenko during his curatorship of molluscs in the ZMFU. The catalogue published in English (Darkina & Lutaenko, 1996) made it possible to concentrate in one list all species records from Vietnam. So, both museum collections were the second source of knowledge of molluscan biodiversity. The collection of MIMB contains part of samples discussed in the paper of Evseev & Lutaenko (1998) but they are only anadarnines. Despite the fact that the IMB carried out many expeditions to Vietnam, no comprehensive collection of bivalves has been so far created except for "private collections" of some staff members which have not yet been transferred to the MIMB. And, finally, we used all available records from ecological/hydrobiological and other papers devoted to the biology of molluscs of Vietnam; this is a less significant sort of information on biodiversity, but, in some cases, identifications were made by professional malacologists and these records cannot be regarded as completely useless. As some authors did not give exact geographical localities within Vietnam, we arranged the list with references only to authors, but not to areas. Mostly, the geographical areas where some authors worked can be understood from the review in Part 1. This time-consuming work yielded a list containing 367 species names (Table 1).

We are aware that the value of records is very different due to incorrect or tentative identifications and the lack of voucher specimens. We tried to comment on some names, but we believe that the list represents in part an enumeration of synonyms. At the same time, it sums Russian national experience of complex malacological research in a tropical region, and the list can provide a basis for further faunal/biogeographical studies and will be emended by subsequent workers. It is also useful for preliminary faunal comparisons with other tropical areas. To date, malacofaunal data on the South China Sea are very limited and hard available be-

cause of the language barrier; for example, in compiling global biogeographic database and considering latitudinal diversity gradient, Flessa & Jablonski (1995) used only one Chinese list of bivalves for Tonkin Gulf although there is a larger amount of information.

#### FORMAT

In this listing, subgeneric names are not used because genus-level names are often changed up to current revisions and preferences of different taxonomic schools. We verified generic and species names mainly after Habe (1977), Bernard *et al.* (1993) and Higo *et al.* (1999), i.e., most recent regional faunal monographs covering areas adjoining Vietnam (China and Japan). In some cases, we followed revisions of other authors on more narrow groups. We could not check out current taxonomic and nomenclatural positions and problems related to some species because this would have made our work unending. Species identified to the genus level were not incorporated in the list. References and comments on synonymy or nomenclature follow the species names. References include published information as well as those from ZISP card catalogue. We always indicated in brackets the original genus name published or given in the catalogue. If a species is an obvious synonym, which is widely accepted in the literature, we listed it as a separate entry but provided data on the possible conspecificity with other species.

In case of citations of species from Gurjanova's (1972) list, we excluded all species found in Hainan Island (they were marked in the list by "+") and those recorded by Serène (1937) and Dawydoff (1952) (marked by "++"). Species mentioned by Zorina (1975) for Tonkin Gulf but not recorded for Vietnamese coast in the ZISP catalogue cards are regarded as occurring in Hainan Island and also were not included in our list. We do not cite a monograph by Scarlato (1965) on Chinese Tellionoidea although there are some Vietnamese records

from Tonkin Gulf; but the text is in Chinese and it was impossible to extract true Vietnamese records. However, the ZISP catalogue contains all Tonkin Gulf samples identified by O.A. Scarlato.

In the Appendix, the original published drawings and photographs of type materials of new species described by Russian malacologists with label data and necessary comments are given.

#### ABBREVIATIONS

IMB - Institute of Marine Biology, Far East Branch of the Russian Academy of Sciences, Vladivostok (formerly, USSR Academy of Sciences) MIMB - The Institute Museum, Institute of Marine Biology, Far East Branch of the Russian Academy of Sciences, Vladivostok ZISP - Zoological Institute, Russian Academy of Sciences, St.-Petersburg (formerly, USSR Academy of Sciences, Leningrad) ZMFU - Zoological Museum, Far East State University, Vladivostok.

### LIST OF SPECIES OF BIVALVE MOLLUSCS OF VIETNAM RECORDED BY RUSSIAN AUTHORS

Class Bivalvia Linnaeus, 1758  
Subclass Protobranchia Pelseneer, 1889  
Order NUCULOIDA Dall, 1889

#### NUCULIDAE Gray, 1824

*Acila divaricata* (Hinds, 1843)

Reference: ZISP catalogue.

*Nucula cumingii* Hinds, 1843

References: Gurjanova (1972); ZISP catalogue.

*Nucula dautzenbergi* Prashad, 1932

References: Gurjanova (1972); ZISP catalogue.

*Nucula layardi* A. Adams, 1856

Reference: ZISP catalogue.

Subclass Pteromorpha Bereulen, 1944

Order MYTILOIDA Ferussac, 1822

#### SAREPTIDAE Stoliczka, 1871

*Yoldia lepidula* A. Adams, 1856

Reference: ZISP catalogue.

#### MYTILIDAE Rafinesque, 1815

*Amygdalum watsoni* (Smith, 1885)

References: Gurjanova (1972; as *Modiolus*); Darkina & Lutaenko (1996); ZISP catalogue (as *Modiolus*).

*Botula cinnamonea* (Lamarck, 1819)

Reference: ZISP catalogue (as *Lithophaga*). Remarks: Invalid name due to preoc-

cupation: *Modiola cinnamonea* Lamarck, 1819 non Schreibers, 1793. The correct name is *Botula silicula* (Lamarck, 1819) (Bernard *et al.*, 1993; Higo *et al.*, 1999).

*Brachidontes striatulus* (Hanley, 1844)

Reference: Zvyagintsev & Mikhailov (1988); Kasyanov *et al.* (1989; as *Modiola*).

*Dentimodiolus hirsutus* (Lamarck, 1819)

Reference: ZISP catalogue (as *Trichomya*).

*Hormomya mutabilis* (Gould, 1861)

Reference: Zevina *et al.* (1992). Remarks: In ZISP catalogue, there are 43 samples from South China Sea (including both Tonkin Gulf and Hainan Island) identified by I.P. Zorina as *Brachidontes curvatus* (Dunker). It seems it is the same species as *Mytilus curvatus* Dunker, 1856 non Kloeden, 1834 is listed in the synonymy of *H. mutabilis* (Wang & Qi, 1984; Bernard *et al.*, 1993; Higo *et al.*, 1999).

*Lithophaga laevigata* (Quoy et Gaimard, 1835)

References: Kasyanov *et al.* (1989); Selin (1991); Zevina *et al.* (1992).

*Lithophaga lithophaga* (L., 1758)

Reference: Kasyanov *et al.* (1989). Remarks: This is a Mediterranean species (Sabelli *et al.*, 1990) which does not occur in the Indo-Pacific.

*Lithophaga malaccana* (Reeve, 1857)

Reference: ZISP catalogue.

- Lithophaga nasuta* (Philippi, 1846)  
Reference: Evseev & Tran Dinh Nam (1989).
- Lithophaga teres* (Philippi, 1846)  
References: Evseev & Tran Dinh Nam (1989); ZISP catalogue.
- Lithophaga zitteliana* Dunker, 1883  
Reference: ZISP catalogue.
- Modiolus auriculatus* (Krauss, 1848)  
Reference: Nguyen Van Chung *et al.* (1988; as *Modiola*).
- Modiolus barbatus* (L., 1758)  
Reference: ZISP catalogue. Remarks: This a Mediterranean species (Sabelli *et al.*, 1990) which does not occur in the Indo-Pacific area.
- Modiolus lignea* (Reeve, 1858)  
Reference: Gurjanova (1972).
- Modiolus metcalfei* (Hanley, 1843)  
References: Selin (1991); Zevina *et al.* (1992); Darkina & Lutaenko (1996); ZISP catalogue.
- Modiolus philippinarum* (Hanley, 1843)  
References: Kasyanov *et al.* (1989); Darkina & Lutaenko (1996); ZISP catalogue.
- Modiolus "rhomboidea* Reeve, 1857" (?)  
References: Gurjanova (1972); ZISP catalogue. Remarks: In both Gurjanova (1972) and the ZISP catalogue, this heading was given with the author "Hanley". According to Habe (1977), *Modiola rhomboidea* Reeve, 1857 is a synonym of *Modiolus (Modiolusia) elongatus* (Swainson, 1821). At the same time, Higo *et al.* (1999) listed *Modiola rhomboidea* Clessin, 1890 non Reeve, 1857 in the synonymy of *M. elongatus*.
- Modiolus vaginus* (Lamarck, 1819)  
Reference: ZISP catalogue (as *vagina*).
- Musculista japonica* (Dunker, 1856)  
Reference: Gurjanova (1972; as *Musculus*).
- Mytilus edulis* (L., 1758)  
Remarks: The boreal blue mussel *Mytilus edulis* (L., 1758) was recorded in biofouling communities on ships from trade line Vietnam - Primorye (Russian continental part of the Sea of Japan) (Zvyagintsev & Mikhailov, 1988).
- Perna viridis* (L., 1758)  
References: Malakhov *et al.* (1985); Malakhov & Blinov (1988); Zvyagintsev & Mikhailov (1988); Selin (1991); Mikhailov *et al.* (1990); Zevina *et al.* (1992); Gogolev (1994); ZISP catalogue (as *Mytilus smaragdinus*).
- Septifer bilocularis* (L., 1758)  
References: Nguyen Van Chung *et al.* (1988); Zvyagintsev & Mikhailov (1988); Kasyanov *et al.* (1989); Zevina *et al.* (1992); ZISP catalogue.
- Septifer virgatis* (Wiegmann, 1837)  
Reference: Selin (1991); ZISP catalogue.
- Stavelia subdistorta* (Récluz, 1852)  
Reference: Kasyanov *et al.* (1989).
- Order ARCOIDA Stoliczka, 1871
- ARCIDAE** Lamarck, 1809
- Anadara antiquata* (L., 1758)<sup>1</sup>  
References: Malakhov *et al.* (1985); Gulbin *et al.* (1988; as *Arca*); Malakhov & Blinov (1988); Darkina & Lutaenko (1996); Evseev & Lutaenko (1998).  
Remarks: In case of the subfamily Anadarinae Reinhart, 1935, the ZISP catalogue is not cited as this information is contained in the paper of Evseev & Lutaenko (1998). For additional non-Russian records of arcids in Vietnam see also Hua Thai Tuyen (1998).
- Anadara binakayanensis* (Faustino, 1932)  
References: Evseev & Lutaenko (1998).
- Anadara chalcanthum* (Reeve, 1844)  
Reference: Lukin *et al.* (1988; as *Arca*).  
Remarks: This species is a synonym of *Anadara (Scapharca) gubernaculum* (Reeve, 1844).
- Anadara clathrata* (Reeve, 1844)  
References: Darkina & Lutaenko (1996).  
Remarks: Invalid name: *Arca clathrata* Reeve, 1844 non DeFrance, 1816. This species is referred to *Anadara (Imparilarca) craticulata* (Nyst, 1847).
- Anadara consociata* (Smith, 1885)  
References: Darkina & Lutaenko (1996);

- Evseev & Lutaenko (1998).  
*Anadara cornea* (Reeve, 1844)  
 References: Kasyanov *et al.* (1989; as *Scapharca*); Darkina & Lutaenko (1996).  
*Anadara craticulata* (Nyst, 1848)  
 Reference: Evseev & Lutaenko (1998).  
*Anadara crebricostata* (Reeve, 1844)  
 References: Darkina & Lutaenko (1996); Evseev & Lutaenko (1998).  
*Anadara dautzenbergi* (Lamy, 1907)  
 References: Darkina & Lutaenko (1996); Evseev & Lutaenko (1998).  
*Anadara dichotoma gratiosa* (Lynge, 1909)  
 Reference: Gurjanova (1972; as *Arca*).  
 Remarks: This subspecies is a synonym of *Anadara (Mabellarca) dautzenbergi* (Lamy, 1907).  
*Anadara ferruginea* (Reeve, 1844)  
 References: Darkina & Lutaenko (1996); Evseev & Lutaenko (1998).  
*Anadara granosa* (L., 1758)  
 References: Darkina & Lutaenko (1996); Evseev & Lutaenko (1998).  
*Anadara guangdongensis* (Bernard, Cai et Morton, 1993)  
 References: Darkina & Lutaenko (1996); Evseev & Lutaenko (1998).  
*Anadara gubernaculum* (Reeve, 1844)  
 References: Zvyagintsev & Mikhailov (1988; as *Scapharca*); Darkina & Lutaenko (1996); Evseev & Lutaenko (1998).  
*Anadara kafanovi* Lutaenko, 1993  
 References: Lutaenko (1993); Darkina & Lutaenko (1996); Evseev & Lutaenko (1998).  
*Anadara kagoshimensis* (Tokunaga, 1906)  
 References: Darkina & Lutaenko (1996; as *A. subcrenata*); Evseev & Lutaenko (1998).  
*Anadara nodifera* (Martens, 1860)  
 References: Lukin *et al.* (1988; as *Tegillarca*); Darkina & Lutaenko (1996); Evseev & Lutaenko (1998).  
*Anadara pilula* (Reeve, 1843)  
 References: Darkina & Lutaenko (1996); Evseev & Lutaenko (1998).  
*Anadara rotundicostata* (Reeve, 1844)  
 Reference: Gurjanova (1972; as *Arca*).  
 Remarks: According to our examination of the ZISP anadarine collection, I.P. Zorina identified so *Anadara (Mabellarca) consociata* (Smith, 1885), an abundant Vietnamese subtidal ark shell. The status of *A. rotundicostata* itself is not clear: the figure of Reeve (1844, pl. 7, sp. 46) refers, most likely, to a representative of the subgenus *Anadara (Tegillarca)* Iredale, 1939. However, type locality of this species is unknown and type specimens are not isolated in the Natural History Museum (London) (Stevenson, 1972). Moreover, *A. consociata* is believed to be a synonym of *Anadara (Diluvarca) ferruginea* (Reeve, 1844) (Stevenson, 1972) and its subgeneric position also requires verification (Evseev & Lutaenko, 1998). FroOn other side, *Arca rotundicostata* of Reeve is similar to *Anadara cuneata* (Reeve, 1844) described by Vongpanich (1996) from Thailand. *A. cuneata* was believed to be a synonym of *Anadara (Tegillarca) granosa* (L., 1758) (Stevenson, 1972; Evseev & Lutaenko, 1998). Lamprell and Healy (1998) regarded *A. rotundicostata* as a separate species in Australia. This taxonomic mess should be resolved through examination of types. It should be also mentioned that *Anadara pesmatacis* Oliver et Chesney, 1994 (Oliver & Chesney, 1994) is close to this complex (*cuneata-rotundicostata*).  
*Anadara cf. satowi* (Dunker, 1882)  
 References: Darkina & Lutaenko (1996); Evseev & Lutaenko (1998).  
*Anadara troscheli* (Dunker, 1882)  
 References: Darkina & Lutaenko (1996); Evseev & Lutaenko (1998).  
*Anadara uropigimelana* (Bory, 1824)  
 Reference: Evseev & Lutaenko (1998).  
*Anadara vellicata* (Reeve, 1844)  
 References: Lukin *et al.* (1988; as *Scapharca*); Evseev & Lutaenko (1998).  
 “*Anadara*” *mortenseni* (Lynge, 1909)  
 References: Gurjanova (1972; as *Arca*); ZISP catalogue (as *Arca*).  
 Remarks: This small arcid (12 mm long) was described based on the single left valve and, probably, is not an anadarine. It has 47 sharp

- ribs, according to original description (Lyngø, 1909, p. 24 (120), pl. 2, figs. 1-2), which is unusual for anadarines: only few species from this area have rib number exceeding 40. The species does not morphologically resemble to any of them. Examination of the ZISP specimens and type material will reveal status of *A. mortenseni*.
- Acar plicatum* (Dillwyn, 1817)  
Reference: ZISP catalogue.
- Arca arabica* Philippi, 1847  
Reference: ZISP catalogue. Remarks: This species is a synonym of *Arca avellana* Lamarck, 1819.
- Arca linter* Jonas, 1845  
Reference: Gurjanova (1972); ZISP catalogue. Remarks: This name is a synonym of *Arca navicularis* Bruguière, 1797.
- Arca navicularis* Bruguière, 1797  
Reference: Nguyen Van Chung *et al.* (1988).
- “*Arca subgranulosa*”  
We could not trace name “*Arca subgranulosa*” (Nguyen Van Chung *et al.*, 1988) which is probably *Anadara subgranosa* (Dunker, 1870).
- Arca ventricosa* Lamarck, 1819  
References: Nguyen Van Chung *et al.* (1989); Kasyanov *et al.* (1989); Selin (1989); Latypov (1993; 1999; 2000); Darkina & Lutaenko (1996).
- Barbatia bicolorata* (Dillwyn, 1817)  
References: Selin (1991; as *Ustularca*); Zevina *et al.* (1992; as *Ustularca*); Latypov (1993; as *Barbatia*; 2000; as *Ustularca*); Darkina & Lutaenko (1996). Remarks: This species is a synonym of *Barbatia (Ustularca) fusca* (Bruguière, 1797).
- Barbatia cometa* (Reeve, 1844)  
References: Nguyen Van Chung *et al.* (1988; as *Arca*); Zvyagintsev & Mikhailov (1988); Mikhailov *et al.* (1990); Zevina *et al.* (1992); ZISP catalogue.
- Barbatia complanata* (Bruguière, 1789)  
Reference: ZISP catalogue. Remarks: This species ranges from Guinea and the Cape Verde Islands southward southern Angola, i.e., western Africa, and the related species in the Indo-Pacific is *Barbatia foliata* (Forskaal, 1775) (Oliver & Cosel, 1992).
- Barbatia fusca* (Bruguière, 1797)  
Reference: Kasyanov *et al.* (1989).
- Barbatia lima* (Reeve, 1844)  
Reference: Kasyanov *et al.* (1989; as *Arca*); Selin (1991); Darkina & Lutaenko (1996). Remarks: This species is a synonym of *Barbatia (Abarbatia) decussata* (Sowerby, 1833).
- Barbatia stearnsii* (Pilsbry, 1895)  
Reference: ZISP catalogue.
- Barbatia velata* (Sowerby, 1833)  
Reference: Gogolev (1994). Remarks: According to Higo *et al.* (1999), *Byssosarca velata* Sowerby, 1833 is a synonym of *Barbatia (Abarbatia) decussata* (Sowerby, 1833) or, according to Lamprell & Healy (1998), a synonym of *Barbatia (Barbatia) foliata* (Forskaal, 1775). Habe (1977), Bernard *et al.* (1993) and Xu (1997) regarded *B. velata* as a distinct separate species.
- Barbatia virescens* (Reeve, 1844)  
Reference: Darkina & Lutaenko (1996); ZISP catalogue.
- Hawaiiarca uwaensis* (Yokoyama, 1928)  
Reference: ZISP catalogue.
- Mimarcaria matsumotoi* Habe, 1958  
Reference: Darkina & Lutaenko (1996).
- Trisidos semitorta* (Lamarck, 1819)  
Reference: Darkina & Lutaenko (1996).
- Trisidos tortuosa* (L., 1758)  
References: Gurjanova (1972; as *Arca*); Darkina & Lutaenko (1996); ZISP catalogue (as *Arca*).
- NOETIIDAE** Stewart, 1930
- Estellacar olivacea* (Reeve, 1844)  
References: Gurjanova (1972; as *Arca*); ZISP catalogue (as *Striarca*).
- Sheldonella lateralis* (Reeve, 1844)  
Reference: Darkina & Lutaenko (1996).
- Striarca symmetrica* (Reeve, 1844)  
Reference: ZISP catalogue.
- CUCULLAEIDAE** Stewart, 1930

*Cucullaea concamerata* (Deshayes, 1835)

References: Gurjanova (1972); ZISP catalogue (with indication of Martens as the author of the species). Remarks: This species is regarded by some authors as a synonym of *Cucullaea labiosa* (Lightfoot, 1786) (Nicol, 1950).

*Cucullaea labiosa* (Lightfoot, 1786)

Reference: Kasyanov *et al.* (1989); Selin (1989); Darkina & Lutaenko (1996; as *C. labiosa granulosa*).

#### LIMOPSIDAE Dall, 1895

*Limopsis cancellata* (Reeve, 1843)

Reference: ZISP catalogue. Remarks: This is invalid name due to preoccupation: *Pectunculus cancellatus* Reeve, 1843 non Michelotti, 1839. The correct name for this species is *Limopsis multistriata* (Forskaal, 1775) (Bernard *et al.*, 1993; Higo *et al.*, 1999).

#### GLYCYMERIDIDAE Newton, 1916

*Glycymeris amamiensis* Kuroda, 1930

Reference: ZISP catalogue. Remarks: Higo *et al.* (1999) synonymised this species with *Tucetilla crebreiliratus* (Sowerby, 1889), however, Habe (1977) and Bernard *et al.* (1993) considered it to be a distinct species.

Order PTERIOIDA Newell, 1965

#### PTERIIDAE Gray, 1847

*Electroma alacorvi* (Dillwyn, 1817)

Reference: Kasyanov *et al.* (1989; as *Electroma ovata*). Remarks: *E. alacorvi* is used instead of *Meleagrina ovata* Quoy et Gaimard, 1835 non Sowerby, 1824. "*Pteria ovata*" mentioned by Kasyanov *et al.* (1989) is most likely the same species.

*Pteria coturnix* Dunker

in Martini et Chemnitz, 1889

References: Malakhov *et al.* (1985); Malakhov & Blinov (1988); Zvyagintsev & Mikhailov (1988); Kasyanov *et al.* (1989).

*Pteria fibrosa* (Reeve, 1857)

Reference: ZISP catalogue.

*Pteria penguin* (Röding, 1798)

References: Kasyanov *et al.* (1989); Latypov (1991; 1999; 2000); Selin (1991); Darkina & Lutaenko (1996).

*Pinctada albina* (Lamarck, 1819)

References: Zvyagintsev & Mikhailov (1988); Mikhailov *et al.* (1990); Zevina *et al.* (1992).

*Pinctada fucata* (Gould, 1850)

References: Selin (1991); Darkina & Lutaenko (1996). Remarks: This species is believed to be a synonym of *Pinctada radiata* (Leach, 1814) (Bernard *et al.*, 1993; Higo *et al.*, 1999). At the same time, Bernard *et al.* (1993) listed *Avicula fucata* Gould, 1850 in the synonymy of *Pinctada albina* (Lamarck, 1819).

*Pinctada margaritifera* (L., 1758)

References: Gurjanova (1972; as *Pteria*); Malakhov *et al.* (1985); Malakhov & Blinov (1988); Zvyagintsev & Mikhailov (1988); Kasyanov *et al.* (1989); Selin (1991); Zevina *et al.* (1992); Gogolev (1994); Darkina & Lutaenko (1996); ZISP catalogue.

*Pinctada martensii* (Dunker, 1872)

Reference: ZISP catalogue. Remarks: This species is a synonym of *Pinctada radiata* (Leach, 1814).

*Pinctada maxima* (Jameson, 1901)

Reference: Kasyanov *et al.* (1989).

*Pinctada nigra* (Gould, 1850)

Reference: Nguyen Van Chung *et al.* (1988).

*Pinctada radiata* (Leach in Leach et Nodder, 1814)

References: Zvyagintsev & Mikhailov (1988); Mikhailov *et al.* (1990); Selin (1991); Zevina *et al.* (1992); Latypov (1999; as *Pteria*).

#### ISOGNOMONIDAE Woodring, 1925

*Crenatula mytiloides* Lamarck, 1819

Reference: ZISP catalogue. Remarks: Probably, a synonym of *Crenatula picta* (Gmelin, 1791) (R.N. Kilburn, pers. comm.).

*Isognomon anomioides* (Reeve, 1858)

Reference: Nguyen Van Chung *et al.* (1988);

- as *Perna*).
- Isognomon ephippium* (L., 1758)  
Reference: Zevina *et al.* (1992); ZISP catalogue.
- Isognomon isognomum* (L., 1758)  
Reference: Kasyanov *et al.* (1989); Selin (1991); Gogolev (1994); Darkina & Lutaenko (1996). Remarks: "*Perna canina*" mentioned by Nguyen Van Chung *et al.* (1988) is probably a record of this species as *P. canina* Lamarck, 1818 is a synonym of *I. isognomum*.
- Isognomon legumen* (Gmelin, 1791)  
Reference: Selin (1991); ZISP catalogue. Remarks: "*Perna linguaeformis*" mentioned by Nguyen Van Chung *et al.* (1988) is probably a record of this species as *P. linguaeformis* Reeve, 1858 is a synonym of *I. legumen*.
- Isognomon nucleus* (Lamarck, 1819)  
Reference: Nguyen Van Chung *et al.* (1988; as *Perna*).
- Isognomon pernum* (L., 1767)  
Reference: ZISP catalogue.
- Isognomon quadrangularis* Reeve, 1857  
Reference: ZISP catalogue (as *Pedalion*). Remarks: Probably, a synonym of *Isognomon nucleus* (Lamarck, 1819) (R.N. Kilburn, pers. comm.).
- Isognomon spathulata* (Reeve, 1858)  
Reference: ZISP catalogue.
- Isognomon sulcatum* (Lamarck, 1819)  
Reference: Kasyanov *et al.* (1989). Remarks: This species is a synonym of *Isognomon (Isognomon) pernum* (L., 1767).
- MALLEIDAE** Lamarck, 1819  
(= Vulsellidae H. et A. Adams, 1857)
- Malleus albus* Lamarck, 1818  
References: Kasyanov *et al.* (1989); Darkina & Lutaenko (1996); ZISP catalogue.
- Malleus malleus* (L., 1758)  
References: Kasyanov *et al.* (1989); Selin (1989; 1991); Latypov (1993; 1999; 2000); Gogolev (1994); Darkina & Lutaenko (1996).
- Malvufundus regulus* (Forskaal, 1775)  
Reference: Zvyagintsev & Mikhailov (1988; as *Malleus*).
- Vulsella vulsella* (L., 1758)  
Reference: ZISP catalogue.
- PINNIDAE** Leach, 1809
- Atrina nigra* (Dillwyn, 1817)  
Reference: Malakhov *et al.* (1985); Kasyanov *et al.* (1989; as *Pinna*); Latypov (2000; as *Pinna*). Remarks: This species is a synonym of *Atrina vexillum* (Born, 1778).
- Atrina pectinata* (L., 1767)  
Reference: ZISP catalogue. Remarks: "*Perna pectinata*" of Nguyen Van Chung *et al.* (1988) is probably a record of this species of *Atrina*.
- Atrina vexillum* (Born, 1778)  
References: Malakhov *et al.* (1985); Kasyanov *et al.* (1989; as *Pinna*); Gogolev (1994); Darkina & Lutaenko (1996).
- Pinna bicolor* Gmelin, 1791  
Reference: ZISP catalogue.
- Pinna fumata* Reeve, 1858  
Reference: Malakhov *et al.* (1985); Dorofeeva *et al.* (1987); Selin (1989); Darkina & Lutaenko (1996). Remarks: This species is a synonym of *Pinna atropurpurea* Sowerby, 1825 (Bernard *et al.*, 1993; Higo *et al.*, 1999)
- Pinna semicostata* Conrad, 1837  
Reference: Nguyen Van Chung *et al.* (1988). Remarks: This species is a synonym of *Pinna (Quantulopinna) muricata* L., 1758.
- Order LIMOIDA Waller, 1978
- LIMIDAE** Rafinesque, 1815
- Limaria fragilis* (Gmelin, 1791)  
Reference: Kasyanov *et al.* (1989); ZISP catalogue (as *Lima*).
- Limaria orientalis* (Adams et Reeve, 1850)  
Reference: ZISP catalogue (as *Lima*). Remarks: Habe (1977) and Bernard *et al.* (1993) considered this species as a synonym of *Limaria (Limaria) basilanica* (Adams et Reeve, 1850).



*Lima lima* (L., 1758)

Reference: ZISP catalogue. Remarks: This species is not known in neighbouring Chinese waters (Bernard *et al.*, 1993; Xu, 1997).

Order OSTREOIDA Ferussac, 1822

**OSTREIDAE** Wilkes, 1810

*Crassostrea echinata* (Quoy et Gaimard, 1835)

References: Gurjanova (1972; as *Ostrea*); Lukin *et al.* (1988); Zvyagintsev et Mikhailov (1988); Mikhailov *et al.* (1990); Zevina *et al.* (1992; latter four ref. as *Saccostrea*); ZISP catalogue (as *Ostrea*).

*Crassostrea pestigris* (Hanley, 1846)

Reference: ZISP catalogue (as *Ostrea*).

*Dendostrea crenulifera* (Sowerby, 1871)

Reference: Darkina & Lutaenko (1996).

*Dendostrea folia* (L., 1758)

Reference: Darkina & Lutaenko (1996).

*Hyotissa hyotis* (L., 1758)

References: Kasyanov *et al.* (1989; as *Ostrea*); Selin (1991).

*Lopha cristagalli* (L., 1758)

References: Zvyagintsev & Mikhailov (1988); Kasyanov *et al.* (1989; as *Ostrea*); Selin (1991); Latypov (1993; 2000).

*Ostrea rivularis* Gould, 1861

References: Gurjanova (1972); Darkina & Lutaenko (1996; as *Pretostrea*).

*Ostrea translucida*

"*Ostrea translucida*" was listed by Zvyagintsev & Mikhailov (1988). This name could not be traced in the malacological literature.

*Parahyotissa inermis* (Sowerby, 1871)

References: Selin (1991; as *Ostrea imbricata*); Darkina & Lutaenko (1996; as *Pretostrea imbricata*); ZISP catalogue (as *Ostrea imbricata*). Remarks: *Ostrea imbricata* Lamarck, 1819 is a homonym of *O. imbricata* Gmelin, 1791.

*Saccostrea cucullata* (Born, 1778)

Reference: Gurjanova (1972; as *Ostrea*); ZISP catalogue (as *Ostrea*).

*Saccostrea forskalii* (Gmelin, 1791)

References: Nguyen Van Chung *et al.* (1988); Zvyagintsev & Mikhailov (1988); Kasyanov *et al.* (1989); Mikhailov *et al.* (1990). Remarks: According to Higo *et al.* (1999), *O. forskalii* Gmelin, 1791 is a synonym of *Malvufundus regularis* (Forskaal, 1775) (Malleidae). Yoosukh & Duangdee (1999) listed *S. forskalii* as a valid species. At the same time, Habe (1977) mentioned *Ostrea regula* (Forskaal, 1775) as *nomen nudum* in the synonymy of *Malleus daemoniacus* Reeve, 1858.

*Saccostrea glomerata* (Gould, 1850)

References: Latypov (1991); Selin (1991); Zevina *et al.* (1992).

*Saccostrea mordax* (Gould, 1850)

References: Gurjanova (1972; as *Ostrea*); Gulbin *et al.* (1987; 1988); Nguyen Van Chung *et al.* (1988); Zevina *et al.*, 1992; ZISP catalogue (as *Ostrea*).

**PLICATULIDAE** Watson, 1930

*Plicatula chinensis* Mörch, 1803

Reference: ZISP catalogue (as "sinensis"). Remarks: In the ZISP catalogue, two names are present on the same card: above-mentioned and *Plicatula imbricata* Menke, 1843 which is not valid due to pre-occupation: non Koch et Dunker, 1837.

*Plicatula muricata* (Sowerby, 1873)

Reference: ZISP catalogue.

**PECTINIDAE** Wilkes, 1810

*Amusium japonicum* (Gmelin, 1791)

References: Gurjanova (1972); ZISP catalogue.

*Amusium pleuronectes* (L., 1758)

References: Gurjanova (1972); Pozdnyakova & Silina (1989); Kasyanov *et al.* (1989; as "*pleuropecten*" sic!); Gogolev (1994); Darkina & Lutaenko (1996); ZISP catalogue.

*Chlamys cristularis* (Adams et Reeve, 1850)

Reference: Gurjanova (1972).

*Chlamys larvata* (Reeve, 1853)

Reference: Gogolev (1994).

*Chlamys lemniscata* (Reeve, 1853)

Reference: Gurjanova (1972; as "*lemniscata*" sic!).

*Chlamys madreporarum* (Sowerby, 1842)  
Reference: Kasyanov *et al.* (1989; as *Pecten*).

*Chlamys rugosus* (Sowerby, 1842)  
Reference: Gurjanova (1972). Remarks: *Pecten rugosus* Sowerby, 1842 is believed to be a synonym of *Chlamys* (*Mimachlamys*) *pelseneeri* Dautzenberg et Bavay, 1912 (Bernard *et al.*, 1993; Higo *et al.*, 1999).

*Chlamys senatoria* (Gmelin, 1791)  
Reference: Gurjanova (1972; as *Chlamys senatorius*).

*Comptopallium radula* (L., 1758)  
Reference: Gogolev (1994).

*Decatopecten plica* (L., 1758)  
Reference: Pozdnyakova & Silina (1989; as "*Pecten plicata*").

*Excellichlamys spectabilis* (Reeve, 1843)  
Reference: Gurjanova (1972; as *Pecten*).

*Pecten tricarinatus* Anton, 1839  
Reference: Gurjanova (1972).

*Pedum spondyloideum* (Gmelin, 1791)  
Reference: Selin (1989).

*Semipallium fulvicostatum* (Adams et Reeve, 1858)  
Reference: Gurjanova (1972).

#### **SPONDYLIDAE** Gray, 1826

*Spondylus barbatus* Reeve, 1856  
Reference: ZISP catalogue.

*Spondylus candidus* Lamarck, 1819  
Reference: ZISP catalogue.

*Spondylus imperialis* Chenu, 1845  
Reference: ZISP catalogue.

*Spondylus lamarcki* Chenu, 1845  
References: Zvyagintsev & Mikhailov (1988); Mikhailov *et al.* (1990); Zevina *et al.* (1992).

*Spondylus nicobaricus* Schreibers, 1793  
Reference: ZISP catalogue.

*Spondylus regius* (L., 1758)  
Reference: Darkina & Lutaenko (1996).

*Spondylus squamosus* Schreibers, 1793  
Reference: Nguyen Van Chung *et al.* (1988; as *Spondylus ducalis*).

#### **ANOMIIDAE** Rafinesque, 1815

*Anomia amabaeus* Gray, 1849  
Reference: ZISP catalogue.

*Anomia cytaeum* Gray, 1850  
References: ZISP catalogue. Remarks: This species is a synonym of *Anomia chinensis* Philippi, 1849 (Habe, 1977; Bernard *et al.*, 1993; Higo *et al.*, 1999).

*Enigmonia aenigmatica* Holten, 1803  
References: Gurjanova (1972; as "*Anomia enigmatica*"); ZISP catalogue (as *Anomia*). Remarks: Bernard *et al.* (1993) referred the authorship of this species to Sowerby, 1825.

#### **PLACUNIDAE** Rafinesque, 1815

*Placuna placenta* (L., 1758)  
References: Gurjanova (1972; with erroneous authorship of Gmelin and assigned to Anomiidae); Lukin *et al.* (1988); Darkina & Lutaenko (1996); ZISP catalogue.

*Placuna sella* (Gmelin, 1791)  
References: Kasyanov *et al.* (1989); Darkina & Lutaenko (1996); ZISP catalogue.

Subclass HETERODONTA Neumayr, 1884  
Order VENEROIDA H. et A. Adams, 1856

#### **CHAMIDAE** Lamarck, 1809

*Chama aspersa* Reeve, 1846  
Reference: ZISP catalogue. Remarks: This species is a synonym of *Chama japonica* Lamarck, 1819 (Bernard *et al.*, 1993; Higo *et al.*, 1999).

*Chama dunkeri* Lischke, 1870  
Reference: Zevina *et al.* (1992).

*Chama fraga* Reeve, 1846  
Reference: ZISP catalogue (as *Chama fragum*).

*Chama imbricata* Broderip, 1835  
Reference: Nguyen Van Chung *et al.* (1988). Remarks: Due to preoccupation, *Ch. imbricata* Broderip, 1835 non Lamarck, 1801 is placed into the synonymy of *Chama brassica* Reeve, 1847 (Bernard *et al.*, 1993; Higo *et al.*, 1999). However, Habe (1977) assigned authorship of *Ch. imbricata* to Lischke, 1870 re-

- garding this species as a distinct.  
*Chama iostoma* (Conrad, 1837)  
 Reference: ZISP catalogue.  
*Chama lazarus* L., 1758  
 Reference: Darkina & Lutaenko (1996).  
*Chama lobata* Broderip, 1835  
 Reference: ZISP catalogue.  
*Chama multisquamosa* Reeve, 1846  
 Reference: Zvyagintsev & Mikhailov (1988).  
*Chama reflexa* Reeve, 1846  
 References: Latypov (1991; as "*rephlexa*"; 1999); Darkina et Lutaenko (1996); ZISP catalogue.  
*Chama spinosa* Broderip, 1835  
 Reference: ZISP catalogue. Remarks: This species is believed to be a synonym of *Chama asperella* Lamarck, 1819 (Higo *et al.*, 1999).
- LUCINIDAE** Fleming, 1828  
*Anodontia stearnsiana* (Oyama, 1954)  
 Reference: Darkina & Lutaenko (1996).  
*Codakia golikovi* Zorina, 1978  
 References: Zorina (1978); ZISP catalogue. Remarks: This species is regarded as distinct by Bernard *et al.* (1993). We have not found any other literature treatments of *C. golikovi*. J. Taylor (pers. comm.) informed that this has a valid prior name - *Lucina venusta* Philippi, 1847; the generic position is not clear, but it may be representative of the genus *Lucinisca*.  
*Codakia tigrina* (L., 1758)  
 Reference: Darkina & Lutaenko (1996).  
*Eamesiella corrugata* (Deshayes, 1843)  
 Reference: ZISP catalogue (as *Lucina*).  
*Epicodakia delicatula* (Pilsbry, 1904)  
 Reference: ZISP catalogue (as *Ctena*).  
*Lucina desiderata* Smith, 1885  
 Reference: ZISP catalogue.  
 "*Lucina lamellosa*"  
 Lukin *et al.* (1988) listed "*Lucina lamellosa*" which we could not trace.  
*Lucina scarlatoi* (Zorina, 1978)  
 Reference: Zorina (1978; as *Phacoides*).  
*Lucinoma adamsiana* Habe, 1958  
 Reference: Darkina & Lutaenko (1996).
- Pillucina vietnamica* Zorina, 1978  
 References: Zorina (1978); ZISP catalogue (as *Lucina*). Remarks: See comments in Appendix.
- UNGULUNIDAE** H. et A. Adams, 1857  
*Diplodonta gurjanovae* Zorina, 1978  
 References: Zorina (1978); ZISP catalogue.  
*Diplodonta lamyi* Prashad, 1932  
 Reference: ZISP catalogue.  
*Diplodonta oblongata* (Hanley, 1844)  
 Reference: ZISP catalogue.
- GALEOMMA TIDAE** Gray, 1840  
*Scintilla hyalina* Deshayes, 1856  
 Reference: ZISP catalogue.
- MONTACUTIDAE** Clark, 1855  
*Montacutona olivacea* Habe, 1959  
 Reference: Zevina *et al.* (1992). Remarks: This species has been known only from Japan - Mie Prefecture and Wakasa Bay (Higo *et al.*, 1999), so, this record seems to be doubtful and is needed in confirmation. At the same time, Morton & Scott (1989) placed *M. olivacea* to the synonymy of *Mysella (Montacutona) mutsuwanensis* (Yamamoto et Habe, 1959) described from Aomori Prefecture (northern Honshu). They (l.c.) recorded the latter species for Hong Kong and extended its range of distribution as south as Australia by synonymising *M. mutsuwanensis* with *Montacutona ceriantha* Ponder, 1971. Bernard *et al.* (1993) support the same viewpoint.
- CARDITIDAE** Fleming, 1858  
*Begonia semiorbiculata* (L., 1758)  
 References: Kasyanov *et al.* (1989); Selin (1989); Selin & Latypov (1990); Latypov (1993); Latypov (1999; 2000).  
*Cardita variegata* Bruguière, 1792  
 References: Kasyanov *et al.* (1989); Gogolev (1994); ZISP catalogue.  
*Megacardita ferruginosa* (Adams et Reeve, 1850)  
 Ref.: ZISP catalogue (as *Venericardia*).

**CRASSATELLIDAE** Ferussac, 1822*Bathytormus foveolatus* (Sowerby, 1870)Reference: ZISP catalogue (as *Ctenocrassatella*).*Eucrassatella nana* (Adams et Reeve, 1850)Reference: ZISP catalogue (as *Crassatellites*).**CARDIIDAE** Lamarck, 1809*Acrosterigma arenicola* (Reeve, 1845)References: Darkina & Lutaenko (1996; as *Vasticardium*); ZISP catalogue (as *Vasticardium*). Remarks: In recent works, this species is regarded as a member of the genus *Vasticardium* (Vidal, 1997).*Acrosterigma biradiatum* (Bruguière, 1789)

Reference: ZISP catalogue.

*Acrosterigma enode* (Sowerby, 1841)Reference: ZISP catalogue (as *Vasticardium*). Remarks: This species is regarded as conspecific with *Acrosterigma elongatum* (Bruguière, 1789) (Vidal, 1993).*Acrosterigma flava* (L., 1758)References: Darkina & Lutaenko (1996; as *Trachycardium*); ZISP catalogue (as *Vasticardium*). Remarks: In recent works, this species is regarded as a member of the genus *Vasticardium* (Vidal, 1999).*Afrocardium carditaeforme* (Reeve, 1845)Reference: ZISP catalogue (as *Fragum*).*Corculum imbricatum* (Sowerby, 1834)Reference: ZISP catalogue (as *Hemicardium*). Remarks: This name is primary homonym for *Cardium imbricatum* Born, 1780 and replacement name is *Corculum (Ctenocardia) perornatum* (Iredale, 1929), according to Fischer-Piette (1977).*Discors multipunctatum* (Sowerby, 1833)Reference: ZISP catalogue (as *Cardium*).*Fragum unedo* (L., 1758)Reference: Lukin *et al.* (1988; as *Cardium*); Darkina & Lutaenko (1996).*Frigidocardium exasperatum* (Sowerby, 1841)Reference: Gurjanova (1972; as *Cardium*); ZISP catalogue.*Fulvia hungerfordi* (Sowerby, 1901)Reference: Lukin *et al.* (1988).*Fulvia undatopicta* (Pilsbry, 1904)Reference: Kasyanov *et al.* (1989; as *Laevicardium undatopictum*).*Vepricardium asiaticum* (Bruguière, 1789)References: Gurjanova (1972; as *Cardium*); ZISP catalogue (as *Cardium*).*Vepricardium fimbriatum* (Wood, 1815)Reference: ZISP catalogue (as *Cardium*).Remarks: This species is believed to be a synonym of *Laevicardium (Vepricardium) coronatum* (Spengler, 1799) (Fischer-Piette, 1977; Xu, 1977).*Vepricardium multispinosum* (Sowerby, 1841)

References: Darkina &amp; Lutaenko (1996); ZISP catalogue.

*Vepricardium sinense* (Sowerby, 1841)References: Darkina & Lutaenko (1996); ZISP catalogue (as *Cardium*).*Lunulicardia subretusa* (Sowerby, 1841)Reference: ZISP catalogue. Remarks: According to Fischer-Piette (1977), this species is a synonym of *Corculum (Lunulicardia) retusum* (L., 1767). Higo *et al.* (1999) regarded it as a synonym of *Lunulicardia hemicardium* (L., 1758). Habe (1977), Bernard *et al.* (1993) and Xu (1997) regarded this species as a separate distinct taxon.**TRIDACNIDAE** Lamarck, 1819*Tridacna crocea* Lamarck, 1819References: Malakhov *et al.* (1985); Kasyanov *et al.* (1989); Selin & Latypov (1990); Latypov (1993; 2000); Gogolev (1994).*Tridacna maxima* (Röding, 1798)

References: Selin &amp; Latypov (1990); Gogolev (1994); Darkina &amp; Lutaenko (1996).

*Tridacna squamosa* Lamarck, 1819References: Malakhov *et al.* (1985); Kasyanov *et al.* (1989); Selin (1989); Selin & Latypov (1990); Latypov (1993; 1999; 2000; as "*squamata*" in Latypov, 2000); Gogolev (1994).

**MACTRIDAE** Lamarck, 1809*Coelomacra antiquata* (Spengler, 1802)

Reference: Zorina (1975); ZISP catalogue.

*Lutraria arcuata* Deshayes, 1854

References: Zorina (1975; as "arquata"); ZISP catalogue.

*Macra aphrodina* Deshayes, 1854

Reference: Zorina (1975); ZISP catalogue.

*Macra cuneata* Gmelin, 1791Reference: Kasyanov *et al.* (1989).*Macra dysoni* Deshayes in Reeve, 1854

Reference: Zorina (1975); ZISP catalogue.

*Macra grandis* Gmelin, 1791

References: Darkina &amp; Lutaenko (1996); ZISP catalogue.

*Macra hepatica* Deshayes, 1854

Reference: Zorina (1975); ZISP catalogue.

*Macra maculata* Gmelin, 1791Reference: Lukin *et al.* (1988); Darkina & Lutaenko (1996).*Macra quadrangularis* Reeve, 1854

Reference: Zorina (1975); ZISP catalogue.

Remarks: This species is a synonym of

*Macra (Macra) veneriformis* Reeve, 1854.*Macrinula dolabrata* (Deshayes, 1854)

References: Zorina (1975); ZISP catalogue.

*Meropesta capillacea* (Deshayes, 1854)References: Zorina (1975; as *Standella*); ZISP catalogue (as *Standella*).*Meropesta nicobarica* (Gmelin, 1791)References: Zorina (1975; as *Standella*); ZISP catalogue (as *Standella*).*Raeta lactea* Zorina, 1978

References: Zorina (1978); ZISP catalogue.

Remarks: This species was described from Hainan Island (southern coast), but can be found along the Vietnamese coast of Tonkin Gulf.

**MESODESMATIDAE** Gray, 1840*Atactodea striata* (Gmelin, 1791)

Reference: ZISP catalogue.

**PHARIDAE** H. et A. Adams, 1858

(= Cultellidae Davies, 1935)

*Ensiculus cultellus* (L., 1758)

References: Gurjanova (1972; in Solenidae); ZISP catalogue.

*Pharella acutidens* (Broderip et Sowerby, 1829)Reference: Zorina (1975; as *Solecortus*); ZISP catalogue (as *Solecortus* in Solecortidae).*Phaxas attenuatus* (Dunker, 1861)References: Gurjanova (1972; in Solenidae); ZISP catalogue. Remarks: Bernard *et al.* (1993) regarded this species as a synonym of *Solen albida* Adams et Reeve, 1850.*Siliqua japonica* (Dunker, 1861)

Reference: ZISP catalogue.

*Siliqua pulchella* (Dunker, 1852)

Reference: ZISP catalogue.

*Siliqua radiata* (L., 1758)

Reference: ZISP catalogue.

*Sinonovacula constricta* (Lamarck, 1818)

Reference: ZISP catalogue.

**SOLENIIDAE** Lamarck, 1809*Solen corneus* Lamarck, 1818

References: Darkina &amp; Lutaenko (1996); ZISP catalogue.

*Solen grandis* Dunker, 1861

References: Darkina &amp; Lutaenko (1996); ZISP catalogue.

"Solen luzonicus (Dunker, 1861)"

Reference: ZISP catalogue. Remarks: This species called in Japan "hina-mate" was described based on a misidentified Chilean juvenile *Ensis macha* Molina and is still unnamed species (Higo *et al.*, 1999).*Solen roseomaculatus* Pilsbry, 1901

Reference: ZISP catalogue.

**TELLINIDAE** Wilkes, 1810*Aeretica tomlini* (Smith, 1915)References: Zorina (1975; as *Strigilla*); ZISP catalogue (as *Strigilla*).*Angulus lanceolata* (Gmelin, 1791)References: Zorina (1975; as *lanceolatum*); ZISP catalogue (as *lanceolatus*).*Angulus psammotella* (Lamarck, 1818)

Reference: ZISP catalogue.

*Angulus vestalis* (Hanley, 1844)

References: Gurjanova (1972); Zorina (1975); ZISP catalogue.

- Apolymetis meyeri* (Philippi, 1846)  
References: Gurjanova (1972); Zorina (1975); ZISP catalogue.
- Apolymetis spectabilis* (Hanley, 1844)  
References: Zorina (1975; as *Leporimetis*); Darkina & Lutaenko (1996).
- Arcopaginula inflata* (Gmelin, 1791)  
References: Gurjanova (1972); Zorina (1975); ZISP catalogue.
- Arcopella casta* (Hanley, 1844)  
References: Zorina (1975); ZISP catalogue.
- Cadella semitorta* (Sowerby, 1867)  
References: Zorina (1975); ZISP catalogue.  
Remarks: This species is a synonym of *Cadella semen* (Hanley, 1845).
- Cadella smithi* (Lynge, 1909)  
References: Zorina (1975); ZISP catalogue.
- Clathrotellina pretiosa* (Deshayes, 1854)  
References: Zorina (1975; as "*Clathrotellina pretium* Desh."); ZISP catalogue.  
Remarks: Invalid name: *Tellina pretiosa* Deshayes, 1854 non Eichwald, 1830; correct name is *Clathrotellina pretium* (Salisbury, 1934) (Bernard *et al.*, 1993).
- Cyclotellina remies* (L., 1758)  
References: Zorina (1975); Darkina & Lutaenko (1996).
- Laciolina chloroleuca* (Lamarck, 1818)  
Reference: Lukin *et al.* (1988; as *Tellina*).
- Loxoglypta transculpta* (Sowerby, 1915)  
Reference: Lukin *et al.* (1988; as *Tellina*).
- Macalia bruguieri* (Hanley, 1844)  
References: Zorina (1975); Darkina & Lutaenko (1996).
- Macoma awajiensis* Sowerby, 1914  
Reference: Lukin *et al.* (1988). Remarks: This species is believed to be a synonym of *Macoma* (*Psammacoma*) *candida* (Lamarck, 1818).
- Macoma candida* (Lamarck, 1818)  
References: Zorina (1975); ZISP catalogue.
- Macoma fallax* Bertin, 1878  
References: Gurjanova (1972); ZISP catalogue.
- Macoma lucerna* (Hanley, 1844)  
References: Zorina (1975); ZISP catalogue.
- Macoma moluccensis* (Martens, 1865)  
References: Gurjanova (1972; as *Tellini-*  
*mactra*); Zorina (1975; as *Tellinimactra*); ZISP catalogue (as *Tellinimactra*).
- Macoma murrayi* (Grabau et King, 1928)  
References: Zorina (1975); ZISP catalogue.  
Remarks: This species is a synonym of *Macoma incongrua* (Martens, 1865) (Bernard *et al.*, 1993).
- Merisca diaphana* (Deshayes, 1855)  
Reference: Zorina (1975); ZISP catalogue.  
Remarks: This species is a synonym of *Merisca* (*Pistris*) *capsoides* (Lamarck, 1818) (Higo *et al.*, 1999); however, Bernard *et al.* (1993) regarded it as a separate species.
- Merisca perplexa* (Hanley, 1844)  
Reference: ZISP catalogue.
- Moerella culter* (Hanley, 1844)  
References: Zorina (1975); ZISP catalogue.
- Moerella fragilis* Zorina, 1978  
References: Zorina (1978); ZISP catalogue.
- Moerella iridescens* (Benson, 1842)  
References: Zorina (1975); ZISP catalogue.
- Moerella philippinarum* (Hanley, 1844)  
References: Zorina (1975); ZISP catalogue.
- Nitidotellina iridella* (Martens, 1865)  
References: Zorina (1975); ZISP catalogue.
- Omala opalina* (Sowerby, 1868)  
References: Zorina (1975; as *Tellinides*); ZISP catalogue (as *Tellinides*). Remarks: This species is a synonym of *Omala hyalina* (Gmelin, 1791) (Bernard *et al.*, 1993).
- Pharaonella perna* (Spengler, 1798)  
References: Zorina (1975); ZISP catalogue.
- Pharaonella rostrata* (L., 1758)  
References: Darkina & Lutaenko (1996); ZISP catalogue.
- Psammotreta praerupta* (Salisbury, 1934)  
References: Zorina (1975; as *Macoma*); Lukin *et al.* (1988; as *Macoma*); ZISP catalogue (as *Macoma*).
- Leporimetis lacunosa* (Dillwyn, 1817)  
References: Zorina (1975; as *lacunosus*); ZISP catalogue. Remarks: This species is a synonym of *Leporimetis papyracea* (Gmelin, 1791).
- Pulvinus micans* (Hanley, 1844)  
References: Gurjanova (1972; as *Pero-*

- nidia*); Zorina (1975); ZISP catalogue (in some cards as *Peronidia*).
- Quidnipagus palatum* Iredale, 1929  
References: Zorina (1975); Darkina & Lutaenko (1996).
- Semelangulus miyatensis* (Yokoyama, 1920)  
Reference: ZISP catalogue (as *Moerella*).
- Tellina liliun* Hanley, 1844  
References: Zorina (1975); ZISP catalogue.
- Tellina staurella* Lamarck, 1818  
Reference: Lukin *et al.* (1988; as "stamella").
- Tellina tenuilirata* Sowerby, 1867  
References: Zorina (1975); ZISP catalogue.
- Tellinella angulata* (L., 1767)  
Reference: Lukin *et al.* (1988; as *Tellina*).
- Tellinides timorensis* Lamarck, 1818  
References: Zorina (1975); ZISP catalogue.
- SEMELIDAE** Stoliczka, 1870
- Abrina magna* Scarlato, 1965  
Reference: ZISP catalogue.
- Semele crenulata* (Sowerby, 1841)  
Reference: Zorina (1975).
- Semele scabra* (Metcalf, 1844)  
Reference: ZISP catalogue (with indication of Hanley as the author of the species).  
Remarks: Higo *et al.* (1999) regarded this species as a synonym of *Semele crenulata* (Sowerby, 1841), although other authors treated it as a distinct species (Bernard *et al.*, 1993; Xu, 1997).
- PSAMMOBIIDAE** Fleming, 1818
- Asaphis dichotoma* (Anton, 1838)  
References: Zorina (1975); Darkina & Lutaenko (1996); ZISP catalogue.
- Gari maculosa* (Lamarck, 1818)  
References: Zorina (1975); ZISP catalogue.
- Gari pallida* (Deshayes, 1855)  
References: Zorina (1975); ZISP catalogue.
- Gari pulcherrima* (Deshayes, 1855)  
References: Zorina (1975); ZISP catalogue.
- Gari reevei* (Martens, 1897)  
References: Zorina (1975); ZISP catalogue.  
Remarks: According to Willan (1993), *Psammobia reevei* Martens, 1897 (replacement name of *Psammobia pulchella* of Reeve, 1856) is a synonym of *Gari pallida* (Deshayes, 1855).
- Gari schepmani* Prashad, 1932  
References: Gurjanova (1972); Zorina (1975); ZISP catalogue. Remarks: According to Willan (1993), *Gari schepmani* Prashad, 1932 is a synonym of *Gari lessoni* (Blainville, 1826).
- Gari togata* (Deshayes, 1855)  
References: Zorina (1975; as *Sanguinolaria*); ZISP catalogue (as *Sanguinolaria*).
- Gari tonkiniensis* Zorina, 1978  
References: Zorina (1975; 1978); ZISP catalogue.
- Psammotellina ambigua* (Reeve, 1857)  
References: Zorina (1975; as *Sanguinolaria*); ZISP catalogue (as *Sanguinolaria*).
- Soletellina atrata* Deshayes in Reeve, 1857  
References: Zorina (1975; as *Sanguinolaria*); Darkina & Lutaenko (1996; as *Hiatula*); ZISP catalogue (as *Sanguinolaria*).
- Soletellina chinensis* (Deshayes, 1855)  
References: Zorina (1975; as *Sanguinolaria*); ZISP catalogue (as *Sanguinolaria*).
- Soletellina diphos* (L., 1771)  
References: Zorina (1975; as *Sanguinolaria*); ZISP catalogue (as *Sanguinolaria*).
- Soletellina violaceus* (Lamarck, 1818)  
References: Zorina (1975; as *Sanguinolaria*); ZISP catalogue (as *Sanguinolaria*). Remarks: Habe (1977), Bernard *et al.* (1993), Xu (1977) and Higo *et al.* (1999) regarded *S. violaceus* as a synonym of *Soletellina diphos* (L., 1771).
- SOLECURTIDAE** d'Orbigny, 1846
- Azorinus coarctatus* (Gmelin, 1791)  
References: Zorina (1975; as *Zozia*); Lukin *et al.* (1988; as *Solecortus*); ZISP catalogue (as *Zozia*). Remarks: According to Higo *et al.* (1999), the priority name for this species is *Solen chamasolen* Da Costa, 1778.
- Solecortus divaricatus* (Lischke, 1869)

References: Zorina (1975); ZISP catalogue.  
*Solecirtus exaratus* (Philippi, 1849)  
 References: Zorina (1975); ZISP catalogue.

#### **DONACIDAE** Fleming, 1828

*Donax cuneatus* (L., 1758)

References: Gurjanova (1972); Zorina (1975); Kasyanov *et al.* (1989; as "*Donax cuneatum*"); Darkina & Lutaenko (1996; as "*Donax cuneatum*"); ZISP catalogue.

*Donax dysoni* Deshayes, 1855

Reference: Zorina (1975).

*Donax faba* Gmelin, 1791

References: Gurjanova (1972); Zorina (1975); ZISP catalogue.

*Donax nitidus* Deshayes, 1854

References: Zorina (1975); ZISP catalogue.

*Donax semigranosus tropicus* Scarlato, 1965

References: Zorina (1975); ZISP catalogue.  
 Remarks: This subspecies is believed to be a synonym of *Donax (Chion) dysoni* Deshayes, 1855 (Bernard *et al.*, 1993; Higo *et al.*, 1999).

#### **TRAPEZIIDAE** Lamy, 1920

*Coralliophaga coralliophaga* (Gmelin, 1791)

Reference: ZISP catalogue.

*Trapezium liratum* (Reeve, 1843)

Reference: ZISP catalogue.

*Trapezium sublaevigatum* (Lamarck, 1819)

Reference: ZISP catalogue.

#### **GLOSSIDAE** Gray, 1847

*Meiocardia vulgaris* (Reeve, 1845)

References: Gurjanova (1972; as *Isocardia*); Darkina & Lutaenko (1996); ZISP catalogue (as *Isocardia*).

#### **VENERIDAE** Rafinesque, 1815

*Anomalocardia flexuosa* (L., 1767)

References: Zorina (1975); ZISP catalogue.

*Anomalocardia squamosa* (L., 1758)

References: Malakhov *et al.* (1985); Lukin *et al.* (1988); Nguyen Van Chung *et al.* (1988); Darkina & Lutaenko (1996; as *Venus*); ZISP catalogue (as *Anomalodiscus*).

*Antigona lamellaris* Schumacher, 1817

Reference: Darkina & Lutaenko (1996).

*Callista costata* Dillwyn, 1817

References: Zorina (1975); ZISP catalogue.  
 Remarks: A preoccupied name (non Gmelin, 1791); correct name is *Callista nioba* Clench and McLean, 1936 (R.N. Kilburn, pers. comm.).

*Circe scripta* (L., 1758)

References: Gurjanova (1972; as *Gafrarium scriptum*); Zorina (1975); ZISP catalogue.

*Cyclina sinensis* (Gmelin, 1791)

References: Zorina (1975); ZISP catalogue.

*Dosinella trailli* (Adams, 1856)

References: Zorina (1975; as *Dosinia*); ZISP catalogue (as *Dosinia*).

Remarks: This species is regarded as a synonym of *Dosinella corrugata* (Reeve, 1850) (Bernard *et al.*, 1993; Higo *et al.*, 1999) or *Dosinella penicillata* (Reeve, 1850) (Habe, 1977). Kafanov & Lutaenko (1997) based on the examination of type materials prove that *D. trailli* is a distinct separate species.

*Dosinia cretacea* Reeve, 1850

References: Zorina (1975); Lukin *et al.* (1988); ZISP catalogue.

*Dosinia concinna* Sowerby, 1852

Reference: ZISP catalogue.

*Gafrarium divaricatum* (Gmelin, 1791)

References: Zorina (1975); ZISP catalogue (as *divaricata*).

*Gafrarium pectinatum* (L., 1758)

References: Zorina (1975); Darkina & Lutaenko (1996).

*Gafrarium tumidum* Röding, 1798

Reference: Zorina (1975); Darkina & Lutaenko (1996); ZISP catalogue.

"*Gomphina veneriformis* (Lamarck, 1818)"

References: Zorina (1975); ZISP catalogue.  
 Remarks: *Donax veneriformis* Lamarck, 1818 refers to Donacidae based on examination of type material (Fischer-Piette, Métivier, 1971); correct name is *Gomphina (Macridiscus) aequilatera* (Sowerby, 1825) (see also: Lutaenko & Yakovlev, 1999).

*Lioconcha castrensis* (L., 1758)

Reference: Lukin *et al.* (1988; as *Meretrix*).

*Lioconcha fastigiata* (Sowerby, 1851)



- Reference: Darkina & Lutaenko (1996).  
*Lioconcha philippinarum* (Hanley, 1844)  
 References: Kasyanov *et al.* (1989); ZISP catalogue (as *Hystericoncha*).
- Lioconcha trimaculata* (Lamarck, 1818)  
 Reference: Lukin *et al.* (1988; as *Meretrix*).
- Marcia hiantina* (Lamarck, 1818)  
 References: Zorina (1975; as *Katelysia*); Kasyanov *et al.* (1989; as "Katelisia").
- Marcia rimularis* (Lamarck, 1818)  
 References: Lukin *et al.* (1988; as *Tapes*); ZISP catalogue (as *Katelysia*).  
 Remarks: *Venus rimularis* Lamarck, 1818 is a synonym of *Marcia hiantina* (Lamarck, 1818) (Bernard *et al.*, 1993; Higo *et al.*, 1999).
- Meretrix lamarckii* Gray, 1853  
 Reference: Darkina & Lutaenko (1996).
- Meretrix lusoria* (Röding, 1798)  
 Reference: Darkina & Lutaenko (1996).
- Meretrix lyrata* (Sowerby, 1851)  
 References: Gurjanova (1972); Kasyanov *et al.* (1989).
- Meretrix meretrix* (L., 1758)  
 Reference: Gurjanova (1972); Zorina (1975); ZISP catalogue.
- Paphia amabilis* (Philippi, 1847)  
 References: Zorina (1975); ZISP catalogue.
- Paphia euglypta* (Philippi, 1847)  
 Reference: Kasyanov *et al.* (1989); Darkina & Lutaenko (1996).
- Paphia exarata* (Philippi, 1846)  
 References: Gurjanova (1972); Zorina (1975); ZISP catalogue.
- Paphia lirata* (Philippi, 1848)  
 References: Gurjanova (1972); Zorina (1975; as *Tapes*); ZISP catalogue.
- Paphia undulata* (Born, 1778)  
 References: Gurjanova (1972); Zorina (1975); Darkina & Lutaenko (1996); ZISP catalogue.
- Paphia vernicosa* (Gould, 1861)  
 Reference: Darkina & Lutaenko (1996).
- Pardosinia amphidesmoides* (Reeve, 1850)  
 References: Zorina (1975; *Dosinia exoleta amphidesmoides*); ZISP catalogue (as *Dosinia exoleta amphidesmoides*).
- Periglypta clathrata* (Deshayes, 1853)  
 References: Zorina (1975); ZISP catalogue (as *Venus*).
- Periglypta reticulata* (L., 1758)  
 References: Zorina (1975); Kasyanov *et al.* (1989; as *Venus*).
- Phacosoma cumingii* (Reeve, 1850)  
 References: Zorina (1975; as *Dosinia*); ZISP catalogue (as *Dosinia*).
- Phacosoma exasperata* (Philippi, 1847)  
 References: Zorina (1975; as *Dosinia*); Lukin *et al.* (1988; as *Dosinia*); Nguyen Van Chung *et al.* (1988; as *Dosinia*); ZISP catalogue (as *Dosinia*).
- Pitar inflata* (Sowerby, 1851)  
 Reference: Lukin *et al.* (1988; as *Meretrix*).  
 Remarks: A synonym of *Pitar (Pitarina) affinis* (Gmelin, 1791).
- Pitar japonicum* Kuroda et Kawamoto in Kawamoto et Tanabe, 1956 (?)  
 Reference: Kasyanov *et al.* (1989; as *japonica*).  
 Remarks: The authorship of this species was not indicated in the cited paper. *P. japonicum* is known to be distributed south to East China Sea (Higo *et al.*, 1999).
- Pitar levis* Zorina, 1978  
 Reference: Zorina (1978).
- Pitar obliquatum* (Hanley, 1844)  
 Reference: Kasyanov *et al.* (1989; as *obliquata*).  
 Remarks: Habe (1977) and Bernard *et al.* (1993) cited this species as separate species, but Higo *et al.* (1999) synonymised it with *Pitar prora* (Conrad, 1837).
- Pitar striatum* (Gray, 1838)  
 References: Zorina (1975); ZISP catalogue.
- Pitar subpellucidum* (Sowerby, 1851)  
 Reference: Darkina & Lutaenko (1996).
- Pitar sulcata* Zorina, 1978  
 Reference: Zorina (1978).
- Placamen calophylla* (Philippi, 1836)  
 References: Gurjanova (1972; as *Clausinella*); Zorina (1975); Lukin *et al.* (1988; as *Venus*); ZISP catalogue.
- Placamen isabellina* (Philippi, 1849)  
 References: Gurjanova (1972; as *Clausinella*); Zorina (1975; as *isabellinum*); ZISP catalogue (as *isabellinum*).

*Placamen tiara* Dillwyn, 1817

References: Gurjanova (1972; as *Clausinella thiara*); Zorina (1975); ZISP catalogue.

Remarks: This species is a synonym of *Placamen lamellata* (Röding, 1798) (Bernard *et al.*, 1993; Higo *et al.*, 1999).

*Ruditapes philippinarum* (Adams et Reeve, 1850)

Reference: Gulbin *et al.* (1988).

*Ruditapes variegatus* (Hanley in Sowerby, 1852)

References: Gurjanova (1972; as *Venerupis variegata*); Zorina (1975; as *Tapes variegata*); ZISP catalogue (as *Venerupis*).

*Sinodia gibba* (A. Adams, 1869)

References: Gurjanova (1972; as *Dosinia*); Zorina (1975; as *Dosinia*); ZISP catalogue (as *Dosinia*).

*Sunetta concinna* Dunker, 1865

References: Zorina (1975); ZISP catalogue.  
Remarks: A synonym of *Cyclosunetta truncata* (Deshayes, 1853) (Bernard *et al.*, 1993).

*Tapes turgidus* (Lamarck, 1818)

References: Zorina (1975; as *turgida*); Darkina & Lutaenko (1996); ZISP catalogue (as *turgida*).  
Remarks: A synonym of *Tapes dorsatus* (Lamarck, 1818) (Higo *et al.*, 1999).

*Timoclea marica* (L., 1758)

Reference: Darkina & Lutaenko (1996; as *Chione*).

*Timoclea scabra* (Hanley, 1845)

Reference: ZISP catalogue (as *Veremolpa*).

*Venus albina* Sowerby, 1853

References: Gurjanova (1972); ZISP catalogue.

*Venus foveolata* Sowerby, 1853

References: Zorina (1975); ZISP catalogue.  
Remarks: This species might be a misidentification of *Venus (Ventricoloidea) cassinaeformis* (Yokoyama, 1926) (see: Higo *et al.*, 1999).

**PETRICOLIDAE** d'Orbigny, 1840*Petricola lapicida* (Gmelin, 1791)

Reference: ZISP catalogue.

**GLAUCONOMIDAE** Gray, 1853*Glaucanome cerea* Reeve, 1844

References: Gurjanova (1972; as "*Glaucomya*"); ZISP catalogue.

*Glaucanome chinensis* Gray, 1828

Reference: ZISP catalogue (as "*Glaucomya*").

Order MYOIDA Goldfuss, 1820

**CORBULIDAE** Lamarck, 1818*Corbula crassa* Reeve, 1843

References: Gurjanova (1972; as *Aloidis*); ZISP catalogue (as *Aloidis*).

*Corbula fortisulcata* Smith, 1879

Reference: ZISP catalogue.

*Corbula solidula* Reeve, 1843

Reference: ZISP catalogue (with indication of Hinds as the author of species).

*Potamocorbula ustulata* (Reeve, 1844)

Reference: ZISP catalogue (as *Corbula*).

*Solidocorbula erythrodon* (Lamarck, 1818)

References: Darkina & Lutaenko (1996); ZISP catalogue.

**GASTROCHAENIDAE** Gray, 1840*Gastrochaena cuneiformis* Spengler, 1793

Reference: ZISP catalogue.

**PHOLADIDAE** Lamarck, 1809*Barnea candida* (L., 1758)

References: Darkina & Lutaenko (1996); ZISP catalogue.

*Pholas orientalis* Gmelin, 1791

Reference: ZISP catalogue.

Subclass ANOMALODESMATA Dall, 1889

Order PHOLADOMYOIDA Newell, 1965

**LATERNULIDAE** Hedley, 1918*Laternula anatina* (L., 1758)

References: Gurjanova (1972); ZISP catalogue.

*Laternula bullata* (Valenciennes in Reeve, 1860)

Reference: ZISP catalogue.

Remarks: According to Bernard *et al.* (1993) and Higo *et al.* (1999), *Anatina*

- bullata* Valenciennes in Reeve, 1860 is a synonym of *L. anatina*.  
*Laternula flexuosa* (Reeve, 1863)  
 Reference: ZISP catalogue.  
 Remarks: *Anatina flexuosa* Reeve, 1863 is believed to be a synonym of *L. anatina* (Habe, 1977; Bernard *et al.*, 1993; *et al.*).  
*Laternula truncata* (Lamarck, 1818)  
 Reference: ZISP catalogue.

#### CLAVAGELLIDAE d'Orbigny, 1844

- Brechites tuberculatum* (Chenu, 1843)  
 Reference: ZISP catalogue (as *Aspergillum*).  
 Remarks: A synonym of *Brechites philippinensis* (Chenu, 1843).  
*Brechites vaginiferus* (Lamarck, 1818)  
 Reference: Gurjanova (1972; as *Aspergillum vaginiferum*).  
 Remarks: This species occurs in the Western Indian Ocean; the record might be based on *Brechites penis* (L., 1758) (R.N. Kilburn, pers. comm.).  
*Penicillus annulosus* (Deshayes, 1858)  
 Reference: ZISP catalogue (as *Aspergillum*).

#### POROMYIDAE Dall, 1886

- Cetoconcha gloriosa* (Prashad, 1932)  
 Reference: ZISP catalogue (as *Poromya*).  
*Poromya pergranosa* Prashad, 1932  
 Reference: ZISP catalogue.

#### CUSPIDARIIDAE Dall, 1886

- Cardiomya singaporensis* (Hinds, 1843)  
 Reference: ZISP catalogue.  
*Cuspidaria chinensis* (Gray in Griffith et Pidgeon, 1834)  
 Reference: ZISP catalogue.

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## APPENDIX

*New species of bivalve molluscs described by Russian authors from Vietnam*

In this Appendix, original illustrations, photographs and some comments on type specimens whenever possible are given. Russian authors described eleven new species from Tonkin Gulf; however, some of Zorina's (1978) species was based on holotypes collected on Hainan Island. Examination of type series shows that there are materials on the same species originated from Vietnamese coast. Thus, we included all Zorina's species to this list.

When examining type materials from the ZISP, we faced with problem that holotypes designated by Zorina (1978) without museum numbers could not be found in the general collection. The practice existing in the ZISP is to place information about holotype to the catalogue cards under no. 1 (lot no. 1); there is no separate type collection of marine bivalves in the Department of Mollusks of the ZISP. However, this was not the case with Zorina types: for example, the single shell of *Pitar sulcata* Zorina, 1978 was covered by mud and valves were closed so, it was easily seen that the shell has not been examined and measured and does not represent the holotype. Other lots under no. 1 contain several shells, and no indications were found which shell is the holotype. Taking into account this situation, we consider herein all specimens on which new species were based from the general collection of the ZISP as syntypes. Zorina (1978) also did not specify whether drawings in your paper holotypes or paratypes (see Plate 1-2).

The species are enumerated in chronological order of appearance of the papers and with original headings.

*Abrina magna* Scarlato, 1965

(Fam. Semelidae)

Pl. 2, figs. 3, 6 &amp; 9

*Original Description.* - Scarlato, 1965, p. 60

(in Chinese), p. 112 (in Russian), pl. 9, fig. 1 (seven figures designated by Cyrillic letters; three of them reproduced here).

*Type Locality.* - Hainan Island.*Depository.* - Syntypes in the ZISP (?).*Remarks.* - Figs. 6 & 9 (pl. 2 of the Appendix) represent holotype, according to figure caption in Scarlato (1965, pl. 9).*Phacoides scarlatoi* Zorina, 1978

(Fam. Lucinidae)

Pl. 1, figs. 4-5; Pl. 3, fig. 3

*Original Description.* - Zorina, 1978, p. 193-194, text-figs. 1-2 (in Russian).*Type Locality.* - Southern coast of Hainan Island.*Depository.* - Syntypes in the ZISP.*Remarks.* - This species is mentioned in the list of Vietnamese bivalves (this paper) as *Lucina scarlatoi* (Zorina, 1978) following Bernard et al. (1993).*Pillucina vietnamica* Zorina, 1978

(Fam. Lucinidae)

Pl. 1, figs. 1-2; Pl. 3, fig. 1

*Original Description.* - Zorina, 1978, pp. 195-196, text-figs. 3-4 (in Russian).*Type Locality.* - Southern coast of Hainan Island.*Depository.* - Syntypes in the ZISP.*Remarks.* - According to J. Taylor (pers. comm.), original figures are confused: the interior of text-fig. 3 is text-fig. 6 (see: Zorina, 1978, p. 195 and 196) (pl. 1, fig. 8 in this Appendix). So, the real figures of *P. vietnamica* in pl. 1 of the Appendix are fig. 1 (exterior) and fig. 8 (interior). Dr. J. Taylor (e-mail message May 11, 2000) informed us that "[*P.*] *vietnamica* is the available name for a widely distributed species ranging from the Arabian Peninsula through SE Asia to northern and eastern Australia. Several older names have been used for the species but these are nomenclaturally unavailable for various reasons".

*Codakia golikovi* Zorina, 1978  
(Fam. Lucinidae)  
Pl. 1, figs. 7-8

*Original Description.* - Zorina, 1978, p. 196, text-figs. 5-6 (in Russian).

*Type Locality.* - Eastern coast of Tonkin Gulf.

*Depository.* - Syntypes in the ZISP.

*Remarks.* - This has a valid prior name - *Lucina venusta* Philippi, 1847 (J. Taylor, pers. comm.); the generic position is not clear, but it may be representative of the genus *Lucinisca*. The interior of text-fig. 5 is text-fig. 4 in Zorina's (1978) paper (J. Taylor, e-mail message, May 11, 2000); so, correct figures of this species should be figs. 7 and 2 (pl. 1, this Appendix).

*Pitar levis* Zorina, 1978  
(Fam. Veneridae)

Pl. 1, figs. 9 & 11; pl. 3, fig. 6

*Original Description.* - Zorina, 1978, p. 197, text-figs. 7-8 (in Russian).

*Type Locality.* - Tonkin Gulf.

*Depository.* - Syntypes in the ZISP.

*Pitar sulcata* Zorina, 1978 (Fam.  
Veneridae)

Pl. 1, figs. 10 & 12; pl. 3, fig. 8

*Original Description.* - Zorina, 1978, p. 198, text-figs. 9-10 (in Russian).

*Type Locality.* - Tonkin Gulf.

*Depository.* - Syntypes in the ZISP.

*Diplodonta gurjanovae* Zorina, 1978  
(Fam. Ungulunidae)

Pl. 1, figs. 3 & 6; pl. 3, fig. 2

*Original Description.* - Zorina, 1978, p. 199, text-figs. 11-12 (in Russian).

*Type Locality.* - Eastern coast of Tonkin Gulf.

*Depository.* - Syntypes in the ZISP.

*Raeta lactea* Zorina, 1978  
(Fam. Mactridae)

Pl. 2, figs. 1-2; pl. 3, fig. 4

*Original Description.* - Zorina, 1978, p. 200, text-figs. 13-14 (in Russian).

*Type Locality.* - Southern coast of Hainan Island.

*Depository.* - Syntypes in the ZISP.

*Moerella fragilis* Zorina, 1978  
(Fam. Tellinidae)

Pl. 2, figs. 5 & 8; pl. 3, fig. 5

*Original Description.* - Zorina, 1978, p. 200-201, text-figs. 15-16 (in Russian).

*Type Locality.* - Eastern coast of Tonkin Gulf.

*Depository.* - Syntypes in the ZISP.

*Gari tonkiniensis* Zorina, 1978  
(Fam. Psammobiidae)

Pl. 2, figs. 4 & 7; pl. 3, fig. 7

*Original Description.* - Zorina, 1978, p. 201-202, text-figs. 17-18 (in Russian).

*Type Locality.* - Tonkin Gulf.

*Depository.* - Syntypes in the ZISP.

*Anadara kafanovi* Lutaenko, 1993  
(Fam. Arcidae)

*Original Description.* - Lutaenko, 1993, pp. 141-142, text-figs. 1-2 (in Russian).

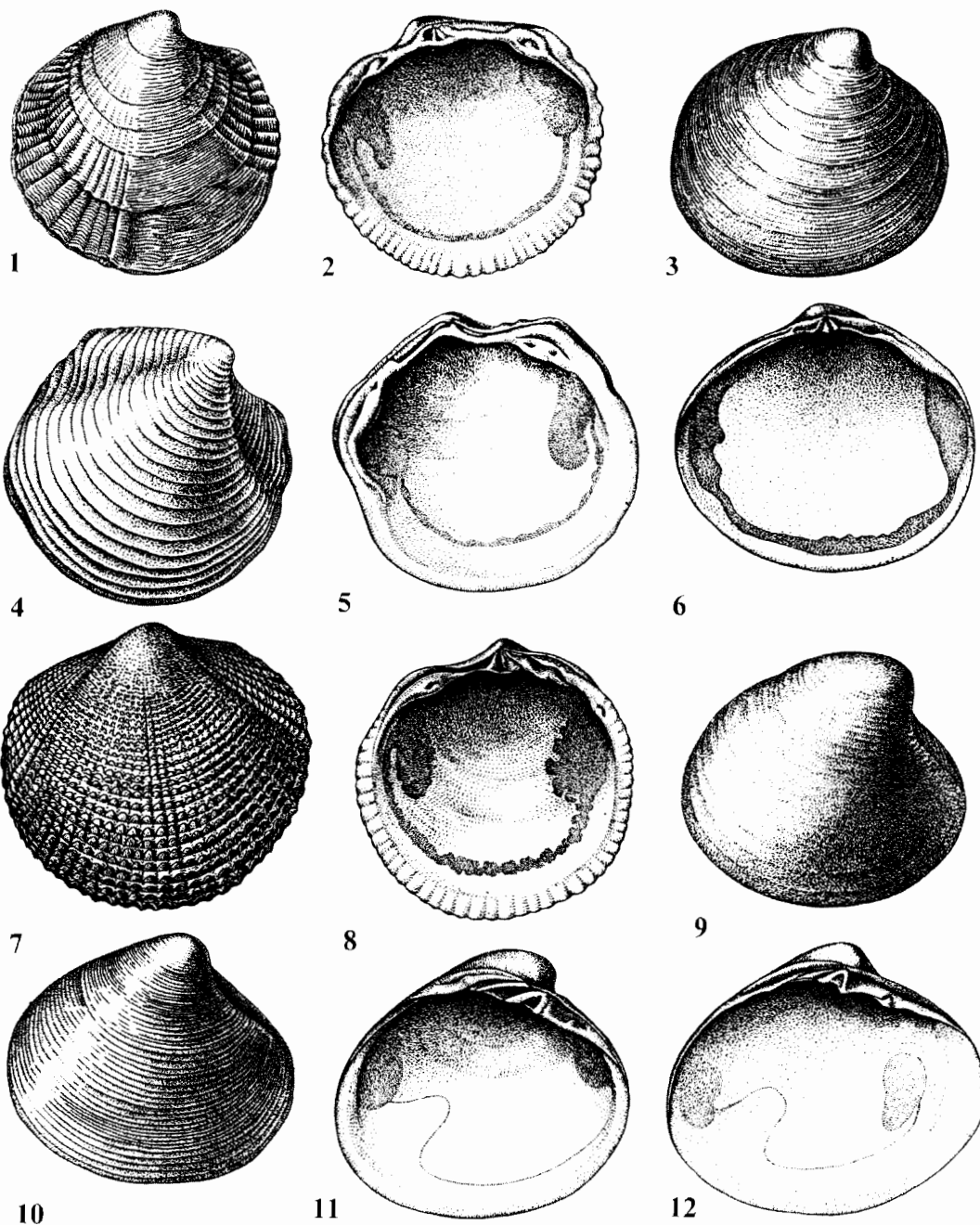
*Type Locality.* - Tonkin Gulf, Vietnam, Bien-Shon Isl.

*Depository.* - Holotype and paratype in the ZMFU (reg. nos. 11661/Bv-1484 and 11662/Bv-1485).

*Remarks.* - The photograph of holotype was published in Darkina & Lutaenko (1996, p. 83, pl. 1, fig. 5) with full label data; the photograph of paratype was given in Lutaenko (1993, p. 141, text-fig. 2), and in Evseev & Lutaenko (1998, p. 11, pl. 1, fig. E). For description in English, see Evseev & Lutaenko (1998, p. 30-31).



## Plate 1.



Figs. 1-2. Original illustration of *Pillucina vietnamica* Zorina, 1978 (see Appendix).  
 Figs. 3 & 6. Original illustration of *Diplodonta gurjanovae* Zorina, 1978 (see Appendix).  
 Figs. 4-5. Original illustration of *Phacoides scarlatoi* Zorina, 1978 (see Appendix).  
 Figs. 7-8. Original illustration of *Codakia golikovi* Zorina, 1978 (see Appendix).  
 Figs. 9 & 11. Original illustration of *Pitar levis* Zorina, 1978 (see Appendix).  
 Figs. 10 & 12. Original illustration of *Pitar sulcata* Zorina, 1978 (see Appendix).

## Plate 2

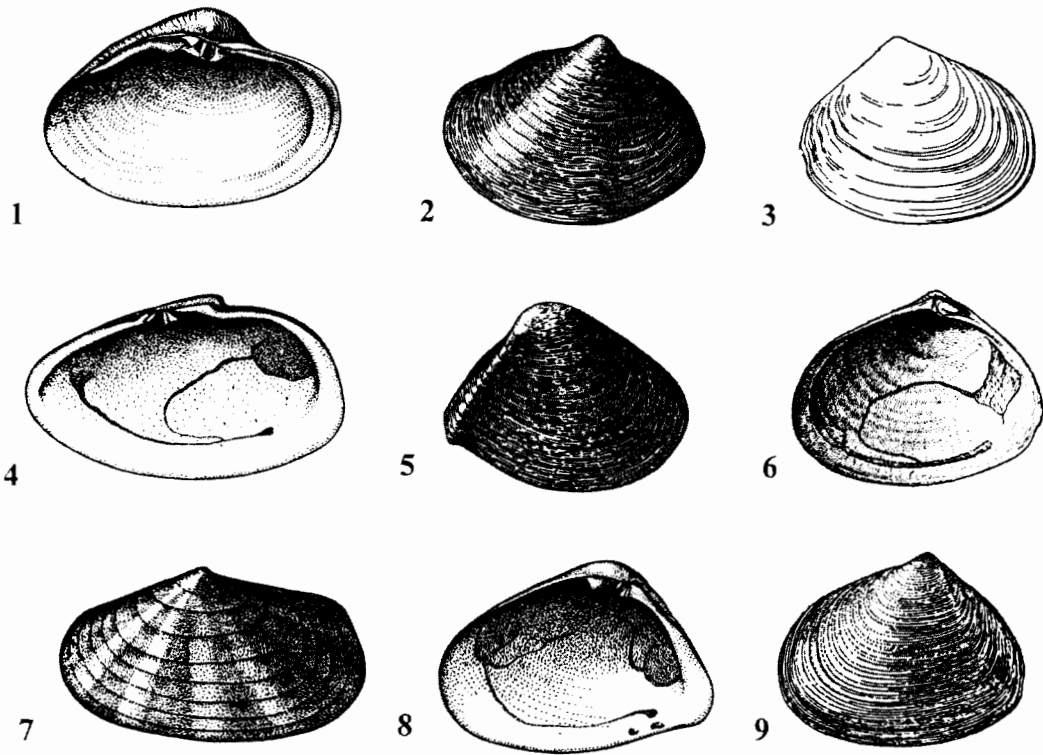
Figs. 1-2. Original illustration of *Raeta lactea* Zorina, 1978 (see Appendix).

Figs. 3, 6 & 9. Original illustration of *Abrina magna* Scarlato, 1965 (see Appendix).

Figs. 4 & 7. Original illustration of *Gari tonkiniensis* Zorina, 1978 (see Appendix).

Figs. 5 & 8. Original illustration of *Moerella fragilis* Zorina, 1978 (see Appendix).

Plate 2.



## Plate 3

Fig. 1. *Pillucina vietnamica* Zorina, 1978: syntype. External and internal views of the same valve. Length 8.6 mm, height 8.4 mm. Original label data: South China Sea, Sanya [Hainan Isl.], sect. 1, sta. 2, coll. by O.A. Scarlato, November 19, 1959. ZISP catalogue no. 1.

Fig. 2. *Diplodonta gurjanovae* Zorina, 1978: syntype. External view. Length 8.1 mm, height 7.5 mm. Original label data: Vietnam, Tonkin Gulf, Kon-Be Isl., sect. 1, sta. 4, coll. by N.L. Tzvetkova, August 12, 1961. ZISP catalogue no. 1.

Fig. 3. *Phacoides scarlatoi* Zorina, 1978: syntype. External and internal views of the same valve. Length 7.3 mm, height 6.9 mm. Original label data: South China Sea, Sanya, Hainan Isl., beach, sect. 1, sta. 2, coll. by O.A. Scarlato and Tsi Chung-Yen, November 21, 1959. ZISP catalogue no. 2.

Fig. 4. *Raeta lactea* Zorina, 1978: syntype. External and internal views of the same valve. Length 10.9 mm, height 7.7 mm. Original label data: [South China Sea], Hainan Isl., Endzou, 50 km west of Sanya, beach drift near the river estuary, coll. by O.A. Scarlato, December 12, 1959. ZISP catalogue no. 2.

Fig. 5. *Moerella fragilis* Zorina, 1978: syntype. External and internal views of the same valve. Length about 7 mm, height 4.7 mm. Original label data: [South China Sea], Tonkin Gulf, Ban-La beach, sect. 6, coll. by E.F. Gurjanova, July 27, 1961. ZISP catalogue no. 1.

Fig. 6. *Pitar levis* Zorina, 1978: syntype. External and internal views of the same valve. Length 16.2 mm, height 13.8 mm. Original label data: [South China Sea], Tonkin Gulf, R/V *Pelamida*, sta. 40, depth 56 m, coll. by E.F. Gurjanova, July 31, 1961. ZISP catalogue no. 1.

Fig. 7. *Gari tonkiniensis* Zorina, 1978: syntype. External and internal views of the same valve. Length 17.3 mm, height 8.9 mm. Original label data: [South China Sea], Tonkin Gulf, 18° 26' N, 107° 47' E, R/V *Pelamida*, sta. 39, depth 77 m, coll. by E.F. Gurjanova, July 29, 1961. ZISP catalogue no. 2.

Fig. 8. *Pitar sulcata* Zorina, 1978: syntype. External and internal views of the same valve. Length 12.8 mm, height 10.5 mm. Original label data: [South China Sea], Tonkin Gulf, R/V *Pelamida*, sta. 96, depth 42 m, coll. by E.F. Gurjanova, July 4, 1961. ZISP catalogue no. 1.

Plate 3.

