

# Karl E. von Baer's collection of Caspian Sea molluscs stored in the Zoological Museum of Lviv University, Ukraine.

## Part 1. Catalogue and general description

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**Abstract.** The collection of Karl E. von Baer's Caspian Sea molluscs was rediscovered in the Zoological Museum of Lviv University, Ukraine, where it has been kept in the depository for over 100 years without having been scientifically studied. The collection includes 116 lots containing altogether over 4000 specimens of gastropod and bivalve shells. The syntypes of 13 out of the 15 Caspian Sea gastropod species described by Władysław DYBOWSKI [1887–1888] are identified in the collection. A brief history of the collection and of the persons involved in its study is given. A catalogue of the collection has been prepared and a description of the collection is presented here. For each lot, we provide a catalogue number, data on quantity and quality of shells, label texts, and pertinent remarks.

**Key words.** Władysław Dybowski, Stefan Clessin, Gastropoda, Bivalvia, brackish-water species, type material, taxonomy.

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### Dedication

This, the first in a series of articles, is dedicated to the 180th anniversary of Władysław Dybowski's birth and the 130th anniversary of his work on the Caspian Sea Mollusca (DYBOWSKI [1887–1888]).

### Introduction

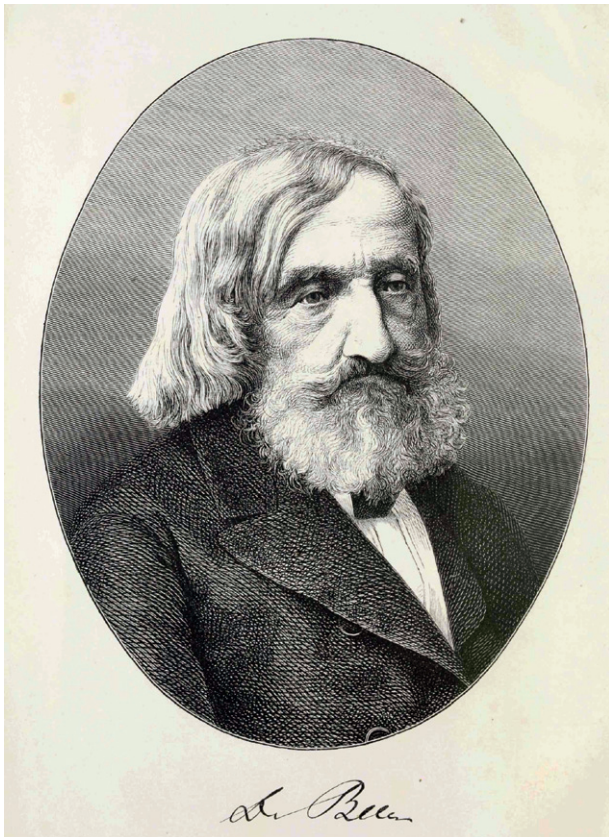
Karl E. von Baer (1792–1876) was a world-renowned researcher and naturalist of the 19th century who worked in the Russian Empire (Fig. 1). He gained outstanding knowledge in different fields of science such as embryology, zoology, geography, and ethnography. Among his many scientific achievements, the Caspian Expedition of 1853–1857, which he headed, was an extraordinarily important project. During this expedition, Baer collected unique material of the vertebrate and invertebrate animals of the Caspian Sea. One of Baer's prides was his collection of molluscs (LUKINA 1984). Baer was aware of the collection's scientific value, put it in good order, and personally wrote all the labels. He intended to process

the material and publish the results, but unfortunately he passed away.

After his death in November 1876, Baer's collection from the Caspian Expedition was thought lost. Oscar A. GRIMM (1876) wrote that it had apparently disappeared without a trace, likely rotting away somewhere in a cellar, waiting for scientific processing. As the location of most of the Baer's Caspian molluscs was not known until recently, Grimm's assumption was accepted.

Shortly after Baer's death, his relatives donated a collection to Władysław Dybowski (1838–1910), an eminent Polish–Russian malacologist. The collection was handed over to W. Dybowski through the mediation of Ludwig Stieda, an anatomy professor at the University of Dorpat, who, by the way, was the first biographer of K.E. von Baer. The transfer of the collection was at the beginning of 1877 or slightly earlier, as W. Dybowski had presented his preliminary results of its study at the February 17, 1877 meeting of the Naturforscher-Gesellschaft zu Dorpat (DYBOWSKI 1878: 365–367).

Almost at the same time, W. Dybowski applied privately to the St Petersburg Academy of Sciences with a request to publish his work on Caspian molluscs in the *Mémoires de l'Académie impériale des sciences de*



**Figure 1.** Portrait of Karl E. von Baer in old age (after STIEDA 1878).

*St.-Petersbourg*. His application, read at the meeting of the Physical–Mathematical Section of the Academy, was refused (ANONYMOUS 1877). A special commission wrongly decided that W. Dybowski’s manuscript duplicated the faunal reviews by Grimm. The first part of Grimm’s work was published in 1876 and the next part was planned to be issued in 1877 (LUKINA 1984: 26–27). In actual fact, W. Dybowski had discovered in the Baer collection many more mollusc species than had reported by GRIMM (1876, 1877). Many of these turned out to be new to science. However, the circumstances compelled W. Dybowski to put his manuscript aside.

Only 10 years later, in cooperation with the German malacologist Stefan Clessin (1833–1911), W. Dybowski prepared a monographic review of the gastropod fauna of the Caspian Sea, which he stated was based mainly on the collection of Baer, while a smaller part of the materials was purchased by his friend Wiktor Godlewski and donated for study (DYBOWSKI [1887–1888]: 1). In *Malakozoologische Blätter* (ANONYMOUS 1887: xi) there is an advertisement for the sale of “Eine fast vollständige Sammlung der kaspischen Schnecken” [an almost complete collection of Caspian gastropods] by Victor Godlewski in “Lubcz bei [near] Nowogródek, Gent. Mińsk, Russland”. Nothing is known about the origin of this collection or about its current location. Godlewski (1831–1900) was a Polish naturalist known for his studies of Lake Baikal together with Benedykt Dybowski

(Władysław’s brother). Both lived there in exile as a punishment by the Russian government for their participation in the Polish uprising in 1863. However, there is no published evidence of Godlewski’s involvement in studies of the Caspian fauna or fieldwork in the area, which would have been possible only after his return from exile about 1876 (D. Kadolsky pers. comm. 22.viii.2018).

Władysław DYBOWSKI’s [1887–1888] publication was a milestone in that it reviewed all species known up to that time and added descriptions of 15 new species of snails occurring in the Caspian Sea. Several more additions and updates to Caspian gastropod taxonomy were made after Władysław’s death by Benedykt Dybowski and Jan Grochmalicki (DYBOWSKI & GROCHMALICKI 1915), and a slightly altered version was published 2 years later (DYBOWSKI & GROCHMALICKI 1917).

Clarifying the identity and systematic position of the Caspian taxa introduced by the Dybowski brothers has been complicated by the putative loss of the Baer’s collection containing all type series. Later malacologists had only the original descriptions and illustrations of these monographs (DYBOWSKI [1887–1888], DYBOWSKI & GROCHMALICKI 1915, 1917) on which to base their opinions. The descriptions of tens of new species of Caspian Sea molluscs in the mid-20th century (GOLIKOV & STAROBOGATOV 1966, LOGVINENKO & STAROBOGATOV [1969]) produced more taxonomic confusion because they could not be compared with W. Dybowski’s types.

Not long ago in the Zoological Institute of the Russian Academy of Sciences, St Petersburg (ZIN RAS) uncataloged shells of Caspian bivalves, mainly *Didacna trigonoides* (Pallas, 1771), were found. They were without detailed labels, but old handwritten notes indicated they came from “Baer’s Collection” (BOGUTSKAYA et al. 2013: 44). Our own searches were recently rewarded when we rediscovered the Baer collection in the B. Dybowski Zoological Museum of Lviv University, Ukraine (ZMD). Although the collection has been there since the end of the 19th century, it has not been catalogued and apparently has never been touched by a malacologist since Benedykt Dybowski.

In the present paper, we describe the content and current state of 116 voucher lots present in the collection of Karl E. von Baer (Fig. 2). Type material, all syntypes, of 13 out of the 15 Caspian Sea gastropod species described by Władysław DYBOWSKI [1887–1888] were discovered in the collection. A detailed review, with illustrations and taxonomic analysis of the type series, will be the subject of another study (Anistratenko et al. unpublished).

## Materials and Methods

The evidence that the collection stored in the ZMD is actually Baer’s should be presented foremost. Unfortunately, no documents in this regard are present in the





**Figure 2.** General view of the Władysław Dybowski collection in the Zoological Museum of Lviv University, Ukraine.

museum's archives. However, there is reasonable evidence that we are indeed dealing with Baer's collection.

(1) The collection contains shells of endemic Caspian species and very few lots contain non-Caspian freshwater molluscs such as viviparids and melanopsids.

(2) Many of the shells agree well with W. DYBOWSKI's [1887–1888] descriptions and figures. Some labels even have a clear reference to the illustrations or are labelled as “originals” (Fig. 3F, G).

(3) All labels, including those of probable type material, are written in a uniform handwriting style. As the inscriptions are in Polish and German on some labels and boxes, we can assume they were written by W. Dybowski, who used both languages.

(4) We found a label with the note “K. E. v. Baer's Hand-

schrift” in the collection. Three other labels carry similar (Baer's?) handwriting (Fig. 3A–E).

(5) Władysław DYBOWSKI ([1887–1888]: 1, 11) explicitly stated that he studied Baer's collection to prepare his work. He added that Baer's collection included some specimens collected by Lieutenant A.F. Ulski (1837–1868). Moreover, Baer himself stated that malacological materials collected in hydrographic expeditions by Ulski from 1858 to 1864 were handed to him (BAER et al. 1863).

The deep-dwelling species of the genus *Caspia* (e.g. *Caspia baerii* and *C. ulskii*) in the collection most likely came from the deep-water samples taken by Ulski. Silt particles can be found inside the shells and the vials. The voucher ZB-M W.Dyb. 116 labelled “Detritus 46 Saž. Tief” (Fig. 4) is also apparently Ulski's sample. Baer





**Figure 3.** Some labels and boxes from the collection. **A–D.** Labels 2, 3 and 4 of ZMD lot #56 are probably written by Baer: (**A**) label 2; (**B**) label 4; (**C, D**) label 3 (on the back side of label 3 the remark “K. E. v. Baer’s Handschrift” was probably added by W. Dybowski). **E.** Label of ZMD lot #61 may also have been written by Baer. **F, G.** Closed (**F**) and open (**G**) cigarette box with mark “Original”, apparently meaning that the shells within were originals. Numbers on the label inside the box are the figure numbers of plate 1 of W. Dybowski’s [1887–1888] publication.

collected mainly in shallow waters because he had no appropriate equipment for deep-water sampling (see the diaries of Baer in LUKINA 1984).

(6) Finally, in addition to Baer’s collection, the collection of Lake Baikal molluscs collected by Benedykt Dybowski is deposited in the ZMD. In 1885, B. Dybowski founded this museum, and up to his death in 1930, he enriched the collection by obviously including specimens obtained from his brother (SHYDLOVSKYY 2012).

The collection consists of 116 lots containing dry shells of bivalves and gastropods. Most lots are in the original cardboard boxes and glass tubes of various sizes; a few more modern matchboxes are also present (Figs 2–4).

According to W. DYBOWSKI ([1887–1888]: 5), some samples of bivalves were originally preserved in alcohol; these were jars with ground stoppers covered with molten wax on the outside. Some fixed samples were obtained by Baer directly from Ulski around 1863 (DYBOWSKI [1887–1888]: 5, footnote). Currently, there are only 2 small glass tubes containing gastropods with dried bodies in the collection. They look to have originally been in alcohol.

According to the labels, this collection contains material for 13 of 15 species of gastropod molluscs described

in W. DYBOWSKI [1887–1888]. In all cases, the type specimens are not specifically marked, and the originals used for preparing the drawings that illustrated his work are usually not separated out. Some bivalves are labelled as “new species”, but their descriptions were never published (Table 1).

We did not find shells of *Hydrobia grimmi* and *Clessinia martensii*, but W. DYBOWSKI ([1887–1888]: 43, 55–56) noted that all specimens used for the descriptions and drawings are kept in Clessin’s collection. According to DANCE (1966), Clessin’s collection was destroyed during World War II.

We also could not find the specimens that served as originals for the drawings of *Micromelania elegantula* and *M. dimidiata*. We suppose these and other “*Micromelania*” shells were withdrawn by Benedykt Dybowski to illustrate his publications with Grochmalicki (DYBOWSKI & GROCHMALICKI 1915, 1917). These samples apparently are stored in ZIN RAS; this assumption is supported by the presence there of syntypes of some “*Micromelania*” taxa described by DYBOWSKI [1887–1888] and DYBOWSKI & GROCHMALICKI (1915, 1917). Some specimens listed in the ZIN catalogue as “det. by B. Dybowski” and “probable syntype” were



**Figure 4.** Different types of boxes and labels in the collection. **A–F.** Standard corked vials with small vials inside: **(A)** ZMD lot #72; **(B)** ZMD lot #75; **(C)** ZMD lot #78; **(D)** ZMD lot #77; **(E)** ZMD lot #74; **(F)** ZMD lot #76. **G–L.** Original cardboard boxes: **(G)** ZMD lot #32, **(H)** ZMD lot #98; **(I)** ZMD lot #106; **(J)** ZMD lot #95; **(K)** ZMD lot #57; **(L)** ZMD lot #110. **M.** Matchbox containing shells wrapped in a piece of blotting paper, ZMD lot #45. **N.** Large corked glass tube, ZMD lot #116. The sample labelled “Detritus 46 Saž. tief” we supposed originated from Lieutenant A.F. Ulski’s samples. Sažen was a Russian sea unit [= morskaja sažen = fathom] of length equal to 1.829 m.



**Table 1.** Taxonomic index of the studied lots in the Baer collection. Gastropod names appear as used by W. DŹBOWSKI [1887–1888]. Bivalves are listed in systematic order, with names as given on labels; unlabelled or nameless lots are listed at the end. The lots with syntypes are marked with an asterisk.

Taxon	ZB-M W.Dyb.	Taxon	ZB-M W.Dyb.
<b>Genus <i>Micromelania</i></b>		<b>Genus <i>Lithoglyphus</i></b>	
<i>Micromelania caspia</i>	24 25 83	<i>Lithoglyphus caspius</i>	7 26 27 31 73
<i>Micromelania grimmi</i>	93*	<b>Genus <i>Planorbis</i></b>	
<i>Micromelania spica</i>	37 38 39 40 94 82 88 89	<i>Planorbis eichwaldi</i>	2* 102* 103*
<i>Micromelania dimidiata</i>	21 22 23 34 79 86 87	<b>Genus <i>Zagrabica</i></b>	
<i>Micromelania elegantula</i>	32*	<i>Zagrabica brusiniana</i>	8* 28*
<i>Micromelania turricula</i>	85* 92*	<b>Genus <i>Neritina</i></b>	
<i>Micromelania</i> sp.	84 90	<i>Neritina liturata</i>	1 30 53
Juvenile <i>Micromelania</i> , <i>Caspia</i> and <i>Nematurella</i>	67 81	<i>Neritina schultzei</i>	71
<b>Genus <i>Caspia</i></b>		<b>Other Gastropoda</b>	
<i>Caspia baerii</i>	95* 96* 97* 78	<i>Neritina (Neritona) ostroumovi</i> n. sp. Brus. [unavailable]	69
<i>Caspia pallasii</i>	5* 74* 104* 105*	<i>Neritina fluviatilis</i>	52
<i>Caspia gmelinii</i>	77* 91*	<i>Andrusovia dybowskii</i>	70
<i>Caspia ulskii</i>	76* 99*	<i>Valvata piscinalis</i>	60
<i>Caspia grimmi</i>	3* 72* 108* 109*	<i>Planorbis (Coretus) corneus</i>	16
<i>Caspia orthii</i>	6* 106* 107*	<i>Planorbis</i> sp.	19 20
<i>Caspia kowalewskii</i>	100* 101*	<i>Planorbis albus</i> v. <i>hispidus</i>	54
<i>Caspia (Caspida) incertae</i>	35 36	<i>Planorbis</i> cf. <i>discus</i>	68
<b>Genus <i>Clessinia</i></b>		<i>Melania tuberculata</i>	61
<i>Clessinia variabilis</i>	29	<i>Hemisinus esperi</i> , juvenile <i>Vitrea</i> sp. and <i>Clausilia</i> sp.	47
<i>Clessinia triton</i>	62	<b>Bivalvia</b>	
<b>Genus <i>Nematurella</i></b>		<i>Dreissensia polymorpha</i>	15 63 110
<i>Nematurella conus</i>	4 33	<i>Dreissensia rostriformis</i>	59
<i>Nematurella sieversii</i>	75* 98*	<i>D. rostriformis</i> var. <i>distincta</i>	46
		<i>Dreissensia caspia</i>	110
		<i>Dreissensia latro</i> ?	110
		<i>Dreissena</i> sp. n. Dybows. [unavailable]	65
		<i>Mytilus</i> cf. <i>minimus</i>	
		<i>Cardium (Cerastoderma) edule</i> cf. <i>umbonata</i>	17
		<i>Cardium edule</i>	18 57
		<i>Adacna edentula</i>	12
		<i>Monodacna edentula</i>	110
		<i>Adacna laeviuscula</i>	11
		<i>Adacna plicata</i>	43 44 45
		<i>Didacna Dybowskii</i> n. sp. Brus. [unavailable]	64
		<i>Didacna (Pontalamyra)</i> [sic!] <i>catillus</i>	110
		<i>Monodacna catillus</i>	10
		<i>Monodacna caspia</i>	55

Taxon	ZB-M W.Dyb.
<i>Monodacna (Cardium) trigonoides</i>	56
<i>Cardium longipes</i>	9
<i>Card. longipes</i> <i>Didacna longipes</i>	48
<i>Didacna longipes</i>	50
<i>Sphaerium</i> sp.	50
<b>Unlabelled or nameless</b>	
Unlabelled [ <i>Micromelania elegantula</i> ]	41 42
Detritus 46 fathoms depth	116

Taxon	ZB-M W.Dyb.
Juvenile gastropods almost all undeterminable	80
Unlabelled [a mix of small caspian gastropods]	66
Unlabelled [ <i>Melanoides tuberculata</i> ]	14
Undeterminable (fossil) [Dreissenidae]	51
Unlabelled [Dreissenidae]	49
Unlabelled [a mix of freshwater, marine and land gastropod shells of uncertain origin]	115
Unlabelled [Cardiidae]	13
Mist	58

designated as lectotypes (LOGVINENKO & STAROBOGATOV [1969]) and illustrated later (KANTOR & SYSOEV 2006).

Below, we provide a complete list and technical description of all lots in Baer's collection present in the ZMD using the following scheme. The original lot numbers, where present on the boxes or vials, do not match up to lot numbers in the current ZMD catalogue (ЗБ-М В.Диб. = ZB-M W.Dyb., meaning Zoological Museum Depository of Invertebrates, W. Dybowski collection), and we provide both numbers. The new museum tags are glued to the boxes and tubes, while the original lot numbers (if any) are simply numbers printed on small pieces of paper attached on the outside of the box or on the inner surface of the tube. These numbers also do not correspond to the order of species in W. Dybowski's [1887–1888] work.

In the description of the lots we reproduce the text of the labels as it is. Original spelling and punctuation are reproduced without alteration. The majority of the original labels were written with ink, but some labels were written in pencil; the writing medium is indicated in square brackets. Similarly, missing parts of the text are reconstructed in square brackets where needed.

For each container, in addition to its number according to the ZMD catalogue, we give the container type (cardboard box or vial), reproduce the text on the label or labels, list the contents, and add our remarks about the sample.

The names and taxonomic status of all taxa are represented here as they were given by W. DYBOWSKI [1887–1888], or, if not mentioned in that work, reproduced as they appear on the labels (Table 1). Only in the remarks section, do we use the currently suggested taxonomy (NEUBAUER et al. 2018).

## Description of the Lots

**ZB-M W.Dyb. 1** (originally # 151). Small vial plugged with cotton wool. Label, in vial: “*Neriti.[na] liturata*”. 2 shells. Lots ZB-M W.Dyb.1 to ZB-M W.Dyb.4 are 4

small vials kept together in the original box # 151 with a glass lid. The underside of the box bears the handwriting “Mięczaki Kaspjskie” [= Caspian molluscs].

**ZB-M W.Dyb. 2** (originally # 151). Small vial plugged with cotton wool. Label, in vial: “*Planor.[bis] Eichwaldii*” [sic!]. 1 shell. This is a syntype of *Planorbis eichwaldi* Clessin & W. Dybowski in W. Dybowski, 1887. The shell is well-preserved. See also remarks for ZB-M W.Dyb.1.

**ZB-M W.Dyb. 3** (originally # 151). Small vial plugged with cotton wool. Label, in vial: “*Casp.[ia] Grimm[i]*”. 4 shells. These are syntypes of *Caspia grimmii* Clessin & W. Dybowski in W. Dybowski, 1887. The shells are well-preserved. See also remarks for ZB-M W.Dyb.1.

**ZB-M W.Dyb. 4** (originally # 151). Small vial plugged with cotton wool. Label, in vial: “*Nematu.[rella] conus*”. 2 shells. These are well-preserved shells. See also remarks for ZB-M W.Dyb.1.

**ZB-M W.Dyb. 5** (originally # 197). Small vial plugged with cotton wool. Label, in vial: “4b, *C.[aspia] Pallasii*”; 3 shells. These are well-preserved syntypes of *Caspia pallasii* Clessin & W. Dybowski in W. Dybowski, 1887. Lots ZB-M W.Dyb. 5 to ZB-M W.Dyb. 8 are the 4 small vials kept together in the original box # 197 with a glass lid. A printed label attached to the lid reads “Mare caspicum”, and on the underside of this box is written “Mięczaki Kaspjskie”.

**ZB-M W.Dyb. 6** (originally # 197). Small vial plugged with cotton wool. Label, in vial: “*Casp.[ia] Orthii*”. 2 shells. These are syntypes of *Caspia orthii* Clessin & W. Dybowski in W. Dybowski, 1887 in various condition. See also remarks for ZB-M W.Dyb. 5.

**ZB-M W.Dyb. 7** (originally # 197). Small vial plugged with cotton wool. Label, in vial: “*Lithogl.[yphus] caspius*”. 3 shells. The shells are in good conditions. See also remarks for ZB-M W.Dyb. 5.

**ZB-M W.Dyb. 8** (originally # 197). Small vial plugged with cotton wool. Label, in vial: “*Zagrabica Brusiniana*”. 2 shells. These specimens are moderately well preserved. As the shells are originally labelled by W. Dybowski as *Zagrabica Brusiniana* they have to be

genuine syntypes. See also remarks for ZB-M W.Dyb. 5 and for ZB-M W.Dyb. 28.

**ZB-M W.Dyb. 9** (originally # 170). Cardboard box with a glass lid. Label 1: “*Cardium longipes*” in pencil. Label 2: “N 32 Morze Kaspijsk[ie]” (=Caspian Sea; in Polish). 3 valves. The two single adult valves and 1 juvenile valve are in a good state of preservation.

**ZB-M W.Dyb. 10** (originally # 175). Cardboard box with a glass lid. Label: “*Monodacna catillus*”. 1 valve. The shell has a Greek  $\gamma$  written with ink inside.

**ZB-M W.Dyb. 11** (originally # 191). Cardboard box with a glass lid. Label 1: “N 22 *Adacna laeviuscula* Eichw. M.[orze] Kaspijskie”. Label 2: “N 23 Morze Kaspijskie”. 1 valve. The shell is partially damaged and subadult in size.

**ZB-M W.Dyb. 12** (originally unnumbered). Cardboard box with a glass lid. Label: “N 29 *Adacna edentula*. Kasp[i-meer]”. 3 valves. These unpaired valves are in good condition.

**ZB-M W.Dyb. 13** (originally # 237). Cardboard box with a glass lid. Label: “N 7 Morze Kaspijskie”. 14 separate valves + 4 complete (paired) shells. This is a mixed lot of various cardiids: *Cerastoderma* sp., *Monodacna* sp., and *Didacna trigonoides* (Pallas, 1771). One of the *D. trigonoides* valve bears the mark “10” in ink on its inside.

**ZB-M W.Dyb. 14** (originally unnumbered). Cardboard box with a glass lid. Label: “16. *Paludinella* 18. Morze Kaspijskie”. 4 shells. These may be *Melanoides tuberculata* (Müller, 1774), but the content does not match the label.

**ZB-M W.Dyb. 15** (originally unnumbered). Cardboard box with a glass lid. Label: “13 *Dreiß. polymorpha* Morze Kaspijskie”. 17 separated valves + 2 complete (paired) juvenile specimens. The specimens are of various sizes and in various states of preservation.

**ZB-M W.Dyb. 16** (originally unnumbered). Matchbox. Label: “*Planorbis (Coretus) corneus*. L.” 1 shell. This is a medium-sized shell of this species with a damaged aperture. It is a freshwater species, not living in the Caspian Sea.

**ZB-M W.Dyb. 17** (originally unnumbered). Matchbox. Label: “*Cardium (Cerastoderma) edule* L. cf. *umbonata* Wood”. 2 valves. These specimens are medium-sized for this species and well-preserved.

**ZB-M W.Dyb. 18** (originally unnumbered). Matchbox. Label: “*Cardium edule* L.” 1 single valve + 2 complete specimens. These specimens are medium-sized for this species and well-preserved.

**ZB-M W.Dyb. 19** (originally unnumbered). Small corked vial in cardboard box with glass lid. Label: “*Planorbis* M[orze] Kaspijsk[ie]”. 1 shell with dried body. The specimen looks like a subadult *Planorbis planorbis* (Linnaeus, 1758) in good condition and seems to have originally been kept in alcohol. The lot is kept together with ZB-M W.Dyb. 20.

**ZB-M W.Dyb. 20** (originally unnumbered). Small corked vial in cardboard box with glass lid. Label: “*Planorbis* M.[orze] Kaspijsk[ie]”. 1 shell with dried body. The specimen looks like a subadult *Anisus spirorbis* (Linnaeus, 1758) in good condition and seems to have originally been kept in alcohol. The lot is kept together with ZB-M W.Dyb. 19.

**ZB-M W.Dyb. 21** (originally unnumbered). Small vial plugged with cotton wool. Label, in box: “*Hydrobia Micromel.[ania] dimidiata* N5: 4”. Label, in vial: “*Micromel.[ania] dimidiata*”. 3 shells. Lots ZB-M W.Dyb. 21 to ZB-M W.Dyb. 23 are the 3 small vials kept together in the original cardboard box with a glass lid.

**ZB-M W.Dyb. 22** (originally unnumbered). Small vial plugged with cotton wool. Label, in box: “*Hydrobia Micromel.[ania] dimidiata* N5: 4”. 46 shells. See remarks for ZB-M W.Dyb. 21.

**ZB-M W.Dyb. 23** (originally unnumbered). Small vial plugged with cotton wool. Label, in box: “*Hydrobia Micromel.[ania] dimidiata* N5: 4”. 37 shells. The variously sized shells are in various condition and mostly fragmented. See remarks for ZB-M W.Dyb. 21.

**ZB-M W.Dyb. 24** (originally # 59). Small vial plugged with cotton wool, in cardboard box with a glass lid. Label, in box: “N 1 *Micromelania caspia* 27 Faden [fathoms]”. Label, in vial: “*Caspia*”. 1 shell. The shell is slightly damaged on the spire and at the aperture. This lot is kept together with ZB-M W.Dyb. 25 in the original cardboard box with a glass lid.

**ZB-M W.Dyb. 25** (originally unnumbered). Small vial plugged with cotton wool, in cardboard box with a glass lid. Label, in box: “N 1 *Micromelania caspia* 27 Faden”. Label, in vial: “*Caspia*”. 4 shells. The shells are in various condition, with damaged spires. This lot is kept together with ZB-M W.Dyb. 24 in the original cardboard box with a glass lid.

**ZB-M W.Dyb. 26** (originally unnumbered). Cardboard box with a glass lid. Label: “*Lithoglyphus caspius*”. 188 shells. The shells are in various states of preservation and are variously sized. Also inside the same box is a vial containing ZB-M W.Dyb. 27.

**ZB-M W.Dyb. 27** (originally # 1). Small vial plugged with cotton wool. Label, in vial: “1”. 17 shells. The shells are in various states of preservation and are variously sized. This vial lies inside the box containing ZB-M W.Dyb. 26 from which these shells were separated.

**ZB-M W.Dyb. 28** (originally # 70). Cardboard box with glass lid. Label: “*Zagrabica Brusiniana*”. 20 shells. The specimens are in various states of preservation. As these shells have original labels from W. Dybowski, they are syntypes of *Zagrabica brusiniana* Clessin & W. Dybowski in W. Dybowski, 1887.

**ZB-M W.Dyb. 29** (originally [box] # 84, [vial] # 15).



Small vial plugged with cotton wool in cardboard box with a glass lid. Label, in box: “15. *Clessinia variabilis* Caspi[see?]”. 2 shells. The 2 damaged specimens are the only ones labelled as *C. variabilis* in the collection.

**ZB-M W.Dyb. 30** (originally unnumbered). Cardboard box with glass lid. Label 1: “*Neritina liturata* 25” (in pencil). Label 2: “*Neritina liturata* 28” (the rest unreadable). 14 shells. This box contains a mixture of *Theodoxus* species; the shells have variable patterns and vary in size.

**ZB-M W.Dyb. 31** (originally unnumbered). Cardboard box with glass lid. Label: “*Lithoglyphus caspius* N. 20”. 13 shells + 7 fragments. The specimens are in a poor state of preservation.

**ZB-M W.Dyb. 32** (originally unnumbered). Small vial plugged with cotton wool in a cardboard box with a glass lid (Fig. 4G). Label, in box: “*M.[icromelania] elegantula* N-7 5”. Label, in vial: “*Microm.[elania] elegantula*”. 5 shells. The shells are in various conditions; 3 of them have damaged apices, and 2 are well-preserved. This is the only lot in the collection labelled by W. Dybowski as *Micromelania elegantula*, which indicates that the shells are syntypes of this species.

**ZB-M W.Dyb. 33** (originally # 11). Small vial plugged with cotton wool in cardboard box with a glass lid. Label, in box: “*Nematurella conus*”. 28 shells. The specimens are in good condition. The shells present are a mixture of *Caspiella* species.

**ZB-M W.Dyb. 34** (originally # 4). Cardboard box with a glass lid. Label: “4 *Dimidiata*”. 128 shells. These specimens are in various states of preservation and represent a mixture of *Turricaspia dimidiata* (Eichwald, 1838) sensu W. Dybowski and other *Turricaspia* species.

**ZB-M W.Dyb. 35** (originally unnumbered). Small corked vial in cardboard box with glass lid. Label in box: “*Caspia* (*Caspida*?) *incertae* – Nieopisane” (= undescribed, in Polish). 16 shells. The specimens in this lot represent a mixture of *Abeskunus* and *Andrusovia* species. This lot is kept in the same box with ZB-M W.Dyb. 36.

**ZB-M W.Dyb. 36** (originally unnumbered). Small corked vial in cardboard box with glass lid. Label in box: “*Caspia* (*Caspida*?) *incertae* – Nieopisane” (= undescribed, in Polish). 138 gastropod shells + 2 valves. These specimens vary in age and condition. This lot is a mixture of several species of gastropods (*Theodoxus* sp., *Turricaspia* spp., *Clessiniola* sp., *Lymnaea* sp. (fragment), *Abeskunus* sp.) and bivalves (1 juvenile left valve of *Corbicula* sp. and 1 juvenile right valve of a cardiid). This lot is kept in the same box with ZB-M W.Dyb. 35.

**ZB-M W.Dyb. 37** (originally # 247). Small vial plugged with cotton wool. Label, in vial: “*Spica*”. 2 shells. These are small shells in good condition. Lots ZB-M W.Dyb. 37 to ZB-M W.Dyb. 42 are in 6 small vials kept together in the original cardboard box # 247 with a glass lid.

**ZB-M W.Dyb. 38** (originally # 247). Small corked vial. Label, in vial: “*Spica*”. 6 shells. Five shells are in good condition and 1 has a broken apex. See remark for ZB-M W.Dyb. 37.

**ZB-M W.Dyb. 39** (originally # 247). Small vial plugged with cotton wool. Label, in vial: “*Spica*”. 68 shells. These shells are of various sizes and in various condition. See remark for ZB-M W.Dyb. 37.

**ZB-M W.Dyb. 40** (originally # 247). Small corked vial. Label, in vial: “*Spica*”. 24 shells. These shells are of various sizes and in various condition. See remark for ZB-M W.Dyb. 37.

**ZB-M W.Dyb. 41** (originally # 247). Small corked vial. No label. 28 shells. This lot contains small gastropod shells. See remark for ZB-M W.Dyb. 37.

**ZB-M W.Dyb. 42** (originally # 247). Small corked vial. No label. 21 shells. This is another lot of small gastropod shells. See remark for ZB-M W.Dyb. 37.

**ZB-M W.Dyb. 43** (originally unnumbered). Cardboard box with a glass lid. Label 1: “*Adacna plicata* Eichw.” Label 2: “*Adacna plicata* (juv.) Eichw.” Label 3: “*Adacna plicata* Eichw. Morze Kaspisk[ie] N 12”. 8 separated valves. Four valves look fresh, and 4 seem to be subfossil. Label 2 has a convolute shape, indicating it had been kept in a vial.

**ZB-M W.Dyb. 44** (originally unnumbered). Matchbox. Label: “*Adacna plicata* Eichw.” 4 valves. The valves vary in size and condition. The shells are wrapped in a piece of blotting paper, which shows their original state in Baer's collection (Fig. 4). This kind of packing was mentioned by DYBOWSKI (1887: 4): “Die Grundproben sind in Löschpapier eingewickelt und in besonderen Schächtelchen verpackt” [The bottom samples are wrapped in blotting paper and packed in special boxes].

**ZB-M W.Dyb. 45** (originally unnumbered). Matchbox (Fig. 4M). Label: “*Adacna plicata* Eichw.” 6 valves. The valves vary in size and condition: 2 large ones are well-preserved, 1 large valve is broken, and there are 2 shell fragments. For shells wrapped in a piece of blotting paper, see remarks for ZB-M W.Dyb. 44.

**ZB-M W.Dyb. 46** (originally unnumbered). Large vial with a plug of cotton wool. Label: “*D.[reissena] rostriformis* Desh. var. *distincta* Hay.” 795 separated valves. The valves vary in size and condition.

**ZB-M W.Dyb. 47** (originally unnumbered). Standard vial with cork. Label 1: “*Hemisinus Esperi* Fér” [sic!]. Label 2: “Mit junge *Vitrea* und *Clausilia*; stammt gewiss nicht a. d. Caspi [certainly not from the Caspian Sea]”. 34 shells. The vial contains a mixture of *Esperiana esperi* (Férussac, 1823) of various sizes and a few shells of terrestrial snails belonging to ?*Vitrea* and *Clausiliidae*.

**ZB-M W.Dyb. 48** (originally unnumbered). Standard vial with cork. Label 1: “*Card.[ium] longipes*”. Label 2:

“*Didacna longipes*? Grimm”. 3 valves. The valves vary in condition and size.

**ZB-M W.Dyb. 49** (originally unnumbered). Standard vial with cork. No label. 18 single valves + 4 double valves of *Dreissena* species. The shells vary in condition and size.

**ZB-M W.Dyb. 50** (originally unnumbered). Standard corked vial, divided into 2 parts by a cotton wool stopper; each part has its own label. Label 1: “*Sphaerium*”. Label 2: “*Didacna longipes*? Grimm”. 1 valve and 11 valves. The shells vary in condition and size. There are 11 valves of *Cerastoderma glaucum* (Bruguère, 1789) in the bottom part of the vial, while in the upper part, there is a single right valve of *Sphaerium corneum* (Linnaeus, 1758).

**ZB-M W.Dyb. 51** (originally unnumbered). Standard vial with cork. Label: “unbestimmbar [= undetermined] (foss.)”. 17 valves. These shells of a *Dreissena* species vary in condition from fragments to whole valves.

**ZB-M W.Dyb. 52** (originally unnumbered). Standard vial with cork. Label: “*Neritina fluviatilis* L.” 8 shells. Shells have various colour patterns.

**ZB-M W.Dyb. 53** (originally unnumbered). Standard vial with cork. Label: “*Neritina (Theodoxus) liturata* Eichw.” 3 shells. These specimens are in poor condition.

**ZB-M W.Dyb. 54** (originally # 42 on the cork of small vial). Standard corked vial containing a small vial plugged with cotton wool and a cork, on which there is an ink mark “42”. Label, in larger vial: “42 *Planorbis albus* Müll. v. *hispidus* Drap.” 1 shell with dried body. These specimens are in poor condition.

**ZB-M W.Dyb. 55** (originally unnumbered). Cardboard box with a glass lid. Label: “*Monodacna caspia* Eichw.” 506 valves. These specimens vary in size and condition.

**ZB-M W.Dyb. 56** (originally unnumbered). Open cardboard box without lid. Label 1, pinned with a thumb tack to the box wall: “*Monodacna (Cardium) trigonoides* M.[orze] Kaspijskie”. Label 2: “Mangischlak”. Label 3, on the box front: “*Cardium trigonoides* Pall. *Monodacna trigonoides* Eichw. Sara”; on the back side: “K. E. v. Baer’s Handschrift”. Label 4: “14 Baku *Monodacna trigonoides* Morze Kaspijskie”. 24 valves. Labels 2 and 3 were written by Baer. The note on the back side of label 3 was apparently written by W. Dybowski. On label 4, Baer wrote “Baku” but the species binomen and note “Morze Kaspijskie” were added by Dybowski (Fig. 3A–D).

**ZB-M W.Dyb. 57** (originally unnumbered). Open original cardboard box without lid (Fig. 4K). Label 1: “*Cardium edule* Morze Kaspijsk[ie]”. Label 2: “*Cardium edule* L.” 28 + 5 valves. The specimens vary in condition and size.

**ZB-M W.Dyb. 58** (originally unnumbered). Standard vial with cork. Label: “Mist” (= ? miscellaneous or obscure). 5 valves of *Cardiidae* and 1 shell of *Theodoxus*

*pallasi* Lindholm, 1924. The condition of the specimens vary from fragments to whole shells. One valve is covered by a black organic deposit.

**ZB-M W.Dyb. 59** (originally unnumbered). Standard vial with cork. Label 1: “*Dreissensia rostriformis* Desh.” Label 2: “*Dreissensia rostriformis* Desh.” 21 valves. The specimens are in moderate condition.

**ZB-M W.Dyb. 60** (originally unnumbered). Standard corked vial containing a small vial with a glass stopper. Label, in external vial: “*Valvata piscinalis* Müll.” 1 shell with dried body and operculum. This specimen is in perfect condition; it had apparently been originally preserved in alcohol.

**ZB-M W.Dyb. 61** (originally unnumbered). Standard vial with cork. Label 1: “*Melania tuberculata* Müll.” Label 2: “*Paludinella* aus dem süßen Wasser [from fresh water] ...” (the rest is illegible). 10 shells. This lot contains only *Melanoides tuberculata*. The specimens are large and all in good condition. Label 2 appears to be written by Baer (Fig. 3E).

**ZB-M W.Dyb. 62** (originally # 7). Standard corked vial containing a small vial plugged with cotton wool. Label, in external vial: “N-7 *Clessinia triton* Kaspisee [Caspian Sea]”. Label, in small vial: “*Caspia triton* Jakov[?] Mus. Turin[?]”. 2 shells. The specimens are in moderate condition.

**ZB-M W.Dyb. 63** (originally unnumbered). Standard corked vial. Label: “*Dreissensia polymorpha* Pall.” 15 valves. These are well-preserved single valves.

**ZB-M W.Dyb. 64** (originally unnumbered). Large corked vial containing a small vial plugged with cotton wool and a glass stopper. Label: “*Didacna Dybowskii* n. sp. Brus.” 64 valves. These specimens are small and juvenile. No further data on this binomen were traced.

**ZB-M W.Dyb. 65** (originally unnumbered). Standard vial, with cork, containing small corked vial. Label, in external vial: “*Mytilus* cf. *minimus* Poli.” Label, in small vial: “*Dreisena* [sic!] sp. n. M. casp. Dybows.” 3 matched and 2 separate valves, which probably are a pair. These specimens are small. No further data on this “new species” were traced.

**ZB-M W.Dyb. 66** (originally unnumbered). Standard corked vial. No label. 24 shells. The specimens are juveniles. The lot contains a mixture of *Turricaspia*, *Caspiella* and *Caspia* species.

**ZB-M W.Dyb. 67** (originally unnumbered). Standard vial, with cork, containing a small corked vial. Label, in external vial: “Fast nur junge [almost only juvenile] *Micromelania*, *Caspia* u. *Nematurella*”. Label, in small vial: “Kaspijskie incertae”. 67 shells. The specimens are small-sized, mostly juveniles. The lot contains a mixture of *Ecrobia*, *Turricaspia*, *Caspiella* and *Caspia* species.



**ZB-M W.Dyb. 68** (originally # 43 on the cork of small vial). Standard vial, with cork, containing a small corked vial. Label, in external vial: “43. *Planorbis* cf. *discus* Rossm.” 2 shells. Both shells are damaged and have dried bodies inside. They probably had been originally preserved in alcohol.

**ZB-M W.Dyb. 69** (originally unnumbered). Standard vial, with cork, containing a small vial plugged with cotton wool. Label, in external vial: “*Neritina* (*Neritona*) *Ostroumovi* n. sp. Brus.” 4 shells. All specimens are worn and probably subfossil. No further data on this binomen were traced; apparently it was never published.

**ZB-M W.Dyb. 70** (originally #6a on the small vial). Standard vial, with cork, containing small vial plugged with cotton wool. Label, in external vial: “*Andrusovia Dybowskii* Brus.” 26 shells. This is the only lot with authentically determined and labelled specimens of *A. dybowskii* Brusina in Westerlund, 1902. The shells are highly variable in outline.

**ZB-M W.Dyb. 71** (originally, on the small vial, # 16). Standard vial, with cork, containing small vial plugged with cotton wool. Label, in external vial: “*Neritina* (*Ninia* Brus.) *Schultzi* Grimm”. 1 shell. The shell is in perfect preservation.

**ZB-M W.Dyb. 72** (originally unnumbered). Standard vial, with cork, containing small vial and glass tube plugged with cotton wool (Fig. 4A). Label 1, in external vial: “*Caspia Grimmi* Dyb. et Cles.” Label 2, in external vial: “*Caspia Grimmi*? Dyb. et Cles.” 18 shells and 1 shell in separate containers. These are syntypes of *Caspia grimmi* Clessin & W. Dybowski in W. Dybowski, 1887 in varying condition.

**ZB-M W.Dyb. 73** (originally unnumbered). Standard vial with cork containing 2 small vials plugged with cotton wool. Label 1, in external vial: “*Lithoglyphus caspius* Kryn.” Label 2, in external vial: “*Lithoglyphus caspius* Kryn.” Label 3, in external vial: “*Lithoglyphus caspius* Kryn.” 21 shells in glass tube; 4 shells in small vial. The size and condition of these specimens vary.

**ZB-M W.Dyb. 74** (originally unnumbered). Standard vial, with cork, containing 2 small vials plugged with cotton wool (Fig. 4E). Label 1, in external vial: “*Caspia Pallasi* Dyb. et Cless.” Label 2, in external vial: “*Caspia Pallasi* Dyb. et Cless.” 1 shell and 23 shells in separate vials. These mostly well-preserved specimens are syntypes of *Caspia pallasi* Clessin & W. Dybowski in W. Dybowski, 1887.

**ZB-M W.Dyb. 75** (originally unnumbered). Original vial with cork and containing a small vial plugged with cotton wool (Fig. 4B). Label, in external vial: “*Nematurella Sieversi* [sic!] Cless.” 3 shells. These are syntypes of *Nematurella sieversi* Clessin in W. Dybowski, 1887.

**ZB-M W.Dyb. 76** (originally unnumbered). Standard vial with a cork and containing 2 small glass tubes plugged with cotton wool (Fig. 4F). Label 1, in external vial: “*Caspia Ulskii* Dyb. et Cless.” Label 2, in external vial: “*Caspia Ulskii* Dyb. et Cless.” 5 shells and 27 shells in separate vials. These well-preserved specimens are syntypes of *Caspia ulskii* Clessin & W. Dybowski in W. Dybowski, 1887.

**ZB-M W.Dyb. 77** (originally unnumbered). Standard vial with a cork and containing a small glass tube plugged with cotton wool (Fig. 4D). Label, in external vial: “*Caspia Gmelini* [sic!] Dyb. et Cless.” 82 shells. These poorly preserved specimens are syntypes of *Caspia gmelinii* Clessin & W. Dybowski in W. Dybowski, 1887. Many shells look subfossil.

**ZB-M W.Dyb. 78** (originally unnumbered). Standard vial containing a small vial, both plugged with cotton wool (Fig. 4C). Label, in external vial: “*Caspia Baeri* Dyb. et Cless.” 28 shells. This lot contains a mixture of *C. ulskii* and *C. gmelinii*. None of the shells matches the description and illustration of *C. baerii*. The label probably got into this vial by error.

**ZB-M W.Dyb. 79** (originally unnumbered). Standard corked vial containing a small ampoule plugged with cotton wool. Label, in external vial: “*Micromelania dimidiata* Eichw.” 38 shells + fragments. These specimens are in poor condition, with most broken and fragmented.

**ZB-M W.Dyb. 80** (originally unnumbered). Standard vial with cork containing a small glass tube plugged with cotton wool. Label, in larger vial: “Junge, fast alle unbestimmbar [juvenile, almost all indeterminable]”. 47 shells. These specimens vary in their condition. The lot is a mixture of mostly juvenile specimens of *Turricaspia* and *Caspiella* species.

**ZB-M W.Dyb. 81** (originally unnumbered). Standard vial with cork containing a small corked vial. Label, in external vial: “Fast nur junge *Micromelania*, *Caspia* und *Nematurella*”. 383 shells. The condition of these specimens varies. The lot is a mixture of species and consists of juvenile specimens.

**ZB-M W.Dyb. 82** (originally unnumbered). Standard corked vial containing a small ampoule plugged with cotton wool. Label, in external vial: “*Micromelania spica* Eichw.” 125 shells. The specimens vary in their condition. They are mostly juveniles and subadults of *Turricaspia spica* (Eichwald, 1855) and *T. elegantula* (Clessin & W. Dybowski in W. Dybowski, 1887).

**ZB-M W.Dyb. 83** (originally # 1). Small vial plugged with cotton wool. Label: “1”. On general label: “N.I. *Microm. [elania] caspia*.” 4 shells. Lots ZB-M W.Dyb. 83 to ZB-M W.Dyb. 90 are 8 small vials kept together in an original “Пальма” [= Palm brand] cigarette box (Fig. 3F, G). On the lid of this box is a label with “*Caspia. Micromelaniae* original. + *Microm. [elania]* Fossilis Kertch”. On the

bottom of the box is a general label listing the contents (numbers agree with the order of species in plate 1 of DYBOWSKI [1887–1888]):

- N.1. *Microm.[elania] caspia*.
- N.2. *M.[icromelania] Grimmi*
- N.3. *M.[icromelania] subulata turricula*
- N.4<sup>a</sup>. *M.[icromelania] dimidiata* + 2 Kid.
- N 5 *M.[icromelania] dimidiata*.
- N 6<sup>a</sup> *M.[icromelania] spica*.
- N 6<sup>b</sup> *M.[icromelania] spica*.
- N 7 *M.[icromelania] elegantula*
- N. 8 *M.[icromelania] ?*

Two vials (N.2. and N 7) are absent; they apparently were extracted by Benedykt Dybowski to illustrate the publications of 1915 and 1917 and are now stored in ZIN RAS.

**ZB-M W.Dyb. 84** (originally unnumbered). Small glass tube plugged with cork at 1 end and cotton wool at the other end. Label: “*Micromelania* sp. Tertiärablag.[erungen] [tertiary deposits] O.[st] Kertsch”. 1 small shell. This is a fossil specimen in moderate condition. The outline of the shell resembles the figure of *Micromelania andrusowi* B. Dybowski & Grochmalicki, 1915 (pl. 3, fig. 31). This lot is 1 of 8 stored together in a cigarette box (see ZB-M W.Dyb. 83). This lot is not listed on the general label on the bottom of this box, but it is mentioned on the box’s lid.

**ZB-M W.Dyb. 85** (originally # 3). Small vial plugged with cotton wool. Label: “3”. On general label: “N.3. *M.[icromelania] subulata turricula*”. 5 shells. These specimens are syntypes of *Micromelania turricula* Clessin & W. Dybowski in W. Dybowski, 1887. The size and condition of these specimens vary. See remarks for ZB-M W.Dyb. 83.

**ZB-M W.Dyb. 86** (originally # 4). Small vial plugged with cotton wool. Label: “4a”. On general label: “N.4<sup>a</sup>. *M.[icromelania] dimidiata* + 2 Kid.” 14 shells. The size and condition of these specimens vary. See remarks for ZB-M W.Dyb. 83.

**ZB-M W.Dyb. 87** (originally # 5). Small vial plugged with cotton wool. Label: “5”. On general label: “N 5 *M.[icromelania] dimidiata*.” 2 shells. One specimen is adult and the other is juvenile. The condition of these specimens vary. See remarks for ZB-M W.Dyb. 83.

**ZB-M W.Dyb. 88** (originally # 6<sup>a</sup>). Small vial plugged with cotton wool. Label: “6<sup>a</sup>”. On general label: “N 6<sup>a</sup> *M.[icromelania] spica*.” 6 shells. The size and condition of these specimens vary. See remarks for ZB-M W.Dyb. 83.

**ZB-M W.Dyb. 89** (originally # 6<sup>b</sup>). Small vial plugged with cotton wool. Label: “6<sup>b</sup>”. On general label: “N 6<sup>b</sup> *M.[icromelania] spica*.” 5 shells. The size and condition of these specimens vary. See remarks for ZB-M W.Dyb. 83.

**ZB-M W.Dyb. 90** (originally # 8). Small vial plugged with cotton wool. Label: “8”. On general label: “N. 8 *M.[icromelania] ?*” 2 shells. The size and condition of these specimens vary. See remarks for ZB-M W.Dyb. 83.

**ZB-M W.Dyb. 91** (originally # 107 [box] and 5 [vial]). Small vial plugged with cotton wool in a cardboard box with a glass lid. Label, in box: “*Caspia Gmelinii*”. Label, in vial: “*Caspia Gmelinii*”. 1 shell. This is a syntype of *Caspia gmelinii* Clessin & W. Dybowski in W. Dybowski, 1887. The shell is damaged.

**ZB-M W.Dyb. 92** (originally # 75). Small corked vial in cardboard box with a glass lid. Label, in box: “*M.[icromelania] Weselo[...?] N 3 6 turricula*”; on the back side: “*Micromelania subulata* N 3”. 12 shells. These are syntypes of *Micromelania turricula* Clessin & W. Dybowski in W. Dybowski, 1887; 5 specimens are unbroken juveniles but all others are fragments.

**ZB-M W.Dyb. 93** (originally unnumbered). Small vial plugged with cotton wool in a cardboard box with a glass lid. Label, in box: “*Microm.[elania] Grimmi*”. Label, in vial: “*Micromel.[ania] Grimmi*”. 1 shell. This is the only syntype of *Micromelania grimmi* Clessin & W. Dybowski in W. Dybowski, 1887 in the collection. See also remarks for ZB-M W.Dyb. 83.

**ZB-M W.Dyb. 94** (originally unnumbered). Small vial plugged with cotton wool in a cardboard box with a glass lid. Label, in box: “*Micromelania spica* N-6 N 3”. Label, in vial: “*Microm.[elania] spica*”. 2 shells + 1 fragment. One specimen is well preserved and agrees with *Turricaspia spica*. The other shell looks similar to *T. elegantula*.

**ZB-M W.Dyb. 95** (originally unnumbered). Cardboard box with a glass lid (Fig. 4J). Label, in box: “*Caspia Baerii*”. 88 shells. These are well-preserved syntypes of *Caspia baerii* Clessin & W. Dybowski in W. Dybowski, 1887. Apart from the 88 shells, inside this box there are 2 small vials (ZB-M W.Dyb. 96 and ZB-M W.Dyb. 97).

**ZB-M W.Dyb. 96** (originally # 3). Small vial plugged with cotton wool. Label: “3”. 12 shells. This is a series of well-preserved syntypes of *Caspia baerii* Clessin & W. Dybowski in W. Dybowski, 1887. This vial lies inside the box ZB-M W.Dyb. 95.

**ZB-M W.Dyb. 97** (originally # 7). Small vial plugged with cotton wool. Label 1: “7”. Label 2, in vial: “*Casp.[ia] Baerii*”. 17 shells. This is a series of well-preserved syntypes of *Caspia baerii* Clessin & W. Dybowski in W. Dybowski, 1887. This vial lies inside the box ZB-M W.Dyb. 95.

**ZB-M W.Dyb. 98** (originally # 93). Shells in a hollow feather shaft (calamus), lying in a cardboard box with a glass lid (Fig. 4H). Label, in box: “*Nematurella Sieversii*”. Label, in calamus: “*Nematurella Sieversii*. m. – Casp.[isches] Meer”. 2 shells. These specimens, in good condition, are syntypes of *Nematurella sieversii*



Clessin in W. Dybowski, 1887. They were apparently obtained by W. Dybowski from S. Clessin (DYBOWSKI [1887–1888]: 46).

**ZB-M W.Dyb. 99** (originally unnumbered). Small vial plugged with cotton wool in a cardboard box with a glass lid. Label, in vial: “*Casp.[ia] Ulskii*”. 3 shells and 2 fragments. These specimens are syntypes of *Caspia ulskii* Clessin & W. Dybowski in W. Dybowski, 1887 and are in varying condition.

**ZB-M W.Dyb. 100** (originally # 83). Cardboard box with a glass lid. Label: “*Caspia Kovalevskii*”. 14 shells. The specimens are syntypes of *Caspia kowalevskii* Clessin & W. Dybowski in W. Dybowski, 1887 and are in moderate condition. In addition to the 14 shells, there is a small vial inside the box (see ZB-M W.Dyb. 101).

**ZB-M W.Dyb. 101** (originally # 11). Small vial plugged with cotton wool. Label: “11”. 7 shells. These specimens are syntypes of *Caspia kowalevskii* Clessin & W. Dybowski in W. Dybowski, 1887. The condition of the shells varies. This vial lies inside box ZB-M W.Dyb. 100.

**ZB-M W.Dyb. 102** (originally unnumbered). Cardboard box with a glass lid. Label: “*Planorbis micrompha[lus]*”. 17 shells. These specimens are syntypes of *Planorbis eichwaldi* Clessin & W. Dybowski in W. Dybowski, 1887 (Anistratenko et al. unpublished). In addition to the 17 shells, inside this cardbox there is small vial (see ZB-M W.Dyb. 103).

**ZB-M W.Dyb. 103** (originally # 2). Small vial plugged with cotton wool. Label: “2”. 7 shells. These are syntypes of *Planorbis eichwaldi* Clessin & W. Dybowski in W. Dybowski, 1887. The shells vary in size and condition. This vial is inside box ZB-M W.Dyb. 102.

**ZB-M W.Dyb. 104** (originally unnumbered). Original cardboard box with a glass lid. Label: “*Caspia Pallasii*”. 29 shells. These specimens are syntypes of *Caspia pallasii* Clessin & W. Dybowski in W. Dybowski, 1887. Inside this box there is also a vial (see ZB-M W.Dyb. 105).

**ZB-M W.Dyb. 105** (originally # 4). Original small vial plugged with cotton wool. Label: “4”. 12 shells. These are syntypes of *Caspia pallasii* Clessin & W. Dybowski in W. Dybowski, 1887. This vial is inside box ZB-M W.Dyb. 104, and these specimens were apparently selected out from the original lot ZB-M W.Dyb. 104.

**ZB-M W.Dyb. 106** (originally unnumbered). Cardboard box with a glass lid (Fig. 4I). Label: “*Caspia Orthii*”. 54 shells. These are syntypes of *Caspia orthii* Clessin & W. Dybowski in W. Dybowski, 1887 (W. Dybowski noted that he had c. 50 specimens). The condition of the specimens varies. In addition to these specimens, which are lying loose in the box, there is a vial (see ZB-M W.Dyb. 107).

**ZB-M W.Dyb. 107** (originally # 8). Small vial plugged with cotton wool. Label: “8”. 7 shells. These are syn-

types of *Caspia orthii* Clessin & W. Dybowski in W. Dybowski, 1887. They vary in their condition. The vial is kept in box ZB-M W.Dyb. 106.

**ZB-M W.Dyb. 108** (originally # 162). Cardboard box with a glass lid. Label 1: “*Caspia Grimmii*”. Label 2: “*Caspia Grimmii* 11” (in pencil). 229 shells. These are syntypes of *Caspia grimmi* Clessin & W. Dybowski in W. Dybowski, 1887. The shells vary in their size and condition. Apart from the 229 shells, lying loosely in the box, there is also a vial containing lot ZB-M W.Dyb. 109.

**ZB-M W.Dyb. 109** (originally # 162). Small vial plugged with cotton wool. No label. 9 shells. These are syntypes of *Caspia grimmi* Clessin & W. Dybowski in W. Dybowski, 1887; the adult specimens vary in their condition. The vial is kept in the box ZB-M W.Dyb. 108.

**ZB-M W.Dyb. 110** (originally # 268). Cardboard box with a glass lid (Fig. 4L). Label 1: “*Monodacna edentula?* Eichw.” Label 2: “*Didacna (Pontalamyra)* [sic!] *catillus* Eichw.” Label 3: “*Dreissensia latro?* Andr. (fossil)”. Label 4: “*Dreissensia caspia* Eichw.” Label 5: “*Dreissensia polymorpha* var. Pall.” 60 valves. The shells in this mixture vary in size and condition. The content of this lot probably has been combined from several lots.

**ZB-M W.Dyb. 111** (originally unnumbered). Matchbox. Label: “*Dreissensia* [sic!] *integra*”. 2 valves. The shells are in moderate condition. Lots ZB-M W.Dyb. 111 to ZB-M W.Dyb. 114 are kept in the same box with the label “*Dreissensia rostriformis* (foss?) Desh.”. The origin, authority, and status of this binomen have not been traced.

**ZB-M W.Dyb. 112** (originally unnumbered). Matchbox. Label: “*Dreissensia* [sic!] *integra*”. 2 valves. The shells are in moderate condition. See remarks for ZB-M W.Dyb. 111.

**ZB-M W.Dyb. 113** (originally unnumbered). Matchbox. Label: “*Dreissensia* [sic!] *integra*.” 2 valves. The shells are in moderate condition. See remarks for ZB-M W.Dyb. 111.

**ZB-M W.Dyb. 114** (originally unnumbered). Matchbox. Label: “*Dreissensia* [sic!] *rostriformis*”. 19 valves. The shells are in moderate condition. See remarks for ZB-M W.Dyb. 111.

**ZB-M W.Dyb. 115** (originally unnumbered). Open cardboard box. No label. 4 shells of 1 *Viviparus viviparus* (Linnaeus, 1758), 1 *Bithynia tentaculata* (Linnaeus, 1758), 1 Conidae sp., and 1 ?Zonitidae sp. This is a mix of species of uncertain origin.

**ZB-M W.Dyb. 116** (originally unnumbered). Large glass test tube with cork (Fig. 4N). Label: “Detritus 46 Saž. Tief” [= detritus 46 fathoms depth]. This sample consists of shell detritus with juvenile and small shells along with particles of silt. It was apparently collected by Lieutenant A.F. Ulski (see Materials and Methods).

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