

RUSSIAN ACADEMY OF SCIENCES  
URAL BRANCH  
INSTITUTE OF PLANT AND ANIMAL ECOLOGY

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Collections of the Zoological Museum Catalogues  
of the Institute of Plant and Animal Ecology UD RAS

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**MOLLUSKS**  
BIODIVERSITY, ECOLOGY



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Plant and Animal Ecology UB RAS

K h o k h u t k i n I. M., E r o k h i n N. G., G r e b e n n i k o v M. E.

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The Catalogue of the Malacological Collection is the first in the planned series of Catalogues of the Zoological Museum of the Institute of Plant and Animal Ecology (IPAE), RAS UB. Besides the catalogue of museum specimens the book gives a short information on the zoological Museum and a comprehensive description of the malacological collection. An attempt to solve some scientific problems has been made based on rigidly documented museum specimens. The actual fauna of the Urals and the adjacent areas, primarily their faunistic diversity, is described, the knowledge of it is evaluated, population variability of a number of mollusks species is approached with regard to genetic diversity as the base for the taxonomic one Usage of the collection material in biomonitoring of ecosystems pollution with heavy metals is proposed.

The book is addressed to zoologists, ecologists, and museologists, to everybody who displays interest in the biodiversity research problems.

E d i t o r  
prof. **L.N. Dobrinskij**

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# INTRODUCTION

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Collections of identified specimens from the animal kingdom of exactly known geographical origin are the basis for zoological studies. They can be successfully treated long after gathering. Museum Catalogues makes it much easier as a researcher may learn where and how much material is available for his work without long trips. Only catalogues are enough for some scientists, for others they are a source of correct planning as they allow to find the most unique or interesting gatherings. Sometimes it is possible to get the necessary information only from collection materials kept in standard conditions for a long time. This exact systematics requires information on the number of specimens studied, their storage place and a detailed description of characters. This allows verifying the identification accuracy of the specimens, which had been studied. Thus, museum collections allow for a taxonomic revision and further studies with maximum economy of labour and expenses.

The collected material displays the actual fauna and the level of knowledge of it. Databases accumulate a great number of primary faunistic data with the registration of taxa in particular locations. The aim of computerisation of collections is to make the availability of information easier to scientists. The evaluation of the collection material precisely directs further investigations.

This is the first volume in the planned series of catalogues of the Institute of Plant and Animal Ecology (IPAE), RAS UB.

Zoological Museum. Besides the catalogue, the authors describe the malacological collection. They share their experience in the creation of computer databases in malacology and suggest a standard in this field.

The authors thank all scientists and individuals for their gifts, the identification of the material, and help in the catalogue.

Please send yours remark and advise which may be useful for compiling the next volumes to the address: Rossia, 620144, Ekaterinburg, 8 Marta St., 202, Institute of Plant and Animal Ecology UB RAS, mail: [museum@ipae.uran.ru](mailto:museum@ipae.uran.ru).

- Fig. 1.** Contribution of collectors to the malacological collection: a - quantity of specimens, b - quantity of museum numbers.
- Fig. 2.** Composition of malacological collection (percentage of families): a, b - terrestrial, w, g - freshwater, marine, salty water; a, b - quantity of specimens, w, g - quantity of museum numbers. Families accounting for less than 0,5 % are not given.
- Fig 3.** Recovery of *Ch. tridens* broken aperture: 1. - parietal callus of the old aperture; 2. - remains of the parietal teeth of the old aperture.
- Fig. 4.** Variability of *Ch. tridens* shell height. The number of shell whorl, from left to right (dentes not shown).
- Fig. 5.** Shell width dependence on its height in *Ch. tridens* from various populations in the Middle Urals. For the populatioon from Arakaevo only big specimens are shown: a - all values; b - the curve of scattered values for three populations.
- Fig. 6.** Variability of number of embryonic whorls in *Ch. tridens*.
- Fig. 7.** Variability of the dentes development in *Ch. tridens*.
- Fig. 8.** Shell of *Ch. tridens* (a) and *Ch. tridens eximia* (b) (Rossmassler, 1842).
- Fig. 9.** Variability of the angular dentes.
- Fig. 10.** Variability of the aperture exterior columellar border in *Ch. tridens*.
- Fig. 11.** The position of the aperture relative of the shell axis in *Ch. tridens* (dentes not shown).
- Fig. 12.** Variation of the aperture plane inclination in *Ch. tridens*.

## SUPPLEMENT

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### I. Rare sinistral shells in dextral species

#### Fig. 1. *Chondrula tridens*

№ 4454 - Bashkiria, Salavat area, 1 km NNE, Sikiaz-Tamak village, steep slope SE exposition of the Ai-river terrace, 06.08.00. coll. Grebennikov M.E.

#### Fig. 2. *Xeropicta krynickii*

№ 339 - Krasnodar region, near Tuapse, Makopse v., mountain meadow, 06.09.71, coll. Khokhutkin I.M., Lazareva A.I.

#### Fig 3. *Cochlicopa lubrica*

№ 5558 - Sverdlovsk region, near Revda, 1 km NE from Sredneural'sky copper plant, food remains in a *Phoenicurus phoenicurus* nest, 15.07.98, coll. Belsky E.A.

#### Fig. 4. *Bradybaena fruticum*

№ 2247 - found during the analysis of the posterity of layings in a terrarium. Parent sample: Udmurtia, c. Sarapul, 02.09.74, Khokhutkin I.M.

#### Fig. 5. *Lymnaea stagnalis*

№ 2284 - Tajik republic, c. Dushanbe, Botanical garden Institute of Botany, pond (circa 2 m. depth), coll. Izzatulaev Z.I.

### II.

#### Fig. 1. *Caucasotachea atrolabiata*

№ 2168 - Krasnodar region, near Tuapse, Makopse v., 11.09.71, coll. Khokhutkin I.M., Lazareva A.I. Morphs 1-1-1-1 (2 nd band very narrow).

#### Fig. 2. *Lymnaea stagnalis*

№ 2175 - Sverdlovsk region, Talitsa area, c. Talitsa SE 5 km, dry ox-bow lakes of the Pyshma r., 04.08.75, coll. Khokhutkin I.M., Votchinsky I.M. Skalaris form.

#### Fig 3. *Choanomphalus* sp.

№ 2164 - Ukraine, Dnepropetrovsk region, c.Ordjonikidze, Bogdanovsky quarry, Upper Miocene, Lower Sarmat, coll. Prisyazhnuk V.A. Dentes in freshwater fossils Planorbidae.

#### Fig. 4. *Bradybaena fruticum*

Chelyabinsk region, Ashinsky area, c. Asha suburbs, 10.07.02, coll. Grebennikov M.E. Morph I with a wide band spreading down wards the whorl.

### III.

#### Fig. I. *Chondrula tridens*

№ 3030 - Sverdlovsk region, Sukholozhsky area, c. Sukhoj Log, E steep rock slope of the ravine right side edge, 28.06.99, coll. Grebennikov M.E., Erokhin N.G.

#### Fig. 2. *Bradybaena transbaicalia*

№ 3065- Sverdlovsk region, Sukholozhsky area, c. Sukhoj Log, W steep stony slope, 27.06.99, coll. Grebennikov M.E., Erokhin N.G.

#### **IV. *Ena montana***

**Fig. 1. № 1521** - Sverdlovsk region, Nizhneserginsky area, 1,7 km ENE Bazhukovo st., Bazhukovo III niche deposits, the Serga r. right bank, 15.08.92, coll. Nekrasov A.E.

**Fig. 2. № 1952** - Perm region, Chusovskoj area, 0,3 km upwards Shaitan tract, spaitan cave deposits, the Chusovaya r. right bank, 18.08.93, coll. Smirnov N.G.

**Fig 3. № 1817** - Sverdlovsk region, Krasnoufimsk area, 6 km S Syzga v., Sukhorechensky grotto deposits, 10.08.89, coll. Smirnov N.G., Erokhin N.G.

**Fig. 4. № 4393** - Sverdlovsk region, Visim Reserve, comp. 84, spruce forest with the birch, horse-tail-wood-reed-short grass, 20.08.99, coll. Grebennikov M.E.

#### **V.**

##### **Fig. 1, 2. *Vertigo pusilla***

**Fig. 1. № 3466** - Sverdlovsk region, Sukholozhsky area, 1,3 km lower the Reft mouth, steep rock slope, the Pyshma r. left bank, 26.06.99, coll. Grebennikov M.E., Erokhin N.G.

**Fig. 2. № 3251** - Chelyabinsk region, Ilmen Reserve, comp. 76, 0,25 km NW Miassovo v., 02.09.95, coll. Chashchina O.E.

##### **Fig 3. *Vertigo substriata***

**№ 2468** - Chelyabinsk region, Ilmen Reserve, comp. 75, 0,6 km SW Bolshoj Tatkul lake, pine forest stone bramble-grass-bracken, the Ilmen ridge foot, 13.08.96, coll. Chashchina O.E.

##### **Fig. 4. *Vertigo moulinsiana***

**№ 978** - Sverdlovsk region, Beloyarsky area, 1 km NW Boyarskoje v., the Pyshma r. left bank, 24.07.55, coll. Khokhutkin I.M.

##### **Fig. 5, 6. *Gastrocopta theeli***

**Fig. 5. № 3020** - Sverdlovsk region, Kamensky area, c. Kamensk-Uralsky, the Kamenka r. left bank, 07.07.99, coll. Grebennikov M.E.

**Fig. 6. № 3016** - Sverdlovsk region, Kamensky area, Smolinskaya cave suburbs, Smolinsky ravine steep slope, the Smolinsky brook left bank, limestone, 12.06.99, coll. Grebennikov M.E.