A Description of a new *Valvata* (Mollusca: Valvatidae) from Armenia

FRANK WALTHER¹ & PETER GLÖER²

¹ Zoological Museum, Centre of Natural History, University of Hamburg, Martin-Luther-King Platz 3, D-20146 Hamburg, Germany, e-mail: fw.walther@googlemail.com
² Schulstr. 3, D-25491 Hetlingen, Germany, email: gloer@malaco.de

Received 15 September 2019  |  Accepted by V. Pešić: 23 October 2019  |  Published online 31 October 2019.

Abstract
A new species of *Valvata* (*Tropidina*) is described from Armenia. It is similar to *Valvata nowshahrensis* Glöer & Pešić 2012 from Iran and *V. kebapcii* Odabaşı, Glöer & Yıldırım 2015 from Turkey, but has a smaller shell with a narrower umbilicus. We provide data on the sampling site, photos of the new species in comparison with related species. Additionally, the taxonomy of *Valvata brandti* Westerlund, 1897 from Armenia is shortly discussed.

Key words: freshwater snail, Tropidina, *Valvata armeniaca* n. sp., Armenia.

Introduction
From the holarctic family Valvatidae Gray, 1840 two species have been mentioned from Armenia: *Valvata (Cincinna) piscinalis* (O.F. Müller 1774) (Akramowski 1976, Vinarski & Kantor 2016, Mashkova et al. 2018) and *V. (Tropidina) pulchella* Studer 1820 (Akramowski 1968, 1976). The name *V. pulchella* Studer is a little problematic because *V. pulchella* Studer, 1798 is not identical with *V. pulchella* Studer, 1820. Kennard & Woodward (1926: 29) attributed both references to *Valvata macrostoma* Mörch, 1864, but Boeters & Falkner (1998) stated that *V. pulchella* Studer, 1789 is a junior synonym of *V. piscinalis* (Müller, 1774) and established the new name *V. studeri* Boeters & Falkner, 1998 for the taxon described by Studer in 1820. Nevertheless do the most records of *V. pulchella* actually refer to *V. macrostoma*, an European-Siberian lowland species with a scattered distribution from Great Britain in the west to Siberia in the east and from southern Sweden in the north to Bulgaria (Odabaşı et al. 2015) in the south. However, *V. macrostoma* does not occur in Armenia (Zhadin 1952, Vinarski & Kantor 2016, Bank & Neubert 2017) and Akramowski’s records refer to a hitherto undescribed species of *Valvata (Tropidina)*. The aim of this paper is to describe this new species *Valvata armeniaca* n. sp., and to expand the knowledge about the freshwater molluscs of Armenia.

Materials and Methods
The snails were collected by FW fixed in 70% isopropanol. The photographs were made with a digital camera system (Leica R8). The type material is stored in the Zoological Museum of Hamburg (ZMH) and the collection of the second author (FW).
Results

Family Valvatidae J.E. Gray, 1840

Genus *Valvata* O.F. Müller, 1773
Type species by subsequent monotypy: *Valvata cristata* O.F. Müller, 1774

Subgenus *Tropidina* H. & A. ADAMS 1854
Type species by subsequent designation: *Valvata (Tropidina) tricarinata* Say, 1817

*Valvata (Tropidina) armeniaca* n. sp. (Figs. 1-3, 7-8)

*Valvata pulchella* [not Studer, 1798] – Akramowski 1968: 26.
*Valvata pulchella* [not Studer, 1798] – Akramowski 1976: 90, text-fig. 24, pl. 1 fig. 3.

**Type material:** Holotype: Shell height 1.5 mm, width 2.5 mm, from type locality (ZMH 59491); Paratypes: from type locality (ZMH 59492, 3 specimens in ethanol); from type locality (FW 13603; 1 dry shell); Ararat Province, Jrahovit, ditch S of the cemetery, 40.0450°N 44.4880°E, 850 m asl., 26 Aug. 2018, F. Walther leg. (FW 14008, 1 specimen in ethanol).

**Type locality:** Armenia, Armavir Province, bridge over river Kasakh, 1.6 km W of Vagharshapat, 40.1650°N 44.2558°E, 870 m asl., 27 Aug. 2018, F. Walther leg.

**Etymology:** The new species is named after Armenia, the country of its origin.

**Description:** The corneous shell has 2.5 circular whorls with a low spire and a blunt apex. The surface has weak growth lines. Within the umbilicus, the penultimate whorl is covered to 75% of its width by the body whorl (measured at the aperture). Shell height 1.2-1.7 mm, diameter 2.2-2.5 mm. The umbilicus is 0.8 mm wide (32-36 % of the shell diameter). The aperture is circular.

**Anatomy:** The penis is long and cylindrical, tapered at the distal end, which corresponds to the drawing of Akramowski (1976: 89), and as it is in *Valvata nowshahrenis* (Glöer & Pešić 2012, fig. 14) and all other *Valvata* spp. The male and female sex tract in *Valvata* spp. is very simple and not suitable for species identification.

![Figure 1](image_url). The sampling sites of *Valvata (Tropidina) armeniaca* n.sp. (red squares, 1: type locality, 2: Jharovit).
Differentiating features: Valvata armeniaca n. sp. has a smaller shell with a narrower umbilicus than V. nowsharensis and V. kebapci Odabaşi, Glöer & Yıldırım, 2015. The exact differences between the species are displayed in Table 1.

Distribution: In addition to the type locality, V. armeniaca n. sp. is also known from Jrahovit, from where Akramowski (1976: pl. 1 fig. 3) figured it as V. pulchella. Both localities are in the drainage area of river Aras making it likely that the new species is also distributed in other wetlands of the Aras drainage system. Records of V. pulchella from the lower part of river Aras in Azerbaijan (Aliyev 2014) could refer to the new species.
Table 1. Distinguishing characters of Valvata (Tropidina) armeniaca n. sp. and related species.

|                      | V. armeniaca n.sp. | V. nowsharensis Glöer & Pešić, 2012 | V. kebapcii Odabaşi et al., 2015 |
|----------------------|--------------------|-------------------------------------|----------------------------------|
| shell diameter       | 2.2-2.5 mm         | 3.2-3.3 mm                          | 3.5-4.0 mm                       |
| shell height         | 1.2-1.7 mm         | 2.3 mm                              | < 2.6 mm                         |
| umbilicus in % of shell diameter | 32-36 %            | 45-48 %                             | 40 %                             |
| part of penultimate whorl covered by the body whorl (umbilical view) | 75%                | < 25%                               | 50%                              |
| number of whorls     | 2.5                | 3                                   | 3.5                              |

Habitat (Fig. 3): Living specimens were collected in dense submerged vegetation. At the type locality river Kasakh has a relatively weak current and carries less water than further upstream due to water withdrawal for the intense agriculture of the surrounding areas. At Jrahovit it was found among partly submersed Nasturtium at a small open spot in the dense reed vegetation of a ditch. Akramowski (1976) mentions the species from weakly flowing water of summer-dry marshes around springs and in drainage canals.

Figure 3. River Kasakh at the type locality of Valvata (Tropidina) armeniaca n.sp.

Associated species: Hippeuthis complanatus (Linnaeus, 1758); Lymnaea spec.; Pisidium spec., Shadinia terpoghassiani (Zhadin, 1952) and an unidentified bithyniid.

Discussion: When describing a new Valvata from Armenia it is necessary to discuss the identity of Valvata brandti Westerlund, 1897, the only Valvata species described from that country before. Although we had no access to the type material we feel entitled to correct some inaccuracies in Haszprunar (2014) concerning the origin and the synonymy of the taxon. The original description of V. brandti is based on two lots. One was collected by A. Brandt in Lake Sevan, while the other was found by L. Młokosiewicz near Lagodekhi in Georgia. Between both localities is a distance of more than 150 km. The Lagodekhi record belongs to Caspicyclotus sieversi, the only Caucasian member of the terrestrial prosobranch family Cyclophoridae and indeed very similar to some Valvata species. The other lot, however, seems to belong to Valvata piscinalis, which is known to occur in Lake Sevan (e.g. Mashkova et al. 2018). The name V. brandti could therefore also be a synonym of V. piscinalis according to a later definition of the taxon by a lectotype. In any case, V. brandti is very different from the species described above.
References

Akramowski, N. N. (1968). [Some additions to the list of living mollusks of Armenia, including new data on the mollusks of Transcaucasia and the U.S.S.R.]. Mollyuski i ikh rol v ekosistemakh. Avtoreferaty dokladov. Nauka, pp. 26–27.

Akramowski, N.N. (1976) Fauna Armyanskoy SSR, Mollyuski (Mollusca). Akademiya Nauk Armyanskoy SSR, Institut Zoologii, Yerevan.

Aliyev, S.I. (2014) Species composition and quantitative distribution of the macrozoobenthos of the lower part of the Araks River of Azerbaijan. Journal of V.N.Karazin Kharkiv Nation University, Series: biology, 22(1126), 73–78.

Bank, R. A. & Neubert, E. (2017) MolluscaBase. Checklist of the land and freshwater Gastropoda of Europe. Last update: July 16th, 2017. 170 pp. www.marinespecies.org/aphia.php?p=sourceget&id=279050.

Boeters H.-D. & Falkner G. (1998) Valvata pulchella S. Studer and Valvata studeri n.sp. (Gastropoda, Ectobranchia: Valvatidae). Heldia, 2(5/6), 113–122.

Glöer, P. & Pešić, V. (2012). The freshwater snails (Gastropoda) of Iran, with descriptions of two new genera and eight new species. ZooKeys, 219, 11–61

Haszprunar, G. (2014) A nomenclator of extant and fossil taxa of the Valvatidae (Gastropoda, Ectobranchia). ZooKeys, 377, 1–172

Kennard, A.S. & Woodward, B.B. (1926) Synonomy of the British Non-Marine Mollusca. British Museum of Natural History.

Odabaşi, D.A., Glöer, P. & Yıldırım, M.Z. (2015) The Valvata Species of Turkey with a Description of Valvata kebabci n. sp. (Mollusca: Valvatidae). Ecologica Montenegrina, 2 (2), 135–142.

Mashkova, I.V., Krupnova, T.G., Kostryukova, A., Harutyunova, L.J., Varuzhan, H.S. & Vlasov, N.E. (2018) Mollusks biodiversity of Lake Sevan, Armenia. Biodiversitas, 19(4), 1509–1513.

Westerlund, C.A. (1897) Beiträge zur Molluskenfauna Russlands. Annuaire du Musée Zoololgique de l'Académie Impériale des Sciences de St.-Pétersbourg 2: 117–143.

Vinarski, M.V. & Kantor, Y.I. (2016) Analytical Catalogue of Fresh and Brackish Water Molluscs of Russia and Adjacent Countries. Moscow 543 pp.

Zhadin, V.I. (1952) Mollusks of Fresh and Brackish Water of The U.S.S.R. Zoological Institute of The Academy Sciences of The Union of Soviet Socialist Republics. Translated 1962 by Israel Program for Scientific Translations Jerusalem. No: 46, 368 pp.