

A new species of the genus *Armenica* O. Boettger, 1877 (Mollusca: Stylommatophora: Clausiliidae) from Armenia

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ABSTRACT. On the territory of Republic of Armenia a new species of land snails of the genus *Armenica* has been found. Illustrated description is presented. Relationship between five close related Transcaucasian species of *Armenica* is discussed. New species differs from closely related *A. unicristata* in having more large dark shell with well developed axial striation and morphology of clausilium.

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Новый вид рода *Armenica* O. Boettger, 1877
(Mollusca, Stylommatophora, Clausiliidae) из
Армении

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РЕЗЮМЕ. Описывается новый вид из рода *Armenica*. Новый вид сравнивается с пятью Закавказскими видами рода *Armenica*. Новый вид отличается от близкородственного вида *A. unicristata* наличием более крупной темной раковины с хорошо развитой осевой исчерченностью и характером клаузилиума.

Introduction

Armenica Boettger, 1877 is a genus of terrestrial door snails; the members of this genus are distributed in the regions from north-eastern Caucasus (South Daghestan) throughout Great and Minor Caucasus to South Turkey. According to Magomedova [2015b], there are 6 species of the genus *Armenica* in Caucasus and Transcaucasus. Of these, 3 species are reliably recorded for the territory of Armenia: *Armenica (A.) disjuncta armenica* Nordsieck, 1977, *A. (A.) likharevi* Nordsieck, 1975, *A. (A.) unicristata* (O. Boettger, 1877). Magomedova [2017: 22] mentioned *Armenica (Astrogena) griseofusca* (Mousson, 1876) for Armenia without exact indication of the origin of information. Probably, the author refers to a sample from Laki gorge in Idzhevan district of Armenia [Akramowski, 1976: 170-171, fig. 78b, pl. VIII, fig. 87]. However, the mentioned

sample subsequently was described as *A. (A.) likharevi* Nordsieck, 1975 [Nordsieck, 1975, 1977]. *A. unicristata* is most widespread species, recorded for almost all parts of Armenia [Nordsieck, 1977; Egorov, 2001; Magomedova, 2015a].

Here we provide the description of additional new species of *Armenica*, recently collected in Tavush region of Armenia.

Materials and methods

The material of the new species (101 alive specimens and empty shells) was collected in the Tavush Region of Armenia by the first author. Live specimens were preserved in 70% ethanol. For comparison with related species material from private collections of the authors and malacological collection of the Zoological Museum of the Lomonosov Moscow State University was used. The photos of clausiliums have been taken using the DeltaPix Invenio-8DII digital camera.

Abbreviations used in the text:

D – shell width; H – shell height; Hap – height of the aperture; HGC – private collection of H. Gevorgyan; REC – private collection of R. Egorov; SMF – Senckenberg Forschungsinstitut und Naturmuseum, Frankfurt a. Main, Germany; WAp – width of the aperture; ZMMU – Zoological Museum of the Lomonosov Moscow State University, Moscow, Russia.

Taxonomy

Armenica (Armenica) narineae sp. nov.
(Figs 1; 2 A-F; 3 A-D; 4)

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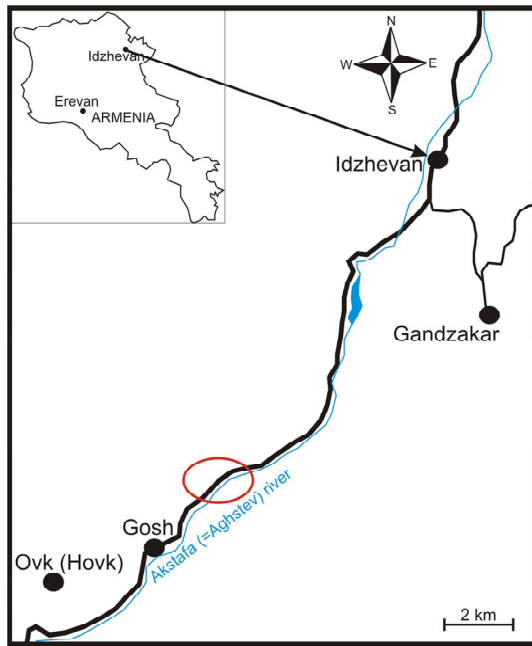


FIG. 1. Map showing the collecting cite for *Armenica (A.) narinae* (locality is encircled by red oval).

РИС. 1. Карта сбора *Armenica (A.) narinae* (местообитание обведено красным овалом).

Type material. Holotype (SMF 356763) and 3 paratypes (SMF 353175), dry samples; 1 paratype in ZMMU (Lc-40612), ethanol preserved sample; 91 paratypes in private collection of H. Gevorgyan; 5 paratypes (2 of them are with broken last whorls; one ethanol preserved sample) in private collection of R. Egorov. All from the type locality.

Type locality. Armenia, Tavush Region, ~ 12 km from Idzhevan (=Ijevan) town to direction of Ovkh settlement, in rocks along the Akstafa river, approx. 40°48'N, 45°05'E (between Ovkh 40°47' 28"N, 45°01'21"E – Idzhevan 40°52'32"N, 45°08' 57"E), basalt rocks at altitude 800–900 m above sea level, 11.05.2018, coll. Hrachya Gevorgyan.

Diagnosis. Shell is rather large, regularly elongate-fusiform, with granulated embryonic whorls and coarsely axially ribbed body whorl behind aperture. Upper whorls mat, finely but distinctly axially striated. Blade of clausilium is elongated with parallel edges.

Description. Shell is rather large, elongate-fusiform, the upper whorls are not displaced with respect to the axis of the shell, shell is almost not transparent, consists of 12.5–13.5 moderately convex whorls. Shell color of fresh collected specimens is dark brown or chestnut with mat coating. Embryonic shell is almost cylindrical, consists of 2.75–3.0 dirty-yellow or light brown slightly irregularly microgranulated whorls. Postembryonic whorls regularly convex and covered with fine distinct axial riblets. The body whorl flattened behind aperture and slightly narrowed down to a sharp single keel, covered with distinct sharpened ribs. The ribs continue to the last whorl, covering it densely. There are 6–8 riblets on the 1 mm of body whorl and 5–7 more flattened fine riblets on 1 mm of the

penultimate whorl. Suture is distinctly whitish in last whorls, slightly serrated in correspond to axial riblets. Aperture is broadly rhomboid-pyriform with reflexed and expanded brownish edges. Upper plate well developed but short, started from edge of aperture. Lower plate is well developed and rather thick, partly visible in standard position of aperture and almost completely visible in oblique position. Subcolumellar plate is almost vertical and not visible through aperture. Principal plica is very short. Upper sutural plica is longer than principal, and lower sutural is almost equal in length to the principal. Lunella well developed and regularly curved. Plicae palatalis are absent. The blade of clausilium is elongate-tongue shaped with parallel edges. Distal part of blade regularly thickened, but not widened.

Measurements. Holotype (SMF 356763): H – 22.9 mm, D – 4.3 mm, Hap – 5.5 mm, WAp – 4.0 mm; paratypes (SMF 353175, ZMMU Lc-40612, HGC, REC): H – 19.5–25.0 mm, D – 4.0–4.5 mm, Hap – 4.5–5.3 mm, WAp – 3.4–4.3 mm

Habitat. Snails were collected in fissures of basalt rocks at the border between mountain forest and subalpine zones at height about 800–900 m above sea level (Fig. 4A). In their habitats snails form mass clusters of up to several dozen individuals (Fig. 4 B–C). Only *Chondrula tridens* (O. F. Müller, 1774) was collected together with *A. narinae*.

Distribution. The species is known only from the type locality.

Etymology. The species named in honor of Narine Gevorgyan, daughter of the first author.

Discussion. The new species is most similar to *A. unicristata*, differing by dark color and a distinct rib-striation on postembryonic whorls. Also, the neck is covered by rough axial ribs. Generally according to the character of the sculpture, *A. narinae* is intermediate between *A. unicristata* (which has practically smooth semi-glossy shell with distinct axial growth lines, Figs 2 G–K, 3 E–G) and *A. likharevi* (having a mat, clearly ribbed shell, Fig. 3 I–M). Blade of clausilium of *A. narinae* is tongue-shaped (Fig. 2 F) and more elongated than in *A. unicristata*, which has clausilium of which is spoon-shaped clausilium (Fig. 2 L). In addition, in description of "*Armenica brunnea*"*, Likharev indicated

* *Clausilia unicristata* (type locality is "Ekatherinenfeld", now Bolnisi is a town in the province of Kvemo Kartli in Georgia) and the Turkish species *C. brunnea* Ziegler in Rossmäessler, 1839 (type locality "Von Taurus-Gebirge nach Ziegler" [Ziegler in Rossmäessler, 1839: 16]) were synonymized by Likharev [1962: 148–149]. However, subsequently Nordsieck, 1975 [83] and Zilch [1976: 206, 208] regarded these species as separate. Paying attention to the distribution of *C. brunnea* (South Turkey, il Karaman), the authors consider comparison of *A. brunnea* with newly described species inexpedient.

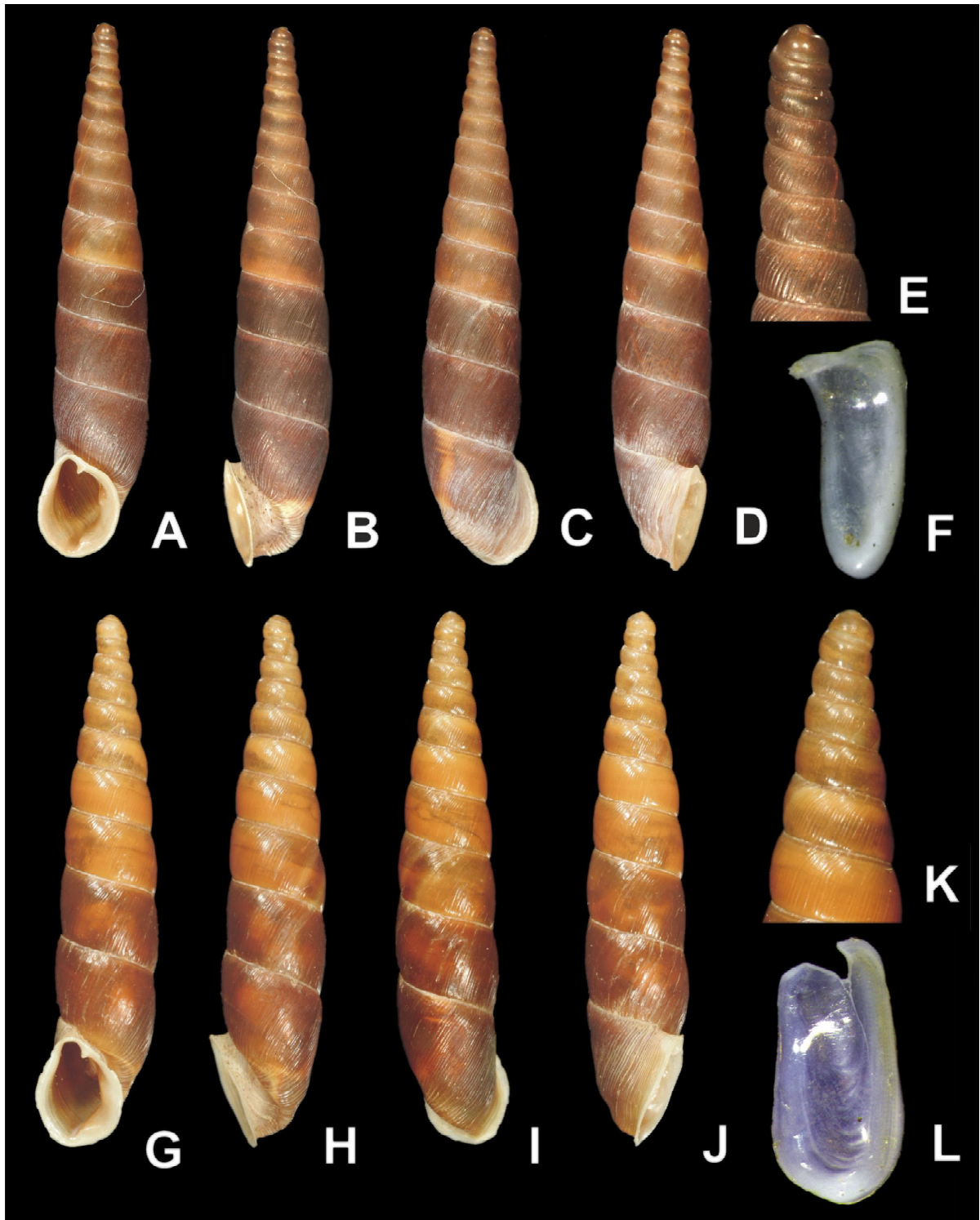


FIG. 2. A–F. *Armenica* (*A.*) *narineae* sp. nov., A–E. Shell of the holotype, SMF 356763, H – 22.9 mm, Armenia, Tavush Region, ~ 12 km from Idzhevan town to direction of Ovkh settlement, in rocks along the Akstafa River, approx. 40°48'N 45°05'E, basaltic rocks at altitude 800–900 m above sea level, 11.05.2018, coll: Hrachya Gevorgyan. F. Clausilium of the paratype, REC, from the same locality; G–L. *Armenica* (*A.*) *unicristata*, G–K. Shell, REC, H – 20.0 mm, Armenia, Azizbekovskiy district (=Vayots Dzor Region now), Dzhermuk town, the right side of the valley of the Arpa River, coarse clastic scree among the rocks below the hotel “Dzhermuk”, under stones, 06.1988, coll. Kuznetsov A.G. L. clausilium.

РИС. 2. А–Е. *Armenica* (*A.*) *narineae* sp. nov., А–Е. Раковина голотипа, SMF 356763, Н – 22.9 мм, Армения, Тавушская область, ~ 12 км от Иджевана в направлении с. Овк, на скалах вдоль р. Акстафа, примерно 40°48'N 45°05'E, базальтовые скалы на высоте 800–900 м над уровнем моря, 11.05.2018, сб: Грачья Геворгян. F. Клаузилиум паратипа, REC, из того же местонахождения. G–L. *Armenica* (*A.*) *unicristata*, G–K. Раковина, REC, Н – 20.0 мм, Армения, Азизбековский район (Вайоц-Дзорская обл. ныне), город Джермук-правобережный, правый борт долины реки Арпа, грубообломочная осыпь среди скал ниже гостиницы “Джермук”, под камнями, 06-1988, сб. Кузнецов А.Г. L. Клаузилиум образца, из того же местонахождения, REC.

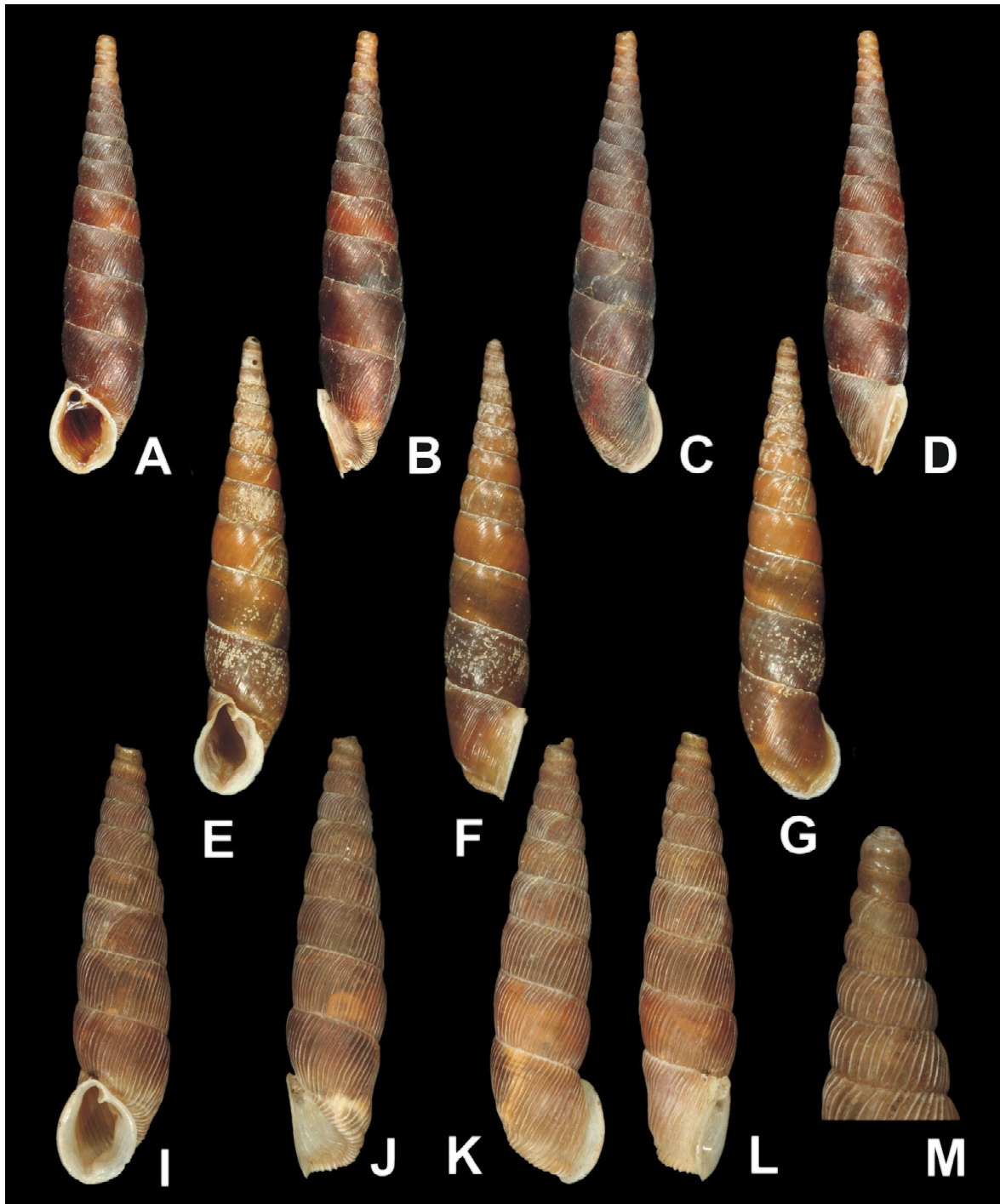


FIG. 3. **A–D.** *Armenica (A.) narineae* sp. nov., shell of the paratype, REC, H – 23.1 mm, Armenia, Tavush Region, ~ 12 km from Idzhevan town to direction of Ovk settlement, in rocks along the Akstafa River, approx. 40°48'N 45°05'E, basaltic rocks at altitude 800–900 m above sea level, 11.05.2018, coll: Hrachya Gevorgyan. **E–G.** *Armenica (A.) unicristata*, shell, ZMMU, Lc–29507, H – 19.7 mm, Armenia, Kafan district, 6 km to the West from the Kafan town, not reaching 1 km from the Kafan to the David-Bek settlement, in rock crevices on the right side of the Vokchi River valley, 13.06.1988. **I–M.** *Armenica (A.) likharevi*, shells: **I–L** adult shell, REC, Armenia, Idzhevan district, north-eastern outskirts of the village of Gandzakhar (= Verin Agdan), right side of the Segnagh River valley, middle of the southern slope of Budur mountain, rock cracks in the deciduous forest, 06.1988, coll. Kuznetsov A.G. **M.** upper whorls of the juvenile shell, REC, from the same locality.

РИС. 3. **A–D.** *Armenica (A.) narineae* sp. nov., раковина паратипа, REC, H – 23.1 mm, Армения, Тавушская область, ~ 12 км от Иджевана в направлении с. Овк, на скалах вдоль р. Акстафа, примерно 40°48'N 45°05'E, базальтовые скалы на высоте 800–900 м над уровнем моря, 11.05.2018, сб: Грачья Геворгян. **E–G.** *Armenica (A.) unicristata*, Lc–29507, Армения, Кафанский район, 6 км к Западу от города Кафан, не доежая 1 км от города Кафан до села Давид-Бек, в трещинах скал на правом борту долины реки Вокчи, 13.06.1988. **I–M.** *Armenica (A.) likharevi*, раковины: **J–L.** взрослая раковина, REC, Армения, Иджеванский район, северо-восточная окраина села Гандзакар (= Верин Агдан), правый борт долины реки Сегнах, середина южного склона горы Будур, трещины скал в лиственном лесу, 06.1988, сб. Кузнецов А.Г. **M** – верхние обороты ювенильной раковины, REC, из того же местонахождения.

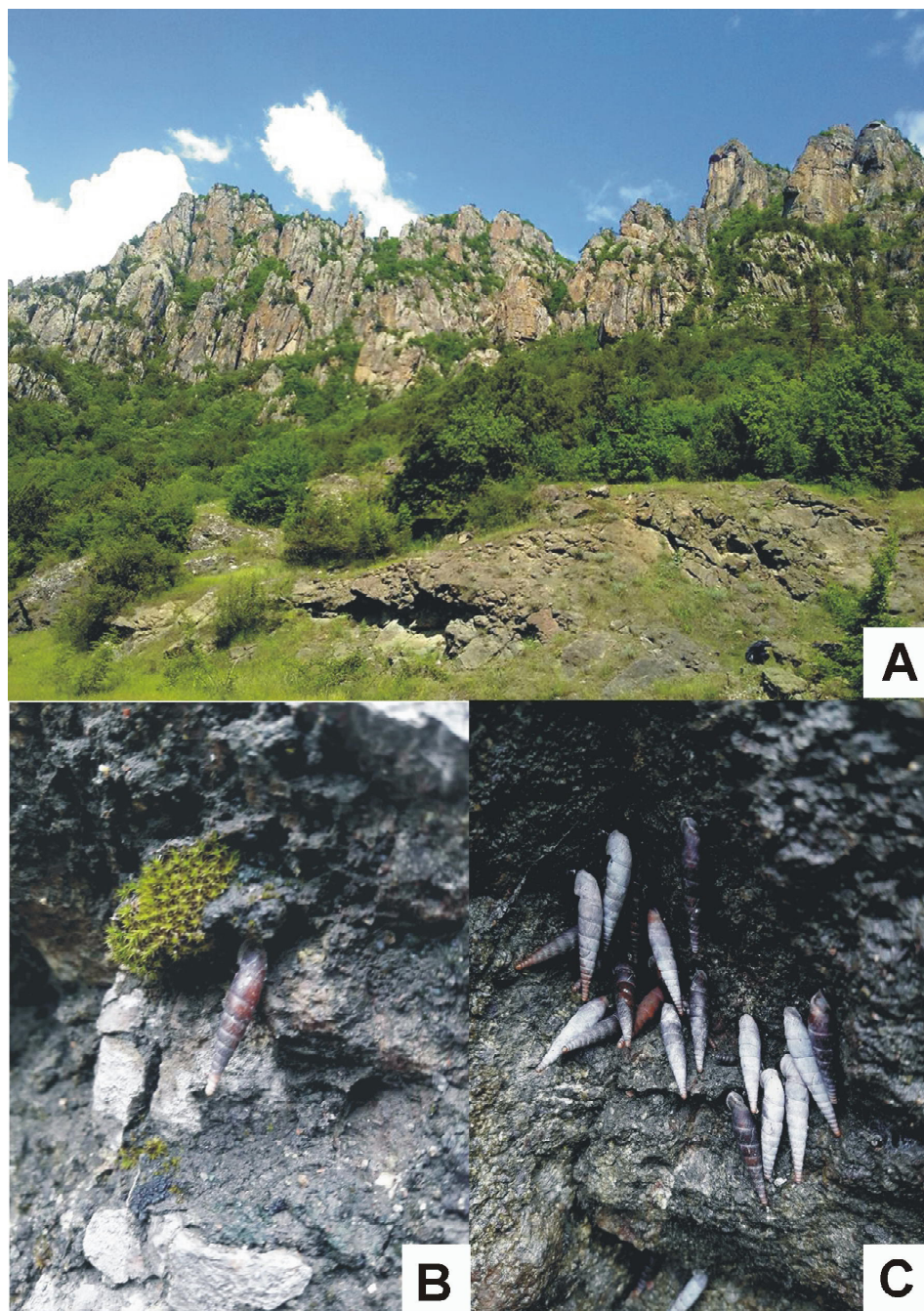


FIG. 4. A. Biotope in which *Armenica* (*A.*) *narineae* sp. nov. dwells. B–C. Live specimens *Armenica* (*A.*) *narineae* sp. nov. in natural habitat.

РИС. 4. А. Биотоп, в котором обитает *Armenica* (*A.*) *narineae* sp. nov., В–С. Живые особи *Armenica* (*A.*) *narineae* sp. nov. в естественной среде обитания.

“two perfectly smooth embryonic whorls having the same width” and, in general, a shell with a “blunt top, often curved along the axis” [Likharev, 1962: 147]. As for the first Likharev’s statement, we do not have shells of typical *A. unicristata* with absolutely smooth embryonic whorls. All of them have more or less grainy microsculpture or embryonic whorls are eroded. Regarding the second statement about the displacement of the top of the shell along the axis, then most of examined by us shells

of *A. unicristata* with unbroken tops had it displaced along the axis. In shells of *A. narineae*, the tops practically do not have such a displacement and the shell has a regular fusiform shape.

Also, the new species differs from nearest distributed *A. likharevi* Nordsieck, 1975 in the weaker sculpture and the distinct lunella and basalis. Eastern Caucasian species *A. zakatalica* Nordsieck, 1977 has a stronger sculpture and different shape. Southern Transcaucasian species *A. gracillima* (Retowski,

1889) is significantly more slender. The new species also differs from *A. disjuncta armenica* Nordsieck, 1975 in regularly fusiform shell and character of the sculpture.

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