

whorl by more than 5 times. Penial sheath longer than preputium, penis almost equal in length to sheath. Preputial organ connected with preputium only in its proximal part, in place of attachment of muscular bands, supporting organ. Cavity of preputial organ tubular, opening at its distal end.]

*Segmentina distinguenda* (Gredler, 1859)

(Рис. 5 В, 8 С, 12 В)

— *nitidus* var. *cupreus* Westerlund, 1885: 86 (*Planorbis*); Старобогатов, 1977: 166.

МАТЕРИАЛ: (колл. ЗИН РАН) 102 сухих экз. из Германии (Берлин), Польши (Вроцлав), Румынии, Украины (окрестности Киева, Полтавы, Херсона и западные районы страны), России (Калининградская область, окрестности Санкт-Петербурга, Псковская, Ярославская, Нижегородская и Курская области, Алтайский край — Рубцовск); 7 спиртовых экз. из Казахстана (Восточно-Казахстанская область, окрестности Усть-Каменогорска, ныне Оскемен), Украина (Черниговская область, сел. Ядуты, озеро Трутик, 13.07.1987; вскрыты 4 экз. из последней пробы).

ОПИСАНИЕ. Раковина светло-рогового или сероватого цвета, обычно сверху воздуха немного сильнее, чем снизу. *SH/SW* — 0,26–0,27. Ширина раковины колеблется от 2,75 до 4,75 мм, высота — 0,65–1,1 мм.

Завиток плоский или слегка погруженный. *I/Wa* — 0,65–0,68. Оборотов 4. Внутренние нарастают очень медленно, последний прибывает стремительно (превышает предпоследний в 5–7 раз). Пупок неглубокий, широкий (*I/Wb* — 0,41–0,48). Устье уплощено-сердцевидное (*W/HA* — 1,36–1,46).

Семенные пузырьки крупные, альвеолярные. Нидаментажная железа небольшая, провагина и вагина примерно равной величины (*Lpv/Lv* = 0,98–1,06), резервуар сперматеки ланцетовидной формы (*Lrs/Wrs* = 2,70–3,00) и в 0,43–0,73 раза короче протока. Простата состоит из 6–8 коротких (0,12–0,20 мм), двулопастных дивертикулов. Длинный железистый отросток короче мешка пениса, а также препуциума. Пенис меньше или равен мешку (0,88–1,00 его длины). Папилла короткая (0,13–0,15 мм). Препуциум цилиндрической формы, слегка вздутый в средней части, тонкостенный, 2/3 которого занимает препуциальный орган. *Lpr/Lps* — 0,85–1,3.

РАСПРОСТРАНЕНИЕ: вся Европа, кроме крайнего севера, северный Казахстан (и, вероятно, юг Западной Сибири), Алтай.

ЛИТЕРАТУРА

- ВОЛКОВА О.В., ЕЛЕЦКИЙ Ю.К. 1971. Основы гистологии с гистологической техникой. М., "Медицина", с. 259.
- ЖАДИН В.И. 1952. Моллюски пресных и солоноватых вод СССР. М.-Л., Изд. АН СССР, 376 с.
- КРУГЛОВ Н.Д. 1984. Моллюски семейства *Lymnaeidae* СССР, особенности их экологии и паразитологическое значение (*Gastropoda, Pulmonata*). Диссертация на соискание ученой степени доктора биологических наук. Смоленск, СГПИ, 796 с.
- СТАДНИЧЕНКО А.П. 1990. Фауна Украины. Т 29. Моллюски. Вып. 4. Прудовиковообразные. Киев, Наукова Думка, 284 с.
- СТАРОВОГАТОВ Я.И. 1958. Система и филогения *Planorbidae* (*Gastropoda Pulmonata*). Бюллетень Московского общества испытателей природы, отд. биологии, 63(6): 37–53
- СТАРОВОГАТОВ Я.И. 1977. Класс *Gastropoda*. В кн.: Определитель пресноводных беспозвоночных европейской части СССР (планктон и бентос). Ленинград, Гидрометеиздат: 166–169.

- BAKER F.C. 1945. *Molluscan family Planorbidae*. Urbana, University of Illinois Press, 530 p.
- BAUDELLOT M. 1863. Recherches sur l'appareil générateur des mollusques gastéropodes. *Annales des Sciences Naturelles*, ser. 4, Zool., 19: 135–222.
- HUBENDICK V. 1955. Phylogeny in the *Planorbidae*. *Transactions of the Zoological Society of London*, 28(6): 453–542.
- PAASCH. 1843. Über das Geschlechtssystem und über die Harn bereitenden Organe einige Zwitter-schnecken. *Archiv für Naturgeschichte*, Jg. IX, 1: 71–104.
- PIESNOSKI A. 1979. Mieczaki (Mollusca). *Slimaki (Gastropoda)*. *Fauna slodkowodna Polski*, 7: 1–186.
- PROSOROVA L.A., STAROBOGATOV Y.I. 1996. Genus *Armiger* Hartmann, 1840 (family *Planorbidae*). *Ruthenica*, 5(2): 167–175.
- WESTERLUND C.A. 1885. *Fauna der in der Paläarktischen Region lebenden Binnenconchylien*, V. Fam. *Succineidae, Auriculidae, Limnaeidae, Cyclostomidae und Hydrocenidae*. H. Ohlsson Buchdr Lund, 135 p.

New data on Enidae (Gastropoda, Pulmonata) of Nepal

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*Pupinidius tukuchensis* sp. nov., *Laevozebrinus nepalensis myagdiensis* subsp. nov., and *L. mustangensis* sp. nov. are described by conchological and anatomical features. New data on the distribution and habitat of *Nepaliens ceratina* (Benson, 1849), *Laevozebrinus nepalensis nepalensis* Schileyko et Frank, 1994, and *Mirus (?) nilagiricus* (Pfeiffer, 1846) are presented.

Новые данные о видах семейства Enidae фауны Непала

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*Pupinidius tukuchensis* sp. nov., *Laevozebrinus nepalensis myagdiensis* subsp. nov. and *L. mustangensis* sp. nov. описаны по конхологическим и анатомическим признакам. Для трех видов (*Nepaliens ceratina* (Benson, 1849), *Laevozebrinus nepalensis nepalensis* Schileyko et Frank, 1994 и *Mirus (?) nilagiricus* (Pfeiffer, 1846)) приведены новые подробные данные о распространении и характере местообитаний.

About 20 species of Enidae are known from Indian part of Himalayas [Gude, 1914], while only two species have been described from Nepalesian Himalayas [Schileyko, Frank, 1994]. This is connected with the fact that the malacofauna of Nepal is still poorly known. During two collecting trips to Nepal of one of the authors (A. K.) in 1995 and 1996, new data on the distribution of previously known species were obtained, and two new species and one new subspecies were found. One of them, *Pupinidius tukuchensis* sp. nov., is the first representative of the genus from southern slope of Himalayas. The others — *Laevozebrinus nepalensis myagdiensis* subsp. nov. and *L. mustangensis* sp. nov. — are the second and the third members of the genus from Nepal. *Mirus (?) nilagiricus* (L. Pfeiffer, 1846) is described by only conchological features, so its generic position is not quite clear.

Family Enidae Woodward, 1903

Subfamily Pseudonapaeinae  
Schileyko, 1978

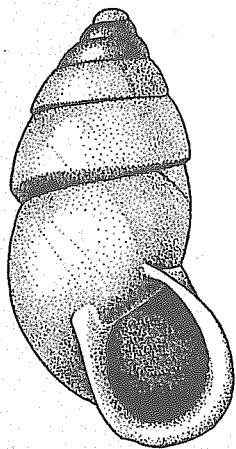
Genus *Pupinidius* Moellendorff, 1901

Moellendorff, 1901: 341 (*Buliminus* subgen.; type species *Buliminus pupinidius* Moellendorff, 1901; o.d.); Wiegmann, 1901: 254; Schileyko, 1978: 345.

*Pupinidius tukuchensis*  
Kuznetsov et Schileyko, sp. nov.

(Figs. 1, 2)

LOCUS TYPICUS — Western Nepal, Dhau-lagiri zone, Mustang District, Annapurna National Park, Pholong-Dara Ridge, right side of Kali-Gandaki Valley, 200–700 m NE of Khobang village, 1–5 m over "Khobang —

FIG. 1. *Pupinidius tukuchensis* sp. nov. Holotype.РИС. 1. *Pupinidius tukuchensis* sp. nov. Голотип.

Tukuche" track, on dry rocks, 2600 m, coll. A.G. Kuznetsov, 1st and 7th of May 1996.

**MATERIAL.** Holotype (No. Lc-22965) and 25 paratypes from the type locality (Lc-22968) are deposited in the Zoological Museum of Moscow State University (ZMMU), more than 200 paratypes from the type locality in private collection of A.G. Kuznetsov (PCK), 5 paratypes from the type locality in private collection of B. Hausdorf (Hamburg, Germany, PCH);

Western Nepal, Dhaulagiri zone, Mustang District, Annapurna National Park:

— right side of Kali-Gandaki Valley, NE end of

Tukuche village, upper half of SE slope of mountain, NW of Gonpa-Sampa temple, along dry rocks among *Astragalus* roots, 2650-2700 m, 40 paratypes (ZMMU Lc-22969), 91 paratypes (PCK), coll. A.G. Kuznetsov, 7.05.1996;

— right side of Kali-Gandaki Valley 1 km NE of Tukuche village, 5-10 m over track on dry rocks, 2580 m, 16 paratypes (PCK), coll. A.G. Kuznetsov, 28.09.1997.

**DESCRIPTION.** Shell ovate-conical to conical-cylindrical, rather solid, glossy, composed of 6.5-7.5 flattened whorls. Last whorl slightly ascending in front. Embryonic whorls (about 2 in number) greyish-corneous or light-fulvous, with radial wrinkles and indistinct spiral striae. Three subsequent whorls whitish-corneous, with more or less developed radial streaks; they have carinated periphery, often hang over last whorl. They form conical apical part. Two or three last whorls greyish-white, sometimes with small grey dots. Body whorl somewhat inflated. Surface of postembryonic whorls silky, with fine irregular radial wrinkles and wavy spiral striation, more distinct on shell base. Aperture ovate to subcircular, only slightly oblique, brownish-orange inside, with white margins. Places of aperture attachment close to each other, connected by variously developed parietal callus; sometimes small parietal tubercle present. Margins moderately thickened, rather expanded and reflexed. Palatal and basal margins evenly arched. Columellar margin subvertical. Umbilicus slit-like.

**DIMENSIONS:** height of shell 15.7-21.8, large diameter 8.4-11.5, height of aperture 6.8-10.0, width of aperture 5.5-7.2 mm; holotype 19.9, 10.0, 9.0, 7.1 mm, respectively.

**REPRODUCTIVE ANATOMY** (14 specimens from four localities). Vas deferens entering

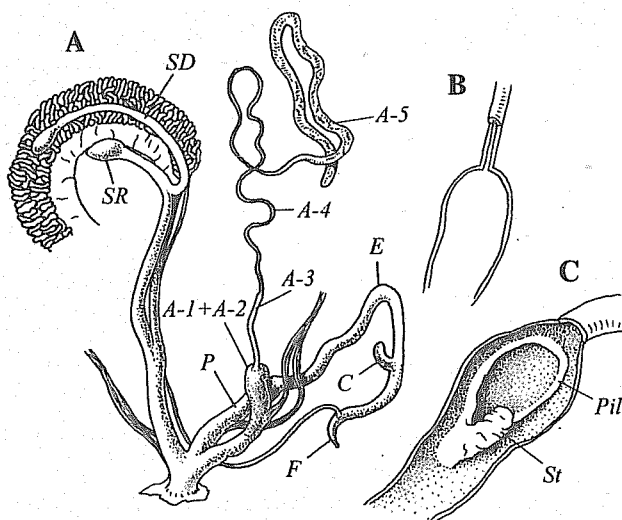


FIG. 2. *Pupinidius tukuchensis* sp. nov. Paratype from type locality. A — reproductive apparatus; B — longitudinal section of basal portion of penial appendix; C — open penis. A-1-A-5 — divisions of penial appendix; C — caecum; E — epiphallus; F — flagellum; P — penis; Pil — pilaster; SD — spermathecal diverticle; SR — spermathecal reservoir; St — stimulator.

РИС. 2. *Pupinidius tukuchensis* sp. nov. Паратип из типового местонахождения. А — половой аппарат; В — продольный разрез базальной части пениального аппендикса; С — вскрытый пенис. А-1-А-5 — отделы пениального аппендикса; С — цекум; Е — эпифаллус; F — флагеллум; P — пенис; Pil — пилиастр; SD — дивертикул семеприемника; SR — резервуар семеприемника; St — стимулятор.

epiphallus at some angle, at some distance from tip, remaining comparatively long, conical flagellum. Epiphallus variable in length, with well-developed caecum above its middle. Penis of moderate length, internally with loop-like pilaster; lower portion of pilaster with tongue-like process (stimulator); inner surface of penis with numerous irregular longitudinal folds. Penial appendix characterized by poorly defined A-2 and absence of any inner structure in corresponding place; A-3 and A-5 unusually long. Penial retractor arising from diaphragm by one bundle which soon is forked: penial branch attached to middle part of penis, appendical branch — to A-1 above its middle. Upper part of vagina (free oviduct) somewhat longer than lower part. Spermathecal neck long; spermatheca and spermathecal diverticle equally expanded at their tips, so shaft and diverticle hardly distinguishable. One of these ducts longer than other.

**REMARK.** *Pupinidius tukuchensis* sp. nov. differs from *P. anocampsus* (Moellendorff, 1901) in larger size, more cylindrical shape of the shell, inflated body whorl, more oblique axis of aperture, and wider umbilical slit. From *P. napingensis* (Moellendorff, 1901) the new species differs mainly in greyish-white colour. Anatomically *P. tukuchensis* sp. nov. differs from type species of the genus, *P. pupinidius* (Moellendorff, 1901), in shorter neck of spermatheca and in presence of tongue-like stimulator located on loop-like pilaster in the penis.

**HABITAT.** *Pupinidius tukuchensis* sp. nov. is abundant in the zone of juniper forests at 2600-3500 m above the sea level. It occurs on open dry rocky slopes with xerophilous vegetation, on steep rocks, and among stones and *Astragalus* roots, where it is associated with: *Pupilla eurina* (Benson, 1864); *P. triplicata* (Studer, 1820); *Gastrocopta huttoniana* (Benson, 1849); *Truncatellina* sp.; *Vallonia ladacensis* (Nevill, 1878); *V. sp.*; *Pyramidula humilis* (Benson in Hutton, 1838); *Laevozebrinus nepalensis nepalensis* Schileyko et Frank, 1994; *Euconulus fulvus* (O.F. Müller, 1774); *Macrochlamys sequax* (Benson, 1859); *M. sequis* Godwin-Austen, 1907; *Hawaia* sp.; *Landouria* sp.

**DISTRIBUTION.** Western Nepal, Dhaulagiri zone, Mustang District, Annapurna National Park, upper part of Kali-Gandaki Valley.

**DERIVATIO NOMINIS.** The species is named after the type locality — "Khobang — Tukuche" track.

[Диагноз. Раковина от овально-конической до коническо-цилиндрической, довольно прочная, блестящая, состоящая из 6,5-7,5 уплощенных оборотов. Последний оборот слегка приподнят перед устьем. Эмбриональные обороты (около 2) серовато-роговые или светло-коричневые, с радиальной морщинистостью и слабой спиральной струйчатостью. Три первых пост-

эмбриональных оборота беловато-роговые с радиальными пестринами и угловатой нависающей периферией. В совокупности они образуют коническую вершину. Два-три последующих оборота серовато-белые, с мелкими серыми точками. Последний оборот несколько вздут. Поверхность постэмбриональных оборотов шелковистая, с тонкими, неправильно расположенными линиями нарастания и радиальными морщинками, а также волнистой спиральной струйчатостью. Устье от овального до полукруглого, слегка скошенное, коричнево-оранжевое внутри, с белыми краями. Места прикрепления устья сближены и соединены развитой в различной степени парietальной мозолью, иногда несущей парietальный буторок. Край устья умеренно утолщенные, расширенные и отвернутые. Parietalный и базальный край равномерно выгнутые. Колумеллярный край почти вертикальный. Пупок открытый, шелковидный.]

## Genus *Nepaliena* Schileyko et Frank, 1994

Schileyko, Frank, 1994: 128 (type species — *Bulimus ceratinus* Benson, 1849; o.d.).

### *Nepaliena ceratina* (Benson, 1849).

Benson in Reeve, 1849, pl. 77, fig. 569. — L. Pfeiffer, 1856: 153 [*Bulimus* (Ena)]. — Nevill, 1878: 134 [*Bulimus* (*Petraeus*) *coelebs* var.]. — Gude, 1914: 230 [*Ena* (*Mirus*)]. — Solem, 1966: 21 [*Coccarderma*]. — Schileyko, Frank, 1994: 128, fig. 1 (I-III).

**LOCUS TYPICUS** — India, Uttar-Pradesh State, Kumaun Himalayas, Almora.

**DISTRIBUTION AND MATERIAL.** Besides the type locality in Northern India, the species is known from Nepal: Central Nepal, vicinity of Kathmandu, 7 specimens (ZMMU), leg. Ch. Frank, 10-20.06.1986; Western Nepal, Dhaulagiri zone, Myagdi District, Annapurna National Park:

— right side of Kali-Gandaki Valley, 100-300 m NNW of Suke-Bagar village, 1-5 m over "Tatapani — Dana" track, in cracks of mossy rocks, 1430 m, 22 specimens (PCK), 25 specimens (ZMMU), coll. A.G. Kuznetsov, 13-14.05.1996;

— right side of Kali-Gandaki Valley, southern end of Dana, along track, under stones of old wall, 1500 m, 3 specimens (ZMMU), coll. A.G. Kuznetsov, 6.05.1996

— left side of Kali-Gandaki Valley, SW end of Do-Khola village, 1180 m, 5 specimens (PCK), coll. A.G. Kuznetsov, 6.10.1997.

**HABITAT.** *N. ceratina* is uncommon species of upper level of deciduous forest zone. It lives at altitude of 1430-1500 m above the sea level. Micropopulations occur in cracks of mossy shadowed rocks and under stones of ancient walls, where it is associated with *Cyclophorus* (*Litostylus*) *pyrotrema* Benson, 1854; *Laevozebrinus nepalensis myagdiensis* subsp. nov.; *Allopeas mauritianus prestoni* (Sykes, 1898); *Macrochlamys longicauda* Godwin-Austen, 1883; *M. subjecta* (Benson, 1852); *Bensonies convexus* (Reeve, 1852); *Cryptaustenia ovata* (H. Blanford, 1871); *C. cf. globosa*

(Godwin-Austen, 1876); *C. sp.*; *Landouria hutoni* (L. Pfeiffer, 1842); *Endothyrella* ex. gr. *affinis* Gude, 1897.

### Genus *Laevozebrinus*

Lindholm, 1925

Lindholm, 1925: 28 [*Zebrina* (*Subzebrinus*), sect.; type species — *Buliminus argutensis* Kobelt, 1902; o.d.l. — Schileyko, 1978: 845 (pro gen.)].

### *Laevozebrinus nepalensis nepalensis*

Schileyko et Frank, 1994

Schileyko, Frank, 1994: 130, fig. 2 (I-VI).

**LOCUS TYPICUS.** Central Nepal, neighbourhood of Kathmandu, holotype and 7 paratypes (ZMMU).

**DISTRIBUTION AND MATERIAL.** Besides the type locality in Central Nepal, the species is widely distributed in Western Nepal, Dhaulagiri zone, Mustang District, Annapurna National Park:

— Pholong-Dara Ridge, right side of Kali-Gandaki Valley, 200-700 m NE of Khobang village, 1-5 m over "Khobang — Tukuche" track, on dry steep slope among stones and grass roots, 2600 m, 52 specimens (PCK), 10 specimens (ZMMU), coll. A.G. Kuznetsov, 7.11.05.1996.

— right side of Kali-Gandaki Valley, NE end of Tukuche village, upper half of SE slope of mountain NW of Gonpa-Sampa temple, along dry rocks among grass roots, 2650-2700 m, 10 specimens (ZMMU), 30 specimens (PCK); coll. A.G. Kuznetsov, 7.05.1996;

— right side of Kali-Gandaki Valley, middle part of southern slope of mountain, at NE end of Marpha village near Buddhist shrine among stones and grass roots, 2750 m, 10 specimens (ZMMU), 13 specimens (PCK), coll. A.G. Kuznetsov, 8.05.1996;

— W of Tukuche village, at right side of Yamkim-Khola Valley (right tributary of the Kali-Gandaki River), on dry slope under stones, 2600 m, 10 specimens (ZMMU), 5 specimens (PCK), coll. A.G. Kuznetsov, 7.05.1996;

— right side of Kali-Gandaki Valley, opposite Chhariogaon village (=Chhariogaon) 1-2 m over "Marpha — Tukuche" track, on dry slope under stones, 2670 m, 10 specimens (ZMMU), 5 specimens (PCK), coll. A.G. Kuznetsov, 11.05.1996;

— left side of Kali-Gandaki Valley 2 km SSW of Jomsom (100 m SW of Samle village), on northern slope of mountain along track between Holy Lake and Kuchhaptrng monastery, among stones and grass roots, 2850-2900 m, 3 specimens (PCK), coll. A.G. Kuznetsov, 9.05.1996;

— 50-100 m E of Dhumpha village, on dry slope around juniper bushes, among stones and grass, 2850-2900 m, 31 specimens (PCK), coll. A.G. Kuznetsov, 9.05.1996;

**HABITAT.** The species is common in zones of pine and juniper forests at altitude of 2600-2900 m above the sea level. It occurs on moderately dry slopes with bushes, among stones and grass roots, where it associated with land snails complex of *Pupinidius sintayevi* sp. nov. (see above).

### *Laevozebrinus nepalensis myagdiensis* Kuznetsov et Schileyko, subsp. nov.

(Figs. 3, 4)

**LOCUS TYPICUS** — Western Nepal, Dhaulagiri zone, Myagdi District, Annapurna National Park, right side of Kali-Gandaki Valley 100-300 m NNW of Suke-Bagar village, 1-5 m over "Tatopani — Dana" track, 1430 m, coll. A.G. Kuznetsov, 13-14.05.1996;

**MATERIAL.** Holotype (ZMMU Lc-29976) and 5 paratypes (ZMMU LC-29975), 30 paratypes (PCK), 3 paratypes (PCH) from type locality;

Western Nepal, Dhaulagiri zone, Myagdi District, Annapurna National Park:

— right side of Kali-Gandaki Valley 150-200 m N of Titre (=Tital) village, 1 m over "Dana — Ghasa" track, 1550 m, 2 paratypes (PCK), coll. A.G. Kuznetsov, 13.05.1996;

— right side of Kali-Gandaki Valley, southern end of Dana, along track under stones of old wall, 1500 m, 7 paratypes (PCK), coll. A.G. Kuznetsov, 6.05.1996.

**DESCRIPTION.** The taxon differs from the nominotypical subspecies in more slender shell consisting of more numerous whorls (up to 8), more conical outline of spire, and comparatively less high and more rounded aperture.

**DIMENSIONS:** height of shell 8.5-11.7, large diameter 3.8-4.8, height of aperture 3.1-4.0, width of aperture 2.3-3.2 mm; holotype: 11.2, 4.2, 3.7, 2.9 mm respectively.

**REPRODUCTIVE ANATOMY** (1 and only preserved specimen from type locality). Vas deferens entering epiphallus at nearly right angle. Flagellum comparatively long, conical. Epiphallus rather long, with large caecum occupying middle part of epiphallus. Penis of slender distal and bulbous proximal portions; later containing fleshy verge with very long and wide lateral orifice. A-1 of penial appendix unusually long, slender and twisted, remaining portions of appendix without any peculiarities. Penial retractor arising from diaphragm as single bundle and soon divided into appendicular arm, attached to A-1 above its middle part, and penial branch, inserted to boundary between distal and proximal portions of penis. Vagina very short. Spermathecal stalk simple, rather short; reservoir lying on lower surface of spermoviduct.

Anatomically the new subspecies differs from the nominotypical in longer A-1 and A-3, shorter vagina, and structure of penial verge: this organ corresponds to principal lobe of *L. nepalensis nepalensis* verge, whereas smaller additional lobe(s) absent.

**HABITAT.** The range of the new subspecies is geographically and ecologically separated from that of nominotypical one. *L. nepalensis myagdiensis* is uncommon in the lower part of Kali-Gandaki Valley, at 1430-1550 m above the sea level, in comparatively more wet con-

### *Laevozebrinus mustangensis* Kuznetsov et Schileyko, sp. nov.

(Figs. 5, 6)

**LOCUS TYPICUS** — Western Nepal, Dhaulagiri zone, Mustang District, Annapurna National Park, left side of Kali-Gandaki Valley 400-600 m SE of Koketani village (=Kokethanti), in small ravine, 2600-2630 m, coll. A.G. Kuznetsov, 11.05.1996.+30.10.1997.

**MATERIAL.** Holotype (ZMMU Lc-22982); 3 paratypes (ZMMU LC-22983), 9 paratypes (PCK) and 2 paratypes (PCH) from the type locality;

Western Nepal, Dhaulagiri zone, Mustang District, Annapurna National Park, right side of Kali-Gandaki Valley:

— SSW end of Ghasa village (= Gansa), on main street opposite "Eagle Nest" guest house, under stones of old wall, 1950 m, 1 paratype (PCK), coll. A.G. Kuznetsov, 6.05.1996;

— left side of Kali-Gandaki Valley 100 m ESE of Lharkyo village along "Koketani-Titigaon" track, 2750 m, 1 paratype (PCK), coll. A.G. Kuznetsov, 1.10.1997;

— left side of Yamkim-Khola Valley 1 km over Tukucho village, along upper track on western slope, 2700 m, 21 paratypes (PCK), coll. A.G. Kuznetsov, 29.09.1997.

**DESCRIPTION.** Shell ovate-conical, rather thin, somewhat translucent, of 6.5-7 slightly convex whorls. Last whorl slightly ascending in front. Colour greyish-corneous, with white radial streaks, which are brighter on three lower whorls. Embryonic whorls (2 in number) dark-corneous or brown, with vague granulation and crowded spiral striae. Sculpture of postnuclear whorls of fine irregular growth lines and white rough radial wrinkles, becoming more numerous toward aperture; besides, indistinct spiral striae present. Aperture

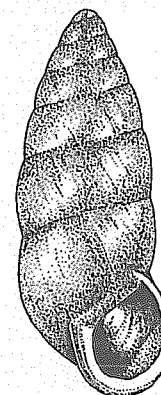


FIG. 3. *Laevozebrinus nepalensis myagdiensis* subsp. nov. Holotype.

РИС. 3. *Laevozebrinus nepalensis myagdiensis* subsp. nov. Голотип.

ditions in dense bushes of the upper level of deciduous forest zone, in crevices of rocks, covered by moss, where it lives together with species of *Nepalena ceratina* complex (see above).

**DISTRIBUTION.** Western Nepal, Dhaulagiri zone, Myagdi District, Annapurna National Park, Kali-Gandaki Valley.

**DERIVATIO NOMINIS.** The subspecies is named after the area (District Myagdi).

[Диагноз. Новый подвид отличается от номинативного более стройной раковинной, состоящей из большего числа оборотов (до 8), более коническими контурами завитка, а также сравнительно меньшей высотой и более округлыми очертаниями устья.]

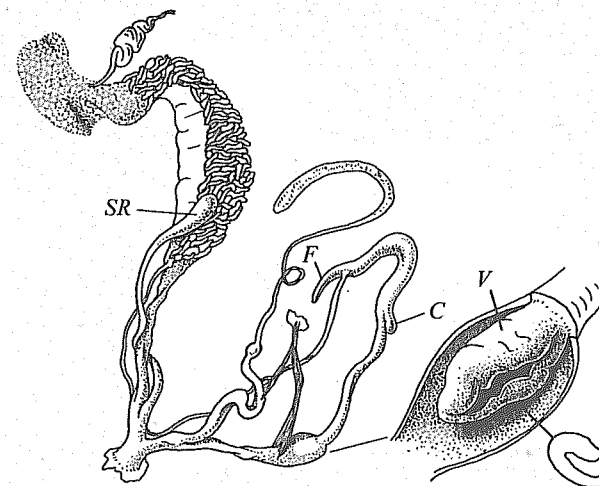


FIG. 4. *Laevozebrinus nepalensis myagdiensis* subsp. nov. Paratype from type locality. Reproductive apparatus and open penis. V — penial verge. Other abbreviations as in Fig. 2.

РИС. 4. *Laevozebrinus nepalensis myagdiensis* subsp. nov. Паратип из типового местонахождения. Половой аппарат и вскрытый penis. V — папилла penis. Другие обозначения как на рис. 2.

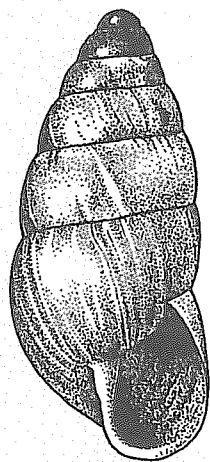


FIG. 5. *Laevozebrinus mustangensis* sp. nov. Holotype.

РИС. 5. *Laevozebrinus mustangensis* sp. nov. Голотип.

elongated-ovate, slightly oblique. Margins whitish, slightly thickened. Palatal and basal margins evenly arched and moderately expanded. Columellar margin subvertical and dilated above. Parietal callus thin to very thin. Umbilicus dot-like.

DIMENSIONS: height of shell 10.9-12.6, large diameter 4.8-5.6, height of aperture 4.0-

4.9, width of aperture 2.8-3.4 mm; holotype 11.3, 5.0, 4.2, 3.0 mm, respectively.

REPRODUCTIVE ANATOMY (4 specimens from left side of Yamkim-Khola Valley, 1 km over Tukuche village). Vas deferens entering epiphallus at some angle. Flagellum conic, tapering, comparatively long. Epiphallus about two times longer than penis, with moderately developed caecum shifted to flagellum. Penis with slender distal and more inflated proximal portions. Penial verge (stimulator) of irregular shape, elongated, somewhat clavate, lying between two high pilasters with corrugated ridges. A-1 of penial appendix 1.5 times longer than penis. A-2 and A-3 poorly defined. A-4 about 1.5 times longer than A-1 and approximately equal to A-5. Two penial retractors arising from diaphragm separately. One of them attached to A-1 above its middle, another inserted to boundary between distal and proximal portions of penis. Vagina short. Spermathecal neck long. Spermathecal diverticle two times longer than spermathecal reservoir plus its stalk. Spermathecal reservoir subglobular, its stalk thin.

TAXONOMIC POSITION. *Laevozebrinus mustangensis* sp. nov. differs from *L. nepalensis* s. lat. in having a thinner shell, covered with white radial wrinkles, rounded apex, and comparatively longer aperture with less thickened margins.

HABITAT. It is a very rare species of zones of *Rhododendron* and *Juniperus* forests, occurring in soil among trees roots and under stones of

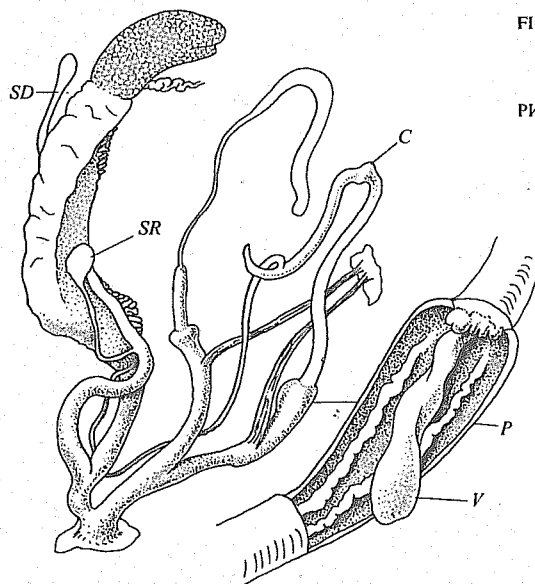


FIG. 6. *Laevozebrinus mustangensis* sp. nov. Reproductive apparatus and open penis. Abbreviations as in Figs. 2 and 4.

РИС. 6. *Laevozebrinus mustangensis* sp. nov. Половой аппарат и вскрытый penis. Обозначения как на рис. 2 и 4.

old walls. The following species were collected together with *Laevozebrinus mustangensis*: *Sinoennea* (S.) sp., *Macrochlamys lata* (?) Godwin-Austen, 1888, *M. longicauda* Godwin-Austen, 1883, *M. subjecta* (Benson, 1852), *M. sp.*, *Benisonites convexus* (Reeve, 1852), *Oxytesta blanfordi* (Theobald, 1859), *O. orobia* (Benson, 1848), *Euaustenia monticola* (L. Pfeiffer, 1848), *Syama p. prona* (Nevill, 1878), *Kaliella* (K.) *barrakporensis* (L. Pfeiffer, 1852), *K. (K.) nana* (Hutton, 1838), *Bradybaena r. radicolica* (Benson, 1848), *Landouria* sp.

DISTRIBUTION. Western Nepal, Dhaulagiri zone, Mustang District, Annapurna National Park, upper part of Kali-Gandaki Valley.

DERIVATIO NOMINIS. The name "*mustangensis*" is given after the range of the species.

[Диагноз. Раковина овально-коническая, довольно тонкостенная, слабо просвечивающая, состоящая из 6,5-7 слабо выпуклых оборотов. Последний оборот перед устьем слегка приподнят. Окраска сероватого цвета, с белыми радиальными пестринами, ярче выраженными на трех последних оборотах. Эмбриональные обороты (2) от темно-роговых до коричневых, покрыты слабо выраженной зернистостью и густой спиральной струйчатостью. Скульптура постэмбриональных оборотов состоит из тонких неправильных линий нарастания и грубых белых радиальных морщинок, более многочисленных перед устьем. Кроме того, присутствует вялая спиральная струйчатость. Устье удлиненно-овальное, слегка скошенное, с белесыми, слабо утолщенными краями. Палатальный и базальный края равномерно выгнутые и умеренно отвернутые. Колумеллярный край почти отвесный, вверху расширенный. Паритетальный каллус от тонкого до очень тонкого. Пупок проколловидный.]

### Genus *Mirus* Albers, 1850

Albers, 1850: 184 (*Bulimus* subgen.; type species *Bulimus cantori* Philippi, 1844; monotypy).

#### *Mirus*(?) *nilagiricus* (L. Pfeiffer, 1846)

(Fig. 7)

Pfeiffer L., 1846: 41 (*Bulimus*). — Adams H., Adams A., 1855: 160 [*Bulimulus* (*Ena*)]. — Nevill, 1878: 135 [*Bulimulus* (*Petraeus*)]. — L. Pfeiffer, Clessin, 1881: 291 [*Bulimina* (*Ena*)]. — Kobelt, 1902: 950, pl. 133, fig. 5 [*Bulimulus* (*Subzebrinus*)]. — Gude, 1914: 231 [*Ena* (*Mirus*)].

LOCUS TYPICUS - "From the Neelgherries, East Indies" (Nilgiri Hills, Madras State, India).

DISTRIBUTION AND MATERIAL. Besides the type locality, the species is distributed in Anaimulai Hills; NE India, Assam State, Dafia and Khasi Hills; Burma, Shan States, Pulney Hills; Eastern Nepal, Sagarmatha zone, Solukhumbu district, 500 m E of Khari-Khola village, right side of Khari-Khola ravine, lower part of southern slope of the mount, on steep rocks in dense bushes among grass roots, 2200 m, 1 specimen (PCK), coll. A.G. Kuznetsov, 16.05.1995.

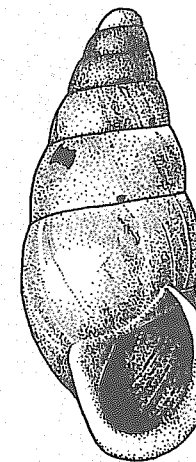


FIG. 7. *Mirus* (?) *nilagiricus* (Pfeiffer, 1846). E Nepal, Solukhumbu district, Khari-Khola village.

РИС. 7. *Mirus* (?) *nilagiricus* (Pfeiffer, 1846). Восточный Nepal, округ Солухумбу, деревня Хари-Хола.

DESCRIPTION. Shell ovate-conical, thin, lustreless, of 7.5-8 moderately convex whorls; last whorl slightly ascending in front. Spire conical, with nearly straight outline and rounded apex. Body whorl somewhat compressed below. Colour brownish-corneous, with radial whitish streaks. Surface of embryonic whorls (two in number) eroded in a single specimen at our disposal. Postembryonic whorls with fine irregular radial wrinkles and crowded spiral striae, which are more rough on basal part. Aperture ovate, slightly oblique, brownish inside, with white, broadly reflexed and expanded margins. Parietal callus thin. Basal and palatal margins evenly arched. Columellar margin subvertical, triangularly dilated above. Umbilicus minutely open.

DIMENSIONS: height of shell 13.4, large diameter 5.8, height of aperture 5.4, width of aperture 4.2 mm.

REMARK. In original description Pfeiffer indicated the shell height being 28.5 mm and width 8 mm; Gude (1914: 231) gave the minimal height 15 mm and believed that Pfeiffer's indication is erroneous: it should be 18.5 mm. Besides, it should be mentioned that Nepal is very far from the type locality. So there is a definite doubt if the specimens from Himalayas and Burma belong to the same species as those collected in the type locality in South India.

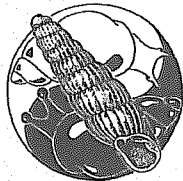
HABITAT. The only dry shell was collected on steep rocks in dense bushes among grass roots together with the following species: *Alycaeus* (A.) *burti* Godwin-Austen, 1874, *Chama-*

*lycaeus* (C.) *summus* (Godwin-Austen, 1914), *Ch. (Dicharax) notatus* (Godwin-Austen, 1876), *Diplommatina* (D.) *oviformis* Fulton, 1901, *D. (D.) pachychilus* Benson, 1857, *D. (D.) sperata* W. Blanford, 1862, *D. (Sinica) canarica* Beddome, 1875, *Carychium minusculum* Gredler,

1887, *Glessula* sp., *Sinoennea* (S.) *stenopylis* (Benson, 1860), *Kaliella* (K.) *nongsteinensis* Godwin-Austen, 1883, *Macrochlamys sathilaensis* Godwin-Austen, 1907, *Oxytesta cycloplax* (Benson, 1852), *Sitala rimicola* (Benson, 1859), *Landouria aborensis* Godwin-Austen, 1918.

## REFERENCES

- ADAMS H., ADAMS A. 1855. *The genera of recent mollusca; arranged according to their organization*. Vol. 2. London: 93-284.
- ALBERS J.C. 1850. *Die Heliceen, nach natürlicher Verwandtschaft systematisch geordnet*. Berlin. 262 S.
- GUDE G.K. 1914. *The fauna of British India, including Ceylon and Burma. Mollusca — II (Trochomorphidae-Janellidae)*. New Delhi. 520 p.
- KOBELT W. 1902. Die Familie Buliminidae. In: Martini, Chemnitz, *Systematische Conchylien-Cabinet*, I. 13, 2: 837-1051.
- LINDHOLM W.A. 1925. Beitrag zur Systematik und Nomenklatur der Familia Enidae (Buliminidae). *Archiv für Molluskenkunde*, 57: 23-41, 140-142.
- MOELLENDORFF O. 1901. Binnen-Mollusken aus Westchina und Centralasien. *Ezhegodnik Zoologicheskogo Muzeja, Sanct-Petersburg*: 299-412.
- NEVILL G. 1878. Mollusca from Kashmir and neighbourhood of Mari (Murree) in the Punjab. In: *Scientific Results of Second Yarkand Mission*, Mollusca. London: 4-21.
- PFEIFFER L. 1846. Descriptions of twenty new species of Helicea, in the collection of H. Cuming, Esq. *Proceedings of the Zoological Society of London*: 37-41.
- PFEIFFER L., 1856. Versuch einer Anordnung der Heliceen nach natürlichen Gruppen. *Malakozoologische Blätter*, 2: 145-185.
- PFEIFFER L., CLESSIN S. 1881. *Nomenclator Heliceorum viventium quo continentur nomina omnium hujus familiae generum et specierum hodie cognitatarum disposita ex affinitate naturali*. Cassels. 606 S.
- REEVE L., 1849. *Conchologia Iconica. Bulimus*. London.
- SCHILEVKO A.A. 1978. A study of type-species in some taxa of the generic group in the family Buliminidae (=Enidae) (Gastropoda). 1. Species of Middle and Central Asia. *Zoologicheskij zhurnal*, 57(3): 344-358 (In Russian).
- SCHILEVKO A.A., FRANCK CH. 1994. Some terrestrial Mollusca of the Nepalesian fauna. *Archiv für Molluskenkunde*, 123(1/6): 127-136.
- SOLEM A. 1966. Some non-marine mollusks from Thailand, with notes on classification of the Helicariionidae. *Spolia zoologica Musei hauniensis*, 24: 7-110.
- WIEGMANN F. 1901. Binnen-Mollusken aus Westchina und Centralasien. *Ezhegodnik Zoologicheskogo Muzeja, Sanct-Petersburg*: 220-298.



## New taxa and the system of Recent representatives of the family Poromyidae (Bivalvia, Septibranchia, Poromyoidea)

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A new classification of Recent representatives of the family Poromyidae is proposed. Poromyidae are considered here to contain species with two or one paired groups of branchial apertures. On the basis of the structure of branchial apertures the family is divided into two subfamilies: Poromyinae Dall, 1886 and *Cetomyinae* subfam. n. Poromyinae have no interfilamentar connections in branchial apertures, whereas in *Cetomyinae* there are interfilamentar connections which make the apertures looking like a sieve. Poromyinae accommodate two genera — *Poromya* Forbes, 1844, with a granular shell surface and *Dermatomya* Dall, 1890, with a smooth shell surface. Both genera have two paired groups of pores. *Cetomyinae* include two genera — *Cetomya* Dall, 1889 and *Lissomya* gen. nov. *Cetomya* accommodates species with a granular shell surface and two or one paired groups of sieves. Molluscs with two pairs of sieves are placed in the subgenus *Cetomya*, whereas those with one pair — in *Perlaporomya* Scarlato et Starobogatov, 1983. The genus *Lissomya* is characterized by smooth shell surface and two paired groups of the sieves. The genus is erected for a single species, *Lissomya rotundula* sp. nov., from the northern part of the Pacific (Aleutian Trench, 4860 m, 45th cruise of the R/V "Vityaz"). *L. rotundula* has semitransparent, rounded shell with a smooth, polished surface. In the septum, anterior group of branchial sieves consists of 5 apertures and 4 interfilamentar connections, whereas posterior one consists of 13 apertures and 4 interfilamentar connections. Around both siphons there is a common ring of 13 tentacles, including 12 lateral tentacles and 1 dorsal. There are four pairs of small papillae between the first five pairs of lateral tentacles.

### Новый род и вид двустворчатых моллюсков и система современных представителей семейства Poromyidae (Bivalvia, Septibranchia, Poromyoidea)

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Предложена новая система современных представителей семейства Poromyidae. В семейство включены моллюски с двумя или одной парами групп септальных отверстий. На основании строения септальных отверстий семейство разделено на два подсемейства: Poromyinae Dall, 1886 и *Cetomyinae* subfam. nov. Первое подсемейство характеризуется отсутствием межфиламентных перегородок в септальных отверстиях, у представителей второго межфиламентные перегородки развиты. Подсемейство Poromyinae включает два рода: *Poromya* Forbes, 1844, с гранулированной поверхностью раковины,