

**A NEW BATHYSCIOID TROGLOBIONT BEETLE *LANEYRIELLA*
PRETNERI SP. NOV. FROM WESTERN ALBANIA
(COLEOPTERA: LEIODIDAE: CHOLEVINAE: LEPTODIRINI)**

Slavko POLAK¹ & Radek UDRŽAL²

¹Notranjski muzej Postojna, Kolodvorska cesta 3, 6230 Postojna, Slovenia;
e-mail: slavko.polak@notranjski-muzej.si

²Dlouhá 352, Mikulovice, Czech Republic; e-mail: radekudrzal@seznam.cz

Abstract – A new troglobiont species *Laneyriella pretneri* sp. nov., is described in the paper based on recently collected specimens of a 1.6 mm long leptodirine beetles from a small cave in a conglomerate near Tamarë village in western Albania. Dilated pentamerous male protarsi, a distinct row of flattened spines of equal length forming a comb (pecten) on the external lateral and apical sides of the protibiae, uniform short decumbent pubescence aligned in strong transversal rows on the elytra surface, the equally long first and second antennomere and the elevated thoracic mesoventral keel, which extends posteriorly over the metaventricle, as well as some peculiarities of the genital structures, lead the authors to rank the new species in the *Laneyriella* genus, which is grouped within the *Pholeuonella* genera group. In the paper external and internal morphological characteristics are described in details.

KEY WORDS: subterranean beetles, troglobiont, morphology, Albania, Dinaric Karst

Izvleček – NOV BATISCIODNI TROGLOBIONTSKI HROŠČ *LANEYRIELLA*
PRETNERI SP. NOV. IZ ZAHODNE ALBANIJE (COLEOPTERA: LEIODIDAE:
CHOLEVINAE: LEPTODIRINI)

Na osnovi 1,6 mm dolgih primerkov hroščev, nedavno zbranih v majhni jami v konglomeratu blizu vasi Tamarë v zahodni Albaniji, je v članku opisana nova troglobionska vrsta podzemljarka (Leptodirini), poimenovana *Laneyriella pretneri* sp. nov. Glede na razširjena pet-člena stopalca prvih nog pri samcih, razločno vrsto enako dolgih sploščenih trnov, ki na zunanji in sprednji strani prvih goleni tvorijo glavniku podobno tvorbo, enakomerno kratko ležečo dlakavostjo poravnano v izrazito prečnih vrstah na površini pokrovk, enako dolgima prvima členkoma anten, dvignjenim oprsnim mezovetralnim gredljem, ki se zadaj razteza čez metaventril, in nekaterim posebnostim genitalnih struktur, avtorja opisano vrsto uvrščata v rod *Laneyriella*, ki je

združen v skupini rodov *Pholeuonella*. V prispevku so podrobneje opisane zunanje in notranje morfološke značilnosti nove vrste.

KLJUČNE BESEDE: podzemni hrošči, troglobiont, morfologija, Albanija, Dinarski kras

Introduction

Small and rounded “bathyscioid” leptodirine beetles (Coleoptera: Leiodidae: Cholevinae: Leptodirini), which were occasionally found sifting leaf litter or deep soils or collected at cave entrances, were initially classified as *Adelops*, *Bathyscia* or *Bathysciola* species. The genus *Pholeuonella* Jeannel (1910) was later created for *Adelops erberi* Schaufuss, 1862, and some other similar species that were already known. In a subsequent monographic revisions of Leptodirini beetles (former subfamily Bathysciinae), the same author (Jeannel, 1911, 1924) restored the generic status of similar small leptodirines from the western Balkan Peninsula. Jeannel also noted several significant peculiarities in the structure of the copulating organ, i.e., paramere styles and aedeagus internal sac of *P. erberi*, indicating that it should be distinguished from other species in the genus. This prompted Robert Laneyrie (1967) to establish a new genus *Protopholeuonella*, for *P. erberi*, even though that this species was already the type species of the genus *Pholeuonella*. This nomenclature error was noticed by Pretner (1970) and published in his comments on Laneyrie’s proposal for a new Leptodirini systematics. Consequently, the genus *Protopholeuonella* is an objective synonym of the genus *Pholeuonella*. For the other species of this genus, which differ significantly from *P. erberi* (Schaufuss, 1862), Vassil B. Guéorguiev (1976) established a new genus, *Laneyriella*, in his next Leptodirini (Bathysciinae) beetle systematics revision.

The type species of the genus is *L. ganglbaueri* (Apfelbeck, 1907), originally described as *Bathyscia* from small caves near Kotor on the Montenegrin coast. Other species in the genus include *L. milotiana* (Reitter, 1918), found in the Miloti region of northern Albania; *L. stussineri* (J. Müller, 1914), found in leaf litter near Cetinje; *L. matchai* (Jeannel, 1924), found in caves on the Orjen mountain range; *L. scutariensis* (G. Müller, 1934), found in caves around Lake Skadar; *L. andrijevicensis* (Jeannel, 1924), found in soils and small caves in the north-eastern part of Montenegro; and *L. staudacheri* (G. Müller, 1934), found in the Makarska and Biokovo regions of Dalmatia, Croatia (Newton 1998; Perreau 2015; Hlaváč et al. 2017). Geographical distributions of these taxa, stretching along the Croatian coast and in Montenegro, have been studied and published by Egon Pretner (1968, 1973, 1977). The sole female (type) specimen of *Bathyscia (Pholeuonella) bosnicola* Reitter, 1913, which was never collected again, was described from the cave Pećina u Kijećinoj stijeni near Sarajevo (Reitter, 1913). Due to its remote distribution, far from other related species, the taxonomic status of this enigmatic species is mostly considered as ‘incertae sedis’ until additional specimens, particularly male specimens, are found. Recently (Fresneda et al. 2024), two new genera and two new species belonging to the *Pholeuonella* group were described; *Perreauia dalmatica* Fresneda et al., 2024 that was found in a small cave near Makarska in Croatia, and *Serbiana latitarsis* Fresneda et al., 2024

that was found in a small cave near Tutin in Serbia.

Leptodirini specimens sharing morphological characteristics with previously mentioned taxa were collected by the second author in July 2024, in a small cave in the western part of northern Albania near the border with Montenegro. Based on these specimens, we present a description of a new subterranean beetle species of the genus *Laneyriella pretneri* sp. nov.

Material and methods

Methods. Studied specimens, 13 ♂♂ and 12 ♀♀, were mostly dry-mounted glued on card boards. In the Holotype ♂ aedeagus was dissected, cleaned and preserved immersed in Solakryl BMX media (as mounting medium) on a smaller transparent label pinned under the card-mounted specimen. For some of the Paratype specimens, the aedeagi were dissected and dry-glued on card boards in front of the specimens. For a more detailed study, an additional 4 ♂♂ and 2 ♀♀ were dissected after being macerated in 10% KOH at room temperature for six hours, washed in pure water and dehydrated by using ethanol. The taxonomically informative body parts (antennae, legs, metatergal apparatus, metendosternite and genital parts) were dissected, separated and immersed in glycerine on classical plain microscope slides (75 mm x 50 mm), which were partly covered with slide covers. For the final permanent microscope slides, the body parts were immersed in Solakryl BMX media.

Morphological measurements were taken from the dissected body parts, that were photographed under the microscope on the microscope glass slides. Photographs were taken using a Nikon Coolpix 4500 digital camera on an Euromex microscope ME2665 (with 10x4, 10x10 and 10x40 magnification). Measurements were taken from the digital photographs with the Image J software. The microscope images were enhanced using Adobe Photoshop. The figures were refined in Adobe Illustrator. A series of photographs of dry mounted specimens were taken using a Nikon D800 camera equipped with a Laowa 25 mm ultra-macro lens mounted on a WeMacro auto-focus stacking rail. The final stacked images, were produced by merging the image series using the Helicon Focus software. The morphological characters, body part nomenclature and systematics used in the paper follow the latest proposal for the phylogenetic classification of Leptodirini (Fresneda et al., 2024).

Abbreviations

Measurements: **BL:** Total body length, measured from the anterior apex of the head (in the natural position, with the head not extended) to the apex of the elytra, measured on dry-mounted specimens glued to cardboard; **AL:** Total antenna length measured in extended, dry-mounted specimens; **AL/BL:** Antennal elongation index = antenna length/body length; **AL/PL:** Index = antenna length/pronotum length; **AmL:** Length of antennomeres measured on dissected specimens under a microscope (1–11); **AmW:** Maximal width of antennomeres (measured on dissected specimens under a microscope) (1–11); **AmL/AmW:** Antennal index (1–11) = antennomere

length/antennomere width; **AL/AmL**: Antennal percentage index (1–11, in %); **PL**: Pronotum maximal length; **PW**: Pronotum maximal width; **EL**: Elytra maximal length; **EW**: Elytra maximal width; **M**: Mean number or average; **N**: Number of samples measured.

Institutes and collections: Specimens are deposited in collections identified by the following acronyms:

PMSL: Slovenian Museum of Natural History, Ljubljana (Slovenia), Egon Pretner Collection.

NMPO: Notranjska Museum Postojna, Postojna (Slovenia), Zoological Collection – Coleoptera.

CRUM: Collection of Radek Udržal, Mikulovice (Czech Republic).

CRLI: Collection of Roman Lohaj, Limbach (Slovakia).

CJBM: Collection of Jiří Brestovanský, Mělník (Czech Republic).

Systematic part

Laneyriella pretneri Polak & Udržal sp. nov.

Figs. 1–25

Type locality: An unnamed small, approximately 7 m long cave in conglomerate (Figs. 26, 27) on right bank of the river Lumi i Cemit (Cijevna), near the village of Tamarë (approximate coordinates: 42.48 N, 19.58 E) in the Shkodër (Skadar) district of western Albania, close to the border with Montenegro. The cave is located at altitude of approximately 400 m a.s.l. The cave is approximately 20 km east of Podgorica in Montenegro and 50 km north from Shkodër in Albania.

Description:

Colour: Reddish brown, antennae and tarsi slightly paler (Figs. 1, 2).

Size: Total body length: males and females of nearly the same size. Measured specimens: (**BL**): 1.58–1.76 mm (M= 1.66, N= 6) in ♂♂ and 1.54–1.66 mm (M= 1.60, N= 6) in ♀♀.

Head: Eyes atrophied, head dorsally covered by protruding sparse pubescence, occipital carina atrophied, neck glabrous. Antennae inserted on the median third of the head length. Maxillary apical palpomere (4th segment) prolonged conical with straight lateral edges, slightly shorter than preapical palpomere. Preapical palpomere swollen with convex lateral edges, distinctly wider than apical palpomere. Mandibles regularly curved, short and armed with usually two small teeth.

Antennae: Relatively long (Figs. 1, 2, 7–10), curved back distinctly exceed the pronotum posterior edge. Antennomeres, especially the terminal ones, slightly dorsoventrally flattened, in males distinctly longer than in females (Figs. 7–10). All antennomeres longer than wide. The 1st antennomere slightly swollen, equally long as the 2nd. Antennomeres 3rd, 4th, 5th, 6th prolonged cylindrical. Antennomere 7th longer than wide, apically widened with a well-developed Hamman organ. Antennomere 8th the shortest, cylindrical. Antennomeres 9th and 10th apically widened. The 11th antennomere elliptical, the widest of all antennomeres, dorsoventrally distinctly flattened and long



Figs. 1–2: *Laneyriella pretneri* sp. nov. Habitus. 1): male; 2): female. Scale bar 1 mm.

as 1st. Antennae total length (**AL**): 1.08–1.24 mm (M= 1.15, N= 12) in ♂♂ and 0.80–0.99 mm (M= 0.94, N= 10) in ♀♀; **AL/BL**: 0.68–0.70 in ♂♂ and 0.52–0.59 in ♀♀; **AL/PL**: 2.25–2.33 in ♂♂ and 1.70–1.98 in ♀♀.

AmL ♂♂: 0.122; 0.129; 0.115; 0.101; 0.11; 0.104; 0.110; 0.074; 0.090; 0.075; 0.121 (N=2).

AmL ♀♀: 0.122; 0.123; 0.091; 0.073; 0.069; 0.067; 0.089; 0.052; 0.074; 0.062; 0.113 (N = 2).

AL/AmL (in %) ♂♂: 10.60; 11.21; 9.99; 8.77; 9.56; 9.04; 9.56; 6.43; 7.82; 6.52; 10.51.

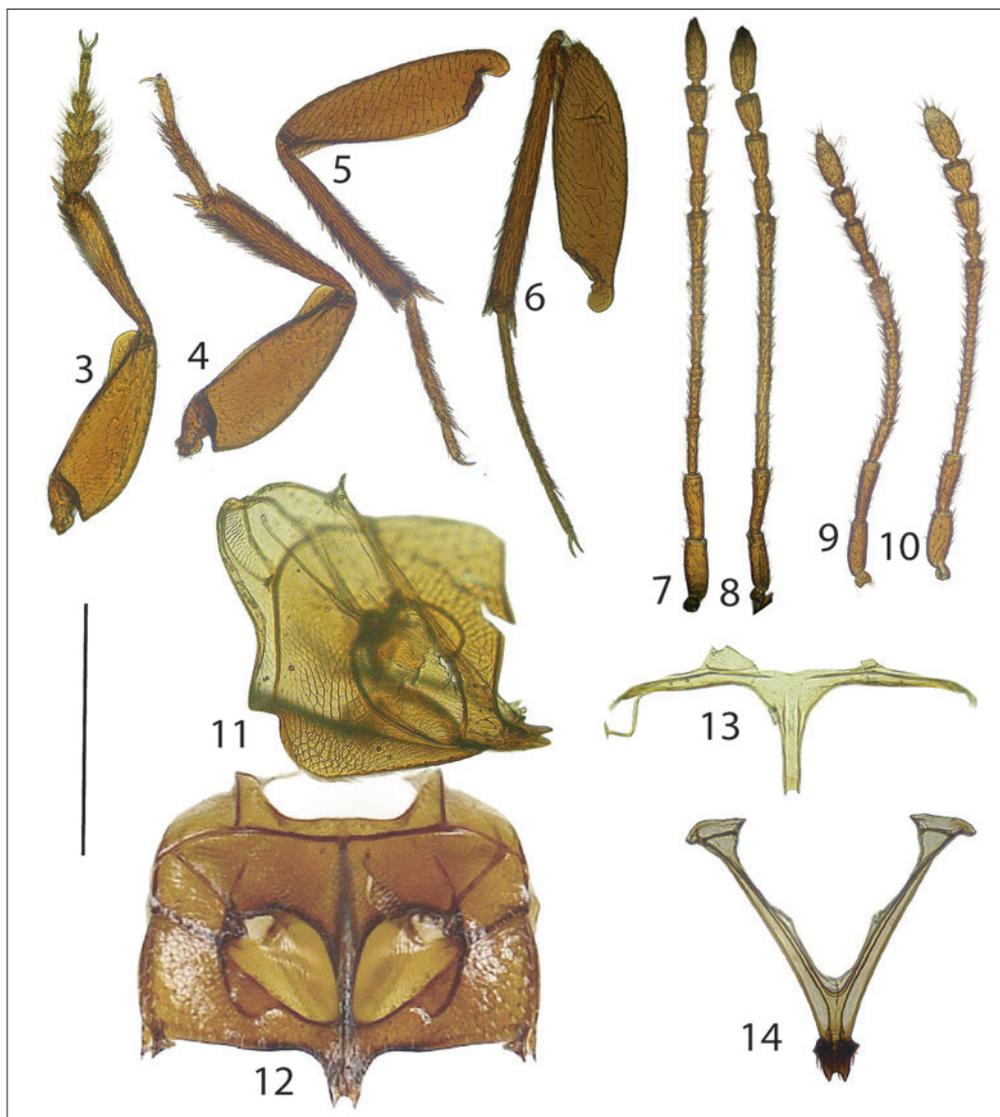
AL/AmL (in %) ♀♀: 13.05; 13.16; 9.73; 7.81; 7.38; 7.17; 9.52; 5.56; 7.91; 6.63; 12.09.

AmL/AmW ♂♂: 2.90; 3.58; 4.60; 3.61; 3.93; 3.71; 2.97; 2.18; 2.05; 1.53; 2.33.

AmL/AmW ♀♀: 2.71; 3.51; 3.79; 2.92; 2.56; 2.23; 2.28; 1.53; 1.75; 1.22; 2.22.

Pronotum: Transverse, wider than long, lateral edges strongly concave with regularly rounded edges, widest at the base, equally wide than elytral maximal width (Figs. 1–2). Dorsal surface strongly pubescent with uniform short and decumbent pubescence, randomly distributed on the weakly reticulated tegument. **PL**: 0.48–0.53 mm (M= 0.51, N=6) in ♂♂ and 0.47–0.50 mm (M= 0.49, N=5) in ♀♀; **PW**: 0.81–0.89 mm (M= 0.84, N=6) in ♂♂ and 0.82–0.85 mm (M= 0.84, N=5) in ♀♀.

Pterothorax: Ventral face glabrous, shiny with distinctly reticulate surface (leathery aspect) (Figs. 11, 12). Mesocoxal cavities separated with elevated, moderately thick mesoventral keel. Ventral edge of keel with short, decumbent, backward oriented



Figs. 3–14: *Laneyriella pretneri* sp. nov. morphological skeletal details. 3): male first leg; 4): female first leg; 5): male second leg; 6): male third leg; 7, 8): male antenna; 9, 10): female antenna; 11): pterothorax, lateral view; 12): pterothorax, ventral view; 13): metatergal apparatus; 14): metendosternite. Scale bar 0.5 mm.

bristles. In lateral view (Fig. 11) mesoventral keel is elevated and regularly rounded on anterior side, regularly descending on its posterior part end extended completely over the metaventricle, almost reaching the apex of metaventral process (Fig. 12). Metaventral process is posteriorly distinctly prolonged, apex narrow bifid. Metaventral

sutures of pterotorax (Figs. 11, 12) extended roundly on anterior side of mesocoxal cavities and obliterated on proximal part of coxa, corresponding model 4 proposed by Fresneda et al. (2024). Metendosternite as in other species of the genus (Fig. 14). Metatergal apparatus with metascutum reduced to narrow strip, alacrista narrow but moderate long (Fig. 13).

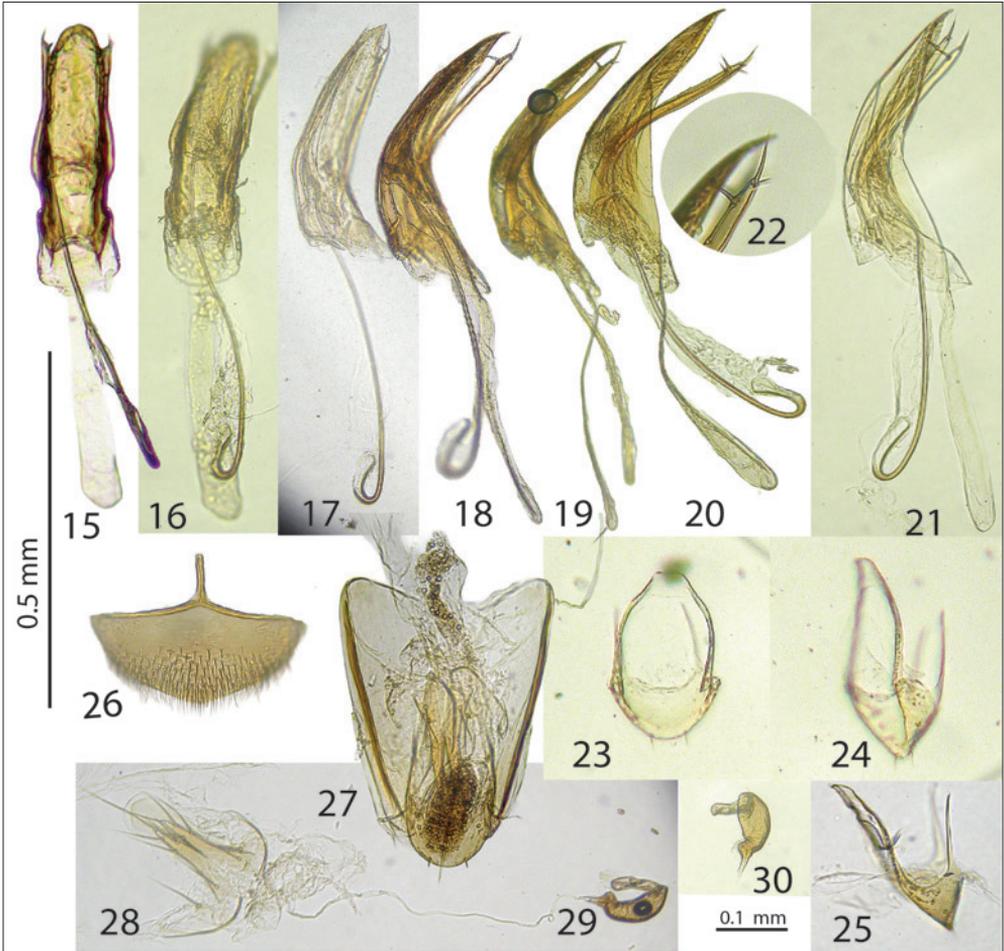
Elytra: Elongated-oval with maximum width on anterior part, without sutural carina (Figs. 1–2). Strongly pubescent with uniform short and decumbent pubescence aligned in strong transversal rows (transversal striae) on complete elytra surface. On the elytral base strigae in slightly undulating rows. **EL:** 1.06–1.19 mm (M= 1.12, N= 6) in ♂♂ and 1.03–1.09 mm (M= 1.07, N= 5) in ♀♀; **EW:** 0.81–0.89 mm (M= 0.85, N= 6) in ♂♂ and 0.81–0.86 mm (M= 0.85, N= 5) in ♀♀. Scutellum widely triangular, pubescent on the posterior side.

Legs: Short and stout (Figs. 1–6) as in other similar species of the *Pholeuonella* group. Male protarsi 5-segmented, widely dilated (Fig. 3). Female protarsi 4-segmented, not dilated (Fig. 4). Protarsi length 0.27 mm in ♂♂ and 0.23 mm in ♀♀; protarsi maximal width: 0.06 mm in ♂♂, segments 1st - 4th widely dilated, hart like, wider than protibia apex and simple 0.03 mm, not dilated in ♀♀. Mesotarsi and metatarsi with five not dilated segments at both sexes (Figs. 5, 6). Claws simple, strong and sharp, empodium with one long bifurcated seta.

Protibiae slightly flattened, on the external lateral and apical side with the row of flattened spines of equal length forming a comb (pecten) stretching on approximately half of the distal protibial length (Figs. 3, 4). On internal apical side with large and strong 5-toothed spur.

Mesotibiae and metatibiae cylindric, with numerous thin spines towards the distal half and a few stronger spines on external-lateral side. Mesotibiae and metatibiae with periapical ring of spines of unequal length in mesotibiae and of nearly equal length in metatibiae, both with additional large and strong 5-toothed spur on internal apical side (Figs. 5, 6). Femorae distinctly flattened, with reticulated aspect, sparsely pubescent.

Male genitalia: Aedeagus median lobe relatively, small 0.4 mm long (together with additional hypertrophic basal lamina approximately 0.7 mm long), elongated and more or less straight in dorsal view (Figs. 15, 16), distinctly bent on almost right angle in the middle of length in lateral view (Figs. 17–21). Median lobe apex in dorsal view moderately rounded (Figs. 15, 16) with sharp beak apically distinctly curved downwards (Figs. 17–22) (beak not seen in dorsal observation). Median lobe basal lamina almost parallel with median lobe, extremely prolonged as a hypertrophic straight basal blade almost equally long as median lobe itself (Figs. 15–21). Inner sac poorly sclerotized, lacking distinct sclerified stylets, phanerae or band-like structures (Figs. 15–21), and without a basal “Y”-shaped piece. It bears a long flagellum that extends along the entire posterior portion of the median lobe and nearly the full length of the basal lamina, terminating in a distinctly backward-curved ampulla-like structure. Parameres cylindric, parallel with median lobe, shorter than median lobe. In dorsal view the parameres distinctly curved laterally in the middle of median lobe length and turned in parallel position with median lobe in its apical part. In lateral view parameres smoothly curved and parallel with median lobe curvature. Parameres



Figs. 15–25: *Laneyriella pretneri* sp. nov. genital structures. 15): aedeagus dorsal view; 16, 17): aedeagus dorso-lateral view; 18, 19, 20, 21): aedeagus lateral view (aedeagus on figs. 20 & 21 slightly compressed under the microscope glass cover); 22): enlarged paramerae apex with stiles (not in scale); 23): male genital segment dorsal view, 24): male genital segment dorso-lateral view; 25) male genital segment lateral view; 26): female uroventrite VIIIth; 27, 28): female urite IXth; 29, 30): spermatheca. Figs. 15–27, scale bar 0.5 mm. Figs. 28–30, scale bar 0.1 mm.

apex not widened, armed with three strong, straight erected setae of similar size and length. One straight long seta inserted apical and two subapical setae oriented towards the median lobe (Figs. 15–22). Male genital segment partly reduced, in dorsal view oval para-ring like, with some minute bristles on tergal external side (Fig. 23), in lateral view forming a hood on dorsal (tergal) side (Figs. 24–25).

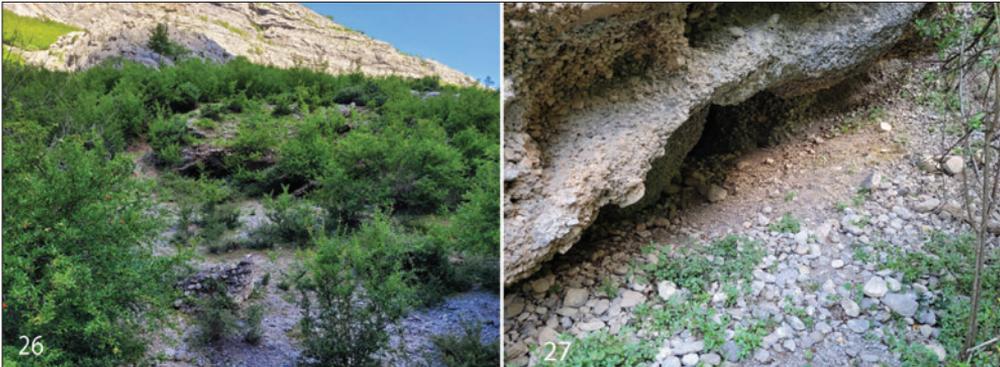
Female genitalia: Female uroventrite VIIIth (Fig. 26) strongly pubescent on the proximal part and has an anterior slim and long apophysis (spiculum ventrale). Urite IXth as in figures 27 and 28. The sub-gonocoxite with one stylus, the gonocoxite with one basal, two lateral and one subapical stylus, the gonostylus as one longest stylus. The spermatheca (Figs. 29, 30) is uniformly and weakly sclerotised, sack-like and curved, consisting of a proximal nodule, a larger spherical medial sac and a smaller, usually curved, terminal sack. The hyaline gland is attached to the spermathecal duct at the proximal part of spermatheca in a distinct nodule. The spermiduct is relatively short (Figs. 28, 29). No traces of a sclerified bursa copulatrix were found.

Systematic position: Cavernicolous or endogeic, apterous and eyeless small-sized leptodirine beetle (Leptodirini) of convex, strongly oval, bathyscioid habitus (Figs. 1, 2). It is characterised by the pentamerous male protarsi, a distinct row of flattened spines of equal length forming a comb (pecten) on the external lateral and apical sides of the protibiae, and a uniform short decumbent pubescence on the elytra aligned in strong, transverse rows (transversal striae) on the elytra surface. The 1st antennomere equally long as the 2nd. Elevated mesoventral keel that extends posteriorly over the metaventrite as well as some peculiarities of the genital structures also contribute to the classification of the described species within the *Laneyriella* genus, which is grouped within the *Pholeuonella* group. This group is listed (after Fresneda et al., 2024) as the *Anthroherpon* series within the *Leptodirus–Anthroherpon* clade of the Leptodirini subtribe.

Differential diagnosis: *Laneyriella pretneri* sp. nov. can be distinguished from other *Laneyriella* species by the shape of the aedeagus, which is in lateral view strongly bent at a right angle in the middle of the medial lobe's length. The long and wide, hypertrophic basal lamina is equally as long as the median lobe. The parameres of *L. pretneri* sp. nov. bear apically only three long, straight setae; all other congener species have more setae of a different shape and composition. *Laneyriella pretneri* sp. nov. can be easily distinguished from the other species externally, since it has the relatively longest antennae of any known congener species. In both males and females, the antennae are distinctly longer than the pronotum (AL/PL: 2.25–2.33 in ♂♂ and 1.70–1.98 in ♀♀). All the antennomeres in *L. pretneri* sp. nov. are distinctly longer than wide.

Etymology: The species name *pretneri* is dedicated to Egon Pretner (1896–1982), a renown Slovenian speleologist and entomologist who devoted his life to the study of cave beetles. Thanks to his extensive collection of cave beetles (Slovenian Museum of Natural History, Ljubljana, Slovenia; Egon Pretner Collection), we were able to compare the newly described species with some others of the related group.

Distribution: The new species is currently only known from its type locality: an MSS habitat near the village of Tamarë in Albania. However, given the extensive conglomerate deposits and MSS habitats in the Cijevna river region, the species is likely to have a wider distribution. Suitable similar habitats stretch from the north-western Albania, on the southern slopes of the Korita plateau (Zatrijebački katun), to Podgorica in Montenegro. Pretner found two female specimens in the small cave Pećina Dućića above Podgorica on 3rd of September 1933. These specimens were de-



Figs. 26–27: The type locality of *Laneyriella pretneri* sp. nov. 26): Wider area in vicinity of the type locality; 27): entrance to the type locality, a small cave in alluvial conglomerate.

terminated by J. Müller as *Pholeuonella* sp. We have found that these specimens have similar long antennae to those described in the paper. However, until additional male specimens are found in Montenegro, the only reliable locality of *L. pretneri* sp. nov. is its type locality.

Ecology: The specimens of the *L. pretneri* sp. nov. type series were collected from a shallow cave, about seven metres long, formed of conglomerate derived from of alluvial river sediments (Figs. 26, 27). Numerous specimens were collected in first week of July 2024 individually by hand in the final chamber of the cave, in total darkness, over a relatively short period of time. Visiting the same cave at the end of September 2025, when climatic conditions in the same place in cave were dry, not a single specimen was found. The proportionally long antennae of the new species, in comparison with those of some similar leptodirines, indicate that the animal lives in deep caves or shallow subterranean habitat rather than in leaf litter. We estimate that the species' typical habitat is the environment of small spaces among subterranean rocks and pebbles in the conglomerate. The species probably migrate seasonally among climatically suitable zones. The small spaces in the conglomerate can be identified as a Mesovoid Shallow Substratum (MSS), or 'Millieu Souterrain Superficiel', as originally described by Juberthie et al. (1980) and additionally described by Giachino & Vailati (2010). The MSS is generally found in the mountainous areas of temperate zones. These terrestrial subsurface habitats often occur and are most accessible to us in the vicinity of caves and in the superficial zones of rock fissures and rock debris slopes. In a wider sense, these environments are known as Shallow Subterranean Habitats (SSH) (Culver & Pipan, 2014).

Type series:

Holotype ♂, glued to a white card, pinned dry, aedeagus dissected and preserved immersed in Solakryl BMX media on a transparent label pinned below the specimen, labelled: HOLOTYPE | *Laneyriella pretneri* sp. nov. ♂ | Polak & Udržal det. 2025,

[rectangular red label, printed]. Second label: ALBANIA, small cave, Tamarë, 400 m., Shkodër distr., 7.7.2024, Udržal, R. leg. [rectangular white label, printed] – (PMSL).

Paratypes: Specimens glued to white card, pinned dry, not dissected, labelled:

PARATYPE | *Laneyriella pretneri* sp. nov. | Polak & Udržal det., 2025 [rectangular yellow label, printed]. Second label: [rectangular white label, printed], Udržal, R. leg. same locality and date than the holotype. 2 ♂♂ and 2 ♀♀, – (PMSL); 2 ♂♂ and 2 ♀♀, – (NMPO); 6 ♂♂ and 6 ♀♀, – (CRUM); 1 ♂ and 1 ♀, – (CRLI); 1 ♂ and 1 ♀, – (CJBM).

Specimens dissected (body parts, aedeagus, genital segments, protarsi, and antenna) preserved immersed in glycerine on glass microscope slides, same locality and date as the holotype. 4 ♂♂ and 2 ♀♀, – (NMPO).

Acknowledgements

The authors would like to thank Jiří Brestovanský for preparing the specimens of the new species for the study. We would also like to thank the reviewers for their constructive comments.

References

- Apfelbeck, V.** (1907): Zur Höhlenfauna der Balkanhalbinsel. I. – Neue Höhlenkäfer aus Bosnien und Dalmatien. *Wiener entomologische Zeitung*, 26(10): 313–321.
- Culver, D.C., Pipan, T.** (2014): *Shallow Subterranean Habitats. Ecology, Evolution, and Conservation*. Oxford University Press, Oxford, 257 pp.
- Fresneda, J., Giachino, P.M., Salgado, J.M., Faille, A., Bourdeau, C., Cieslak, A., Ribera, I.** (2024): A phylogenetic classification of Leptodirini (Coleoptera, Leiodidae, Cholevinae). *Memorie della Società Entomologica Italiana*, 101: 3–936.
- Giachino, P.M., Vailati, D.** (2010): *The Subterranean Environment. Hypogean life, concepts and collecting techniques*. *WBA Handbooks*, Verona, 3, 132 pp.
- Guéorguiev, V.B.** (1976): Recherches sur la taxonomie, la classification et la phylogénie des Bathysciinae (Coleoptera Catopidae). Ljubljana, *Razprave SAZU*, 19(4): 91–129.
- Hlaváč, P., Perreau, M., Čeplík, D.** (2017): *The Subterranean Beetles of the Balkan Peninsula*. Praha, Czech University of Life Sciences, Faculty of Forestry and Wood Sciences, Department of Forest Protection and Entomology, 267 pp.
- Jeannel, R.** (1910): Essai d'une nouvelle classification des Silphides cavernicoles. *Archives de Zoologie expérimentale et générale*, 45(1): 1–48.
- Jeannel, R.** (1911): Révision des Bathysciinae (Coléoptères Silphides). Monographie; distribution géographique, systématique. *Archives de Zoologie expérimentale et générale*, 471: 641 pp.

- Jeannel, R.** (1924): Monographie des Bathysciinae. *Archives de Zoologie expérimentale et générale*, 63(1): 434 pp.
- Juberthie, C., Delay, B., Bouillon, M.** (1980): Extension du milieu souterrain en zone non-calcaire: description d'un nouveau milieu et de son peuplement par les coleopteres troglobies. *Mémoires de Biospéologie*, 7: 19–52.
- Laneyrie, R.** (1967): Nouvelle classification des Bathysciinae (Coleopteres Catopidae). *Annales de Spéléologie*, 22(3): 58–645.
- Müller, J.** (1914): Zur Kenntnis der Höhlen und Subterranfauna von Albanien, Serbien, Montenegro, Italien und des österreichischen Karstgebietes. *Sitzungsberichte der Akademie der Wissenschaften in Wien, Mathematisch-naturwissenschaftliche Klasse*, 123(1): 1001–1030.
- Müller, G.** (1934): Diagnosi preliminari di Coleotteri ipogei et cavernicoli. *Atti del Museo civico di Storia naturale, Trieste*, 12: 176–181.
- Newton, A.F.** (1998): Phylogenetic problems, current classification and generic catalog of world Leiodidae (Including Cholevidae). In: Giachino P.M. & Peck S.B. (Eds.), *Phylogeny and Evolution of Subterranean and Endogean Cholevidae (= Leiodidae Cholevinae)*. *Proceedings of a Symposium (30 August 1996, Florence, Italy) at XX International Congress of Entomology. Atti Museo Regionale di Scienze Naturali, Torino*: 41–178.
- Perreau, M.** (2015): Leiodidae, In: Löbl I. & Löbl D., (Eds.): *Catalogue of Palearctic Coleoptera. (Hydrophiloidea - Staphylinoidea)*. Revised and Updated Edition, Brill, Leiden, Boston: 180–290.
- Pretner, E.** (1968): Coleoptera, Fam. Catopidae, Subfam. Bathysciinae. *Catalogus faunae Jugoslaviae* III. /6, Ljubljana, Slovenska akademija znanosti in umetnosti SAZU: 59 pp.
- Pretner, E.** (1970): Pripombe h katalogu Laneyriejevi novi klasifikaciji subfam. Bathysciinae (Coleoptera) in pojasnila h katalogu subfam., Bathysciinae. *Acta carsologica*, 5: 343–365.
- Pretner, E.** (1973): Kolopterološka fauna pečina i jama Hrvatske s historijskim pregledom istraživanja. *Krš Jugoslavije*, 8(6): 101–239.
- Pretner, E.** (1977): Pregled podzemne faune koleoptera Crne Gore. Crnogorska akademija nauka i umjetnosti, *Glasnik odjeljenja prirodnih nauka*, 2: 91–186.
- Reitter, E.** (1913): Sechs neue von Herrn Weirather in Bosnien entdeckte Höhlensilphiden. *Koleopterologische Rundschau*, 2(10): 153–157.
- Reitter, E.** (1918): Vier neue Coleopteren aus Albanien. *Wiener Entomologische Zeitung*, 37(4–7): 153–155.
- Schaufuss, L.W.** (1862): Über zwei neue Höhlenkäfer. *Sitzungs-Berichte der Naturwissenschaftlichen Gesellschaft Isis in Dresden*: 145–147.