

## A new species of the millipede genus *Epanerchodus* from western Nepal (Diplopoda: Polydesmida: Polydesmidae)

### Новый вид диплопод рода *Epanerchodus* из Западного Непала (Diplopoda: Polydesmida: Polydesmidae)

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**ABSTRACT.** *Epanerchodus telnovi* sp.n. is described from Nepal, the first in its genus to be recorded from the western part of the country. This is presently the westernmost representative of that very large genus in the Himalayas, differing from the other six congeners known from Nepal by a single postfemoral process of the gonopod.

**РЕЗЮМЕ.** Из Непала описан *Epanerchodus telnovi* sp.n., первый вид рода, отмечаемый в западной части страны. Это пока самый западный представитель этого очень большого рода в Гималаях, отличающийся от остальных шести видов рода, известных из Непала, единственным постфеморальным отростком гонопода.

#### Introduction

The millipede genus *Epanerchodus* Attems, 1901 is amongst the most species-rich genera of millipedes globally, and certainly the most speciose in Asia [Engelhoff *et al.*, 2015]. The genus contains medium- to large-bodied species of Polydesmidae. *Epanerchodus* spp. are primarily characterized by the seminal groove starting mesally, making a distinct distolateral loop on the gonopodal femorite, then recurving laterad (near the base of an always strongly elaborate endomere, with or without an exomere) to enter a large accessory seminal chamber that largely opens on a hairy pulvillus [e.g., Liu, Golovatch, 2018]. The genus *Epanerchodus* shows a Palearctic distribution and currently comprises 122 accepted species ranging from Central Asia in the northwest (Uzbekistan and Tajikistan), through Afghanistan and Pakistan, to the Russian Far East (Maritime Province, Sakhalin and Kuril Islands), Korea and Japan in the east, and the Himalayas and China (together with

Taiwan) in the south and southeast [Liu, Golovatch, 2018; Liu, Huo, 2020; Golovatch, 2021]. Numerous species are troglobitic or high-montane, yet quite a few are lowland to mid-montane [Liu, Golovatch, 2018].

At present, the Himalayas harbour six described and one still undescribed species from Nepal or Bhutan [Golovatch, Martens, 2018]. The following six species have been known to occur in Nepal, all presumably narrow endemics [Golovatch, 1986, 1987, 1990]:

*E. anachoretus* (Golovatch, 1986), Ramechap District; *E. buddhis* (Golovatch, 1986), Dolpo District; *E. occultus* (Golovatch, 1986), Mustang and Parbat districts;

*E. sacer* (Golovatch, 1987), Gorkha District; *E. theocraticus* (Golovatch, 1990), Taplejung District; *E. theosophicus* (Golovatch, 1986), Rasuwa District.

All were originally described in *Usbekodesmus* Lohmander, 1933, but transferred to *Epanerchodus* since their synonymization by Golovatch *et al.* [2011].

As one can easily see, all of them are confined to Nepal's eastern or central parts. The more so interesting seems to be the discovery of a new mountainous congener in western Nepal. This represents yet the westernmost record of *Epanerchodus* in the entire Himalayas.

#### Material and methods

The sample underlying this contribution was donated to me for treatment by Dmitry Telnov (Riga, Latvia), housed in the Zoological Museum of the State University of Moscow (ZMUM), Russia. The pictures were taken with a Canon EOS 5D digital camera and stacked using Zerene Stacker software. Final image processing was performed with Adobe Photoshop CC.

## Description

*Epanerchodus telnovi* Golovatch **sp.n.**  
Figs 1–5.

HOLOTYPE ♂ (somewhat macerated and broken into three pieces) (ZMUM), Western Nepal, Karnali Prov., Humla Distr., ca 12–13 km SE of Simikot, N 29°54'23"–29°54'00", E 81°55'7"–81°55'11", 2990–3310 m, disturbed mixed forest, 17–18.VI.2022, D. Telnov leg.

NAME. Honours Dmitry Telnov, the collector.

DIAGNOSIS. Differs from congeners by the relatively small size (width ca 2.0 mm), coupled with the head being narrower than the collum, the absence of sphaerotrichomes, lateral bulges on ♂ prefemora, and an exomere, and the shapes of the endomere (**en**) and its single, basal, postfemoral process (**pf**). See also Remarks below.

DESCRIPTION. Length ca 14 mm, width of midbody pro- and metazonae 1.0 and 2.0 mm, respectively (♂). Col-



Figs 1–3. *Epanerchodus telnovi* **sp.n.**, ♂ holotype: 1–2 — habitus, dorsal and ventral views, respectively; 3 — anterior part of body, anterodorsal view. Pictures by K. Makarov, not taken to scale.

Рис. 1–3. *Epanerchodus telnovi* **sp.n.**, голотип ♂: 1–2 — общий вид, соответственно сверху и снизу; 3 — передняя часть головы, одновременно спереди и сверху. Фотографии К. Макарова, сняты без масштаба.

ouration in alcohol uniformly brown with mostly lighter sterna and brown-yellow legs (Figs 1–3). Body with 20 segments.

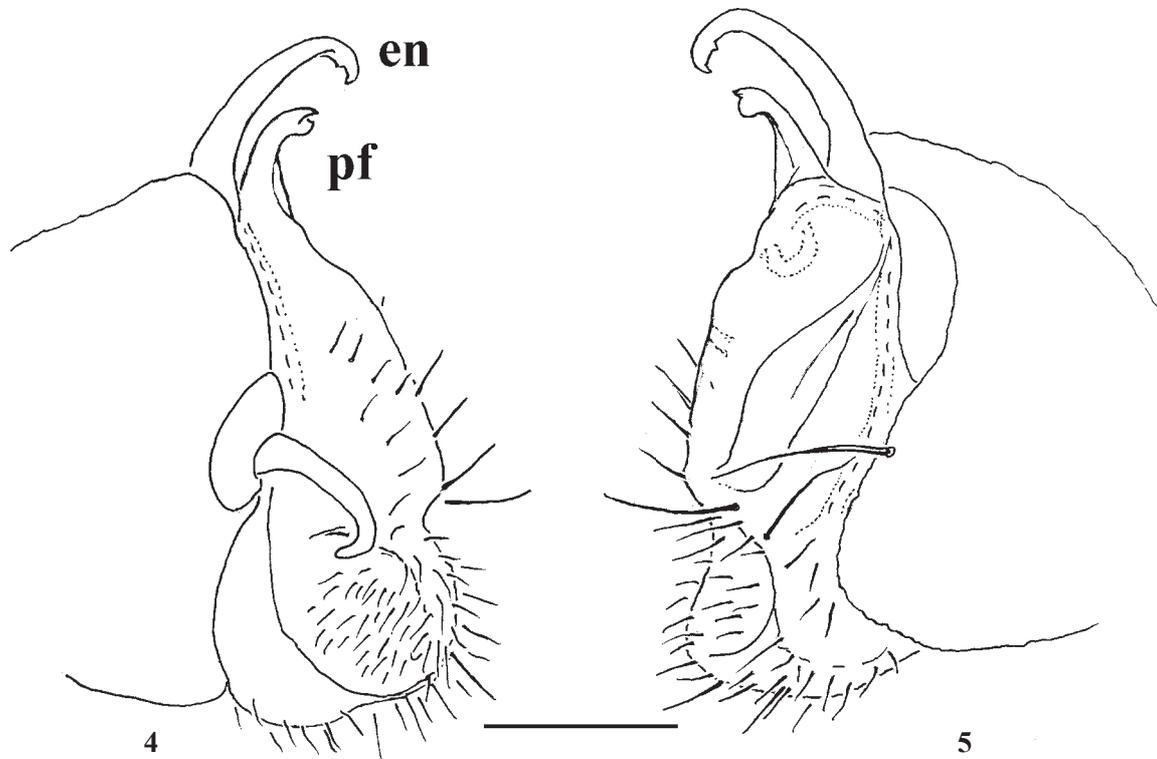
Tegument mostly dull, texture very delicately shagreened. Head pilose nearly throughout, with squarish genae. Antennae and most legs broken off. Interantennal isthmus about twice as large as diameter of antennal socket (Figs 2–3).

In width, head < collum < segment 3=4 < 2 < 5=15, thereafter body gradually tapering towards telson (Figs 1–3). Paraterga strongly developed, set high (at about upper ¼ of midbody height), starting with collum, dorsum very faintly convex; paraterga mostly weakly upturned above dorsum. Anterior shoulders and sides of paraterga mostly straight to only slightly rounded. Collum crescent-shaped, each side with only one lateral incision near midway (Figs 1, 3). Caudolateral corner of paraterga spiniform and pointed, post-collum ones extending increasingly past rear tergal margin starting with paraterga 4, especially clearly so on rings 17 and 18. All poreless paraterga with three, all pore-bearing ones with four, minute incisions at lateral margin. Front margins of metaterga narrowly bordered and forming distinct shoulders. Pore formula normal, ozopores small, but evident, dorsal, located in front of posteriormost marginal indentation. Metatergal sculpture typical, starting with collum, poorly developed, but readily visible, with three transverse rows of typical (= polydesmid), setigerous, polygonal bosses (Figs 1–3), anterior row being the most obliterate and caudal row the most evident (up to rough wrinkles on ring 18). Tergal setae very short, simple, mostly obliterated. Stricture between pro- and metazona wide, shallow and nearly smooth. Limbus very

thin, microdenticate. Pleurosternal carinae absent. Epi-proct rather short, conical, pre-apical lateral papillae inconspicuous. Hypoproct semi-circular; caudal, paramedian, setigerous papillae very prominent and well separated teeth (Fig. 2). Sterna without modifications, nearly flat, densely setose. Legs (♂) generally rather long and slender, apparently slightly incrassate (Figs 1–2), ca 1.7–1.8 times as long as midbody height, densely setose, almost all setae simple, very poorly branching setae with minute, distal, side branchlets being observed only on slender prefemora, the latter devoid of lateral bulges; sphaerotrichomes absent. In length, tarsus = femur > prefemur > coxa = postfemur = tibia (Fig. 2).

Gonopods (Figs 2, 4–5) with large, subquadrate coxites (**cx**) strongly fused medially at base and carrying a few long setae ventrally; a long, simple and unciform cannula, as usual. Telopodite elongated, stout, subfalcate only distally, prefemorite (= densely setose part) more than half as long as entire telopodite; seminal groove running mesally over most of its extent, only distally moving frontally to recurve first laterad and then a little basad at base of a longer, subunciform and quite simple endomere (**en**); an exomere absent; a round accessory seminal chamber hidden inside at base of a single, stout and apically unequally bifid postfemoral process (**pf**).

REMARKS. The new species differs readily from all hitherto known Himalayan congeners primarily by the single, undivided postfemoral process of the gonopod [Golovatch, 1986, 1987, 1990], in this respect rather resembling several species from China, e.g. *E. coniger* Liu et Golovatch, 2018, *E. parvus* Liu et Golovatch, 2018, *E. gladius* Liu et Golovatch, 2018 and some others, in which the single postfemoral



Figs 4–5. *Epanerchodus telnovi* sp.n., ♂ holotype, right gonopod, mesal and lateral views, respectively. Scale bar: 0.2 mm. Abbreviations explained in text.

Рис. 4–5. *Epanerchodus telnovi* sp.n., голотип ♂, правый гонопод, соответственно изнутри и сбоку. Масштаб: 0,2 мм. Объяснение обозначений в тексте.

process is relatively small, sometimes even barely discernible [Liu, Golovatch, 2018].

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