

The Millipede Genus *Koponenius* Golovatch & VandenSpiegel, 2014 Found in Myanmar (Diplopoda: Polydesmida: Haplodesmidae)

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Received: 21 January 2015; Accepted: 12 February 2015

Abstract.– *Koponenius*, the westernmost genus of the basically Australasian family Haplodesmidae which has hitherto been known by two species only, one each from Nepal and northern India, is recorded in Myanmar for the first time. It is represented there by *K. simplex* n. sp., from Chin State, the first haplodesmid to be described from Myanmar. This new species nicely fills in the considerable gap in the distribution of indigenous Haplodesmidae lying between the Himalayas, on the one hand, and Thailand and Yunnan Province, southern China, on the other hand.

KEY WORDS: Polydesmida, *Koponenius*, taxonomy, new species, distribution, Myanmar

INTRODUCTION

The diplopod genus *Koponenius* Golovatch & VandenSpiegel, 2014, has only been described very recently, being represented by *K. unicornis* Golovatch & VandenSpiegel, 2014, the type-species from the Himalayas of Darjeeling District, northeastern India, and *K. biramus* Golovatch & VandenSpiegel, 2014, from eastern Nepal (Golovatch and VandenSpiegel, 2014). This oligotypic genus seems to be the westernmost native member of the basically Australasian family Haplodesmidae. The latter family is rather small, encompassing some 70+ species from seven genera (Golovatch and VandenSpiegel, 2014). Of them, 40 species currently belong to the largest and especially widespread genus *Eutrichodesmus* Silvestri, 1910, which ranges from southern Korea, southern Japan and Taiwan in the northeast, through southern continental China, Indochina,

Malay Peninsula and Indonesia, to New Guinea and Melanesia in the southeast. Thus, the indigenous distribution of this genus largely repeats that of the entire family, except for its absence from Australia. The westernmost representatives of *Eutrichodesmus* are known from Thailand and Yunnan Province, China, several species being presumed troglobionts (Golovatch et al., 2009a, 2009b). Therefore, a very considerable gap has been observed so far in the distribution of indigenous Haplodesmidae between the Himalayas, on the one hand, and Thailand and Yunnan Province, southern China, on the other hand.

All the more important is the first Haplodesmidae to be found in Myanmar. It represents a new species of *Koponenius* and is being described below.

MATERIAL AND METHODS

The material treated below has been taken in Chin State, western Myanmar by Peter Jäger, of the Senckenberg Museum, Frankfurt/M. (SMF), Germany. The holotype and most of the paratypes, including the one studied using scanning electron microscopy (SEM), are housed in SMF, whereas two paratypes are retained for the collection of the Zoological Museum of the Moscow University (ZMUM + entry number), as indicated below.

DESCRIPTION

Koponenius simplex n. sp.

(Figs. 1-3)

Holotype.— ♂ (SMF), Myanmar, southern Chin State, Nat Ma Taung National Park, road Kampetlet – Mindat, N 21°12'33.8", E 94°01'26.8", 2150 m a.s.l., disturbed primary forest, litter, Winkler extraction, 11.V.2014, leg. P. Jäger.

Paratypes.— 3 ♀, 1 incomplete ♀ (only segments 7-19 retained) (SMF), 1 ♂, 1 ♀ (ZMUM p2558), 1 ♂ (SEM), same locality, together with holotype; 3 ♂ (1 ♂ lacking the head and segments 1-6), 3 ♀ (1 ♀ lacking segments 16-19), Myanmar, southern Chin State, above Kampetlet, below Mountain Oasis Resort, 1585 m a.s.l., N 21°11'43.6", E 94°02'1.1", secondary forest along stream, 10.V.2014, leg. P. Jäger & J. Martens.

Name.— To emphasize the relatively simple collum and gonopod structure compared to both other congeners known so far; adjective.

Diagnosis.— Differs clearly from *K. unicornis* by the absence of a conspicuous median projection at the anterior margin of the collum, from *K. biramus* in the uniramous gonopod telopodite (Golovatch and VandenSpiegel, 2014).

Description.— Length in both sexes ca 9-10 mm, width ca 0.8-0.9 and 1.0-1.1 mm on midbody pro- and metazonae, respectively. Holotype ca 10 mm long, 0.8 and 1.0 mm wide on midbody pro- and metazonae, respectively. Coloration in alcohol mostly rusty to grey-brown, including vertigial region of head, as well as most of pleurosternal and midsternal regions, but pattern evident due to contrasting pale, mostly whitish clypeolabral and occipital regions of head, antennae, prozonae, porosteles, legs, epi-, hypo- and paraprocts (Fig. 1).

Body with 19 segments in both sexes, subcylindrical, not capable of volvation. Collum and following metaterga clothed with a dense, dull, microvillose ceratgement crust (Fig. 2A-M); vertigial region down to a well-expressed border with clypeolabral region clearly granular (Fig. 2H). Clypeolabral region densely setose (Fig. 2H). Antennae short and clavate, in situ each placed inside a deep, transverse, nearly C-shaped groove (Fig. 2H); in length, antennomere 6 > 2 > 1 > 3=4=5; both antennomeres 5 and, especially, 6 with a tight dorso-apical group of bacilliform sensilla.

In width, head < collum < segment 2=4 < 3 < 5=15, thereafter body gradually tapering towards telson (Fig. 2D-F). Collum hood-shaped, regularly rounded at fore margin, concealing the head from above (Fig. 2A, D, H). Paraterga rather well developed, strongly declined, mostly wing-shaped, set low (at about lower ¼ of midbody height), starting from collum, laterally vaguely lobulate (Figs. 1 & 2A-C, K). Paraterga 2 clearly enlarged, subtending the head on both sides. Dorsum very convex (Figs. 1 & 2A-G). Postcollum metaterga usually with 4-5, regular, transverse rows of rather flat, sometimes clearly obliterated, setigerous, isostictic (= regular in axial direction), mostly roundish

bosses or tubercles (Figs. 1 & 2A-G); caudal row of particularly elongate bosses forming a faint constriction (Fig. 2B, E), caudal series of lobulations ending up in a distinct crenulate limbus (Fig. 2E, F, I, M); fore row likewise forming a row of similar lobulations (Figs. 1 & 2A-F). Caudolateral corner of

postcollum paraterga mostly well rounded, nearly pointed only in segments 17 and 18 (Fig. 2C, F). Ozopores borne on conspicuous dorsolateral porosteles, these lying close to caudolateral corners of paraterga; pore formula 5, 7–18 (Figs. 1 & 2A-K). Tergal setae filiform, rather long (Fig. 2A).

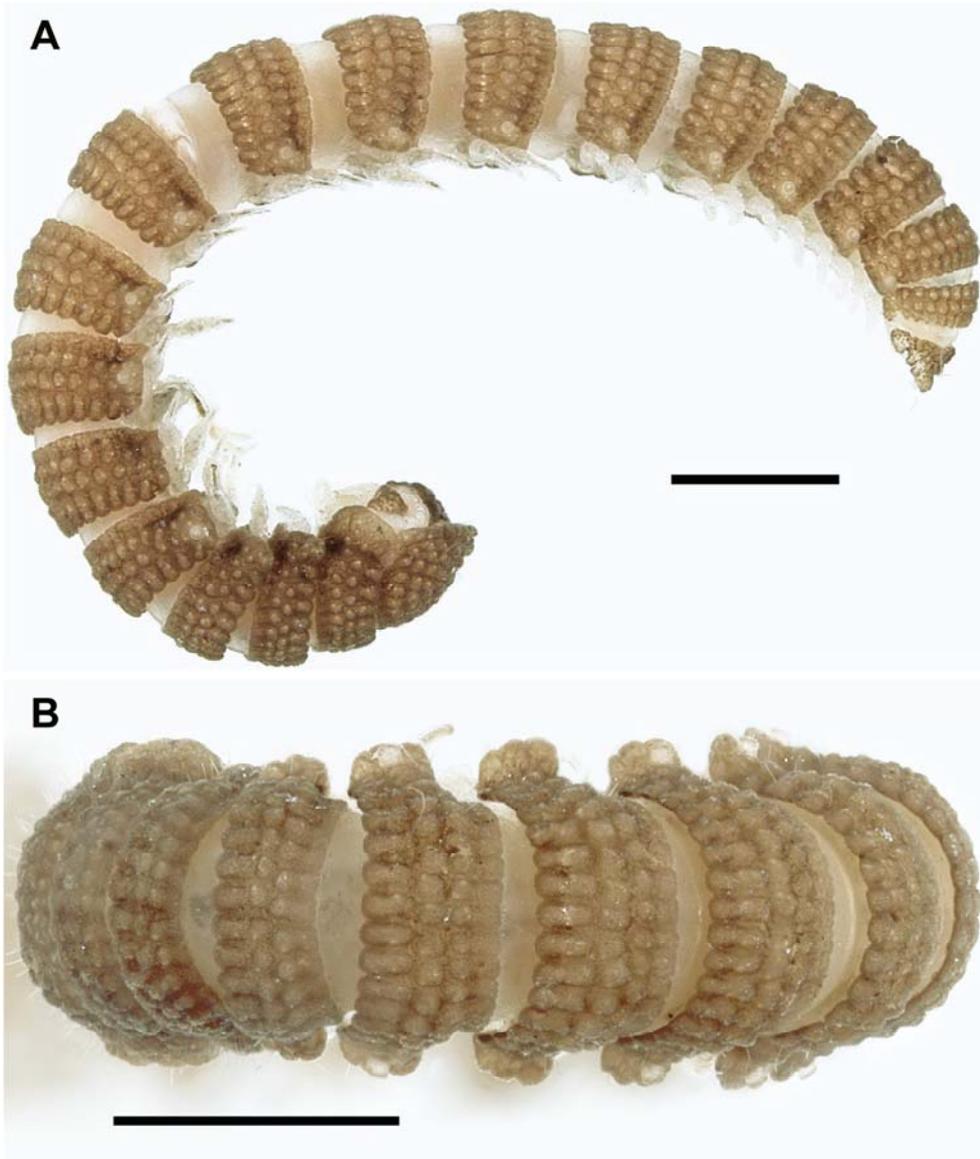


FIGURE 1. Habitus of *Koponenius simplex* n. sp., ♂ paratype, lateral (A) and dorsal (B) views, respectively. Pictures by D. VandenSpiegel, Scale bars: 1.0 mm.

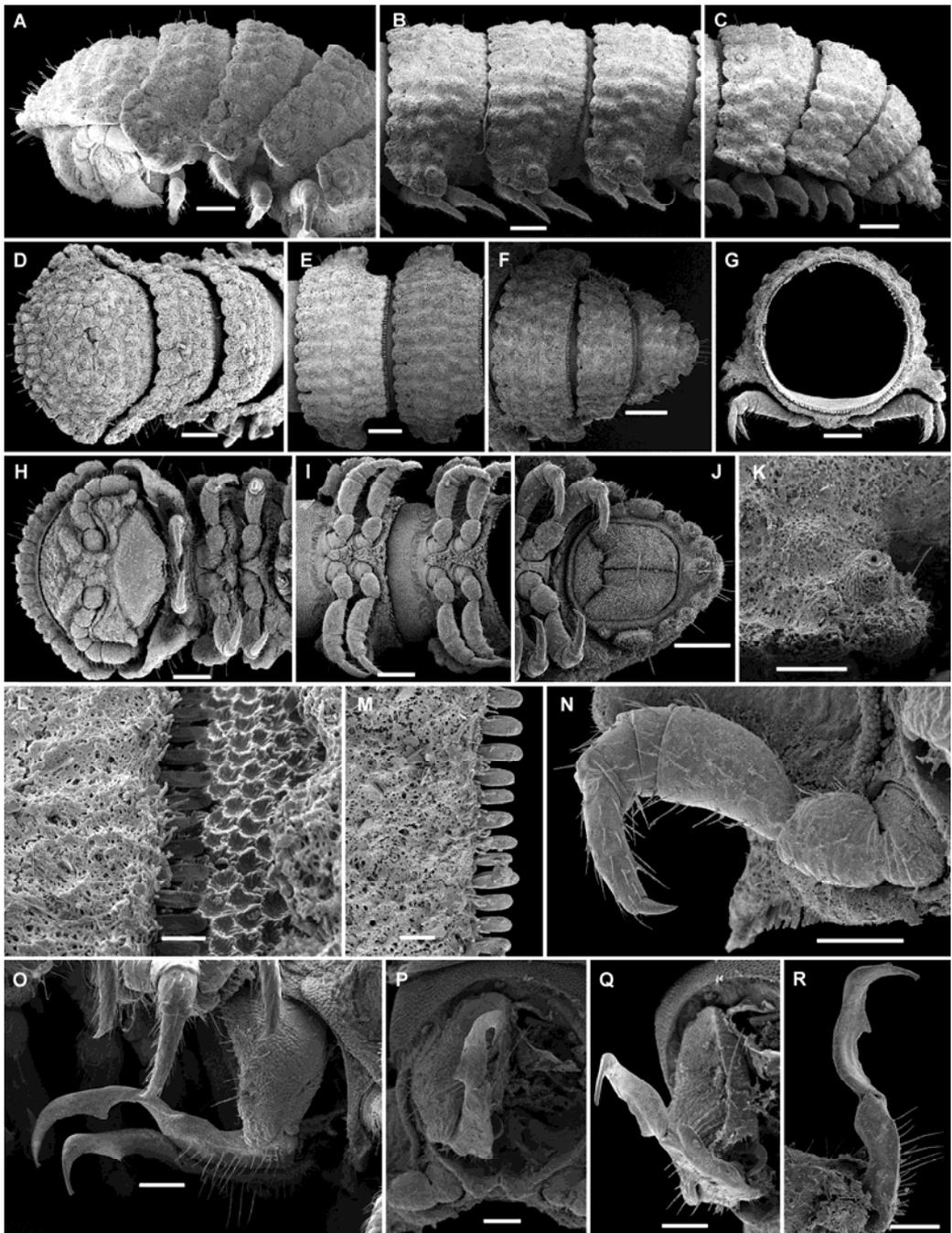


FIGURE 2. *Koponenius simplex* n. sp., ♂ paratype. (A, D, H) anterior body part, lateral, dorsal and ventral views, respectively; (B, E, I) midbody segments, lateral, dorsal and ventral views, respectively; (C, F, J) posterior body part, lateral, dorsal and ventral views, respectively; (G) cross-section of a midbody segment; (K) ozopore region, lateral view; (L) tergal texture, dorsal view; (M) limbus, dorsal view; (N) midbody leg, lateral view; (O) both gonopods in situ, lateral view; (P-R) right gonopod, ventral, ventromesal and lateral views, respectively. Scale bars: (A-J), 0.2 mm; (K, N-R), 0.1 mm; (L, M), 0.02 mm.

Epiproct strongly flattened dorsoventrally, lobulated laterally, subtruncate caudally, but tip located ventrally, invisible from above (Fig. 2C, F, J). Hypoproct subtrapeziform (Fig. 2J).

Sterna narrow, but evident, mostly slightly elevated due to small subtriangular lobules observed between both coxae (Fig. 2H-J). Spiracles apparently absent. Legs mostly tightly appressed to venter, densely setose, short and stout, about as long as body height and subequally incrassate in both sexes, devoid of micropapillae (Figs. 1, 2H-J, N & 3A).

Gonopods (Figs. 2O-R & 3B) with large, subcylindrical, mediobasally fused coxae carrying a small, but evident, rounded, lateral

lobe apically; cannulae long and slender. Telopodite strongly elongated, considerably longer than coxa, slender; prefemoral (= densely setose) portion suberect, nearly half as long as entire telopodite, set off from a subfalcate, rather gradually attenuate and narrowly truncate acropodite (= solenomere, **sl**) by a strong sulcus (**s**) on mesal face, devoid of a ventral projection, but supplied ventrally by a low membranous velum (**v**) at midlength, seminal groove shifted laterad shortly after its origin due to a twisted prefemoral portion, thereafter running only on lateral side to tip of **sl**. Neither an accessory seminal chamber nor a hairy pulvillus.

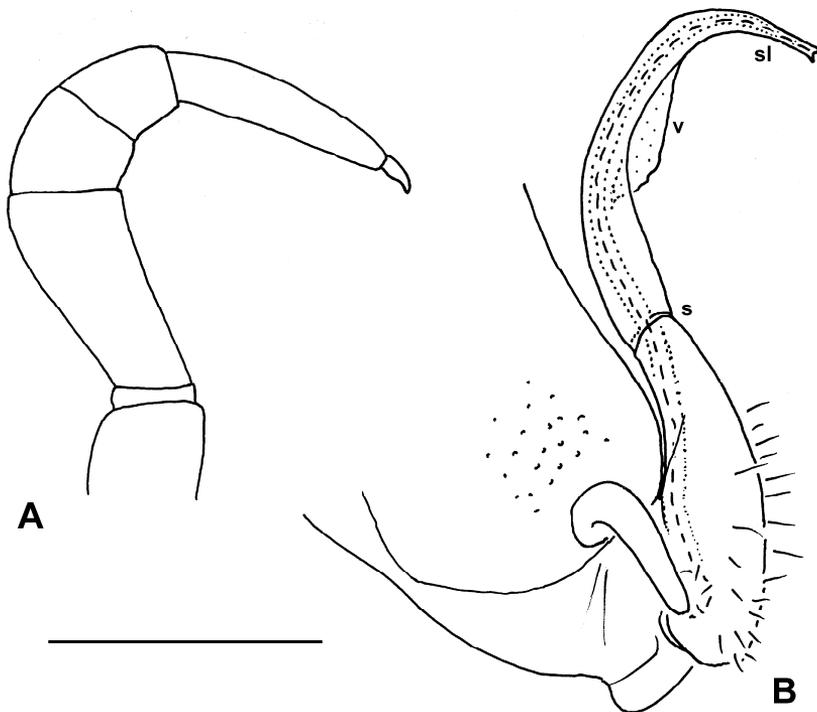


FIGURE 3. *Koponenius simplex* n. sp., ♂ paratype. (A) leg 9, lateral view; (B) left gonopod, mesal view. Scale bar: 0.1 mm. Designations explained in text.

ACKNOWLEDGEMENTS

We are most grateful to Peter Jäger (SMF) for the exciting material he rendered to us for treatment. Special thanks go to Henrik Enghoff (Natural History Museum of Denmark, Copenhagen, Denmark) for his critical review of an advanced draft.

LITERATURE CITED

- Golovatch, S.I. and VandenSpiegel, D. 2014. *Koponenius* gen. nov., a new genus of the millipede family Haplodesmidae from the Himalayas of India and Nepal (Diplopoda: Polydesmida). *Zootaxa*, 3894(1): 141-151.
- Golovatch, S.I., Geoffroy, J.-J., Mauriès, J.-P. and VandenSpiegel, D. 2009a. Review of the millipede family Haplodesmidae Cook, 1895, with descriptions of some new or poorly-known species (Diplopoda, Polydesmida). *ZooKeys*, 7: 1-53.
- Golovatch, S.I., Geoffroy, J.-J., Mauriès, J.-P. and VandenSpiegel, D. 2009b. Review of the millipede genus *Eutrichodesmus* Silvestri, 1910 (Diplopoda, Polydesmida, Haplodesmidae), with descriptions of new species. *ZooKeys*, 12: 1-46.
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