

Two new species of Glomeridellidae (Diplopoda: Glomerida) from the Middle East

Два новых вида семейства Glomeridellidae (Diplopoda: Glomerida) с Ближнего Востока

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КЛЮЧЕВЫЕ СЛОВА: *Typhloglomeris*, таксономия, новая синонимия, новые виды. Израиль, Сирия.

ABSTRACT: *Albanoglomerus* Attems, 1926 is formally synonymised under *Typhloglomeris* Verhoeff, 1898, syn.n. This results in the following transfers: *T. ljubetensis* (Attems, 1929), *T. asiaeminoris* (Strasser, 1975), *T. martensi* (Golovatch, 1981), *T. lohmanderi* (Golovatch, 1989), *T. alba* (Golovatch, 1989) and *T. kosswigi* (Golovatch, 1989), all comb.n., ex *Albanoglomerus*. Two new species of *Typhloglomeris* are described: *T. contrasta* sp.n. from Syria and *T. semitica* sp.n. from Israel. Based on a restudy of the holotype of *Glomeris klugii* Brandt, 1833, apparently mislabelled as being from Syria, this species is actually a senior subjective synonym of the common European *G. undulata* C. L. Koch, 1844, syn.n.

РЕЗЮМЕ: Род *Albanoglomerus* Attems, 1926 сведен в синонимы *Typhloglomeris* Verhoeff, 1898, syn.n. Установлены следующие новые комбинации: *T. ljubetensis* (Attems, 1929), *T. asiaeminoris* (Strasser, 1975), *T. martensi* (Golovatch, 1981), *T. lohmanderi* (Golovatch, 1989), *T. alba* (Golovatch, 1989) и *T. kosswigi* (Golovatch, 1989), все comb.n., из *Albanoglomerus*. Описано два новых вида рода *Typhloglomeris*: *T. contrasta* sp.n. из Сирии и *T. semitica* sp.n. из Израиля. На основе изучения голотипа *Glomeris klugii* Brandt, 1833, ошибочно этикетированного “Сирия”, установлено, что этот вид является старшим субъективным синонимом европейского *G. undulata* C. L. Koch, 1844, syn.n.

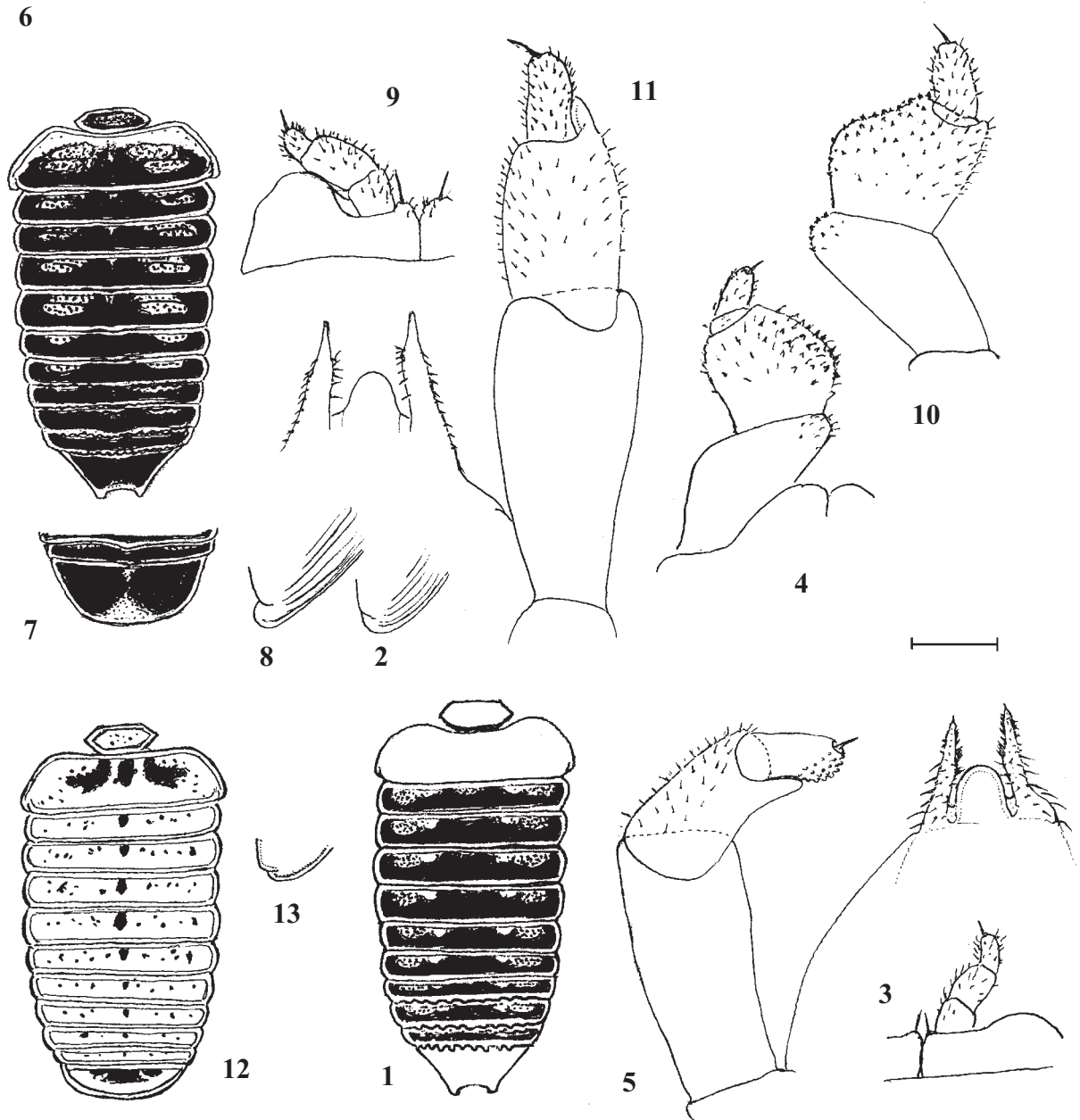
Introduction

Representatives of the millipede order Glomerida are not particularly diverse in the eastern Mediterranean. Only 10 species of *Trachysphaera* Heller, 1858, eight species of *Hyleoglomeris* Verhoeff, 1910, five species of *Albanoglomerus* Attems, 1926, two species of *Glomeris* Latreille, 1802/03 and one species each in

Epiromeris Strasser, 1976, *Glomerellina* Silvestri, 1908, *Onychoglomeris* Verhoeff, 1906 and *Typhloglomeris* Verhoeff, 1898 are currently known to occur in the Caucasus region, north-western Iran, Anatolia, Greece and Cyprus (cf. Golovatch, 1989a,b, 1990, 1993; Thaler, 1999).

Only two species of Glomerida have hitherto been reported from the entire Middle East south of Turkey. One is the minute *Trachysphaera* aff. *rotundata* (Lignau, 1911), a chiefly eastern Mediterranean taxon recently recorded from near Jerusalem, Israel [Tabacaru, 1995]. The second glomeridan is the much more conspicuous *Glomeris klugii* Brandt, 1833. This was first described very succinctly from a single female originating from “Syria or Egypt” [Brandt, 1833], but later [Brandt, 1840] its provenance was refined as “Syria”. Koch [1863], having apparently seen the holotype of *klugii*, still kept in the Berlin Museum, identified and beautifully illustrated *klugii*, based on material coming from “Idrien und Triest”. On geographical grounds alone, this record was logically questioned by Verhoeff [1923] in his survey of the Near Eastern diplopods, as *klugii* in the sense of Koch definitely represented the common and widespread European species *Glomeris conspersa* C. L. Koch, 1844, currently considered as only a colour form of *G. undulata* C. L. Koch, 1844 [cf. Hoess, 2000]. Verhoeff thus disagreed with Latzel [1884], who had incorrectly sunk *klugii* under *conspersa*, not vice versa. A few occasional reports of *G. klugii* [cf. Porat, 1893] or a *Glomeris* sp. [Bodenheimer, 1935, 1937] in the Levant complete our previous knowledge of the regional glomeridan fauna.

Recently, during a short-term collecting trip in Israel, I obtained material comprising, among others, a couple of glomeridan millipede specimens. An additional specimen was provided on the spot by Dr T. Pavliček, Haifa. Still one more sample, this time from Syria, was sent to me for study later by Prof. H. Enghoff, Copenhagen. All this material proved to include two



Figs 1-13. 1-5 — *Typhloglomeris contrasta* sp.n., ♂ holotype; 6-11 — *Typhloglomeris semitica* sp.n., ♂ holotype (6, 8-11) and ♀ paratype (7); 12-13 — *Glomeris klugii* Brandt, 1833, ♀ holotype. 1, 6 & 12 — habitus, dorsal view; 2, 8 & 13 — lateral part of thoracic shield, lateral view; 3 & 9 — leg 17; 4 & 10 — leg 18; 5 & 11 — telopods; 7 — caudal body part, dorsal view. — Scale bar: Figs 3-5, 9-11 = 0.2 mm; others not drawn to scale.

Рис. 1-13. 1-5 — *Typhloglomeris contrasta* sp.n., голотип ♂; 6-11 — *Typhloglomeris semitica* sp.n., голотип ♂ (6, 8-11) и паратип ♀ (7); 12-13 — *Glomeris klugii* Brandt, 1833, голотип ♀. 1, 6, 12 — габитус, дорсально; 2, 8, 13 — боковая часть грудного щита, латерально; 3, 9 — нога 17; 4, 10 — нога 18; 5, 11 — телоподы; 7 — каудальная часть тела, дорсально. Масштаб: 0,2 мм для рис. 3-5, 9-11; остальные рисунки изображены без масштаба.

new species. This paper is devoted not only to their description, but also to a brief taxonomic survey of the entire eastern Mediterranean fauna of Glomerida. The most important outcomes of the work are that *Albanoglomerus* Attems, 1926 is formally synonymised under *Typhloglomeris* Verhoeff, 1898; that all species previously placed in *Albanoglomerus* are formally transferred to *Typhloglomeris*; and that *Glomeris klugii* Brandt, 1833 becomes a senior subjective synonym of the common European species *G. undulata* C. L. Koch, 1844.

The following museum acronyms are applied: Zoological Museum, University of Tel Aviv, Israel (ZMTA), Zoological Museum, University of Copenhagen, Denmark (ZMUC) and Zoological Museum, University of Moscow, Russia (ZMUM).

Species descriptions

Typhloglomeris contrasta sp.n.

Figs 1–5.

Holotype ♂ (ZMUC), Syria, road Aleppo–Jisr ech-Chorghur, 20.03.1975; leg. Kinzelbach et al., ded. H. Schmalfuss.

DIAGNOSIS: Differs from congeners by the whitish-yellow collum, thoracic shield and pygidium strongly contrasting to the dark brown to blackish head, antennae and terga 3–11, coupled with minor peculiarities in structure of male leg-pairs 17–19.

DESCRIPTION: Length ca. 7 mm, width ca. 3.1 mm. Coloration strongly contrasting (Fig. 1): head and antennae rather uniform dark brown, labrum pale; collum, thoracic shield and pygidium entirely whitish-yellow, terga 3–11 blackish-brown with a large, transversely oval, laterally more or less strongly marbled spot on each side, anteromedian parts slightly paler than blackish background; legs pale brownish-gray. Ocelli black, convex, 7+1 on each side of head.

Collum with usual two transverse striae in anterior half. Thoracic shield with a very small hyposchism failing to project behind rear tergal contour; five very fine striae laterally (Fig. 2), of which distal four crossing the dorsum. Rear edges of terga 9–11 increasingly strongly and upright-denticulate. Pygidium somewhat flattened centrocaudally, rear edge with two large paramedian knobs (Fig. 1). Rear margin of most terga very slightly sinuate in middle.

Male legs 17 (Fig. 3) with rather low external coxal lobes and 3-segmented telopodites. Male legs 18 (Fig. 4) with medially swollen femora beset with small but evident denticles, telopodites 4-segmented. Male legs 19 (telopods) (Fig. 5) with a high syncoxital lobe connected to adjacent coxal horns by concave hyaline membranes; telopodites 4-segmented, tarsus strongly papillate distally.

Typhloglomeris semitica sp.n.

Figs 6–11.

Holotype ♂ (ZMTA), Israel, Nahal Keziv, near bottom of canyon, *Quercus* forest and dense undergrowth, litter, 05.03.2003; leg. S. Golovatch. — Paratypes: ♀ (ZMUM), same locality and date, collected with holotype; ♀ (ZMTA), same locality, pitfall traps, No. 04–3, 12.12.1998–02.01.1999; leg. M. Finkel.

DIAGNOSIS: Differs from congeners mainly by the red-orange anterior band on the thoracic shield, coupled with some minor peculiarities in structure of male leg-pairs 17–19.

DESCRIPTION: Length ca. 7–8 mm, width ca. 3.2 (♂ holotype) to 4.0 mm (♀ paratype). Background coloration of dorsum dark brown to blackish (Fig. 6): antennae uniform dark brown; head marbled dark brown, labrum and a few spots near and above antennal sockets paler; central part of collum marbled intensely yellowish-brown; thoracic shield with a broad orange-red band extending from hyposchism all along anterior edge of tergite; a large, transversely oval, yellowish-brown, marbled spot on each side of terga 2–11, traces of a pale axial line in front parts of these terga; pygidium either nearly entirely dark, a little paler only in front of caudomarginal knobs (♂ holotype) (Fig. 6) or with a more or less evident, subtriangular, central, pale spot caudally and an axial line frontally (♀ paratypes) (Fig. 7); legs rather light, reddish-brown. Ocelli black, convex, 7+1 (♂ holotype and ♀ paratype) or 8+1 (♀ paratype) on each side of head.

Collum with usual two transverse striae in anterior half. Thoracic shield with a small hyposchism slightly projecting behind rear tergal contour; four (♀ paratypes) or five (♂ holotype) very fine striae laterally (Fig. 8), of which 2, 3 (♀) or 4 (♂) crossing the dorsum. Rear edges of terga 8–11 increasingly strongly and upright-denticulate, this denticulation being especially poorly expressed on tergum 8. Pygidium somewhat flattened centrocaudally, rear edge with two large paramedian knobs (Fig. 6). Rear margin of most terga very slightly sinuate in middle.

Male legs 17 (Fig. 9) with rather high external coxal lobes and 3-segmented, relatively slender telopodites. Male legs 18 (Fig. 10) as in the previous species. Male legs 19 (telopods) (Fig. 11) with a high syncoxital lobe connected to adjacent coxal horns by oblique hyaline membranes; telopodites also 4-segmented, tarsus not so strongly papillate distally.

Conclusions

Although both the new species are definitely epigean and distinctly coloured, I now take the opportunity to formally suppress the genus *Albanoglomerus* Attems, 1926 as entirely superfluous. This action was suggested but not formalised earlier [Golovatch, 1989; Thaler 1999]. Čurčić & Makarov (in prep.) provide additional evidence in support of the synonymy, based on new material from the Balkan region. In other words, the following new synonymy is proposed herewith: *Typhloglomeris* Verhoeff, 1898 = *Albanoglomerus* Attems, 1926, syn. n. This also entails the following new combinations: *T. ljubetensis* (Attems, 1929), *T. asiaeminoris* (Strasser, 1975), *T. martensi* (Golovatch, 1981), *T. lohmanderi* (Golovatch, 1989), *T. alba* (Golovatch, 1989) and *T. kosswigi* (Golovatch, 1989), all comb.n., ex *Albanoglomerus*. All these species, together with *T. contrasta* sp.n. and *T. semitica* sp.n., are epigean (rarely trogliphilic (cf. Thaler, 1999)) and usually distinctly coloured, while the troglobites *T. coeca* Verhoeff, 1898 and *T. caucasica* Golovatch, 1975, as well as the presumed geobite *T. fumarana* Verhoeff, 1899, are unpigmented. The current distributions, as well as the main taxonomic, evolutionary and biogeographical issues, are discussed in Golovatch [1981, 1989], Thaler [1987, 1999] and Čurčić & Makarov (in prep.).

To finally establish the identity of the enigmatic *Glomeris klugii* Brandt, 1833, the holotype of this

species, which is still in rather good condition, was restudied vis-a-vis a rich sample of *G. undulata* C. L. Koch, 1844 from near Darmstadt, Germany (coll. ZMUM). Their side-by-side comparison shows quite unequivocally that these taxa are conspecific. This is obvious from the same body size, colour pattern (Fig. 12), structure of the hyposchism (Fig. 13), legs, etc. The only noteworthy difference concerns the complete lack of the usual fine striae on the thoracic shield. This was already emphasised in the original descriptions [Brandt, 1833, 1840]. However, as the number of such striae in *Glomeris* species generally tends to be quite low, usually ranging between one and three, and as this trait tends to vary quite considerably intraspecifically, I believe it reasonably safe to follow Koch [1863] in treating *klugii* as a European form, later identified by Latzel [1884] and Verhoeff [1923] as *G. conspersa* C. L. Koch, 1844. Since the latter taxon has recently been shown to represent only a colour morph of *G. undulata* C. L. Koch, 1844 [cf. Hoess, 2000], this means that *Glomeris klugii* Brandt, 1833 is a senior subjective synonym of *G. undulata* C. L. Koch, 1844, **syn.n.** The holotype of *G. klugii* must have simply been mislabelled.

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