

Several noteworthy records of millipedes (Diplopoda) from Central Asia

Несколько примечательных находок двупарноногих многоножек (Diplopoda) из Центральной Азии

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КЛЮЧЕВЫЕ СЛОВА: фаунистика, таксономия, распространение, иконография, Турмения, Казахстан.

ABSTRACT. New and mostly illustrated records of six millipede species are given from Turkmenistan or Kazakhstan.

РЕЗЮМЕ. Приведены новые и в основном иллюстрированные находки шести видов диплопод из Туркмения и Казахстана.

Introduction

Central Asia, a vast geographic region that supports strongly varied landscapes that range from lowland deserts to very high mountains and lies between the Caspian Sea and western Siberia, is long known to harbour a highly peculiar, albeit relatively poor millipede fauna [Read, Golovatch, 1994]. The present note provides new, mostly illustrated records of six Central Asian diplopods housed in the Zoological Museum of the Moscow University (ZMUM).

Taxonomy and faunistic records

Order Glomerida

Family Glomeridae

Hyleoglomeris kirgisica Golovatch, 1976

MATERIAL. 3 ex. (ZMUM), Kyrgyzstan, Chatkal Mt. Range, Sary-Chelek Nature Reserve, N 41°51', E 71°57', Meteorological Station, *Juglans* & *Malus* woodland, ca 1500 m a.s.l., under stones and in litter, 31.V.1993; 1 ex. (ZMUM), same locality, close to lake, *Picea* litter, 25.V.1993; 2 ex. (ZMUM), Alash-Tau Mountains, S of Alash, N 41°11', E 72°39', *Juglans regia* & *Crataegus* woodland with grassy glades, *Crataegus* litter, 26.V.1993; 17 ex. (ZMUM), Bobash-Ata Mountains, Yarodar Research Station near Arslanbob, N 41°22', E 72°52', *Juglans regia* woodland with mixed forest, 1200–1550 m a.s.l., litter, 12–17.V.1993, all H. Read leg.; 8 ex.

(ZMUM), same locality and habitat, ca 6 km S of Alash, 25–26.V.1993, S. Golovatch leg.

REMARKS. The above samples are either strict topotypes (Sary-Chelek Nature Reserve, Golovatch [1976]) or near-topotypes. These records were published earlier, but without underlying material being listed [Read, Golovatch, 1994].

Only two species of Glomerida, both from the genus *Hyleoglomeris* Verhoeff, 1910, are presently known to occur in entire Central Asia: the above *H. kirgisica*, from the western Tien-Shang Mountains, and *H. bohaci* Golovatch, 2015, from the Varzob Canyon, Ghissar Mt. Range, Tajikistan [Golovatch, 2015].

Order Julida

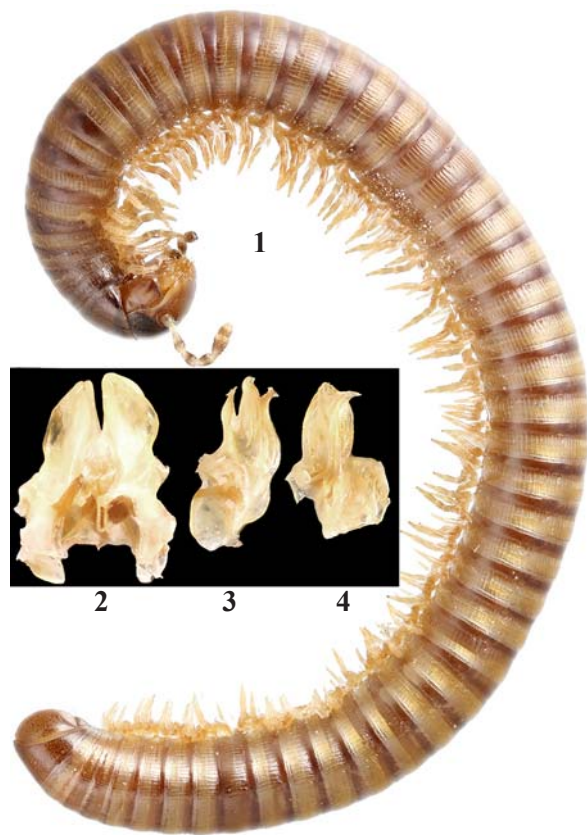
Family Julidae

Cylindroiulus orientalis Read, 1994

Figs 1–4.

MATERIAL. Numerous ♂♂, ♀♀ and juveniles (ZMUM), E Kazakhstan, East Kazakhstan Area, Urjar Distr., Tarbagatai Mountains, Urjar River valley, 4 km N of Alekseevka, N 47°17', E 81°34', ca 1000 m a.s.l., *Populus*, *Malus*, *Salix* etc. forest with *Rosa*, *Lonicera* etc. bushes, 24–25.VI.2001; numerous ♂♂, ♀♀ and juveniles (ZMUM), E Kazakhstan, East Kazakhstan Area, Makanchi Distr., Tarbagatai Mountains, 6 km NE of Kirovka (= Karatuma), Sholakterek River valley, N 47°10', E 82°06', ca 1200 m a.s.l., highly disturbed *Populus* forest with *Salix*, *Rosa*, *Lonicera*, *Crataegus* etc. bushes, 23–24.VI.2001; numerous ♂♂, ♀♀ and juveniles (ZMUM), E Kazakhstan, East Kazakhstan Area, Makanchi Distr., Tarbagatai Mountains, Kyzylbulak River valley, 4 km NE of Petrovskoe (= Kyzylbulak), N 47°03', E 82°18', ca 1100–1200 m a.s.l., riverine *Populus*, *Malus*, *Salix* etc. forest, 22.VI.2001, all S. Golovatch leg.

REMARKS. This species is presently the easternmost in the natural distribution area of the entire Ancient Mediterranean genus *Cylindroiulus* Verhoeff, 1894. This very large genus currently encompasses 130+ species ranging from Macaronesia in the west to Central Asia in the east, mostly narrowly endemic, although about a dozen species are anthropochoric and up to subcosmopolitan in distribution



Figs 1–4. *Cylindroiulus orientalis* Read, 1994, ♂♂ from near Alekseevka: 1 — habitus, lateral view; 2 — both promeres and tightly attached mesomeres, caudal view; 3, 4 — left opisthomere, mesal and caudolateral views, respectively. Photographs by K.V. Makarov, taken not to scale.

Рис. 1–4. *Cylindroiulus orientalis* Read, 1994, ♂♂ из окрестностей Алексеивки: 1 — общий вид, сбоку; 2 — оба промера и тесно прижатые к ним мезомеры, сзади; 3, 4 — левый опистомер, соответственно изнутри и одновременно сзади и сбоку. Фотографии К.В. Макарова, сняты без масштаба.

[Minelli, 2015]. The above samples are near-topotypes, as they also come from the Tarbagatai Mountains within eastern Kazakhstan [Read, 1994]. New illustrations (Figs 1–4) are provided to document the identity.

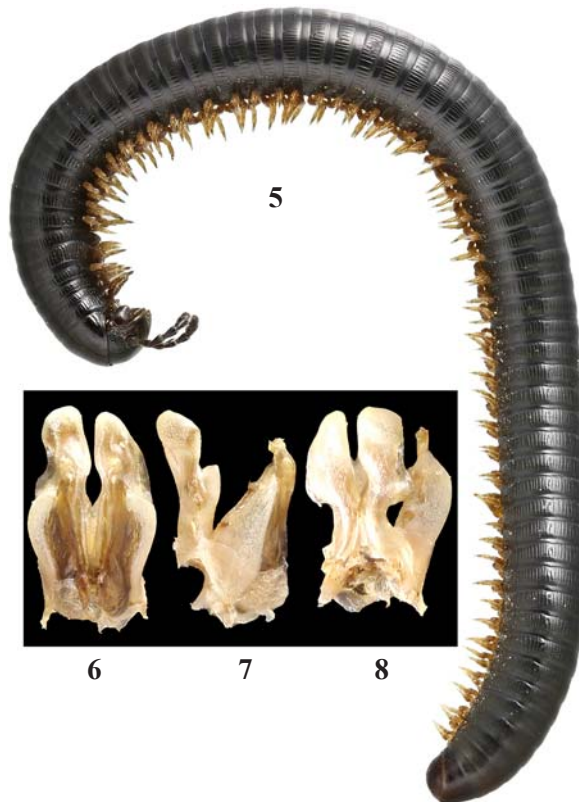
Parapachyiulus recessus Golovatch, 1979
Figs 5–8.

MATERIAL. 1 ♂ (ZMUM), Tajikistan, Varzob Region, Kondara Canyon, 1987, collector unknown.

REMARKS. As this species was originally described from several places in western Tajikistan [Golovatch, 1979], the above new sample can be regarded as near-topotypic and the first to be recorded from Kondara. New illustrations (Figs 5–8) are provided to document the identity. Further two congeners are only known to occur in Israel [Golovatch, 2018].

Peltopodoiulus schestoperovi Lohmander, 1933
Figs 9–12.

MATERIAL. 1 ♀ (ZMUM), Turkmenistan, near Bakharden (= Bäherden), near Cave Kov-Ata, 5.II.1982, K.G. Mikhailov leg.; 2 ♂♂, 7 ♀♀ (ZMUM), Turkmenistan, SW Kopet-Dagh Mountains, ca 10 km SE of Kara-Kala (= Magtymguly), Kalaligez Canyon, litter, 28–29.IV.1993, D.V. Logunov leg.



Figs 5–8. *Parapachyiulus recessus* Golovatch, 1979, ♂ from Kondara Canyon: 5 — habitus, lateral view; 6–8 — gonopod block, caudal, mesal and oral views, respectively. Photographs by K.V. Makarov, taken not to scale.

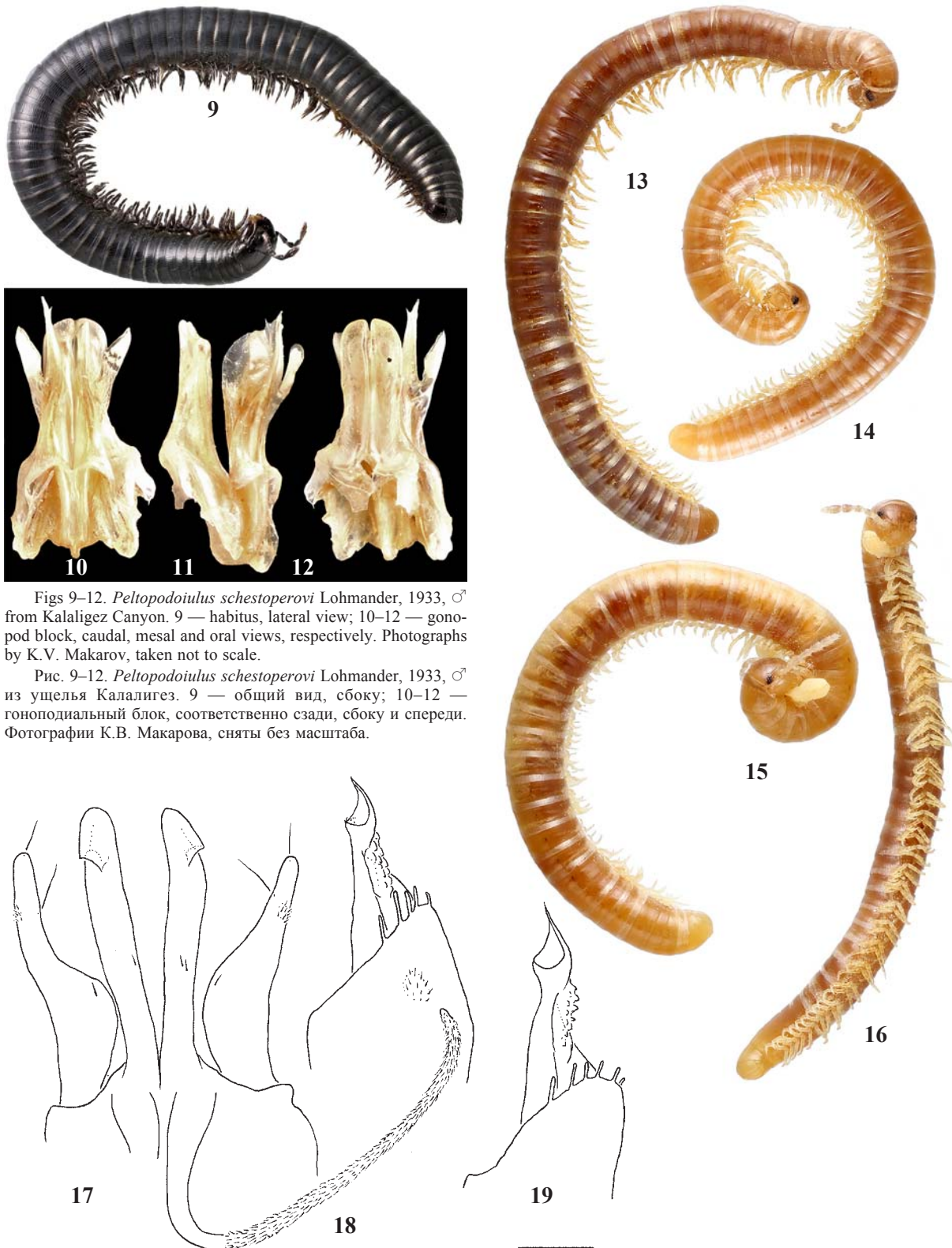
Рис. 5–8. *Parapachyiulus recessus* Golovatch, 1979, ♂ из ущелья Кондара: 5 — общий вид, сбоку; 6–8 — гоноподиальный блок, соответственно сзади, сбоку и спереди. Фотографии К.В. Макарова, сняты без масштаба.

REMARKS. This is the only component species of the genus *Peltopodoiulus* Lohmander, 1933, endemic to the western Kopet-Dagh Mountains in Turkmenistan [Lohmander, 1933]. The above samples are therefore near-topotypes, being illustrated (Figs 9–12) to document the identity.

Family Nemasomatidae
Orinisobates sibiricus (Gulička, 1963)
Figs 13–19.

MATERIAL. Numerous ♂♂, ♀♀ and juveniles (ZMUM), E Kazakhstan, Almaty Area, Dzhungarsky Alatau Mountains, 7 km E of Lepsinsk, Chornaya River canyon, N 45°31', E 80°43', 1200–1400 m a.s.l., *Betula*, *Malus*, *Populus* etc. forest, 13–15.VI.2001, S.I. Golovatch leg.

REMARKS. This species is common and highly widespread in Central Asia (Kyrgyzstan and eastern Kazakhstan) and western, central and eastern Siberia [Mikhaljova, 2017]. Even though the Dzhungarsky Alatau Mountains support two species of *Orinisobates* Lohmander, 1933, i.e. *O. kasakstanus* (Lohmander, 1933) and *O. sibiricus* as refined by Eng-hoff [1985], the above new samples clearly represent the latter species. New illustrations (Figs 13–19) are provided to document its identity and to show minor structural variations.



Figs 9–12. *Peltopodiulus schestoperovi* Lohmander, 1933, ♂ from Kalaligez Canyon. 9 — habitus, lateral view; 10–12 — gonopod block, caudal, mesal and oral views, respectively. Photographs by K.V. Makarov, taken not to scale.

Рис. 9–12. *Peltopodiulus schestoperovi* Lohmander, 1933, ♂ из ущелья Калалигез. 9 — общий вид, сбоку; 10–12 — гоноподидальный блок, соответственно сзади, сбоку и спереди. Фотографии К.В. Макарова, сняты без масштаба.

Figs 13–19. *Orinisobates sibiricus* (Gulička, 1963), adult ♂♂ (13–14, 17–19) and ♀♀ (15–16) from near Lepsinsk. 13–16 — habitus (13–15 — lateral, 16 — subventral views); 17 — both anterior gonopods, caudal view; 18, 19 — right posterior gonopods, mesal views. Photographs by K.V. Makarov, taken not to scale; line drawings by the author. Scale bar — 0.1 mm.

Рис. 13–19. *Orinisobates sibiricus* (Gulička, 1963), взрослые ♂♂ (13–14, 17–19) и ♀♀ (15–16) из окрестностей Лепсинска. 13–16 — общий вид (13–15 — сбоку, 16 — сбоку и почти снизу); 17 — оба передних гонопода, сзади; 18, 19 — правый задний гонопод, изнутри. Фотографии К.В. Макарова, сняты без масштаба; рисунки автора. Масштаб — 0,1 мм.

Order Polydesmida
Family Polydesmidae

Brachydesmus pigmentifer Attems, 1951

MATERIAL. 4 ♀♀ (ZMUM), Turkmenistan, SW Kopet-Dagh Mountains, ca 10 km SE of Kara-Kala (= Magtymguly), Kalaligez Canyon, litter, 28–29.IV.1993, D.V. Logunov leg.

REMARKS. This species has been nicely illustrated elsewhere [Golovatch et al., 2016] and it seems to be endemic to the Hyrcanian biogeographic province of the Caucasus region, ranging from the Hyrcanian part of the Republic of Azerbaijan, through northern Iran, to the western Kopet-Dagh Mountains of Turkmenistan [Golovatch et al., 2016, 2022]. In Turkmenistan, all samples are uniformly light yellow.

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