

The cave millipede *Trachysphaera fragilis* Golovatch, 1976,  
new to the fauna of Abkhazia, western Caucasus  
(Diplopoda: Glomerida: Glomeridae)

Пещерная диплопода *Trachysphaera fragilis* Golovatch, 1976,  
новая для фауны Абхазии (Западный Кавказ)  
(Diplopoda: Glomerida: Glomeridae)

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KEY WORDS. *Trachysphaera fragilis*, cave, western Georgia, Abkhazia.

КЛЮЧЕВЫЕ СЛОВА. *Trachysphaera fragilis*, пещера, Западная Грузия, Абхазия.

ABSTRACT. The most likely troglobiont species *Trachysphaera fragilis* Golovatch, 1976, hitherto known only from several karst caves in western Georgia, Caucasus, is recorded in Abkhazia for the first time. The new samples come from two caves in the Sukhum District, both stem from the deepest parts of their caves.

РЕЗЮМЕ. Очень вероятно троглобионтный вид *Trachysphaera fragilis* Golovatch, 1976, до сих пор известный лишь из нескольких карстовых пещер в Западной Грузии (Кавказ), впервые отмечается в Абхазии. Новые пробы собраны в двух пещерах в Сухумском районе, найдены в самых удалённых от входа частях пещер.

The Euro-Mediterranean genus *Trachysphaera* Heller, 1857, is one of the most speciose in the family Glomeridae, at present encompassing about 30 species ranging across Europe, except for its northern and eastern parts, in the Crimea, the Caucasus, Turkey and northwestern Iran [Minelli, 2015]. Several species are presumed or proven troglobionts, including a few from western Georgia, Caucasus [Barjadze et al., 2015]. One such species is *T. fragilis* Golovatch, 1976, described and hitherto known only from a number of karst caves near Tshhaltubo, Kutaisi and Gegechkori (now Martvili), namely, the caves Ghliana (= Gliana), Kumistavi, Motena, Orpiri II, Prometheus, Sataplia I, Sataplia II, Sataplia IV, Solkota and Tetra [Golovatch, 1976, 1981, 1984/1985, 1990; Barjadze et al., 2015]. The species shows several traits of troglomorphism (unpigmented body and ocelli, a thin, often nearly translucent and fragile tegument, and an elongated antennomere 6), has never been collected be-

yond caves and therefore may be regarded as a triglobiont rather than a troglophile [cf. Turbanov et al., 2016].

The present note puts on record *T. fragilis* from another two caves, this time in Abkhazia. The new samples, all taken by the second author, appear to be quite remote from the terra typica (Sataplia I Cave) in western Georgia. Because both come from the deepest, dark parts of their caves, they most likely represent true troglobiont populations, while the species is new to the fauna of Abkhazia.

The new material is housed in the collection of the Zoological Museum, State University of Moscow, Russia (ZMUM + acquisition number).

*Trachysphaera fragilis* Golovatch, 1976  
Figs 1–6.

MATERIAL. 14 ex. (♂♂, ♀♀, juv.) (ZMUM p3518), Western Caucasus, Abkhazia, Sukhum Distr., near Verkhnie Eshery, Adzaba Cave, >100 m off the entrance, 14.IX.2014, leg. I.S. Turbanov; 1 ♀ (ZMUM p3517), Abkhazia, Sukhum Distr., near Guma, Mikhailovskaya Cave, ca 80 m off the entrance, 3.IX.2015, leg. I.S. Turbanov.

REMARKS. The new illustrations are provided to document the species identity. The fresh samples are in complete agreement with the original description [Golovatch, 1976].

ACKNOWLEDGEMENTS. The second author is most grateful to A.G. Koval (All-Russia Research Institute of Plant Protection, St. Petersburg, Russia) and R.S. Vargovitsh (Institute of Zoology, National Academy of Sciences, Kiev, Ukraine) for the help rendered during his field-work in Abkhazia. His research was partly supported through grants Nos 16-34-00275 мол\_a and No. 15-34-40011 А6х\_a, both received from the Russian Foundation for Basic Research. Kirill Makarov very skillfully took all colour pictures. Both Kirill Mikhailov and Elena Kudryavtseva (ZMUM) helped us incorporate the ZMUM samples into the collection.

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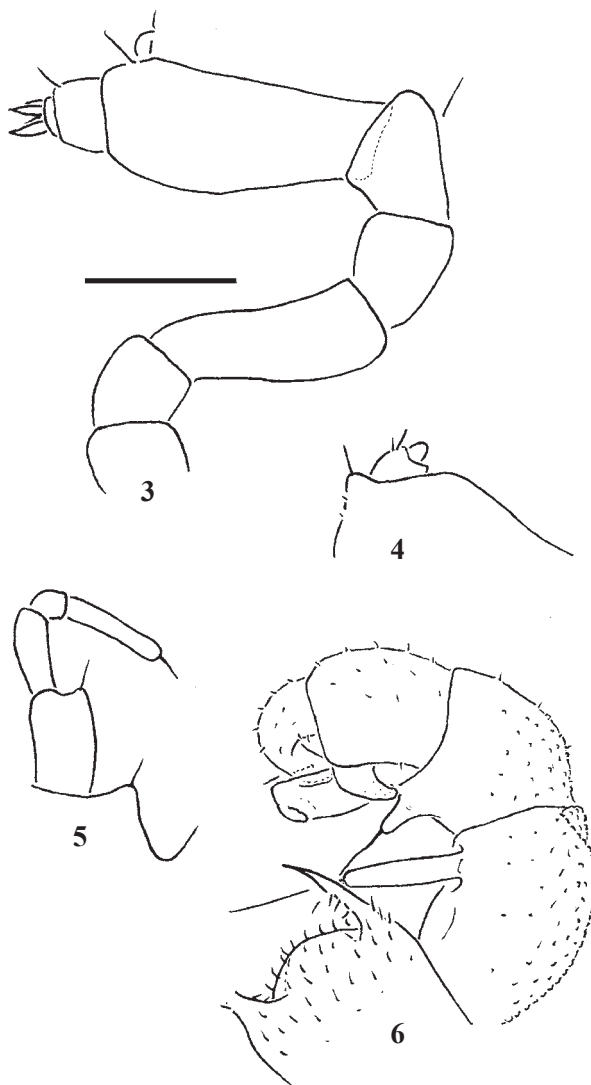
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Figs 1–2. *Trachysphaera fragilis* Golovatch, 1976, specimens from Cave Adzaba: 1 — habitus of four specimens in various aspects; 2 — enlarged habitus of a rolled-up specimen, ventral view. Pictures by K.V. Makarov, taken not to scale.

Рис. 1–2. *Trachysphaera fragilis* Golovatch, 1976, экземпляры из пещеры Адзаба: 1 — общий вид четырех экземпляров в разных положениях; 2 — увеличенный общий вид свернутого экземпляра, вид снизу. Фотографии К.В. Макарова, снято без масштаба.



Figs 3–6. *Trachysphaera fragilis* Golovatch, 1976, ♂ from Cave Adzaba: 3 — antenna, lateral view; 4 — right leg 17, caudal view; 5 — right leg 18, oral view; 6 — right telopod (leg 19), oral view. Scale bar: 0.2 mm.

Рис. 3–6. *Trachysphaera fragilis* Golovatch, 1976, ♂ из пещеры Адзаба: 3 — усик, сбоку; 4 — правая нога 17, сзади; 5 — правая нога 18, спереди; 6 — правый телопод (нога 19), спереди. Масштаб: 0,2 мм.