

## The millipede genus *Trachysphaera* Heller, 1858 in the Ukraine (Diplopoda: Glomeridae)

### Двупарноногие многоножки рода *Trachysphaera* Heller, 1858 на Украине (Diplopoda: Glomeridae)

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КЛЮЧЕВЫЕ СЛОВА: Diplopoda, *Trachysphaera*, Украина.

ABSTRACT. Three species of *Trachysphaera* occur in the Ukraine, all keyed and illustrated: *T. costata* (Waga, 1857) (largely parthenogenetic, bisexual only in a cave in the Crimea), *T. acutula* (Latzel, 1884) (restricted to the Carpathians and adjacent parts) and *T. gibbula* (Latzel, 1884) (represented by the easternmost isolate in a forest park near the city of Lvov).

РЕЗЮМЕ. На Украине обитают три вида *Trachysphaera*, и для всех трех приведены ключ и иллюстрации: *T. costata* (Waga, 1857) (в основном партеногенетические популяции, только в пещере в Крыму обоеполая), *T. acutula* (Latzel, 1884) (вид приурочен к Карпатам и прилегающим территориям) и *T. gibbula* (Latzel, 1884) (вид представлен самым восточным изолятом в лесопарке близ города Львова).

The Euro-Mediterranean millipede genus *Trachysphaera* Heller, 1858 contains over 30 species [Mauriès, 2006], of which only three have hitherto been reported from the Ukraine. Of them, *T. costata* (Waga, 1857) is known from solely parthenogenetic populations which occur in Central and Eastern Europe (Germany, Austria, Poland, Lithuania, Czech Republic, Slovakia, Hungary, much of Romania and some extra-Carpathian regions of the Ukraine), as well as some areas in the Caucasus, while bisexual populations are restricted to southern Romania, the Balkans, Anatolia, ?Israel, most of the Caucasus, and the Crimea [Golovatch, 1990, 2008; Gruber, 2009]. In the Ukraine, *T. costata* has been recorded as obligate parthenogenetic in the Carpathians and adjacent parts (Zakarpate, Lvov, Ivano-Frankovsk, Ternopol, Chernovtsy and Odessa regions) [Chorny & Golovatch, 1993], as well as a bisexual population from a cave in the Crimea [Golovatch, 2008]. The second species, *T. acutula* (Latzel, 1884), is a basically Carpathian congener

also known from Poland, Slovakia, Hungary and Romania (www.faunaeur.org). The presence, and even the status, of a third species in the fauna of the Ukraine, *T. gibbula* (Latzel, 1884), has remained questioned [Chorny & Golovatch, 1993; Golovatch, 2008].

Sverlova [1996] has rather recently reported on remarkable individual variation in pygidium shape in what she identified as a parthenogenetic population of *T. costata* from Rostochye, environs of Lvov, currently western Ukraine. This variation was first discovered there by Jawłowski [1929] who, based on the presence of a central projection on the pygidium in the two females he had, attributed the Rostochye sample to *T. gibbula* (Latzel, 1884), a basically Alpine species characterized by a distinct pygidial hump. Later, however, Jawłowski [1936, 1939] dropped *T. gibbula* altogether from the Polish list. Stojalowska [1961] confused the situation in following Jawłowski [1936, 1939] and referring to *T. gibbula* as a species absent from Poland, but, evidently after Jawłowski [1929], present in the Ukrainian part of Rostochye. Again based on material from Rostochye, this time coming from the Polish part of this transborder woodland area, Bielak-Oleksy et al. [1970], apparently again relying on the pygidial hump in some samples, found both *T. costata* and *T. gibbula* coexisting there. Sympatry of both was also documented using material from the nearby Bieszczady Mountains of Poland [Jaśkiewicz, 1978; Jędryczkowski, 1979]. Stojalowska & Starega [1974] referred to *T. gibbula* as a rare species which is currently known, besides Poland, only in Austria, Hungary, Croatia, Czech Republic and the Ukraine (www.faunaeur.org). Chorny & Golovatch [1993] followed Jawłowski [1929] in listing *T. gibbula* as possibly occurring in the Ukraine only in the vicinity of Lvov, but, following Jawłowski [1936, 1939], questioned the identity of this species.



1



2

Figs 1 & 2. *Trachysphaera acutula*, ♀♀ from Skole, dorsal and lateral views, respectively.  
Рис. 1 и 2. *Trachysphaera acutula*, ♀♀ из Сколе, соответственно сверху и сбоку.



Figs 3–7. *Trachysphaera costata*, ♀ from Rostochye Nature Reserve (3 & 4) and ♂♂ from Cave Mangupskaya, Crimea (5–7), dorsal, lateral, dorsal, lateral and lateral views, respectively.

Рис. 3–7. *Trachysphaera costata*, ♀ из заповедника Росточье (3 и 4) и ♂♂ из Мангупской пещеры (Крым), соответственно сверху, сбоку, сверху, сбоку и сбоку.



8



9



12



10



11

Figs 8–12. *Trachysphaera gibbula*, ♀ (8 & 9) and ♂♂ (10–12) from Chortova Skala, dorsal, lateral, dorsal, lateral and lateral views, respectively.

Рис. 8–12. *Trachysphaera gibbula*, ♀ (8 & 9) и ♂♂ (10–12) из-под Чертовой скалы, соответственно сверху, сбоку, сверху, сбоку и сбоку.

I have recently been privileged to re-examine the pertinent material referred to by Sverlova [1996] as belonging to *T. costata*. This has allowed me not only to clarify the identity of *T. gibbula*, but also prompted to compile and publish the present note. As a result, this material contains *T. acutula*: 4 ♂♂, 10 ♀♀ from Lvov Region, Skole, *Fagus*, *Carpinus* & *Picea* forest, 26.VII.1993, leg. N. Sverlova; and *T. gibbula*: 17 ♂♂, 18 ♀♀ from the vicinity of Lvov, Vinniki Forest Park, near Chortova Skala (a limestone outcrop), 27.IV.1994, leg. N. Sverlova. Considering a sample of 4 ♀♀ of *T. costata* from the Rostochye Nature Reserve, Lvov Region, as well as another sample of the same species from Cave Mangupskaya, Crimea, both these samples referred to elsewhere [Golovatch, 2008], the Ukraine supports three *Trachysphaera* species which can be distinguished using the following key.

1. Transverse tergal crests lower (Figs 3–12), containing at least two, often three to four rows of short bacilli or grains ..... 2
- Transverse tergal crests higher (Figs 1 & 2), mostly containing a single row of higher bacilli ..... *T. acutula*
2. Pygidium with a more (♂) or less (♀) prominent caudal tubercle centrally (Figs 8–12) ..... *T. gibbula*
- Pygidium without evident tubercles (Figs 3–7) ..... *T. costata*

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