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# The spider genus *Trachyzelotes* Lohmander, 1944 in the Crimea, south Ukraine (Araneae: Gnaphosidae)

# Пауки рода *Trachyzelotes* Lohmander, 1944 Крыма, южная Украина (Araneae: Gnaphosidae)

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ABSTRACT. Three species of the spider genus *Trachyzelotes* Lohmander, 1944 have been recorded from the Crimea: *T. pedestris* (C.L. Koch, 1837), *T. lyonneti* (Audouin, 1827) and *T. malkini* Platnick et Murphy, 1984 (the last two species are new to Ukraine). The earlier Crimean records of *T. barbatus* (L. Koch, 1866) are misidentifications of *T. malkini*. The greatest activity and highest abundance of adult specimens for all *Trachyzelotes* species occurs in June. *T. pedestris* occurs in the submontane forest-steppe of the north macro-slope of the Crimean mountains; *T. lyonneti* and *T. malkini* occur in the saline semi-desert steppes and salt-marshes, but the latter is also recorded from the *Quercus pubescens – Juniperus excelsa – Pistacia mutica* forests on the southern coast.

РЕЗЮМЕ. В Крыму обнаружены три вида пауков рода *Trachyzelotes* Lohmander, 1944: *T. pedestris* (C.L. Koch, 1837), *T. lyonneti* (Audouin, 1827), *T. malkini* Platnick et Murphy, 1984. Два последние вида являются новыми для фауны Украины. Указание из Крыма *T. barbatus* (L. Koch, 1866) не подтверждено (вероятно, ошибочное определение *T. malkini*). Пик численности и активности взрослых особей всех трёх видов в Крыму приходится на июнь. *T. pedestris* обнаружен в предгорной лесостепи северного макросклона Крымских гор; *T. lyonneti* — в засолённых полупустынных степях и на солончаках; *T. malkini* — тоже в полупустынных степях и на солончаках, а также на южном берегу Крыма в шибляках из дуба пушистого, можжевельника высокого и фисташки туполистной.

KEY WORDS: spiders, *Trachyzelotes*, new records, ecology, the Crimea.
КЛЮЧЕВЫЕ СЛОВА: пауки, *Trachyzelotes*, новые находки, экология, Крым.

## Introduction

The genus *Trachyzelotes* Lohmander, 1944 was recently reviewed by Platnick & Murphy [1984] and Levy [1998] and comprises 17 valid species [see Platnick, 2003]. Of these, the only species to be reported from the Crimea to date is *T. barbatus* (L. Koch, 1866) [Spassky, 1927; and subsequent authors]. It is demonstrated below, that these records should be assigned to *T. malkini* Platnick et Murphy, 1984.

This paper presents data for the three species of *Trachyzelotes* known from the Crimea. All species are illustrated, redescribed and diagnosed; phenology and habitat preferences are also discussed.

## Material and methods

Unless otherwise stated, specimens for this study were collected by the author during 2000, primarily using pitfall traps; some specimens were hand collected (see below). The specimens studied are distributed between the following collections: KVE = the private collection of Dr. K.V. Evtushenko, Kyiv, Ukraine (I.I. Schmalhausen's Institute of Zoology, National Academy of Sciences of Ukraine); TNU = the collection of the Department of Zoology, V.I. Vernadsky Taurida National University, Simferopol, Ukraine, Mr. N.M. Kovblyuk; ZIN = Zoological Institute, Russian Academy of Sciences, St. Petersburg, Russia, Dr. V.A. Krivokhatskii.

Legs and palpal segments were measured after separating them from the cephalothorax. The total length of each leg is taken as: femur + patella + tibia + metatarsus + tarsus. Length/width of cephalothorax/abdomen were measured after separating them by breaking the pedicel. Coloration is described from specimens preserved in 75% ethanol with glycerin (in the proportion 9:1). The 'Records' section refers to previous records of the species from the Crimea.

The following abbreviations are used in the text: a = apical; d = dorsal; pl = prolateral; rl = retrolateral; v = ventral. The abbreviations AM, AL, PM and PL refer to the anterior median, anterior lateral, posterior median and posterior lateral eyes respectively. All measurements are in mm.

## Survey of the species

### Genus *Trachyzelotes* Lohmander, 1944

Type species: *Zelotes pedestris* (C.L. Koch, 1837).

DIAGNOSIS. Species of the genus *Trachyzelotes* can be distinguished from other genera of the tribe Zelotini (i.e., the Gnaphosidae having a ventrodistal comb of stiff setae distally on metatarsi III and IV) by the presence of a brush of equally long, spine-shaped setae on the anterior-medial surface of the chelicerae [Platnick & Murphy, 1984; Levy, 1998].

NOTE. The genus *Trachyzelotes* is heterogeneous in its genitalic features. There were three species groups established by Platnick & Murphy [1984]: the *pedestris* group, with a single species included, the *lyonneti* group and the *barbatus* group. Representatives of all three groups are found in the Crimea: *T. pedestris, T. lyonneti* and *T. malkini* respectively.

*Trachyzelotes pedestris* (C.L. Koch, 1837)
Figs 1–4.

*Trachyzelotes pedestris*: Platnick et Murphy, 1984: 5, f. 3–6; Grimm, 1985: 213–214, f. 223–226; Levy, 1998: 102–104, f. 15–18.

For a complete list of synonyms see Platnick [2003].

RECORDS. Kovblyuk [2001].

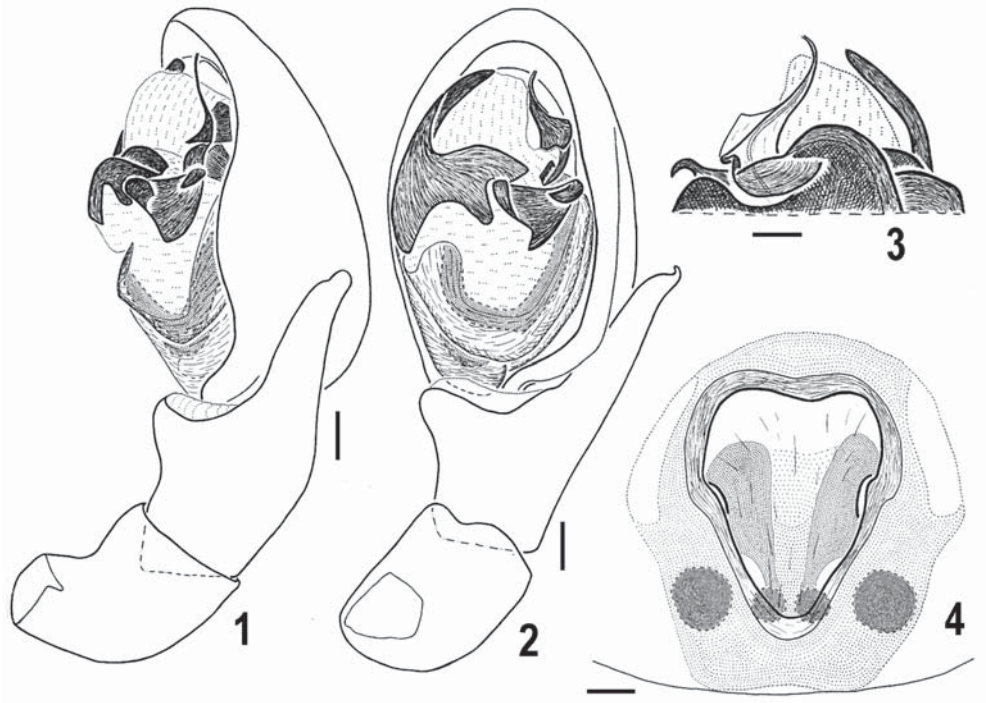
MATERIAL. UKRAINE, THE CRIMEA: 3 ♂♂ (TNU), Simferopol Distr., *c*. 1.5 km NE Fersmanovo, Kesslers' forest, watershed (350–400 m a.s.l.), forest (*Quercus pubescens, Cornus mas, Physospermum danaa, Polygonatum odoratum, P. latifolium*), pitfall traps, 26.05–23.06.2000; 5 ♂♂, 1 ♀ (TNU), Simferopol Distr., *c*. 1.5 km NE of Fersmanovo, Kesslers' forest, watershed (350–400 m a.s.l.), forest edge (*Quercus pubescens, Cornus mas, Swida australis, Prunus spinosa, Lithospermum purpureo-coeruleum*), pitfall traps, 27.05–16.07.2000; 1 ♂ (TNU), Simferopol Distr., *c*. 1.5 km NE Fersmanovo, Kesslers' Forest, watershed (350–400 m a.s.l.), grassland (*Brachypodium pinnatum, Elytrigia maeotica, Filipendula vulgaris*), pitfall traps, 6–23.06.2000; 3 ♂♂ (ÒNU), Simferopol Distr., near Lozovoe, Bairakly Mt. (S slope; *c*. 400 m a.s.l.), rock steppe (*Stipa capillata, Teucrium chamaedrys, T. polium, Festuca rupicola, Filipendula vulgaris, Amygdalus nana*), pitfall traps, 6.06–16.07.2000.

DIAGNOSIS. *T. pedestris* can separated from other *Trachyzelotes* species by the structure of the copulatory organs (Figs 1–4) as follows: males by the unique elongated, anterio-retrolaterally directed terminal apophysis, females by the wide median plate lacking an M-shaped median ridge.

DESCRIPTION. (♂/♀; N = 1/1): Total length 6.8/?. Carapace: 2.6/3.1 long, 2.2/2.4 wide. Eye sizes and interdistances: AM 0.07/0.08, AL 0.15/0.15, PM 0.09/0.12, PL 0.12/0.14, AM–AM 0.06/0.07, AM–AL 0.02/0.02, PM–PM 0.02/0.03, PM–PL 0.04/0.06, AM–PM 0.09/0.12, AL–PL 0.08/0.08. Largest eyes = AL, smallest = AM. Distances between eyes and anterior clypeal margin: AM–clypeus 0.18/0.23, AL–clypeus 0.12/0.15. Length of leg segments:

| Legs | Femur | Patella + Tibia | Metatarsus | Tarsus | Total |
|---|---|---|---|---|---|
| I | 1.8/2.0 | 2.5/2.8 | 1.3/1.4 | 1.2/1.2 | 6.9/7.2 |
| II | 1.6/1.9 | 2.1/2.4 | 1.2/1.2 | 1.0/1.0 | 6.0/6.6 |
| III | 1.4/1.6 | 1.8/2.0 | 1.2/1.3 | 0.8/0.9 | 5.2/5.8 |
| IV | 2.1/2.3 | 2.8/3.1 | 2.0/2.1 | 1.1/1.1 | 8.0/8.6 |

Length of palp segments: femur 1.0/1.0, patella 0.4/0.6, tibia 0.4/0.5, tarsus 0.9/0.8. Abdomen: 4.0/4.8 long, 2.3/2.8 wide. Scutum on male abdomen: 1.8 long, 1.7 wide. Leg spination. Leg I. Femur: d 1-1, pl 1; metatarsus and tarsus ventrally with two double rows of thick setae. Leg II. Femur: d 1-1-1, pl 1/d 1-1, pl 1; metatarsus and tarsus ventrally with two double rows of thick setae. Leg III. Femur: d 1-1, pl 1-1, rl 1; tibia: pl 1-1-1, rl 1-1, v 2-2-2a; metatarsus: pl 1-2, rl 1-2, v 2-0-0/pl 1-2-2, rl 1-1-2,




Figs 1–4. Copulatory organs of *Trachyzelotes pedestris*: 1–2 — left palp of ♂, ventral and retrolateral views; 3 — apical part of bulbus, dorsal (inner) view; 4 — epigyne, ventral view. Scale: 0.1 mm.

Рис. 1–4. Копулятивные органы *Trachyzelotes pedestris*: 1–2 — левая пальпа самца вентрально и ретролатерально; 3 — верхняя часть бульбуса дорсально (цимбиум удалён); 4 — эпигина вентрально. Масштаб: 0,1 мм.

v 2-0-0. Leg IV. Femur: d 1-1; tibia: pl 1-1-1, rl 2-2, v 2-2-2a/pl 1-1-1, rl 1-2, v 2-2-2a; metatarsus: d 2-2, pl 1-1-1, rl 1-1-1, v 2-2-2a.

Coloration. Carapace, chelicerae, sternum, labium, palpal endites, coxae and femora of the legs, and scutum on male abdomen dark brown. Remaining leg and palp segments yellow, leg tarsi white distally. Abdomen grey, with six to eight yellow sigillae in two rows; book-lungs yellow; spinnerets grey–brown.

Palpal structure as in Figs 1–3, epigyne as shown in Fig. 4.

DISTRIBUTION. Widespread throughout Europe, from England to Israel in the south and from Portugal to Azerbaijan in the east [Platnick & Murphy, 1984; Grimm, 1985; Mikhailov, 1997; Levy, 1998; Cardoso, 2000; Relys & Dapkus, 2002].

HABITAT. In the Crimea, the forest-steppe zone (forests, forest edges, grasslands). In Europe, *T. pedestris* is reported to inhabit open areas such as chalk and limestone grasslands, meadows, rocky steppes and floodplains [Buchar & Ruzichka, 2002; Harvey *et al*., 2002]. Thus, this species prefers different habitats in the Crimea and central Europe.

PHENOLOGY (in the Crimea). ♂♂, V–VII; ♀♀, VI; maximum abundance occurs in June (Fig. 15). A similar phenological cycle for this species was reported from the UK [Harvey *et al*., 2002] and central Europe [Heimer & Nentwig, 1991].

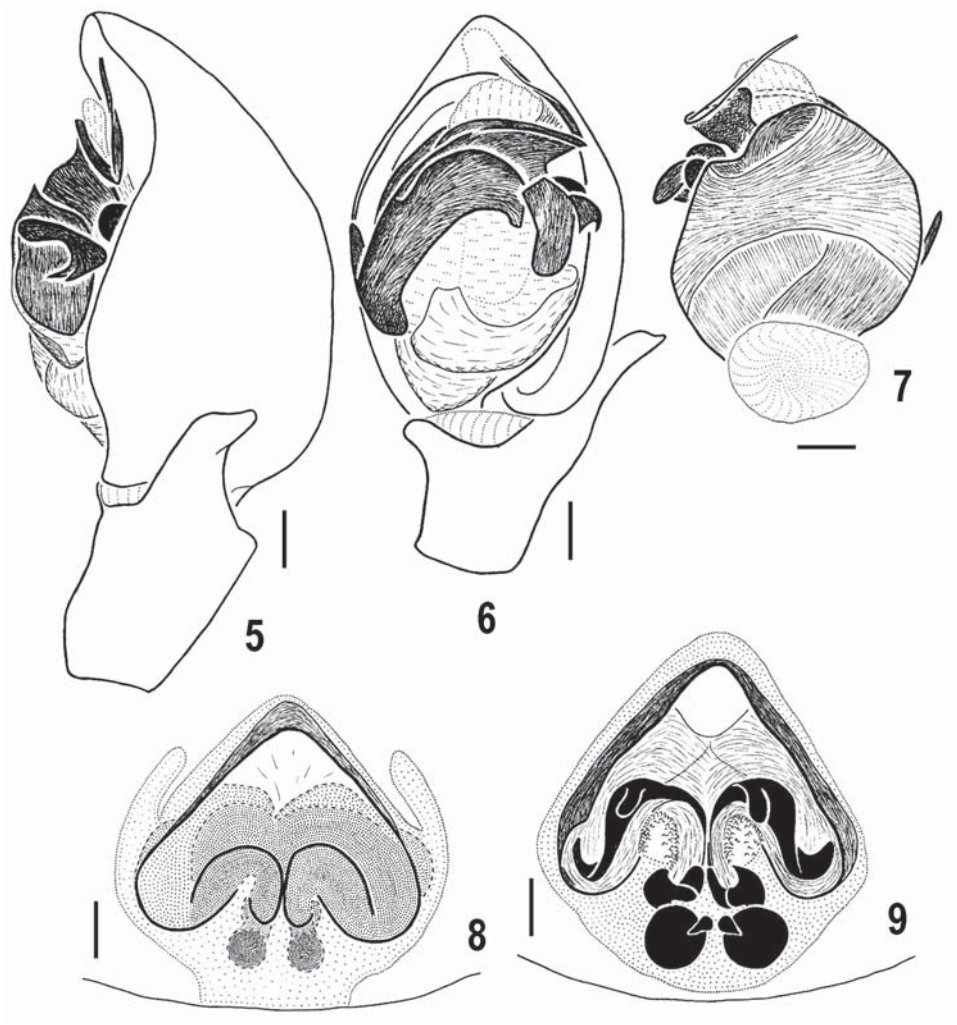
## *Trachyzelotes lyonneti* (Audouin, 1827)
## Figs 5–9.

*Trachyzelotes lyonneti*: Platnick & Murphy, 1984: 6–7, f. 7–10; Levy, 1998: 105–106, f. 19–22.

For a complete list of synonyms see Platnick [2003].

MATERIAL. UKRAINE, THE CRIMEA: 4 ♂♂, 6 ♀♀ (TNU), Saky Distr., near the railway station Pribrezhnaya (45°09.317′N, 33°30.044′E), *c*. 1 m a.s.l., humid salt-marsh (*Salicornia europaea, Halocnemum strobilaceum*), pitfall traps, 28.05–19.07.2000; 3 ♂♂ (TNU), same locality, meadow steppe on yellow porous limestone, pitfall traps, 8.06–3.07.2000; 4 ♂♂, 5 ♀♀ (TNU), same locality, salt meadow, pitfall traps, 28.05–24.06.2000; 1 ♂, 1 ♀ (TNU), same locality, *Artemisia* steppe on sand, pitfall traps, 28.05–24.06.2000.

DIAGNOSIS. The males of *T. lyonneti* can be separated from other *Trachyzelotes* species by the structure of the copulatory organs (Figs 5–7) as follows: (1) a distinct prolateral extension of the




Figs 5–9. Copulatory organs of *Trachyzelotes lyonneti*: 5–6 — left palp of ♂, ventral and retrolateral views; 7 — bulbus, dorsal (inner) view; 8 — epigyne, ventral view; 9 — epigyne, dorsal (inner) view. Scale: 0.1 mm.

Рис. 5–9. Копулятивные органы *Trachyzelotes lyonneti*: 5–6 — левая пальпа самца вентрально и ретролатерально; 7 — бульбус дорсально (цимбиум удалён); 8 — эпигина вентрально; 9 — эпигина дорсально. Масштаб: 0,1 мм.

terminal apophysis, (2) the notched end of the median apophysis, and (3) the absence of a distal notch on the tibial apophysis. The closely related species *T. adriaticus* (Caporiacco, 1953) and *T. stubbsi* Platnick et Murphy, 1984 have the tibial apophysis with a distal notch and the median apophysis with a pointed tip [see Platnick & Murphy, 1984: figs 11, 12, 15, 16; Levy, 1998: figs 23, 24]. The females of *T. lyonneti* (Figs 8, 9) can be separated from their congeners by having (1) a triangular epigynal plate and (2) M-shaped ridges covering half of the epigynal plate.

DESCRIPTION. (♂/♀; N = 1/1): Total length 6.5/6.8. Carapace: 2.4/2.6 long, 2.0/2.1 wide. Eye sizes and interdistances: AM 0.09/0.09, AL 0.15/0.14, PM 0.16/0.16, PL 0.14/0.12, AM–AM 0.03/0.08, AM–AL 0.02/0.02, PM–PM 0/0.03, PM–PL 0.03/0.03, AM–PM 0.08/0.10, AL–PL 0.04/0.06. Largest eyes = PM, smallest = AM. Distances between eyes and anterior margin of clypeus: AM–clypeus 0.22/0.20, AL–clypeus 0.10/0.15. Length of leg segments:

| Legs | Femur | Patella + Tibia | Metatarsus | Tarsus | Total |
|---|---|---|---|---|---|
| I | 1.9/1.9 | 2.6/2.7 | 1.4/1.4 | 1.2/1.0 | 7.2/7.0 |
| II | 1.6/1.6 | 2.2/2.2 | 1.2/1.2 | 1.0/0.9 | 6.0/6.0 |
| III | 1.4/1.5 | 1.8/1.8 | 1.2/1.2 | 0.8/0.8 | 5.2/5.4 |
| IV | 2.1/2.0 | 2.8/2.9 | 2.0/2.0 | 1.0/1.0 | 8.0/8.0 |

Length of palp segments: femur 1.0/0.9, patella 0.5/0.6, tibia 0.3/0.4, tarsus 0.8/0.8. Abdomen: 3.5/4.8 long, 1.9/2.9 wide. Scutum of ♂ abdomen: 0.8 long, 0.7 wide. Leg spination: Leg I. Femur: d 1-1, pl 1; metatarsus and tarsus ventrally with two double rows of thick setae. Leg II. Femur: d 1-1, pl 1; metatarsus and tarsus ventrally with two double rows of thick setae. Leg III. Femur: d 1-1, pl 1-1, rl 1-1; patella: rl 1; tibia: pl 1-1-1, rl 1-1-1, v 2-2-2a; metatarsus: pl 2-2, rl 1-2-2, v 2-0-0 / pl 1-2-2, rl 1-1-2, v 2-0-0. Leg IV. Femur: d 1-1, rl 1 / d 1-1, pl 1, rl 1; tibia: pl 2-2, rl 2-2, v 2-2-2a; metatarsus: pl 1-2-2, rl 1-2-2, v 2-2-1a / pl 1-2-2, rl 1-2-1, v 2-2-1a.

Coloration: Carapace, chelicerae, sternum and scutum of ♂ abdomen brown. Labium, palpal endites, coxae, femora of the legs, palpal femora and patellae yellow. Remaining leg segments grey, except tarsi which are brown with white distal ends. Abdomen grey with six yellow sigillae in two rows; book-lungs yellow; spinnerets dark grey.

Palpal structure as in Figs 5–7, epigyne as in Figs 8, 9.

DISTRIBUTION. This is quite a widespread species known from the Madeira Islands and Morocco in the west, through the Mediterranean and Asia Minor (Turkey) and the Caucasus (Azerbaijan) Russia to Turkmenistan (Kopetdagh Mts) and Kazakhstan in the east, to Israel and Saint Helena Isl. in the south. Also recorded in USA, Brazil and Peru [Platnick & Murphy, 1984; Mikhailov, 1997]. A new record for the Crimea, and hence new to Ukraine.

HABITAT. In the Crimea, humid salt-marshes (*Salicornia europaea, Halocnemum strobilaceum*), salt meadows and salt *Artemisia* steppe. In Sicily, *T. lyonneti* inhabits saltwort areas (*Salicornia perennis, Aleuropus lagopoides*) [Di Franco, 2000].

PHENOLOGY (in the Crimea). ♂♂, VI; ♀♀, VI–VII; maximum abundance occurs in June (Fig. 15). Maximum abundance of *T. lyonneti* from Sicily (Italy) occurs in May [Di Franco, 2000: 281]. From Israel ♀♀, IV, VI, VIII [Levy, 1998: 106]. In the Crimea, males and females of *T. lyonneti* appear one month later than in Sicily; females two months later than in Israel.

## *Trachyzelotes malkini* Platnick et Murphy, 1984

Figs 10–14.

*Trachyzelotes malkini*: Platnick & Murphy, 1984: 22–23, f. 51–54.

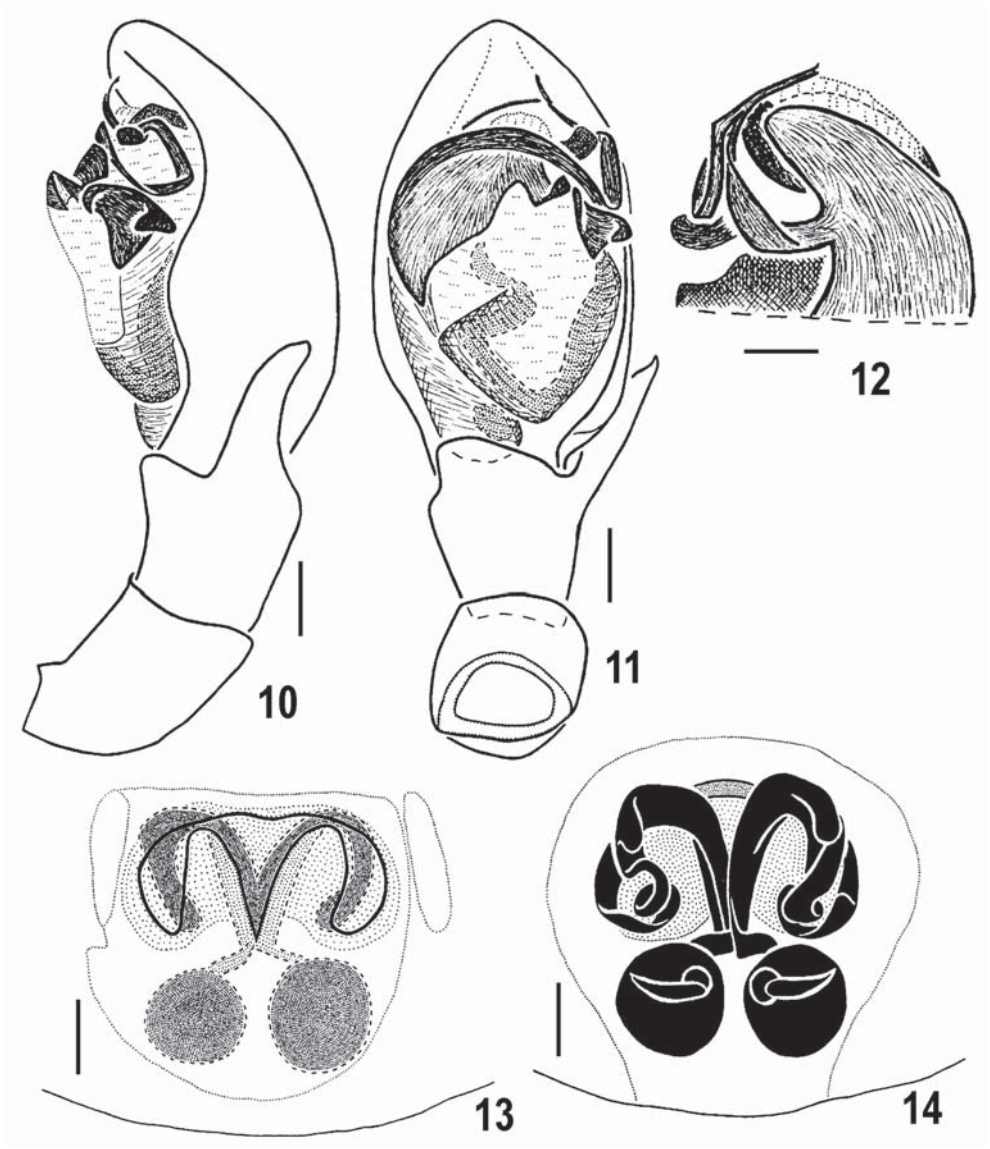
For a complete list of synonyms see Platnick [2003].

RECORDS. Spassky [1927: sub *Zelotes barbatus*]; Charitonov [1932: sub *Zelotes barbatus*]; Tyshchenko [1971: sub *Zelotes barbatus*]; Ovtsharenko [1982: sub *Zelotes barbatus*]; Mikhailov [1997: sub *T. barbatus*].

MATERIAL. UKRAINE, THE CRIMEA: 4♀♀ (TNU), Sevastopol Distr., Khersones Cape, Mayachny Peninsula (Kap-Fonar), petrophyt ruderal steppe, 17.07.1999; 1 ♂, 1 ♀ (TNU), Sevastopol Distr., right board of Chernaya River canyon, *Juniperus excelsa* silva rara, 23.05.2000, leg. O.V. Kukushkin; 4 ♀♀ (TNU), Sevastopol Distr., Choban-Tash rock above Sarych Cape, *c*. 100 m a.s.l., 16–17.06.2000, leg. O.V. Kukushkin; 3 ♂♂ (TNU), Yalta Distr., 'Martyan Cape' Reserve (44°30′N, 34°15′E), *c*. 50 m a.s.l., forest (*Pinus pallasiana, Quercus pubescens, Juniperus excelsa, Brachypodium rupestre*), pitfall traps, 13–20.05.2000; 2 ♂♂ (TNU), same locality, 20–27.05.2000; 2 ♂♂, 1 ♀ (TNU), same locality, 27.05–3.06. 2000; 2 ♂♂ (TNU), same locality, 3–11.06.2000; 3 ♂♂, 1 ♀ (TNU), same locality, 11–17.06.2000; 1 ♂ (TNU), same locality, 17–26.06.2000; 1 ♂ (TNU), Yalta Distr., 'Martyan Cape' Reserve, forest (*Carpinus orientalis, Juniperus excelsae, Ruscus ponticus*), pitfall traps, 3–11.06.2000; 1 ♂ (TNU), same locality, 11–17.06.2000; 1 ♂, 1 ♀ (TNU), Yalta, Massandra Park, *Pistacia mutica* silva rara, pitfall traps, 1–8.07.2000; 1 ♂ (TNU), Yalta, *c*. 1 km N of Nikita Vil., neglected field, pitfall traps, 13–20.05.2000; 1 ♀ (TNU), same locality, 27.05–3.06.2000; 1 ♀ (TNU), same locality, 3–11.06.2000; 1 ♂ (TNU), same locality, 25.06.–2.07.2000; 1 ♂, 1 ♀ (TNU), Saky Distr., vicinities of railway station Pribrezhnaya (45° 09.317′N, 33°30.044′E), *c*. 1 m a.s.l., humid salt-marsh (*Salicornia europaea, Halocnemum strobilaceum*), pitfall traps, 8–24.06.2000; 3 ♂♂ (TNU), Saky Distr., vicinities of railway station Pribrezhnaya, meadow steppe on yellow porous limestone, pitfall traps, 19–28.05.2000; 1 ♂, 1 ♀ (TNU), same locality, 28.05–8.06.2000; 1 ♂, 6 ♀♀ (TNU), same locality, 8–24.06.2000; 1 ♂ (TNU), same locality, 24.06–3.07.2000; 2 ♀♀ (TNU), same locality, 3–19.07.2000; 1 ♂ (TNU), Saky Distr., vicinities of railway station Pribrezhnaya, salt meadow, pitfall traps, 19–28.05.2000; 4 ♂♂, 1 ♀ (TNU), same locality, 28.05.–8.06.2000; 3 ♂♂, 1 ♀ (TNU), same locality, 8–24.06.2000; 1 ♀ (TNU), same locality, 3–19.07.2000; 4 ♂♂, 3 ♀♀ (KVE), Saky Distr., vicinities of railway station Pribrezhnaya, *Artemisia* steppe on sand, pitfall traps, 19–28.05.2000; 2 ♂♂, 1 ♀ (TNU), same locality, 28.05.–8.06.2000; 1 ♂ (TNU), same locality, 8–24.06.2000.

DIAGNOSIS. Males of *T. malkini* can be separated from other *Trachyzelotes* species by the unique shapes of (1) the embolar division (embolus + embolar projection), which is sharply curved retrolaterally and directed anteriorly, and (2) the seminal duct, which is strongly bent prolaterally. The epygine of *T. malkini* is not easy to distinguish from other *Trachyzelotes* species of the *barbatus*-group; a reliable identification of *T. malkini* can only be made from male specimens.

DESCRIPTION. (♂/♀; N = 1/1): Total length 6.0/7.5. Carapace: 2.4/2.6 long, 1.9/1.8 wide. Eye sizes and interdistances: AM 0.08/0.10, AL 0.14/0.14, PM 0.15/0.14, PL 0.12/0.12, AM–AM 0.06/0.03, AM–AL 0.02/0.01, PM–PM 0.01/0.02, PM–PL 0.0/ 0.03, AM–PM 0.09/0.09, AL–PL 0.07/0.08. Largest eyes = PM, smallest = AM. Distances be-




Figs 10–14. Copulatory organs of *Trachyzelotes malkini*: 10–11 — left palp of ♂, ventral and retrolateral views; 12 — apical part of bulbus, dorsal (inner) view; 13 — epigyne, ventral view; 14 — epigyne, dorsal (inner) view. Scale: 0.1 mm.

Рис. 10–14. Копулятивные органы *Trachyzelotes malkini*: 10–11 — левая пальпа самца вентрально и ретролатерально; 12 — верхняя часть бульбуса дорсально (цимбиум удалён); 13 — эпигина вентрально; 14 — эпигина дорсально. Масштаб: 0,1 мм.

tween eyes and anterior margin of clypeus: AM–clypeus 0.18/0.16, AL–clypeus 0.12/0.12. Length of leg segments:

| Legs | Femur | Patella + Tibia | Metatarsus | Tarsus | Total |
|---|---|---|---|---|---|
| I | 1.8/1.8 | 2.5/2.4 | 1.2/1.0 | 1.0/0.9 | 6.6/6.2 |
| II | 1.6/1.6 | 2.1/2.0 | 1.0/1.0 | 0.8/0.8 | 5.5/5.3 |
| III | 1.4/1.4 | 1.8/1.7 | 1.2/1.1 | 0.8/0.7 | 5.1/4.8 |
| IV | 2.2/2.0 | 2.8/2.7 | 2.0/1.9 | 1.0/0.9 | 8.0/7.4 |

Length of the palp segments: femur 0.9/0.8, patella 0.4/0.5, tibia 0.3/0.4, tarsus 0.8/0.6. Abdomen: 3.4/4.9 long, 1.8/2.8 wide. Scutum on male abdomen: 0.8 long, 1.15 wide. Leg spination: Leg I. Femur: d 1-1, pl 1; metatarsus and tarsus ventrally with two double rows of thick setae. Leg II. Femur: d 1-1, pl 1/d 1-1, pl 0; tibia: v 1/v 0; metatarsus and tarsus ventrally with two double rows of thick setae.

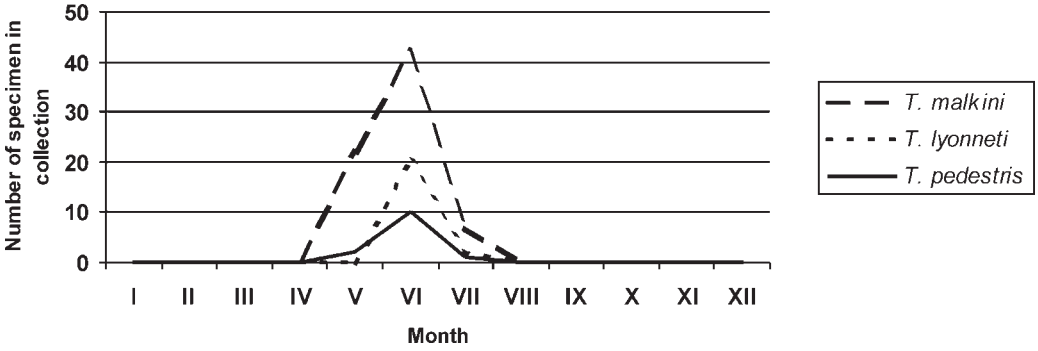



Fig. 15. Seasonal activity of adults of *Trachyzelotes* species from the Crimea (number of individuals is shown on y-coordinate).

Рис. 15. Сезонная динамика активности взрослых особей видов *Trachyzelotes* в Крыму (по оси ординат количество особей).

Leg III. Femur: d 1-1, pl 1-1, rl 1-1/d 1-1, pl 1-1, rl 1; patella: rl 1; tibia: pl 1-1-1, rl 1-1-1, v 2-2-2a/pl 2-1-1, rl 1-1-1, v 2-2-2a; metatarsus: pl 1-2-2, rl 1-1-1, v 2-2-0/pl 1-2-2, rl 1-2-2, v 2-0-0. Leg IV. Femur: d 1-1, rl 1/d 1-1, pl 1, rl 1; tibia: pl 2-2, rl 2-2, v 2-2-2a; metatarsus: pl 1-2-2, rl 1-2-1, v 2-2-0/pl 1-2-2, rl 1-2-1, v 2-2-1a.

Coloration: Carapace, chelicerae, sternum, labium, all leg and palp segments, scutum on male abdomen, and spinnerets dark brown. Leg tarsi brown, with white distal ends. Abdomen grey, with six yellow sigillae in two rows; book-lungs yellow.

Palpal structure as in Figs 10–12, epigyne as in Figs 13, 14.

NOTE: The earlier record of *T. barbatus* from the Crimea was based on two females (deposited in the ZIN, not examined) collected by V.G. Pligинsky in Sevastopol and identified by S.A. Spassky [1927] and then re-examined by V.I. Ovtsharenko [1982]. In the environs of Sevastopol, *T. malkini* is the only *Trachyzelotes* species encountered [pers. data], which is quite close to *T. barbatus*. *T. malkini* was not known when S.A. Spassky and V.I. Ovtsharenko examined the specimens from the Crimea. Furthermore, the females of *T. barbatus* and *T. malkini* are very similar in epigynal structure [see Platnick & Murphy, 1984: 14, 22, figs 29, 30, 53, 54]. For these reasons, it is reasonable to conclude that the earlier records *T. barbatus* from the Crimea were based on misidentifications and should actually belong to *T. malkini*.

DISTRIBUTION. Crete, Turkey, the Caucasus [Platnick & Murphy, 1984: 23]. The Crimea represents a new record and therefore the species is newly reported for Ukraine. The Crimea is the northernmost record for this species.

HABITAT. In the Crimea, southern coast (*Juniperus excelsa, Quercus pubescens, Pistacia mutica* forests), saline areas (see material).

PHENOLOGY (in the Crimea). ♂♂, V–VI; ♀♀, V–VII; maximum abundance occurs in June (Fig. 15). From Crete, ♂♂, IV; from Turkey, ♂♂, XI, ♀♀, IV [Platnick & Murphy, 1984: 22–23]. In the Crimea, males of *T. malkini* appear one month later than in Crete, whilst the females appear one month later than in Turkey.

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## References

Buchar J. & Růžička V. 2002. Catalogue of spiders of the Czech Republic. Praha: Peres Publishers. 349 p.

Cardoso P. 2000. Portuguese spiders (Araneae): a preliminary checklist // Gajdos P. & Pekár S. (eds.). Proc. 18th European Coll. Arachnol., Stara Lesna. / Ekologia (Bratislava). Vol.19. Suppl.3. P.19–29.

Charitonov D.E. 1932. Katalog der russischen Spinnen. AN SSSR. Leningrad: Izd. AN SSSR. 206 S. [in Russian and German].

Di Franco F. 2002. Observations on the spider family Gnaphosidae (Araneae) in the nature reserve 'Oasis of Simeto' (Italy, Sicily) // Toft S. & Scharff N. (eds.). European Arachnology 2000. Proc. 19th European Coll. Arachnol., Århus. P.279–282.

Grimm U. 1985. Die Gnaphosidae Mitteleuropas (Arach-

nida, Araneae) // Abh. Verh. Naturwiss. Verein. Hamburg. Bd.26. S.1–318.

Harvey P.R., Nellist D.R. & Tefler M.G. 2002. Provisional Atlas of British spiders (Arachnida, Araneae). Vols 1–2. Huntington: Biological Records Centre. 406 p.

Heimer S. & Nentwig W. 1991. Spinnen Mitteleuropas: ein Bestimmungsbuch. Berlin: P. Parey Verlag. 543 S.

Kovblyuk N.M. 2001. [About the necessity of forest edges examining during the study of local fauna of spiders (Arachnida, Aranei)] // Uch. Zap. TNU. Ser. Biol. Vol.14. No.1. P.94–98 [in Russian].

Levy G. 1998. The ground-spider genera *Setaphis, Trachyzelotes, Zelotes,* and *Drassyllus* (Araneae: Gnaphosidae) in Israel // Isr. J. Zool. Vol.44. P.93–158.

Mikhailov K.G. 1997. Catalogue of the spiders of the territories of the former Soviet Union (Arachnida, Aranei) // Sbornik Trudov Zool. Muzeya MGU. Moscow: Zool. Museum, Moscow State Univ. Vol.37. 416 p.

Mikhailov K.G. 1998. Catalogue of the spiders (Arachnida, Aranei) of the territories of the former Soviet Union. Addendum 1. Moscow: KMK Sci. Press Ltd. 50 p.

Ovtsharenko V.I. 1982. A systematic list of the spider family Gnaphosidae (Aranei) of the European part of the USSR and the Caucasus // Ent. Obozr. T.61. No.4. S.830–844 [in Russian].

Platnick N.I. 2003. The World Spider Catalog (Fam. Gnaphosidae Pocock, 1898; Last updated Dec. 26, 2002). Copyright 2000, 2001, 2002, 2003 by the American Museum of Natural History, online at http://research.amnh.org/entomology/spiders/catalog81-87/index.html

Platnick N.I. & Murphy J.A. 1984. A revision of the spider genera *Trachyzelotes* and *Urozelotes* (Araneae, Gnaphosidae) // Amer. Mus. Novit. No.2792. 30 pp.

Relys V. & Dapkus D. 2002. Comments to the checklist of Gnaphosidae and Liocranidae (Arachnida, Araneae) of the Baltic States, with remarks on species new to Lithuania // Toft S. & Scharff N. (eds.). European Arachnology 2000. Proc. 19th European Coll. Arachnol., Århus. P.273–278.

Spassky S.A. 1927. [Materials to the spider fauna of the Tauric Gouvernement] // Izv. Donsk. Inst. Sielesk. Vol.7. P.66–80 [in Russian].

Tyshchenko V.P. 1971. [An identification guide to the spiders of the European part of the USSR]. Leningrad: Nauka Publ. 281 p. [in Russian].