Arthropoda Selecta 17 (3–4): 157–164

Three interesting species of Gnaphosidae from Crimea (Arachnida: Aranei)

Три интересных вида семейства Gnaphosidae из Крыма (Arachnida: Aranei)

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KEY WORDS: spiders, Gnaphosidae, new species, new record, Crimea.
КЛЮЧЕВЫЕ СЛОВА: пауки, Gnaphosidae, новый вид, новые находки, Крым.

ABSTRACT. *Poecilochroa senilis* (O. Pickard-Cambridge, 1872), *Trachyzelotes barbatus* (L. Koch, 1866) and *Zelotes eugenei* Kovblyuk sp.n., are recorded from Crimea. For these species and for *Trachyzelotes malkini* Platnick & Murphy, 1984, diagnostic drawings and data on distribution and phenology are provided.

РЕЗЮМЕ. В Крыму найдены *Poecilochroa senilis* (O. Pickard-Cambridge, 1872) и *Trachyzelotes barbatus* (L. Koch, 1866), а также новый для науки вид *Zelotes eugenei* Kovblyuk, sp.n. Для этих видов, приведены диагностические рисунки (как и для *Trachyzelotes malkini* Platnick & Murphy, 1984), сведения о географическом распространении и фенологии.

Ground spiders or Gnaphosidae are relatively well studied in Crimea. So far 61 gnaphosid species belonging to 16 genera have been reported from the Peninsula [Kovblyuk, 2004a, 2006]. In new material recently collected in Crimea, some addition species, including new to science, have been found. The goal of this paper is the description or redescription of species newly found in the Crimean Peninsula.

All specimens treated in this study are deposited in the following collections: PSU — Perm State University, Perm, Russia (T.K. Tuneva, Yekaterinburg, Russia); TNU — Zoology Department, V.I. Vernadsky Taurida National University, Simferopol, Ukraine (M.M. Kovblyuk); ZMMU — Zoological Museum of the Moscow State University, Moscow, Russia (K.G. Mikhailov). The following abbreviations are used in the text: RTA — retrolateral tibial apophysis; s.p. — same place. All measurements are in mm. All scale bars are equal 0.1 mm. Illustrations were made using both reflecting and transmitted light microscopes. Microphotographs were made by SEM Jeol JSM-5200 in the Zoological Museum, University of Turku, Finland. Coloration was described from specimens preserved in 75% ethanol/water solution with added glycerin (9:1 by volume).

Printed in 2009.

Poecilochroa senilis (O. Pickard-Cambridge, 1872)
Figs 1–9.

Drassus flavo-maculatus L. Koch, 1878: 40–42, pl. 1, f. 2, 2a (♂).
P. s.: Levy, 1999: 431–433, f. 6–9 (♂♀).
P. s.: Chatzaki et al., 2002: 569–570, f. 8–11 (♂♀).
P. s.: Murphy, 2007: 370–371 (♂♀).
For a complete list of references see Platnick [2008].

MATERIAL. UKRAINE: CRIMEA. Feodosiya Distr.: 2 ♂♂ (TNU–1726/2), Karadag Nature Reserve, Biological station, 19–22.07.2002, Î.V. Kukushkin; 1 ♂ (TNU–1985/2), s.p., 6–12.07.2005, M.M. Kovblyuk; 1 ♂ (TNU–2396/3), s.p., 6.07.2007, M.M. Kovblyuk; Sevastopol Distr.: 1 ♀ (PSU), Sevastopol, under stones, 16.07.2005, T.K. Tuneva.

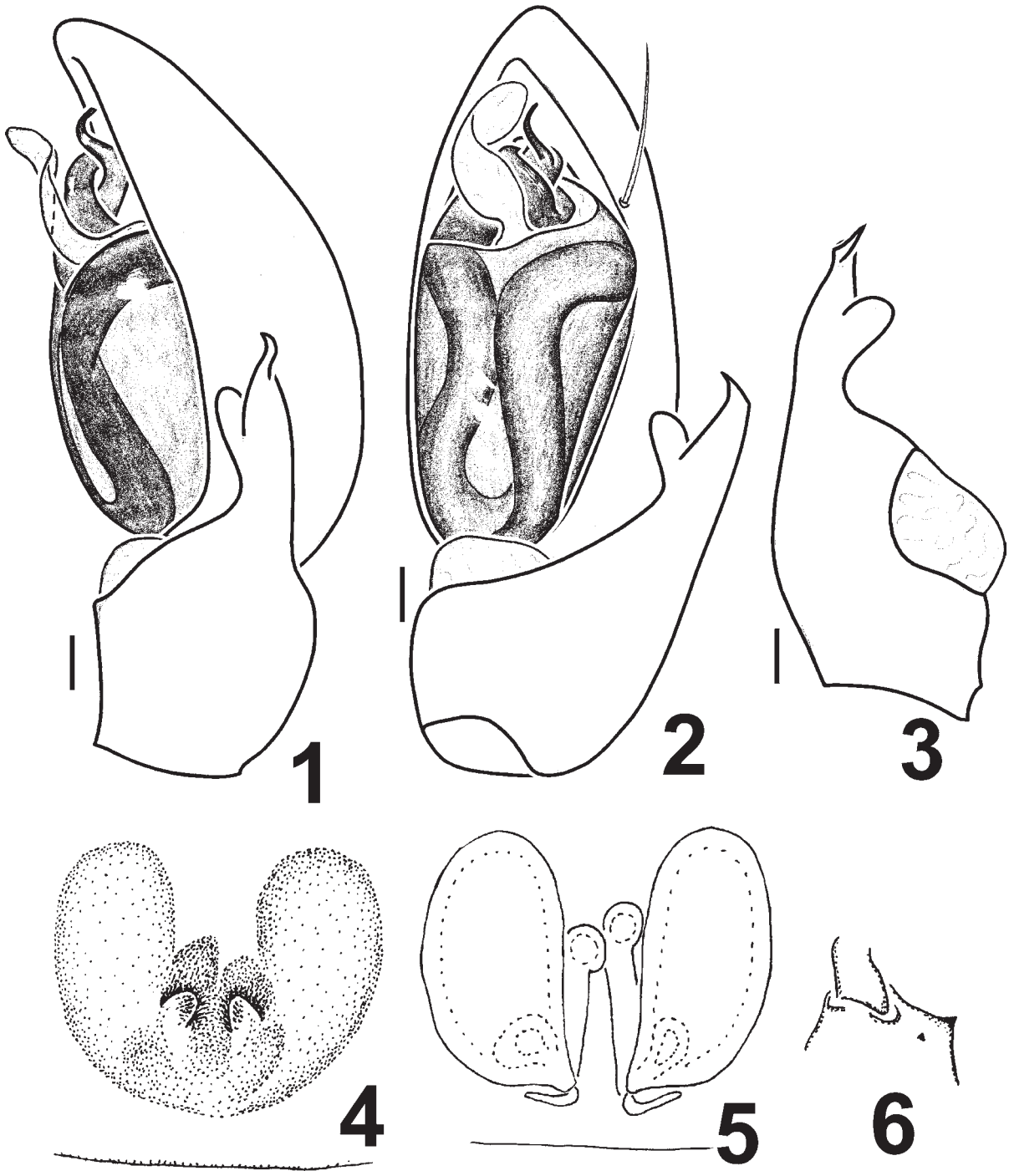
DISTRIBUTION. Ancient Mediterranean — from western Mediterranean to Turkmenistan: Corsica, Sicily, Crete, Cyprus, Libya, Egypt, Palestine, Syria, Anatolia, Turkmenistan [L. Koch, 1878; Levy, 1999; Di Franco, 2002; Chatzaki et al., 2002; Seyyar et al., 2006; Murphy, 2007; Platnick, 2008].

NOTE. *P. senilis* is a species new to Crimea and Ukraine. It is the only species of the genus *Poecilochroa* Westring, 1874, occurring in the Crimea.

PHENOLOGY: ♂♀ — VII. In Israel this cursorial araneophagic spider is found all year round [Levy, 1999]. On Crete adults are present in spring and summer, a peak of activity is in early summer [Chatzaki et al., 2002]. In Anatolia ♀♀ — IV–VII [Seyyar et al., 2006].

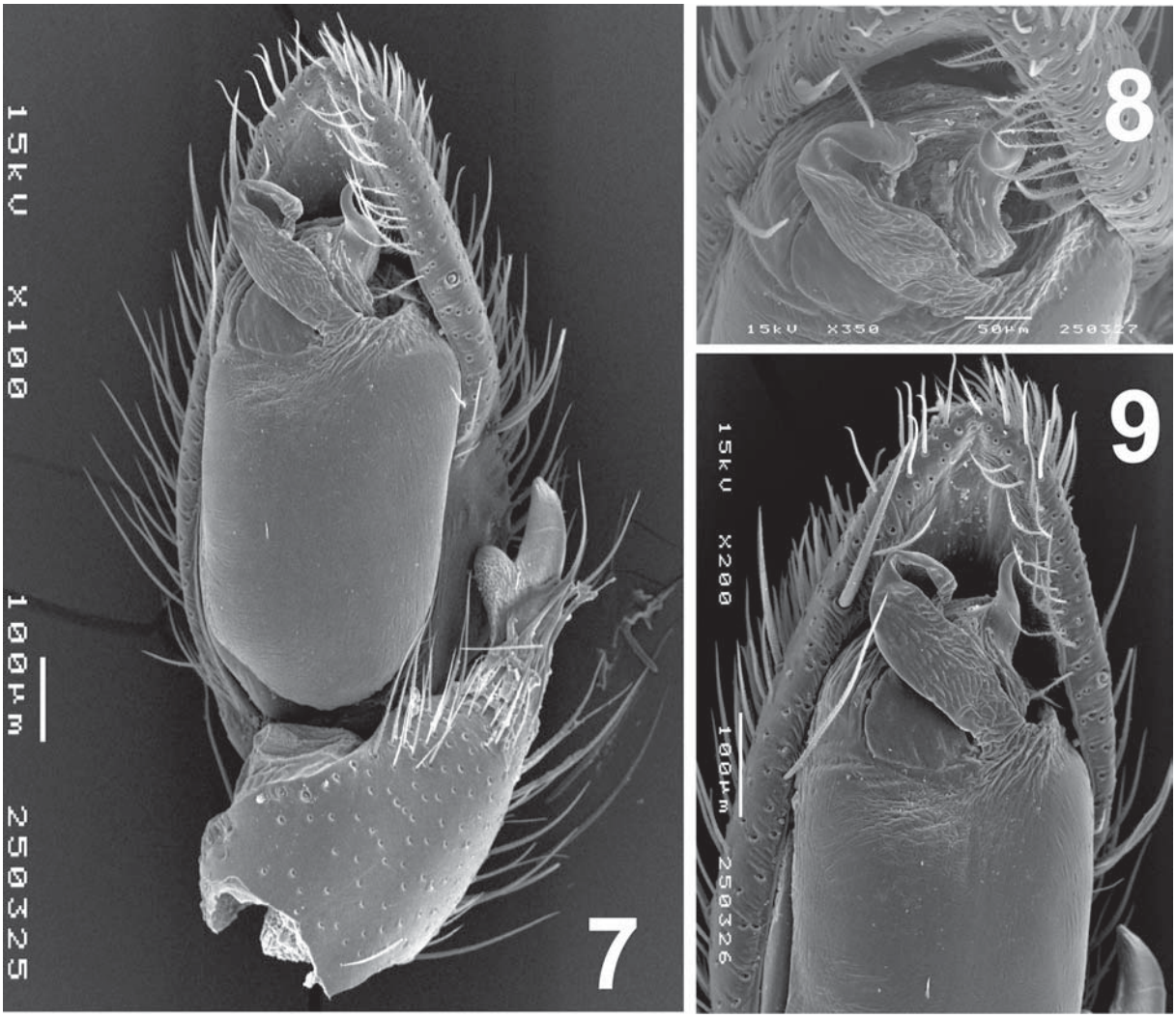
Trachyzelotes barbatus (L. Koch, 1866)
Figs 10–16.

Melanophora b. L. Koch, 1866: 161–163, pl. 6, f. 101–103 (♂♀).



Figs 1–6. Copulatory organs of *Poecilochroa senilis*: 1 — male palp, retrolateral view; 2 — male palp, ventral view; 3 — tibia of male palp, prolateral view; 4 — epigyne, ventral view; 5 — epigyne, dorsal view; 6 — basal segment of female chelicerae, apical part, anterior view.

Рис. 1–6. Копулятивные органы *Poecilochroa senilis*: 1 — пальпа самца, ретролатерально; 2 — пальпа самца, вентрально; 3 — голень пальпы самца, пролатерально; 4 — эпигина, вентрально; 5 — эпигина, дорсально; 6 — хелицера самки, вершина базального сегмента, спереди.



Figs 7–9. Male palp of *Poecilochroa senilis*: 7 — ventral view; 8 — apical view; 9 — bulbus, ventral view.
Рис. 7–9. Пальпа самца *Poecilochroa senilis*: 7 — вентрально; 8 — апикально; 9 — бульбус, вентрально.

Prosthesima b.: Chyzer & Kulczynski, 1897: 208, pl. 7, f. 46, pl. 8, f. 23 (♂♀).

T. b.: Platnick & Murphy, 1984: 15, f. 27–30 (♂♀).

T. b.: Chatzaki et al., 2003: 53, f. 20–21, 26–27 (♂♀).

For a complete list of references see Platnick [2008].

FAUNISCIC RECORDS FROM CRIMEA: Spassky, 1927; Charitonov, 1932; Tyshchenko, 1971; Ovtsharenko, 1982 — all as *Zelotes barbatus* (L. Koch, 1866); Mikhailov, 1997 — as *Trachyzelotes*; Kovblyuk, 2003, 2004a, b — as misidentification by previous authors.

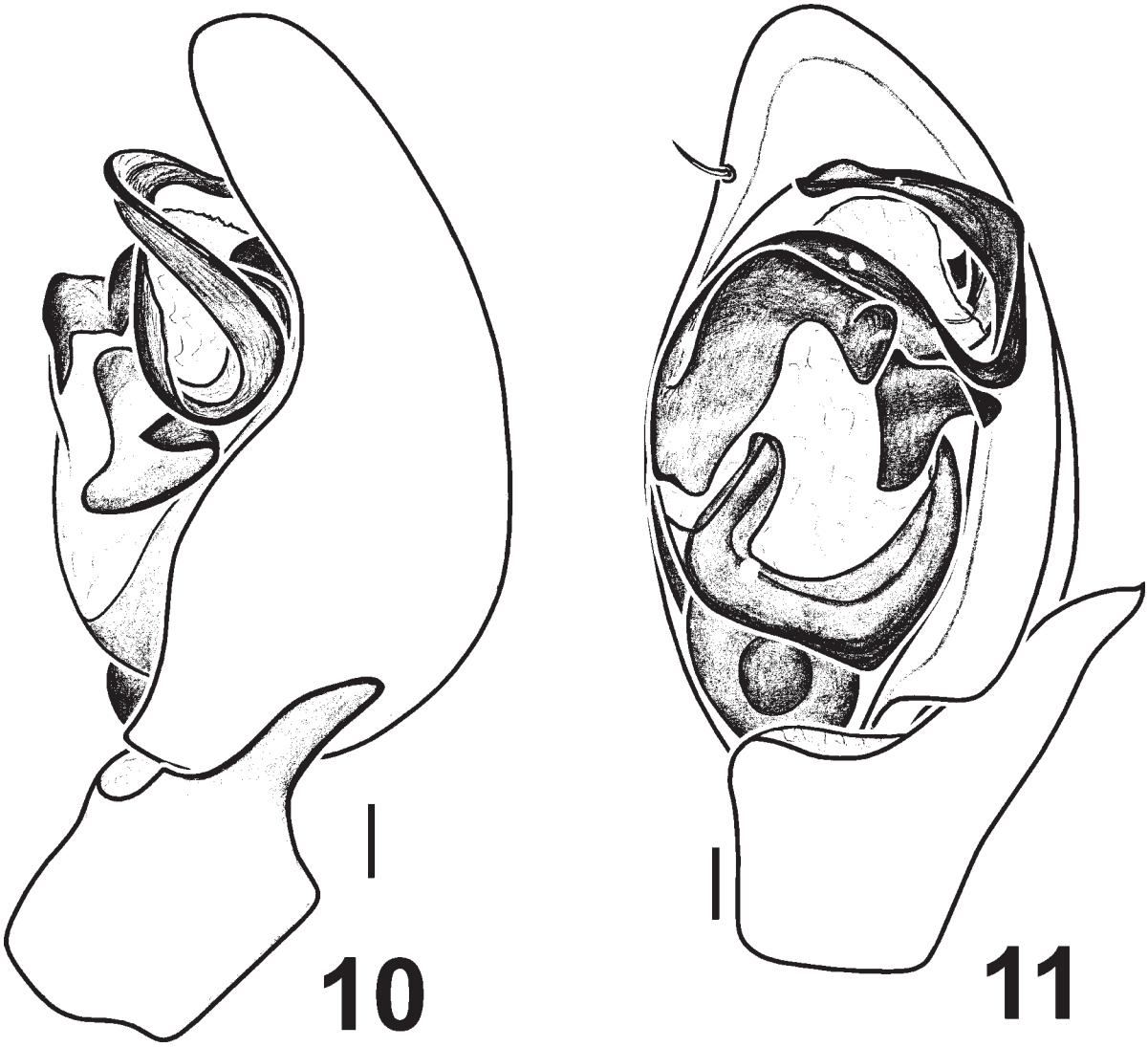
NOTE. Figures of *Trachyzelotes barbatus* by F. Miller [1967: pl. III, f. 17–18, pl. VI, f. 5 (♂♀)] in fact refer to *Trachyzelotes malkini* Platnick & Murphy, 1984.

MATERIAL. UKRAINE: CRIMEA. Feodosiya Distr.: 1 ♂ (TNU–2382/3), Karadag Nature Reserve, Biological station, 31.05.–10.06.2007, O.V. Kukushkin; 1 ♀ (TNU–2385/13), s.p., 11–30.06.2007, O.V. Kukushkin; 1 ♀ (TNU–2396/4), s.p., 6.07.2007, M.M. Kovblyuk; 2 ♀♀ (TNU–2401/2), s.p., 07.2007, O.V. Kukushkin.

COMPARATIVE MATERIAL. *Trachyzelotes malkini* Platnick & Murphy, 1984 — see material in Kovblyuk [2004b] and Kovblyuk et al. [2008] and also additional material: UKRAINE: CRIMEA, Feodosiya Distr., Karadag Nature Reserve: 1 ♂ (TNU–1822/6), ?.06.2003, O.V. Kukushkin; 1 ♂ (TNU–2034/5), Biological station, *Quercus pubescens* forest, 2.07.2004; 1 ♀ (TNU–2009/9), s.p., 15–30.07.2004, O.V. Kukushkin; 1 ♂ (TNU–1972/5), Biological station, 20–30.05.2005, O.V. Kukushkin; 1 ♂ (TNU–1978/5), s.p., ?.06.2005, O.V. Kukushkin; 1 ♂ (TNU–2562/5), s.p., 18–23.05.2008, O.V. Kukushkin.

DIAGNOSIS. The shape of embolus and epigynal ducts easily distinguish *T. barbatus* from all other *Trachyzelotes* species. *T. barbatus* may be confused with *T. malkini* (Figs. 17–21), but can be distinguished by the male palps, epigyne and coloration. General coloration of carapace *T. barbatus* is red to brown, while in *T. malkini* it is black.

DISTRIBUTION. From West Mediterranean to Central Asia and USA (introduced): Sahara, “Oase Bisera” (perhaps it is Biskra, in Algeria); Spain; France; Italy; Croatia; Crete; Hungary; Ukraine; Rostov Area of Russia; California [L. Koch, 1866; Chyzer & Kulczynski, 1897; Platnick & Murphy, 1984; Chatzaki et al., 2003; Ponomarev & Tsvetkov, 2004; Platnick, 2008].



Figs 10–11. Male palp of *Trachyzelotes barbatus*: 10 — retrolateral view; 11 — ventral view.
Рис. 10–11. Пальпа самца *Trachyzelotes barbatus*: 10 — ретролатерально; 11 — вентрально.

PHENOLOGY: ♂♂ — VI; ♀♀ — VI–VII. In Rostov Area phenology is as in Crimea: ♂♂ — VII; ♀♀ — VI [Ponomarev & Tsvetkov, 2004]. In California ♂♂ — IV; ♂♀ — VI–VIII [Platnick & Murphy, 1984]. On Crete ♂♀ — IV–VIII; ♀♀ — V–IX [Chatzaki et al., 2003].

NOTE. Earlier Kovblyuk [2003, 2004a, b] doubted previous identifications of *T. barbatus* from Crimea. There are four species of *Trachyzelotes* Lohmander, 1944, in Crimea: *T. barbatus*; *T. malkini*; *T. lyonneti* (Audouin, 1826) and *T. pedestris* (C. L. Koch, 1837) [Kovblyuk, 2003, 2004a, b, and this article].

Zelotes eugenei Kovblyuk, **sp.n.**
Figs 22–28.

MATERIAL. UKRAINE: CRIMEA. Lenin Distr.: holotype ♂ and paratypes 2 ♀♀ (ZMMU and TNU), Arabatskaya strelka, 2 km south of Schastlivtsevo Vil., coast of Azov Sea, 9–13.09.2003, E.M. Zhukovets.

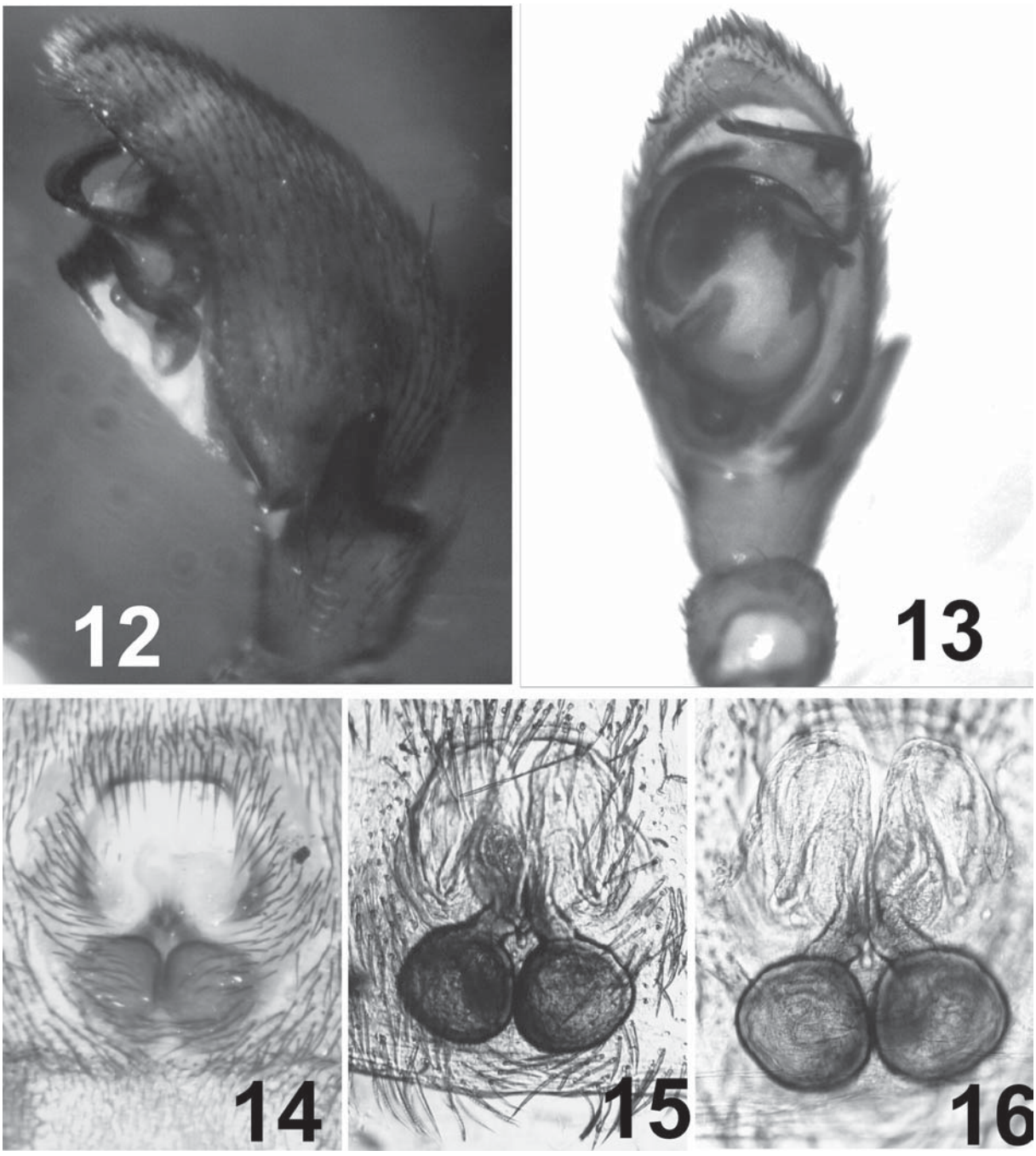
DIAGNOSIS. The new species belongs to *Zelotes subterraneus*-group. *Z. eugenei* sp.n. can be easily distinguished from congroupers by the shape of embolus and epigyne. The thick embolus is recurved and directed retrolaterally. RTA longer than tibia. Fovea of epigyne with diagonally directed grooves.

DESCRIPTION. (♂ / ♀; n = 1 / 1): Measurements. Total length 6.8 / ? (female is not measured because abdomen and cephalothorax are separated). Carapace: 3.0 / 2.8 long, 2.4 / 2.2 wide. Eye sizes and legs segments are not measured because only one male/one female are available.

Coloration: Carapace, chelicerae, sternum, labium, palps, legs, book-lungs, scutum on male's abdomen dark brown. Abdomen dark grey.

Palp as in Figs 22–24, 26, thick embolus is recurved and directed retrolaterally. RTA straight, longer than tibia.

Epigyne as in Figs 25, 27–28, with two unfused apical pockets; width of fovea smaller than distance between pockets; foveal grooves diagonally directed; insemination ducts



Figs 12–16. Copulatory organs of *Trachyzelotes barbatus*: 12 — male palp, retrolateral view; 13 — male palp, ventral view; 14–15 — epigyne, ventral view; 16 — epigyne, dorsal view.

Рис. 12–16. Копулятивные органы *Trachyzelotes barbatus*: 12 — пальпа самца, ретролатерально; 13 — пальпа самца, вентрально; 14–15 — эпигина, вентрально; 16 — эпигина, дорсально.

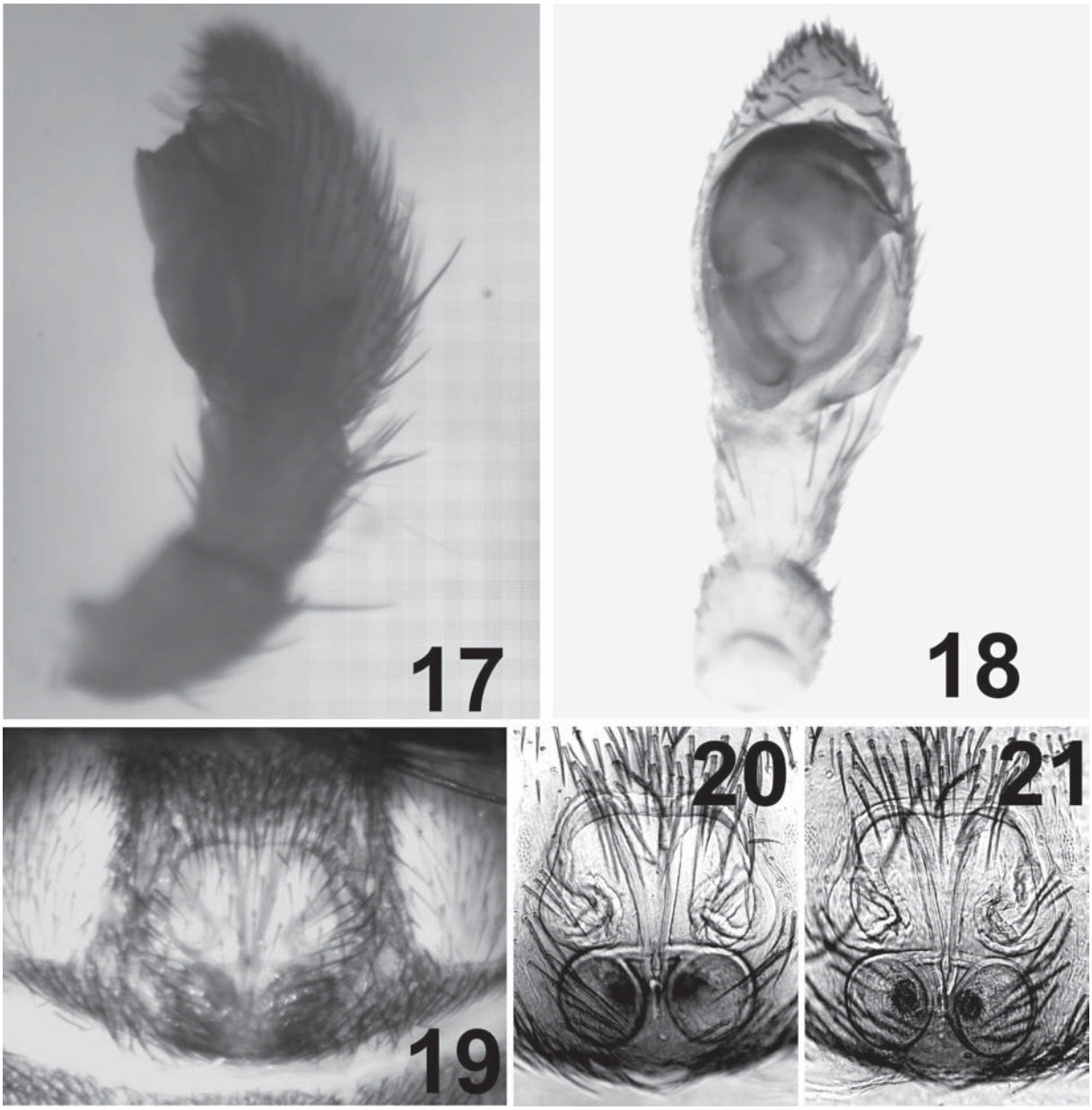
make half circle loop; accessorialgland round shaped and in mid part of loop.

DISTRIBUTION. Northern Crimea only.

HABITATS. Sandy steppe with of *Elaeagnus* sp. trees; under stone.

PHENOLOGY: ♂♀ — IX.

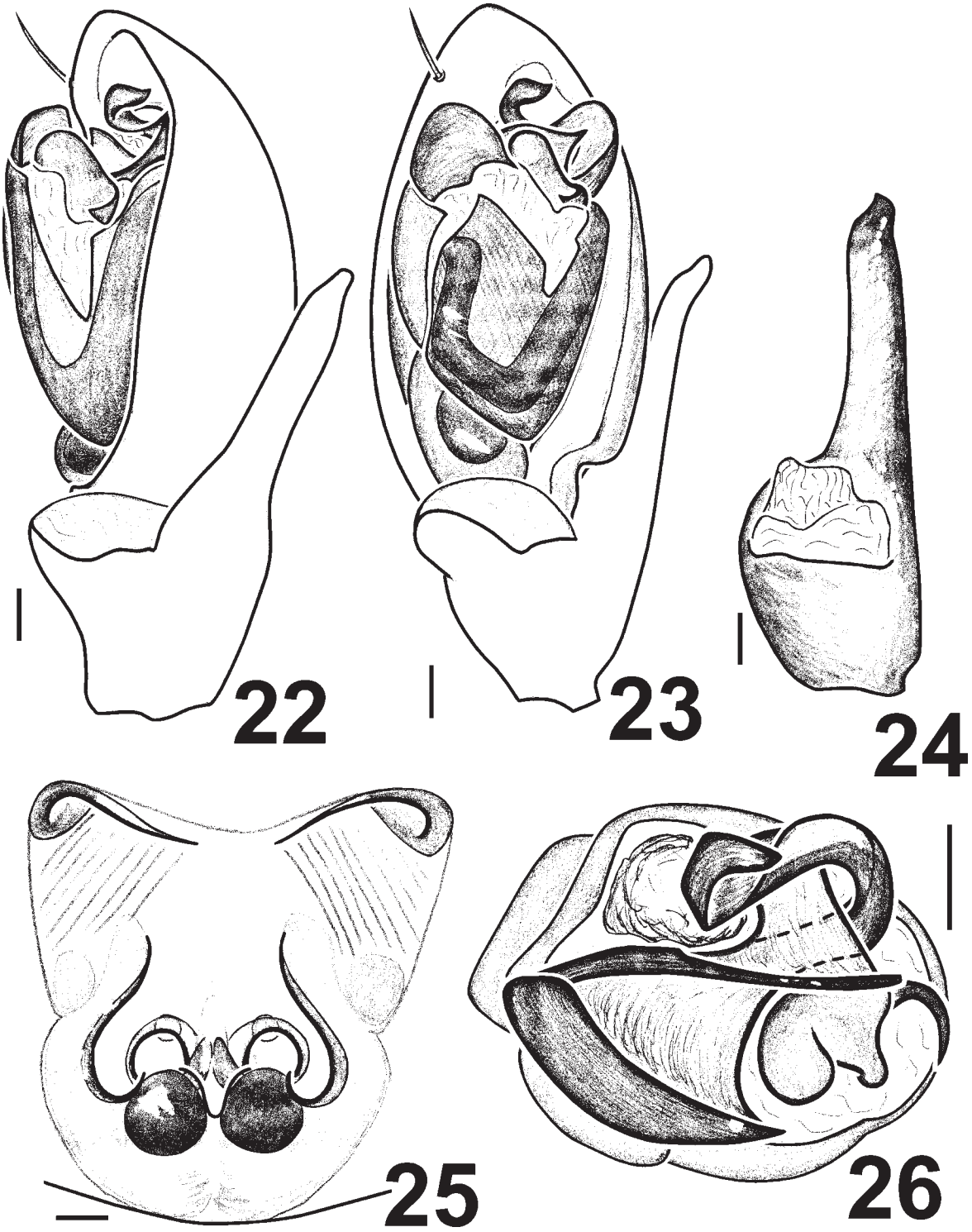
ETYMOLOGY. The species is named in honour of our colleague and first teacher of M.K. in arachnology, Eugene Mikhailovich Zhukovets (Minsk, Belarus), who collected the type specimens.



Figs 17–21. Copulatory organs of *Trachyzelotes malkini*: 17 — male palp, retrolateral view; 18 — male palp, ventral view; 19–20 — epigyne, ventral view; 21 — epigyne, dorsal view.

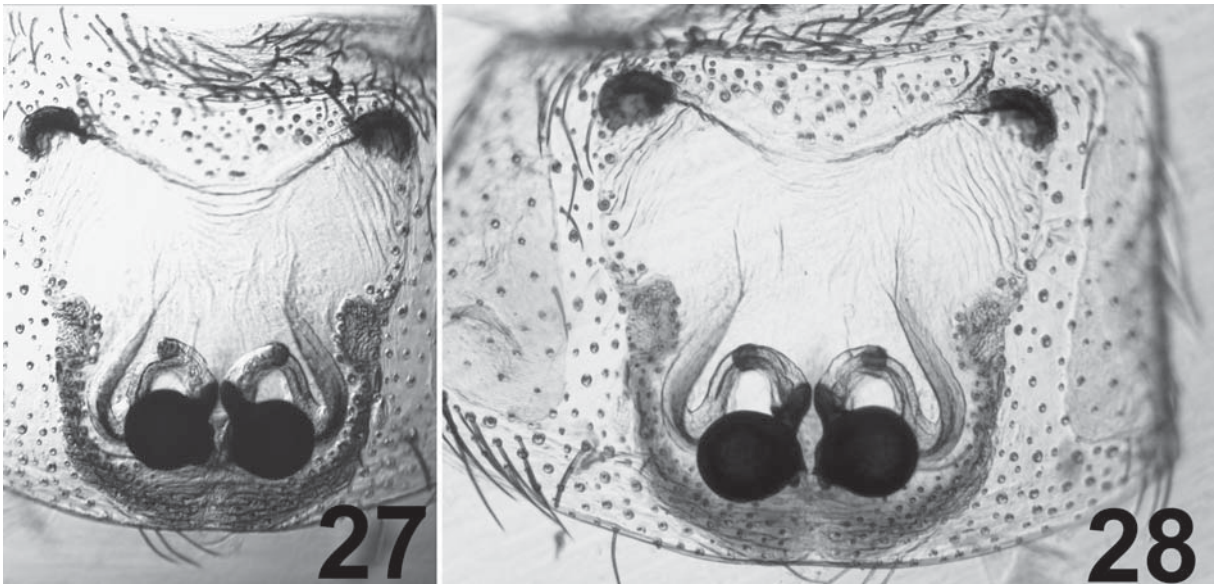
Рис. 17–21. Копулятивные органы *Trachyzelotes malkini*: 17 — пальпа самца, ретролатерально; 18 — пальпа самца, вентрально; 19–20 — эпигина, вентрально; 21 — эпигина, дорсально.

ACKNOWLEDGEMENTS. We wish to thank staff of the Karadag Nature Reserve for the support of M.K. scientific work. The authors sincerely thank E.M. Zhukovets (Minsk, Belarus), who collected and send us specimens of *Zelotes eugenei* sp.n., and O.V. Kukushkin (Karadag Nature Reserve, Ukraine), who collected many interesting spiders in Crimea. The authors are deeply obliged to M. Chatzaki (Irakleio, Greece), Di Franco (Catania, Italy), N.I. Platnick (NewYork, USA), A.V. Ponomarev (Rostov-on-Don, Russia), O. Seyyar (Kayseri, Turkey) and other colleagues for references search. M.K. sincerely thanks Seppo Koponen (Turku, Finland) and Yuri M. Marusik (Magadan, Russia) for making possible the visit to the Zoological Museum, University of Turku in 2004 and for the use of the Lab's SEM and other equipment; Y.M. Marusik helped with making SEM photographs; R. Bosmans (Gent, Belgium) for consultation about position of "Oase Bisera". We thank P.E. Gol'din (Simferopol) for improving the English of the earlier draft and Y.M. Marusik for consultations and corrections in the text.



Figs 22–26. Copulatory organs of *Zelotes eugenei* sp.n.: 22 — male palp, retrolateral view; 23 — male palp, ventral view; 24 — RTA, prolateral view; 25 — epigyne, ventral view; 26 — bulbus, apical view.

Рис. 22–26. Копулятивные органы *Zelotes eugenei* sp.n.: 22 — пальпа самца, ретролатерально; 23 — пальпа самца, вентрально; 24 — отросток голени пальпы, пролатерально; 25 — эпигина, вентрально; 26 — бульбус, апикально.



Figs 27–28. Epigyne of *Zelotes eugenei* sp.n.: 27 — ventral view; 28 — dorsal view.
Рис. 27–28. Эпигина *Zelotes eugenei* sp.n.: 27 — вентрально; 28 — дорсально.

References

Charitonov D.E. 1932. Katalog der russischen Spinnen. AN SSSR. Leningrad: Izdatelstvo AN SSSR. 206 S.

Chatzaki M., Thaler K., Mylonas M. 2002. Ground spiders (Gnaphosidae; Araneae) of Crete (Greece). Taxonomy and distribution. I // Revue suisse de Zoologie. T.109. Fasc.3. P.559–601.

Chatzaki M., Thaler K., Mylonas M. 2003. Ground spiders (Gnaphosidae; Araneae) from Crete and adjacent areas of Greece. Taxonomy and distribution. III: *Zelotes* and allied genera // Revue suisse de Zoologie. T.110. Fasc.1. P.45–89.

Chyzer C., Kulczyn'ski W. 1897. Araneae Hungariae. T.2. Pt.2. Budapest. P.147–366.

Di Franco F. 2002. Observations on the spider family Gnaphosidae (Araneae) in the nature reserve "Oasis of Simeto" (Italy, Sicily) // European Arachnology 2000 (S. Toft & N. Scharff eds.) Proceeding of the European Colloquium of Arachnology, Arhus 17–22 July 2000. Aarhus: Aarhus University Press. P.279–282.

Koch L. 1866. Die Arachniden-Familie der Drassiden. Nurnberg: Verlag von J.L. Lotzbeck. 352 S.

Koch L. 1878. Kaukasische Arachnoideen // Naturwissenschaftliche Beitrage zur Kenntniss der Kaukasuslander auf Grund seiner Sammelausbeute (Schneider O. ed.). Sonderheft der Sitzungsberichte der Naturforschenden Gesellschaft ISIS. Dresden. S.9–71.

Kovblyuk M.M. 2003. The spider genus *Trachyzelotes* in the Crimea, South Ukraine (Araneae: Gnaphosidae) // Program, abstracts, list of participants of the 21th European Colloquium of Arachnology (4–9 August 2003, St. Petersburg, Russia). St. Petersburg: St. Petersburg University Press. P.48.

Kovblyuk M.M. 2004a. [Catalogue of the spiders (Arachnida: Aranei) of the Crimea, South Ukraine] // Points on the development of the Crimea. Analytical, scientific and practical collected articles open to discussion. 15-th issue: Problems of the ecology in the Crimea. Inventory animals and plants species in the Crimea. Simferopol: Tavriya-Plus. P.211–262 [in Russian].

Kovblyuk M.M. 2004b. The spider genus *Trachyzelotes* Lohmander, 1944 in the Crimea, south Ukraine (Araneae: Gnaphosidae) // European Arachnology 2003 (D.V. Logunov & D. Penney eds.). Proceedings of the 21th European Colloquium of Arachnology (St.-Petersburg, 4–9 August 2003). Arthropoda Selecta. Special Issue No.1. P.139–146.

Kovblyuk M.M. 2006. [Gnaphosid spiders (Arachnida: Aranei) in Crimean fauna]. Abstract of PhD thesis, Kyiv: Institute of Zoology Ukrainian Acad. of Sci. 20 p. [in Ukrainian, with Russian and English summary].

Kovblyuk M.M., Nadolny A.A., Gnelitsa V.A., Zhukovets E.M. 2008. [Spiders (Arachnida, Aranei) of the Martyan Cape Reserve (Crimea, Ukraine)] // Caucasian Entomological Bull. Vol.4. No.1. P.3–40 [in Russian].

Levy G. 1999. Spiders of six uncommon drassodine genera (Araneae: Gnaphosidae) from Israel // Israel Journal of Zoology. Vol.45. P.427–452.

Mikhailov K.G. 1997. Catalogue of the spiders of the territories of the former Soviet Union (Arachnida, Aranei). Moscow: Zoological Museum of the Moscow State University. 416 pp.

Miller F. 1967. Studien über die Kopulationsorgane der Spinnengattung *Zelotes, Micaria, Robertus* und *Dipoena* nebst Beschreibung einiger neuen oder unvollkommen bekannten Spinnenarten // Acta scientiarum naturalium Academiae scientiarum bohemoslovacae — Brno. T.1. S.251–298.

Murphy J.A. 2007. Gnaphosid genera of the world. St Neots, Cambs: British Arachnological Society. 2 vols. Vol. 1 (text). P. i–xii + 1–92; Vol. 2 (plates). P. i–ii + 93–605.

Ovtsharenko V.I. 1982. [A systematic list of the spider family Gnaphosidae (Aranei) of the European part of the USSR and the Caucasus] // Entomol. Obozr. T.61. Vol.4. P.830–844 [in Russian].

Platnick N.I. 2008. The World Spider Catalog. Version 8.5. (Fam. Gnaphosidae Pocock, 1898). American Museum of Natural History. Online et: http://research.amnh.org/entomology/spiders/catalog/incex.html

Platnick N.I., Murphy J.A. 1984. A revision of the spider genera *Trachyzelotes* and *Urozelotes* (Araneae, Gnaphosidae) // American Museum Novitates. No.2792. 30 pp.

Ponomarjov A.V. & Tsvetkov A.S. 2004. [The generalized data on spiders (Aranei) of the Nature Reserve "Rostovski"] // Trudy Gosudarstvennogo prirodnogo zapovednika "Rostovski". Vol.3. P.84–104 [in Russian].

Seyyar O., Topcu A., Demir H. 2006. New records of ground spiders (Araneae: Gnaphosidae) from Anatolia // Zoology in the Middle East. T.38. P.118–120.

Spassky S.A. 1927. [Materials to the spider fauna of the Tauric Gouvernement] // Izvestiya Donskogo Instituta Sel'skogo Khozyaistva i Melioratsii. Vol.7. P.66–80 [in Russian].

Tyshchenko V.P. 1971. [Identification key to spiders of the European part of the USSR]. Leningrad: Nauka. 281 pp. [in Russian].