

The spider genus *Trachelas* L. Koch, 1872 (Aranei: Corinnidae) in Russia

Пауки рода *Trachelas* L. Koch, 1872 (Aranei: Corinnidae) России

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КЛЮЧЕВЫЕ СЛОВА: *Trachelas*, новый вид, Хабаровский край России.

ABSTRACT. Three species of *Trachelas* are recorded from Russia: *T. minor* O. Pickard-Cambridge, 1872, *T. japonicus* Bösenberg & Strand, 1906 and *T. tanasevitchi* sp.n. (Bolshekhkhtsyrski Reserve Khabarovsk Prov., ♀). All species are described and illustrated.

РЕЗЮМЕ. Три вида рода *Trachelas* отмечены в России: *T. minor* O. Pickard-Cambridge, 1872, *T. japonicus* Bösenberg & Strand, 1906 и *T. tanasevitchi* sp.n. (Большехехцирский заповедник, Хабаровский край, ♀). Приведены описания и иллюстрации этих видов.

Introduction

Trachelas L. Koch, 1872 is a fairly large genus with 86 species distributed almost worldwide [Platnick, 2010] and is apparently absent only from Australia and New Zealand. Recently, all Palaearctic representatives of this genus were revised in three independent studies [Bosselaers et al., 2009; Feng et al., 2009; Kovblyuk & Nadolny, 2009]. Bosselaers et al [2009] revised all eight species from the Mediterranean region and described one new species from the Iberian Peninsula. The paper of Feng et al. [2009] revised all Chinese members of the genus (six species altogether) and described two new species. Kovblyuk and Nadolny [2009] surveyed two species occurring in Crimea and Caucasus. The latter paper demonstrated that *Trachelas* was not a monophyletic genus and described a new genus, *Paratrachelas*, for two species. Bosselaers et al (2009) also suggested that *Trachelas* is not a monophyletic genus. Taking into account new discoveries and transfers, the actual diversity of *Trachelas* is 87 species, 12 of them from the Palaearctic.

Trachelas is one of two corinnid genera that are known from Russia, the other being *Phrurolithus* C.L.

Koch, 1839. The diversity of Corinnidae in adjoining countries is higher.

Only two species of *Trachelas*: *T. minor* O. Pickard-Cambridge, 1872 and *T. japonicus* Bösenberg et Strand, 1906, were known from Russia. The former was recently reported from Krasnodar Area and Ingushetia [Mikhailov & Seifulina, 2003; Kovblyuk & Nadolny, 2009] and the latter was recorded only from Khabarovsk and Maritime Provinces [Marusik et al., 2007; Marusik, 2009].

While surveying spiders from the Bolshekhkhtsyrski Nature Reserve [Marusik et al., 2007], the first author found *T. japonicus* and one unidentified species. When the revision of Chinese *Trachelas* was published [Zhang et al., 2009], it became clear that specimen from Bolshekhkhtsyrski Reserve belongs to an undescribed species.

The goal of this paper is the description of the new *Trachelas* species and its comparison with the sympatric *T. japonicus*.

Material and Methods

Material treated herein will be deposited in the Zoological Museum of Moscow State University (ZMMU). Specimens were photographed using an Olympus Camedia E-520 camera attached to an Olympus SZX16 stereomicroscope. The images were mounted using "CombineZM" image stacking software. Photographs were taken under 75% ethanol in dishes of different size with paraffin wax in the bottom. Different sized holes were made in the wax to keep the specimens in the correct position.

Coloration was described from specimens preserved in 75% ethanol with added glycerin (9:1 by volume). Legs and palpal segments were measured after separation from the cephalothorax. All measurements are in mm.



Figs 1–5. Habitus and pattern of *Trachelas japonicus* (1–2), *T. tanasevitchi* sp.n. (3) and *T. minor* (4–5): 1, 5 — male, dorsal; 2–4 — female, dorsal. Abbreviations: Sc — scutum.

Рис. 1–5. Габитус и рисунок *Trachelas japonicus* (1–2), *T. tanasevitchi* sp.n. (3) и *T. minor* (4–5): 1, 5 — самец, дорсально; 2–4 — самка, дорсально.

Museum abbreviations:

CP — personal collection of A.V. Ponomarev, Rostov-on-Don, Russia;

IBPN — Institute for biological problems of the North, Magadan, Russia

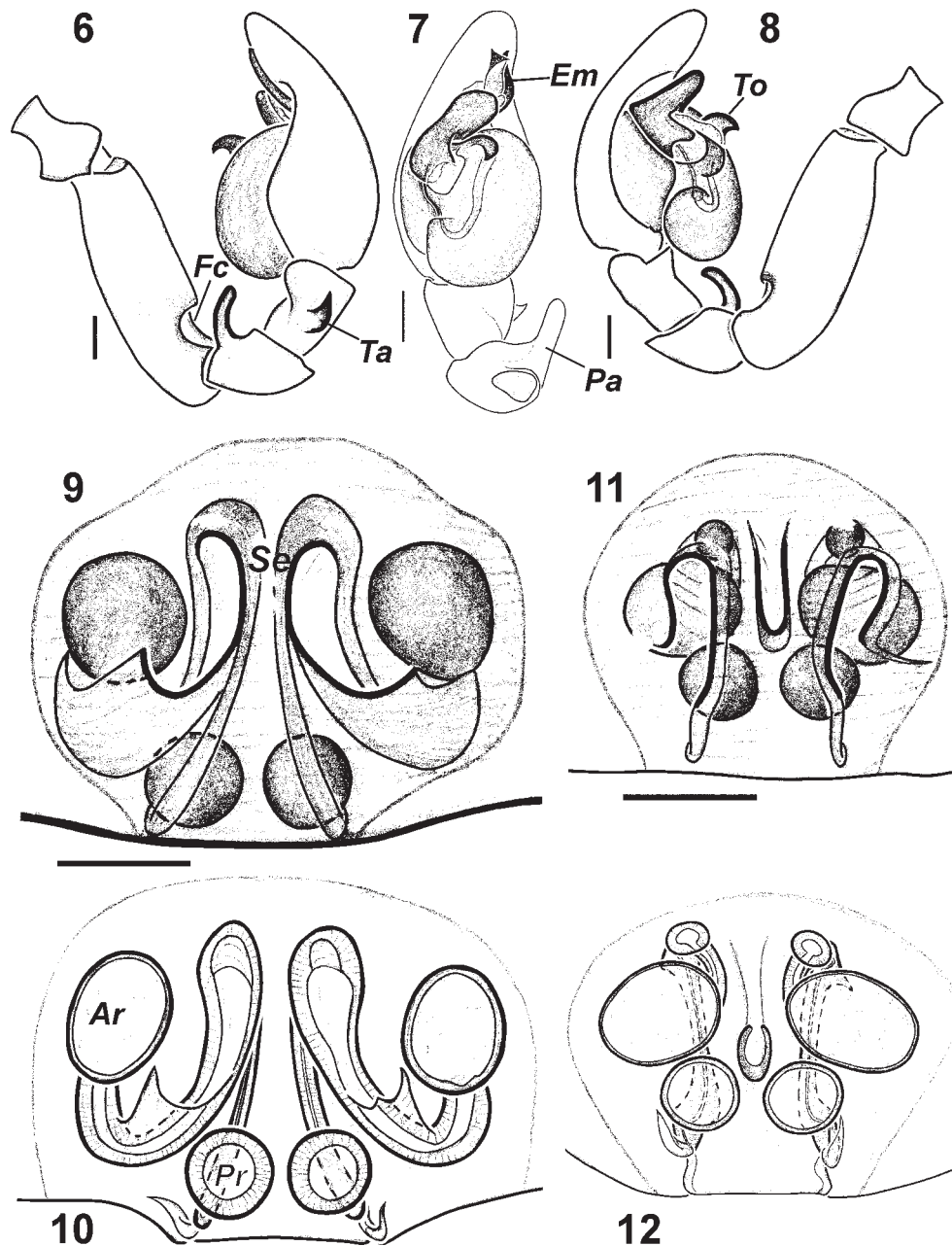
ZMMU — Zoological Museum of Moscow State University.

Species survey

Trachelas japonicus Bösenberg et Strand, 1906
Figs 1–2, 6–10, 24.

T. j.: Chikuni, 1989: 128, f. 28 (♂♀).

T. j.: Paik, 1991: 201, f. 12–23 (♂♀).



Figs 6–12. Copulatory organs of *Trachelas japonicus* (6–10) and *T. tanasevitchi* sp.n. (11–12): 6–8 — male palp, retrolateral, ventral and prolateral, respectively; 9, 11 — epigyne, ventral; 10, 12 — epigyne after maceration, dorsal. Scale 0.1 mm. Abbreviations: *Ar* — anterior receptaculum; *Em* — embolus; *Fc* — femoral cavity; *Pa* — patellar apophysis; *Pr* — posterior receptaculum; *Se* — septum; *Ta* — tibial apophysis; *To* — tegular outgrowth.

Рис. 6–12. Копулятивные органы *Trachelas japonicus* (6–10) и *T. tanasevitchi* sp.n. (11–12): 6–8 — палпы самца, ретролатерально, вентрально и пролатерально, соответственно; 9, 11 — эпигина, вентрально; 10, 12 — эпигина после мацерации, дорсально. Масштаб 0,1 мм.

T. j.: Song et al., 2001: 324, f. 209A–H (♂♀).

T. j.: Namkung, 2002: 455, f. 35.2a–b (♂♀).

T. j.: Zhang et al., 2009: 51, figs. 23–35 (♂♀).

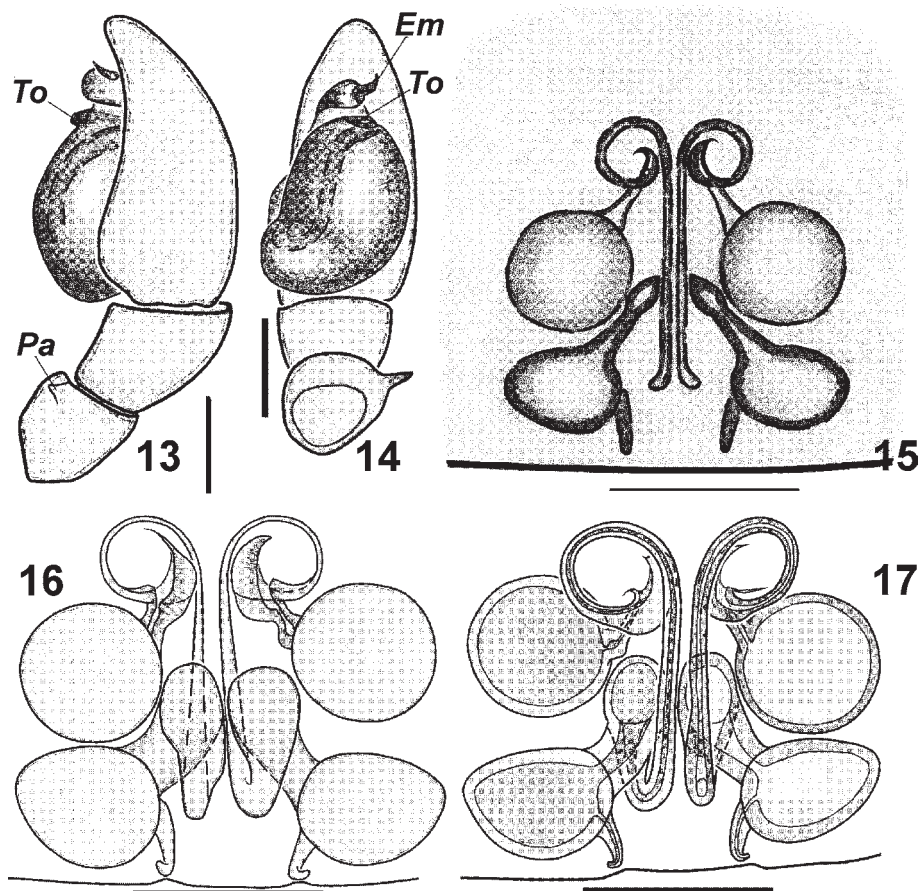
T. j.: Kamura, 2009: 553, f. 2-2-64—18-21.

For all references see Platnick [2010].

FAUNISTIC RECORDS FROM RUSSIA: Kim & Kurenshchikov, 1995: 58; Marusik et al., 2007: 42 — Khabarovsk Prov.

MATERIAL. RUSSIA. **Khabarovsk Province**: 1 ♂ 1 ♀ (ZMMU), Bolshehekhtsyrski Reserve, Klyuch Sosnensky Kordon, 05.2004 (A.V. Tanasevitch); 1 ♂ (ZMMU), Bolshehekhtsyrski Reserve, Chirki Kordon, 05–06.2004 (A.V. Tanasevitch). **Maritime Province**: 2 ♂♂ 3 ♀♀ (IBPN), Chuguyevka Field Station, ca 43°50'N 134°15'E, 31.07–5.08.1998 (Yu.M. Marusik).

DIAGNOSIS. *T. japonicus* can be easily distinguished from other species found in Russia due the



Figs 13–17. Copulatory organs of *Trachelas minor* from Crimea (after Kovblyuk & Nadolny, 2009): 13–14 — male palp, retrolateral and ventral, respectively; 15, 17 — epigyne, ventral; 16 — epigyne, dorsal. 16–17 — epigyne after maceration. Scale 0.1 mm. Abbreviations: *Em* — embolus; *Pa* — patellar apophysis; *To* — tegular outgrowth.

Рис. 13–17. Копулятивные органы *Trachelas minor* из Крыма (по Kovblyuk & Nadolny, 2009): 13–14 — пальпа самца, ретролатерально и вентрально, соответственно; 15, 17 — эпигина, вентрально; 16 — эпигина, дорсально. 16–17 — эпигина после мацерации. Масштаб 0,1 мм.

dark uniformly coloured carapace and shape of copulatory organs. Males of this species have a long finger like patellar apophysis (short and pointed in *T. minor*), a tibial apophysis (absent in *T. minor*) and a massive and long embolus (short in *T. minor*). Females of this species can easily be recognized by having a thin septum and closely spaced posterior pair of receptacula (wide septum with distinct furrow in *T. tanasevitchi* sp.n.; septum absent and posterior pair of receptaculæ spaced by one diameter in *T. minor*).

DESCRIPTION. Measurements (♂/♀): total length 2.7 / 3.8; carapace 1.3 / 1.4 length, 1.1 / 1.1 width. Length of leg segments (♂/♀):

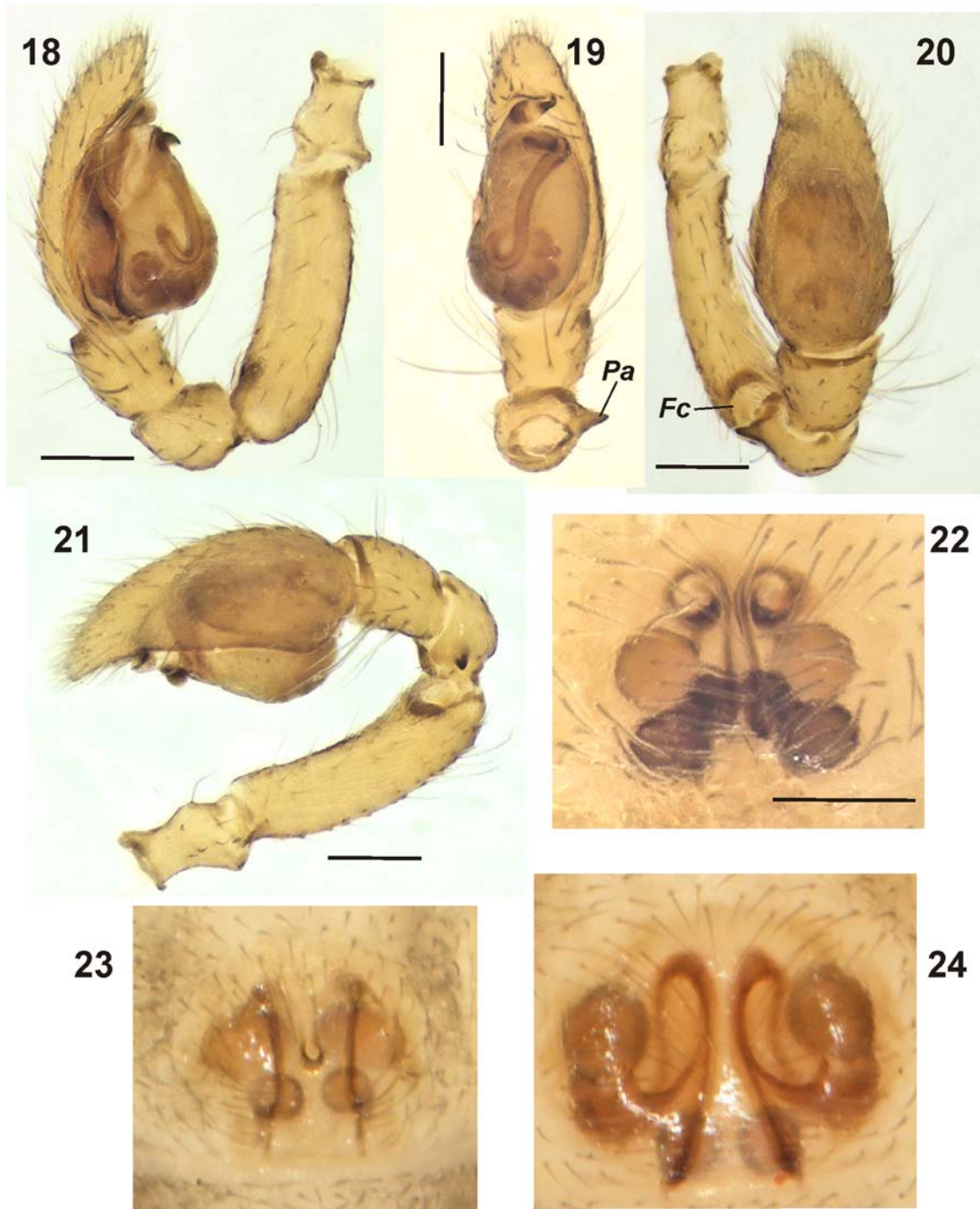
Legs	femur	patella	tibia	metatarsus	tarsus
I	1.0/1.0	0.5/0.5	0.8/0.8	0.6/0.6	0.5/0.5
II	0.9/0.9	0.4/0.4	0.7/0.7	0.6/0.6	0.5/0.4
III	0.7/0.7	0.4/0.4	0.5/0.5	0.6/0.6	0.3/0.3
IV	0.9/1.0	0.4/0.4	0.8/0.9	0.8/0.9	0.4/0.4

Abdomen length 1.5 / 2.4. Scutum absent in female, but present in male.

Carapace, sternum and chelicerae dark red-brown with vermiculation. Abdomen in female dark-gray with dorsal pattern formed by dark median band and 6 transverse stripes (Fig 2). Abdomen in male darker than in female with indistinct pattern, whole dorsum covered with scutum. Legs and palps yellow-brown in female, male palps dark. Tibia and metatarsus III–IV in male with gray annulations on proximal and distal ends as in Fig 1. Female legs without annulations (Figs 2).

Male palp as in Figs 6–8. Femur with distinct cavity in antero-ventral part, patella with long finger like apophysis (as long as diameter of patella), tibia with claw like retrolateral apophysis located in middle of tibia and directed perpendicularly to axis of the palp; tegulum as high as wide with claw-like outgrowth originating from the base of embolus; embolus complex, thick and long (about of height of tegulum), with bifurcated tip.

Epigyne as in Figs 9–10, 24. Epigynal plate with distinct septum, subequal in width to diameter of posterior pair of receptaculæ, margins of septum diverg-



Figs 18–24. Copulatory organs of *Trachelas minor* (18–22), *T. tanasevitchi* sp.n. (23) and *T. japonicus* (24): 18 — male palp, prolateral; 19 — male palp, ventral; 20 — male palp, dorsal; 21 — male palp, retrolateral; 22–24 — epigyne, ventral. Scale 0.1 mm. Abbreviations: *Fc* — femoral cavity; *Pa* — patellar apophysis.

Рис. 18–24. Копулятивные органы *Trachelas minor* (18–22), *T. tanasevitchi* sp.n. (23) и *T. japonicus* (24): 18 — палпа самца, пролатерально; 19 — палпа самца, вентрально; 20 — палпа самца, дорсально; 21 — палпа самца, ретролатерально; 22–24 — эпигина, вентрально. Масштаб 0,1 мм.

ing posteriorly, copulatory openings located in middle half of epigyne; anterior pair of receptaculæ spaced by 2.5 of their diameters; anterior receptaculum more than one diameter from posterior .

DISTRIBUTION. This species is restricted to south-eastern Palaearctic and known from Russia (Khabarovsk and Maritime Prov.), northeastern China, Korea and Japan [Marusik et al., 2007; Platnick, 2010]. The record

from Chuguyevka Field Station is first for the Maritime Province.

Trachelas tanasevitchi sp.n.

Figs 3, 11–12, 23.

Trachelas sp.: Marusik et al., 2007: 42.

MATERIAL. RUSSIA. Holotype: 1 ♀ (ZMMU), *Khabarovsk Province*, Bolshekhkhtsyrski Reserve, Chirki Kordon, 05–06.2004 (A.V. Tanasevitch).

ETYMOLOGY. The species name is a patronym honoring our friend and colleague Andrei V. Tanasevitch (Moscow), who collected the holotype.

DIAGNOSIS. The new species can be recognized due to the pattern of carapace (dark frontal part, and orange posterior part), wide septum with longitudinal furrow (Figs 11–12, 23) lacking all other *Trachelas* species.

DESCRIPTION. Measurements (♀): total length 3.2; carapace 1.2 length, 1.0 width. Length of leg segments (♂):

Legs	femur	patella	tibia	metatarsus	tarsus
I	0.8	0.4	0.7	0.6	0.4
II	0.8	0.3	0.6	0.5	0.4
III	0.6	0.3	0.4	0.5	0.3
IV	0.8	0.4	0.7	0.7	0.3

Legs without a spines and cusps. Abdomen length 1.9. Scutum is absent.

Carapace with pattern: frontal part dark red-brown, and posterior part light-brown (Fig. 3). Sternum is light-brown and smooth. Chelicerae dark red-brown. Carapace and chelicerae with fine vermiculation. Abdomen dark, darker than posterior half of carapace, without dorsal pattern (Fig. 3). Legs and palps are yellow-brown without annulations (Fig. 3).

Epigyne as in Figs 11–12, 23. Epigynal plate with a wide septum (wider than diameter of posterior receptaculum) bearing a longitudinal furrow which terminates in a small pit; margins of septum parallel; anterior pair of receptaculae less than one radius apart; anterior and posterior receptaculae almost touching each other.

DISTRIBUTION. Type locality only.

Trachelas minor O. Pickard-Cambridge, 1872

Figs 4–5, 13–22.

T. m.: Simon, 1932: 957–958, 977, f. 1498–1499 (♂♀).

T. m.: Bosselaers et al., 2009: 18, f. 4, 9–15 (♂♀).

T. m.: Kovblyuk & Nadolny, 2009: 37, f. 1–36 (♂♀).

For all references see Platnick [2010].

FAUNISTIC RECORDS FROM RUSSIA: Mikhailov & Seifulina, 2003: 96 – Krasnodar Area; Kovblyuk & Nadolny, 2009: 37 – Ingushetia.

MATERIAL. RUSSIA, *Ingushetia*: 1 ♀ (CP: 46.10.1/1), Me-gas, sweeping, 26.08.2004 (T.V. Khanov). ABKHAZIA: 16♂♀ (IBPN), Sukhum, 42°58.4'N 41°04.04'E, sandy seashore, cushions of grass, 9–10.10.2004 (Yu.M. Marusik).

DIAGNOSIS. This species can be easily recognized among *Trachelas* occurring in Russia by its light colouration, absence of a tibial apophysis in male palp

and the shape of the receptacula with widely spaced posterior pairs of spermathecae (closely spaced in other species). The distinct copulatory openings are located in the anterior part of the epigynal plate which lacks a distinct septum.

DESCRIPTION. Well described by Kovblyuk & Nadolny [2009] and Bosselaers *et al.* [2009]. In addition we can add that males of *T. minor* have a small abdominal scutum, which can be almost invisible in pale specimens. Abdomen lighter than carapace, in some specimens with a distinct pattern of darker median band and several transverse bands in the posterior half (Fig. 4), male with a small scutum, sometimes indistinct.

DISTRIBUTION. This species has a West Palaearctic range and is known from the Iberian Peninsula to Uzbekistan and south to Syria [Kovblyuk & Nadolny, 2009].

Discussion

The occurrence of other *Trachelas* species in Russia is very unlikely. The only species that might be found in Russia along the Black Sea shore is *Paratrachelas maculatus* (Thorell, 1875). It was recently removed from *Trachelas* [Kovblyuk & Nadolny, 2009]. This species ranges from Hungary to Bulgaria and eastward to Crimea [Kovblyuk & Nadolny, 2009].

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