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Short Communication

New species of *Trachelas* (Araneae: Trachelidae) from Nanda Devi Biosphere Reserve, Western Himalaya, India

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ABSTRACT

The genus *Trachelas* is well reported around the world with 86 valid species known so far, of which, only two species have been reported from India. In this article, we describe a new species *Trachelas chamoli* sp. nov from Uttarakhand, India.

Introduction

Trachelidae is considered as a monophyletic group traditionally ranked as a subfamily in Clubionidae (Gertsch 1942; Chickering 1972) and then in Corinnidae (Bosselaers & Jocqué 2002). Deeleman-Reinhold (2001) for the first time proposed trachelids as a separate family and was then later recognized as a family by Ramírez (2014). Trachelids can be distinguished from other Corinnids by a strong reduction in the number of normal leg spines, the presence (mostly in males) of blunt ventral legs cusps on the last three apical segments of the anterior legs (Platnick & Shadab 1974), and the presence of four or five cylindrical gland spigots in two rows in the female posterior median spinnerets (Bosselaers *et al* 2009). Current statistics reflect that this family comprised 16 genera and 208 species with a cosmopolitan distribution, except in Australia (WSC 2016).

The genus *Trachelas* L. Koch, 1872 comprises 86 species reported from the world (WSC 2016). They have a large and widespread distribution, especially in the American continents (Zhang *et al* 2009). The species of this genus is characterized by their shiny red carapaces and sternum and creamy or gray abdomen (Zhang *et al* 2009). These spiders prefer to reside in ground habitat, in loose bark of trees, in rolled leaves, or under stones (Dondale & Redner 1982).

Currently, two species of *Trachelas* are reported from India: *Trachelas himalayensis* Biswas, 1993 and *Trachelas oreophilus* Simon, 1906 and another species, *Trachelas costatus* O. Pickard-Cambridge, 1885 is known from Yarkahnd. In this article we describe a new species of Trachelas, based on female specimens collected from Nanda Devi Biosphere Reserve (NDBR), India.

Material and methods

Specimens were collected from NDBR from the ground by active search method which was partly bare and had some low bushes and vegetation. They were then preserved and examined under a stereomicroscope (MOTIC™); the illustrations were prepared with the aid of a camera lucida. All measurements are measured using an ocular micrometer in millimeters (mm). Epigyna were dissected and cleaned using 10% KOH. Photographs were taken with a Leica DFC 290 stereomicroscope. Type material was deposited in the

Abbreviations: ALE, Anterior lateral eye; AME, Anterior median eye; fe, Femur; HT, Holotype; MOA, Median Ocular Area; mt, Metatarsus; OA, Ocular area; PME, Posterior median eye; PLE, Posterior lateral eyes; PT, Paratype; pa, Patella; ta, Tarsus; ti, Tibia; WILD, Wildlife Information Liaison Development Society.

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public museum of Wildlife Information Liaison Development Society (WILD), Coimbatore, Tamil Nadu, India.

Taxonomic accounts

Trachelas chamoli sp. nov

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(Figures 1A–1E, Table 1)

Type. Holotype: 1 female, 14 Mar 2009, Joshimath, Chamoli District, Uttarakhand, India; elevation 2030 m, N 30°; 33′18.6″ E 79°; 33′00.6″, WILD-09-ARA-1238 (Shazia Quasin). Paratypes: 1 ♀, 02 Feb 2009, Govindghat, Chamoli District, Uttarakhand, India: elevation 1970 m, N 30°37′35.9″, E 79°33′51.0″, WILD-09-ARA-1239 (Shazia Quasin); 1 ♀, WILD-09-ARA-1240, rest data same as holotype.

Diagnosis. New species closely resembles *Trachelas alticolus* Hu, 2001 in having an arch-shaped epigynal hood, spermathecae

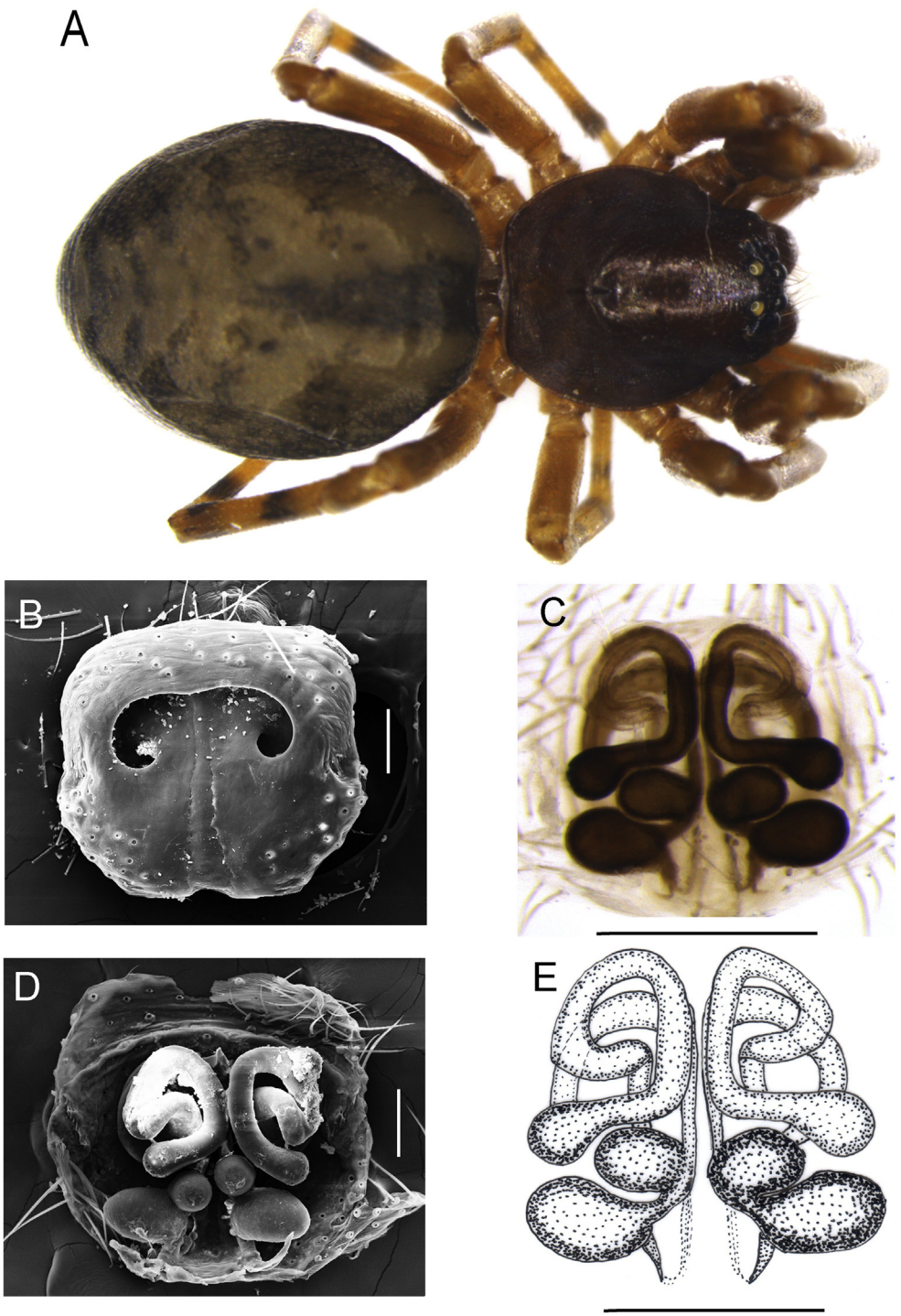

Figure 1. *T. chamoli* sp. nov., holotype female: A, female habitus; B, external epigynum; C and E, internal epigynum, scale bar = 1.0 mm; B and D, SEM image of epigynum. <scale bar: 100 μm>. SEM = scanning electron microscopy.

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Table 1. Leg measurements of *Trachelas chamoli* sp. nov. from Nanda Devi Biosphere Reserve, Holotype WILD-09-ARA-1238, Paratypes WILD-09-ARA-1239 (WILD-09-ARA-1240).

Legs	I			II			III			IV		
	HT	PT1	PT2	HT	PT1	PT2	HT	PT1	PT2	HT	PT1	PT2
Fe	1.72	1.8	1.8	1.10	1.34	1.76	1.59	1.83	1.31	1.62	2.0	1.9
Pa	0.62	0.7	0.7	0.45	0.59	0.66	0.62	0.76	0.72	0.52	0.7	0.7
Ti	1.41	1.6	1.5	0.97	1.00	1.41	1.31	1.41	0.97	1.45	1.6	1.6
Mt	0.97	1.1	1.1	1.07	1.14	1.14	1.07	1.17	1.10	1.69	1.7	1.7
Ta	0.72	0.8	0.9	0.45	0.52	0.83	0.72	0.76	0.38	0.59	0.6	0.6
Total	5.45	6.1	6.03	4.03	4.59	5.79	5.31	5.93	4.48	5.86	6.5	6.55

Fe = femur; HT = holotype; Mt = metatarsus; Pa = patella; PT = paratype; Ta = tarsus; Ti = tibia.

composed of two globose parts, and carapace without granulations but can be distinguished from all the known species by combination of following characteristics: 1. Both lobes of spermathecae have higher width than the length (roundish in *T. alticolus*); 2. Bursa is roundish (nearly oval in shape in *T. alticolus*); 3. Abdomen is oval, grayish brown mottled with yellow spots and 7–8 pairs of chevron markings (in *T. alticolus*, yellowish brown with several pairs of gray markings).

Description. Holotype: female (WILD-09-ARA-1238): Total length is 3.53 mm. Carapace is 1.8 mm long and 2.2 mm wide. Abdomen is 1.7 mm long and 2.6 mm wide. Carapace has clearly higher width than the length with narrower cephalic area, posteriorly truncated; caput is high, dark reddish brown, with darker cephalic region, longitudinal slit-like fovea, and darker radial striae. Carapace is sparsely covered with short pale erect setae and appears rough and warty, distinct on caput and along striae. Eyes in two rows are subequal in size; anterior eye row (AER) is slightly recurved, and posterior eye row (PER) is recurved. Eye diameter: anterior median eye (AME) 0.10 mm, anterior lateral eye (ALE) 0.10 mm, posterior median eye (PME) 0.12 mm, posterior lateral eye (PLE) 0.1 mm; eye inter-distances: AME–AME 0.075 mm, AME–ALE 0.06 mm, PME–PME 0.10 mm, PME–PLE 0.065 mm, ALE-PLE adjacent; ocular area is 0.4 mm long and 0.65 mm wide; median ocular area is 0.16 mm long and 0.25 mm wide. Clypeus is 0.12 mm high. Chelicerae are reddish brown, stout rough dorsally covered with stiff setae with three promarginal teeth and two retromarginal teeth. Endites are 0.3 mm wide and 0.6 mm long, almost straight on lateral margins, and rounded on anterior margins and have higher length than width; labium is 0.4 mm wide and 0.5 mm long, reddish brown with arrow-shaped darker margins. Sternum is 1.2 mm wide, 1.0 mm long, reddish brown, heart shaped, and shield like. Legs are yellowish brown with annulations on each segment which are more prominent on posterior legs; legs are rough and covered with strong hairs; thin scopulae are present; legs formula 1432. Morphometry of legs is given in Table 1. Abdomen is oval, grayish brown, mottled with yellow spots, and 7–8 pairs of chevron markings, two pairs of sigilla, ventrally grayish brown, with yellow spots, and three pairs of spinnerets are present.

Epigynum. Externally, epigyne has two anteriorly large atria and partially visible copulatory ducts. Internally, spermathecae have two unequal lobes, both connected with a short spermathecal tube and both lobes horizontally oval; copulatory duct arising anterioprolaterally runs parallel to a distance and then loosely coils twice, ending in a round bursa around atrium; short fertilization ducts arise from the posterior-lateral end of lower lobe of spermathecae.

Variation. Paratype WILD-09-ARA-1282 (WILD-09-ARA-1283). Total length is 4.65 (3.53); carapace is 2.05 (1.8) long and 1.73 (2.1) wide; abdomen is 2.50 (1.9) long and 1.22 (2.8) wide. Eye diameters: AME 0.12 (0.10), ALE 0.11 (0.10), PME 0.10 (0.07), PLE 0.10 (0.07); eye inter-distances: AME–AME 0.08 (0.07), AME–ALE 0.07 (0.07), PME–PME 0.1 (0.09), PME–PLE 0.18 (0.17), ALE-PLE adjacent; ocular area is 0.3 (0.4) long and 0.65 (0.5) wide; median ocular area 0.30 (0.28) long and wide 0.3 (0.25). Clypeus is 0.13 (0.10) high. Endites are 0.3 (0.25) wide and 0.6 (0.4) long. Labium is 0.4 (0.35) wide and 0.5 (0.4) long. Sternum is 1.2 (1.1) wide and 1.0 (1.2) long. Leg measurements are given in Table 1.

Distribution. Chamoli district (NDBR), Uttarakhand, India.

Etymology. The specific epithet is a noun taken in apposition with reference to the district Chamoli (NDBR), from where the specimens were collected.

Conflicts of interest

The authors declare that there is no conflicts of interest.

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