

Taxonomic revision of the huntsman spider genus *Eusparassus* Simon, 1903 (Araneae: Sparassidae) in Eurasia

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The huntsman spider genus *Eusparassus* Simon, 1903 in Eurasia is revised to include 13 valid species. The type species is redescribed, and additional diagnostic characters are presented for the genus. Neotypes are designated for *Eusparassus dufouri* Simon, 1932 from Portugal, and *Eusparassus walckenaeri* (Audouin, 1826) from Egypt to establish their identity. Consequently, *Eusparassus kronebergi* **stat. nov.** Denis, 1958 from Afghanistan and *Eusparassus doriae* **stat. nov.** (Simon, 1874) from central Iran, which were considered junior synonyms of *E. walckenaeri*, are re-established as valid species. Three new combinations are proposed: *Eusparassus xerxes* (Pocock, 1901) **comb. nov.** from Makran coast in Pakistan and Iran, *E. maynardi* (Pocock, 1901) **comb. nov.** from Baluchistan in Pakistan and *E. pearsoni* (Pocock, 1901) **comb. nov.** from Ghats in India (all transferred from the genus *Olios* Walckenaer, 1805). The latter two species are proposed as valid species and are removed from junior synonymy with *E. xerxes* **comb. nov.** Lectotypes and paralectotypes are designated for: *E. kronebergi* **stat. nov.**, *Eusparassus maynardi* (Pocock, 1901) **comb. nov.** and *Eusparassus pearsoni* (Pocock, 1901) **comb. nov.** A new synonymy is proposed: *Eusparassus nanjiangensis* (Hu and Fu, 1985) as junior synonym of *Eusparassus potanini* (Simon, 1895) from Xinjiang Uyghur autonomous region in China. One new species is described: *Eusparassus mesopotamicus* **sp. nov.** (male and female) from Iraq and Iran. New geographical records are presented: *Eusparassus pontii* Caporiacco, 1935 and *E. kronebergi* **stat. nov.** are recorded for the first time from India. *Eusparassus fuscimanus* Denis, 1958, *Eusparassus oculatus* (Kroneberg, 1846) and *Eusparassus levantinus* Urones, 2006 are redescribed using new material. *Eusparassus lilus* Strand, 1907, described from Java, is proposed as *nomen dubium* because the type material could not be found and no longer seems to exist. Misplaced *Olios flavovittatus* **comb. nov.** (Caporiacco, 1935) from Karakoram is transferred from the genus *Eusparassus*. Almost all the species are redescribed for the first time and illustrations of male and female copulatory organs including intraspecific variations are provided using a large number of specimens.

Keywords: Eusparassinae; neotype; lectotype; new species; Eurasia

Introduction

Eusparassus Simon, 1903 are medium to large huntsman spiders, which are among the foremost arthropod predators of deserts and semi-arid areas (Levy 1989). Silken papery retreats, stuck firmly to the underside of large flat stones, are used as a shelter for moulting and hiding during the day (Figure 1A). Females lay their eggs

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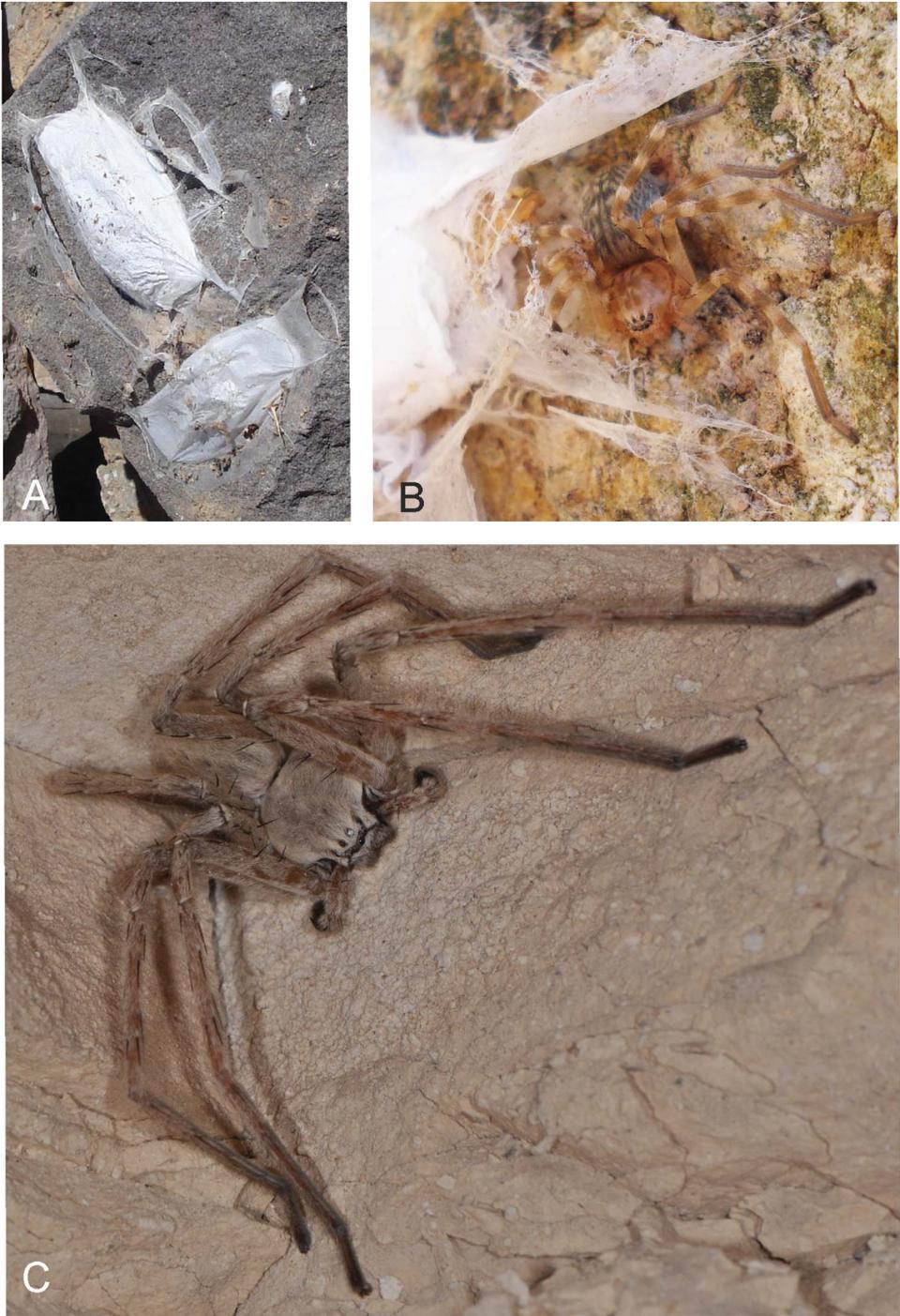


Figure 1. (A) Papery retreats of *Eusparassus walckenaeri* underside of flat stones in Müğla, Turkey; (B) habitus of *E. walckenaeri* at the entrance of its retreat; (C) habitus of *Eusparassus* cf. *mesopotamicus* sp. nov. from Birecik, Turkey. Photos by D. Kunz (A, B) and B. Göcmen (C).

enclosed in a silken sac inside the retreat (Gerhardt 1928; Levy 1989; Gabriel 2011). *Eusparassus* species are distributed across part of the Old World from Southern Africa to Mediterranean Europe and through the Middle East into Central and South Asia. The single Neotropical report of the genus, “*Eusparassus shefteli*” Chamberlin, 1916, is not congeneric with *Eusparassus* (based on original illustrations and picture of holotype female epigyne) and actually belongs to the genus *Polybetes* Simon, 1897 (Cristina Anne Rheims, personal communication), so *Eusparassus* spp. are restricted to Africa and Eurasia.

Currently, *Eusparassus* comprises 28 nominal species of which 10 species are described from Eurasia and 18 from Africa (Platnick 2012). The majority of the species are known merely by a single gender and by their original description and they have never been recorded since. Some species were placed originally or subsequently in the genus *Olios* and therefore the necessity to investigate their types was unavoidable. The systematics of the taxon is obscure and no comprehensive taxonomic revision has been carried out so far. It was only Levy (1989) who, in a small revisionary work, emphasized the female’s copulatory organs and the lateral view of the vulva as a diagnostic character, and redescribed *Eusparassus walckenaeri* (sub *Sparassus*). Definitions of characters and species boundaries of *Eusparassus* species are currently incomplete. As in other groups of spiders, early diagnoses were based mostly on variable somatic and non-copulatory characters, which poorly defined species boundaries. *Eusparassus* show a striking uniformity in somatic and copulatory characters. These similarities in traits as well as some intraspecific variations have challenged a discrimination of species. The challenging taxonomy of *Eusparassus* was described by previous workers (i.e. Denis 1947; Levy 1989; Jäger and Yin 2001).

Eusparassus was erected by Simon (1903) to replace nominal species previously published under the name *Sparassus* by Simon (1880). The type species is *Eusparassus dufouri* Simon, 1932, designated originally sub misidentified “*Eusparassus argelasius*”. Simon (1903: 1020) proposed the synonymy of *Sparassus* Walckenaer, 1805 with *Micrommata* Latreille, 1804. The time lapse between proposing the genus and describing the type species was a result of the taxonomic puzzle of the generic name *Sparassus*. At that time, it had been subjected to complex disputes. It was in use simultaneously for species of *Olios* Walckenaer, 1805 and *Eusparassus* (Simon 1874, 1895; Pocock 1901). Some workers (Bonnet 1958; Levy 1989) originally used *Sparassus* to describe and record species of *Eusparassus* until *Sparassus* was considered by Jäger (1999) as a junior synonym of *Micrommata*. Simon (1897) classified the Sparassidae by means of eyes (pattern and size) in seven sub-groups and placed *Sparassus* in Sparassinae (sub “Sparasseae”). After creating the genus *Eusparassus*, Simon (1903) classified his new genus along with several other genera in Delenineae (sub “Deleneae”). Järvi (1912, 1914) proposed a new subfamily Eusparassinae (sub “Eusparasseae”) for three genera *Eusparassus*, *Pseudomicrommata* Järvi, 1914 and *Rhitymna* Simon, 1897, according to similarities in female copulatory structures. *Rhitymna* was later revised and proved to belong to a different phylogenetic lineage (Jäger 2003). Järvi’s classification appeared in Petrunkevitch (1928) who emphasized some somatic characters and combined Järvi’s and Simon’s classifications. Recently, Eusparassinae was re-established by Jäger and Kunz (2003) who found some synapomorphies in both somatic and genital characters, transferred an endemic African genus *Arandisa* Lawrence, 1938 and proposed some other endemic South African genera to be included potentially in this subfamily.

The recently investigated *Eusparassus* fossil in Baltic amber, *Eusparassus crassipes* (Koch and Berendt, 1854), uncovered the long existence of the genus, which can be dated back to at least 44–49 million years ago, during Eocene (Dunlop et al. 2011). Modern widespread distribution of the genus across the Old World and its long existence at least from early Tertiary till present (~ 50 million years) demonstrate its evolutionary success. The extant individuals occur in a diverse range of elevations from the semi-arid areas at sea level to the mountainous highlands, c. 4000 m, the highest altitude recorded to date for members of Sparassidae. We deal in the present paper with the Eurasian species excluding Arabia. The *Eusparassus* fauna of the Arabian Peninsula is mostly related to North African elements, which will be considered in a revision of African representatives. In this context, we provide descriptions of 13 *Eusparassus* species and designate neotypes, lectotypes and paralectotypes to fix species identities.

Materials and methods

The specimens were examined, measured and illustrated using a Leica MZ 165C stereomicroscope equipped with a drawing tube. Male palps were observed in 70% ethanol. Hairs covering the bulb as well as the base of the retrolateral tibial apophysis (RTA) were removed with forceps and fine needles. Hairs surrounding the distoventral margin of cymbium and around RTA are partially illustrated in male palps. Female epigynes were dissected and soft tissue surrounding vulva was removed using minute entomological pins (model Sphinx V2A 0.1 × 12 mm). Subsequently, epigynes were submerged in 96% lactic acid to observe the internal duct system. For a better understanding of the internal duct system, we provide drawings in the antero-dorso-lateral view of left vulvas. In this view, there is no need to cut the lateral lobes of the epigyne and it is suitable for type material, which should be treated with care. The dorsal view of the vulva is not illustrated (except in Figure 3B), because it demonstrates no additional diagnostic characters. The order of species is arranged from West (Portugal) to East (India) in the geographical distribution range. Geographic coordination extracted subsequently from the web site <http://www.fallingrain.com/world/> is presented in parentheses.

All measurements are in millimetres. Size classes of spiders are according to Jäger (2001: 14). Measurements of palps are listed as: total length [femur, patella, tibia, tarsus = cymbium]; legs as: total length [femur, patella, tibia, metatarsus, tarsus]. Abbreviations used in the text: AB, anterior bands of epigynal field; ALE, anterior lateral eyes; AME, anterior median eyes; AMLL, anterior margin of LL; dRTA, dorsal RTA; EF, epigynal field; EFB, epigynal field bridge; LL, lateral lobes; MS, median septum; PLE, posterior lateral eyes; PME, posterior median eyes; PMLL, posterior margin of LL; RTA, retrolateral tibial apophysis; vRTA, ventral RTA; SD, Sparassidae DNA numbers in SMF; SS, slit sensillum; T, tegulum; TL, turning loop; I–IV, first to fourth leg. Palp and leg spination are presented in the following format: prolateral, dorsal, retrolateral and ventral (the latter only if present). Parentheses and slashes are used to state spination variation within a single specimen and among different specimens, respectively. As most of the specimens are old and long preserved, we provide a general pattern of colouration in the genus description paragraph. Species-specific colouration is given briefly in species description.

Collections and curators

CRB, Collection of Robert Bosmans, Gent; IOZB, Institute of Zoology, Chinese Academy of Sciences, Beijing (Li Shuqiang); MCSN, Museo Civico di Storia Naturale “Giacomo Doria”, Genoa (Maria Luisa Tavano); MHNG, the Muséum d’histoire naturelle, Genève (Peter Schwendinger); MIZ, Zoological Museum, Polish Academy of Science, Warsaw (Dominika Mierzwa); MVHN, Museu Vallencià d’Historia Natural (Sergio Montagud Alario); MMB, Moravian Museum, Brno, Czech Republic (Petr Baňar); MNCN, Museo Nacional de Ciencias Naturales, Madrid (Javier Sánchez Almazán); MNHN, Muséum National d’Histoire Naturelle, Paris (Elise-Anne Leguin, Christine Rollard); MNM, Museo Civico di Storia Naturale di Milano, Milan (Andrea Sabbadini, Carlo Pesarini); MZH, Finish Museum of Natural History, University of Helsinki (Ritva Talman); NHM, Museum of Natural History, London (Janet Beccaloni);

NHMW, Naturhistorisches Museum, Vienna (Christoph Hörweg); NRM, Swedish Museum of Natural History, Stockholm (Gunvi Lindberg, Kjell Arne Johanson); SMF, Senckenberg Research Institute, Frankfurt am Main (Julia Altmann, Peter Jäger); SNSD, Senckenberg Naturhistorische Sammlungen, Dresden (Katrin Schniebs); SZMN, Siberian Zoological Museum, Novosibirsk (Galina Azarkina); ZIP, Zoological Institute, Academy of Science, St. Petersburg (Kirill Mikhailov); ZMB, Museum für Naturkunde, Berlin (Anja Friederichs, Jason Dunlop); ZMMU, Zoological Museum of Moscow state University, Moscow (Kirill Mikhailov); ZMUC, Zoological Museum, University of Copenhagen (Nikolaj Scharff); and ZSM, Zoologische Staatssammlung München, Munich (Stefan Friedrich, Roland Melzer).

Taxonomy

Family **SPARASSIDAE** Bertkau, 1872
 Subfamily **EUSPARASSINAE** Järvi, 1912
 Genus *Eusparassus* Simon, 1903

Micrommata [part] – Latreille, 1818: 517; Dufour, 1820: 299, pl. 2 (misidentification).

Sparassus [part] – Walckenaer, 1830: 108, pl. 7, fig. 1; Walckenaer, 1837: 584, 585; Simon, 1880: 290; Bonnet, 1958: 4098; Levy, 1989: 138, fig. 20. (misidentification).

Eusparassus Simon, 1903: 1020, 1023, 1025– Strand, 1906: 630; Strand, 1907: 437; Strand, 1908: 19; Simon, 1909: 31; Järvi, 1912: 57, 175, fig. 49, pl. 4, figs 9, 10; Järvi, 1914: 173–175; Reimoser, 1919: 200; Petrunkevich, 1928: 155; Gravely, 1931: 238; Schenkel, 1936: 9, 283; Roewer, 1928: 118, pl. 2, figs 38–39; Roewer, 1955: 775; Roewer, 1962: 4, figs 82–84; Caporiacco, 1935: 216, pl. 6, f. 4; Caporiacco, 1939: 353; Caporiacco, 1941: 109, f. 40; Denis, 1945: 54; Denis, 1947: 49, pl. 2, f. 12; Denis, 1958: 102, f. 30; Barrientos and Urones, 1985: 356, figs 4, 5; Jäger, 1999: 1, 4, 6; Song et al. 1999: 467, f. 268H, K; Jäger, 2001: 16, 18, fig 13 a–c, ä, ö; Jäger and Yin, 2001: 132; Jäger and Kunz, 2005: 168, 169, figs 205–213; Urones, 2006: 100, figs 1–43; Dunlop et al. 2011; Deltshhev, 2011: 28; Gabriel, 2011: 9–12, figs 2, 9.

Notes

Simon (1903) created the generic name *Eusparassus* to substitute it for the name *Sparassus*; because he suspected that *Sparassus* was a junior synonym of *Micrommata* (Simon 1903: 1020). Simon (1903) designated the type species as *Eusparassus argelasius* denoted by a new replacement name (nomen novum) for the name of misidentified *M. argelasia* (published in Latreille 1818). Since this species could be mistaken with *Olios argelasius*, type of *Olios* Walckenaer, 1805 (sub *Sparassus argelasius*) Simon (1932) presented *E. dufouri* as a new species.

Type species

Eusparassus dufouri Simon, 1932 by original designation in Simon (1903) sub *E. argelasius*, female from Spain.

Extended diagnosis

Eusparassus spp. can be diagnosed from the other two monotypic genera of Eusparassinae by the number of ventral tibial spines: I–IV four (six in *Arandisa* and *Pseudomicrommata*) and by relative diameters of AME, which is subequal to or larger than ALE (in the other two genera, AME smaller than ALE); *Eusparassus* spp. are recognizable by the shape of copulatory structures: parallel embolus and tegulum constructing a U-shaped structure, embolus membrane partially covering embolus tip; dRTA strong and straight, in contrast to dRTA, vRTA small and weakly developed (Figures 2A, 11G, 19A); Female epigyne characterized by two large triangular lateral lobes, LL parallel and in contact on the median longitudinal suture and diverging at posterior margins strongly and at anterior margins slightly and circumscribing MS entirely (Figures 3A, 4C) or partially (Figures 5F, 8A, 16A, 21A); in vulva, dorsal view, two parallel copulatory ducts, straight and fully or partially hyaline, folded and membranous (Figure 3B).

Redescription

Medium to large Sparassidae, body length 10 mm (e.g. *E. oculatus*) to 30 mm (e.g. *E. xerxes* comb. nov.); prosoma slightly longer than wide. Leg length formula 2 4 1 3 (most species) or 2 4=1 3; eyes arranged in two rows, anterior row slightly recurved and posterior row relatively straight, eyes about subequal in size, AME slightly larger than or subequal to ALE; Basal segment of chelicerae at distal retromarginal end with one (Figures 2E, 7B) to three or four thick bristles (Figures 19E, 22D), in most species just one bristle. Chelicerae with two anterior and three to six posterior teeth, Cheliceral furrow with (Figure 4B) or without (Figures 2E, 9B, 21D) denticles; ventral tibial spines: I–IV four, spination of other parts variable but in most species: Palp 131, 101, 1111, 1013. Legs: Femur I–III 323, IV 322; Patella I–IV 101; Tibia I–IV 2024; Metatarsus I–III 2024, IV 3034/3036; male palp as in diagnosis with embolus originating at 6:30 (o'clock position) running first distally and bent retrolaterally, tip of embolus pointing in various angles and with diverse shapes, embolus and tegulum forming a U-shaped structure in ventral view; small and hyaline conductor situated at distal end of tegulum and partially covering tip of embolus (Figures 11E, 12B). Female epigyne consisting of two large triangular lateral lobes, LL parallel and in

contact on the median longitudinal suture; MS soft and hyaline (Figure 5F) or hard and sclerotized (Figure 22E), EF fusing anteriorly and constructing EFB (Figures 17F, 20A) or not (Figure 16A); internal duct system with glandular pores situated in a depression (Figures 5G, 6B, D) or on a projection (Figures 2C, 8B, 22F).

Colouration

Pale grey to dark brown spiders, with uniform colouration of body (Figure 1C) or clearly patterned body and banded legs (Figure 1B), ventral opisthosoma with distinct dark marking (Figure 23B-D) or pale (Figure 23A), dorsal opisthosoma with a pattern of small chevrons in posterior half.

Eusparassus dufouri (Simon, 1932) (Figures 2, 3, 23C)

Micromata argelasia (Walckenaer, 1805) – Latreille, 1818: 517 (misidentification, description of female, Spain); Dufour, 1820: 299, pl. 2 (misidentification).

Sparassus argelasius – Walckenaer, 1830: 108, pl. 7, fig. 1 (misidentification, male); Walckenaer, 1837: 584 (misidentification, female); Simon, 1875: 334 (misidentification); Simon, 1880: 290 (misidentification).

Eusparassus argelasius – Simon, 1903: 1020, 1025 (type species designation, new replacement name, description of the genus) – Järvi, 1912: 57, 175, figs 9, 10, 49, pl. 4; Järvi, 1914: 175; Roewer, 1928: 118, pl. 2, figs 38–39 (misidentification).

E. dufouri Simon, 1932: 890 (new replacement name). – Barrientos and Urones, 1985: 356, figs 4, 5; Urones, 2006: 102, figs 1–24.

Sparassus dufouri (Simon) – Levy, 1989: 138, fig. 20.

Type material

(syntype females unavailable, see notes below). Neotype: male (SD 815), Portugal: Distrito de Portalgere, Montalvão, [39°36' N, 07°31' W] 6 May 2011, S. Henriques leg. (SMF).

Other material examined

PORTUGAL: 1♂ (SD 834), 1♀ (SD 822), with same data as for neotype (SMF); 1♂, Pulo do Lobo, May 2011, S. Henriques leg. (SMF, SD 838); 1♀, Distrito de Beja: Serpa, Altenju, May 2011, S. Henriques leg. (SMF, SD839); 1♂, 1♀, Pomarao, 120 m, (37°34.5' N 7°32.100' W) 19–22 May 2006, Cardoso et al. leg. (ZMUC); SPAIN: 1♂, 1♀, Huelva Province: Alajar, Aracena, (37°53'28'' N 6°33'40'' W) 7 July 1969, A. Senglet leg. (MHNG); 2♂♂, Jaén Province: Sierra de Cazorla, Guadalquivir, (37°56'12'' N 02°57'30'' W), 24 July 1971, A. Senglet leg. (MHNG); 1♂, 1♀, Cordoba, 3 June 1909 (MNCN); 1♀, Rabida, June 1959, V. Buddenbrock leg. (SMF).

Diagnosis

Closely related to *E. levantinus* but differing from it by much stouter embolus tip and more sickle-like dRTA in ventral view (Figure 2A,C); EM sheath-like and covering part of embolus tip in retrolateral view (Figure 2B); vulva differing from that of *E. levantinus* by glandular process located on a continuous part distinguishable from turning loop (Figure 3C).

Redescription

Male ($n = 8$). Medium-sized *Eusparassus* species; Total length: 9.9–13.8, prosoma length 5.5–6.8, prosoma width 5.3–6.6, anterior width of prosoma 2.6–3.5, opisthosoma length 4.5–7.0, opisthosoma width 3.0–4.5. Eyes subequal, eye diameters (neotype): AME 0.40, ALE 0.32, PME 0.31, PLE 0.34; eye interdistances: AME–AME 0.22, AME–ALE 0.10, PME–PME 0.43, PME–PLE 0.42, AME–PME 0.32, ALE–PLE 0.22, clypeus height at AME 0.20, clypeus height at ALE 0.27.

Chelicerae with two anterior and three posterior teeth, cheliceral furrow without denticles; Basal segment of chelicerae at distal end close to base of fangs with one bristle (Figure 2E).

Leg formula: 2 4 1 3. Measurements of palp and legs (neotype): Palp 8.3 [2.7, 1.2, 1.0, 3.4], I 25.9 [7.2, 2.3, 6.8, 7.3, 2.3], II 28.7 [8.3, 2.9, 7.6, 7.5, 2.4], III 24.3 [7.2, 2.6, 6.1, 6.3, 2.1], IV 26.7 [7.9, 2.3, 6.8, 7.4, 2.3].

Spination. Palp 131, 000/001, 1111; Legs: Femur I–III 323/424, IV 321/322/422; Patella I–IV 000(1)/101; Tibia I–IV 2024/2224; Metatarsus I–III 1014/2024, IV 3034/3(4)036.

Palp. As in diagnosis with cymbium nearly twice as long as tibia; tegulum shorter than embolus and tip of embolus proximad, embolic projection consists of a large sheath-like part distally and a hyaline part proximally (Figure 2A–C).

Female ($n = 6$). Total length: 16.2–17.5, prosoma length 8.0–8.5, prosoma width 6.7–7.7, anterior width of prosoma 4.3–4.5, opisthosoma length 8.2–9.0, opisthosoma width 4.5–6.0. Eye diameters: AME 0.45, ALE 0.41, PME 0.34, PLE 0.40; eye interdistances: AME–AME 0.35, AME–ALE 0.16, PME–PME 0.60, PME–PLE 0.58, AME–PME 0.48, ALE–PLE 0.42, clypeus height at AME 0.27, clypeus height at ALE 0.35.

Chelicerae with two anterior and three or four posterior teeth. Cheliceral furrow without denticles. Basal segment of chelicerae at distal end close to base of fangs mostly with one bristle or two bristles.

Leg formula: 2 4 1 3. Measurements of palp and legs: Palp 8.7 [2.3, 1.5, 1.7, 3.2], I 26.1 [7.5, 3.4, 6.2, 6.8, 2.2], II 28.5 [8.5, 3.5, 7.0, 7.3, 2.2], III 24.2 [7.4, 3.2, 5.7, 5.8, 2.1], IV 26.7 [8.0, 3.1, 6.3, 7.1, 2.2].

Spination. Palp 131, 000 (001), 1111, 1013; Legs: Femur I–III 323/(3)424, IV 322(1)/422; Patella I–IV 000(1)/101; Tibia I–IV 1014/2024; Metatarsus I–III 2024, IV 3034/3036.

Epigyne/vulva. As in diagnosis, epigyne is longer than wide, AMLL are fused together and encircling MS entirely, EFB present and combined with AMLL (Figure 3A).

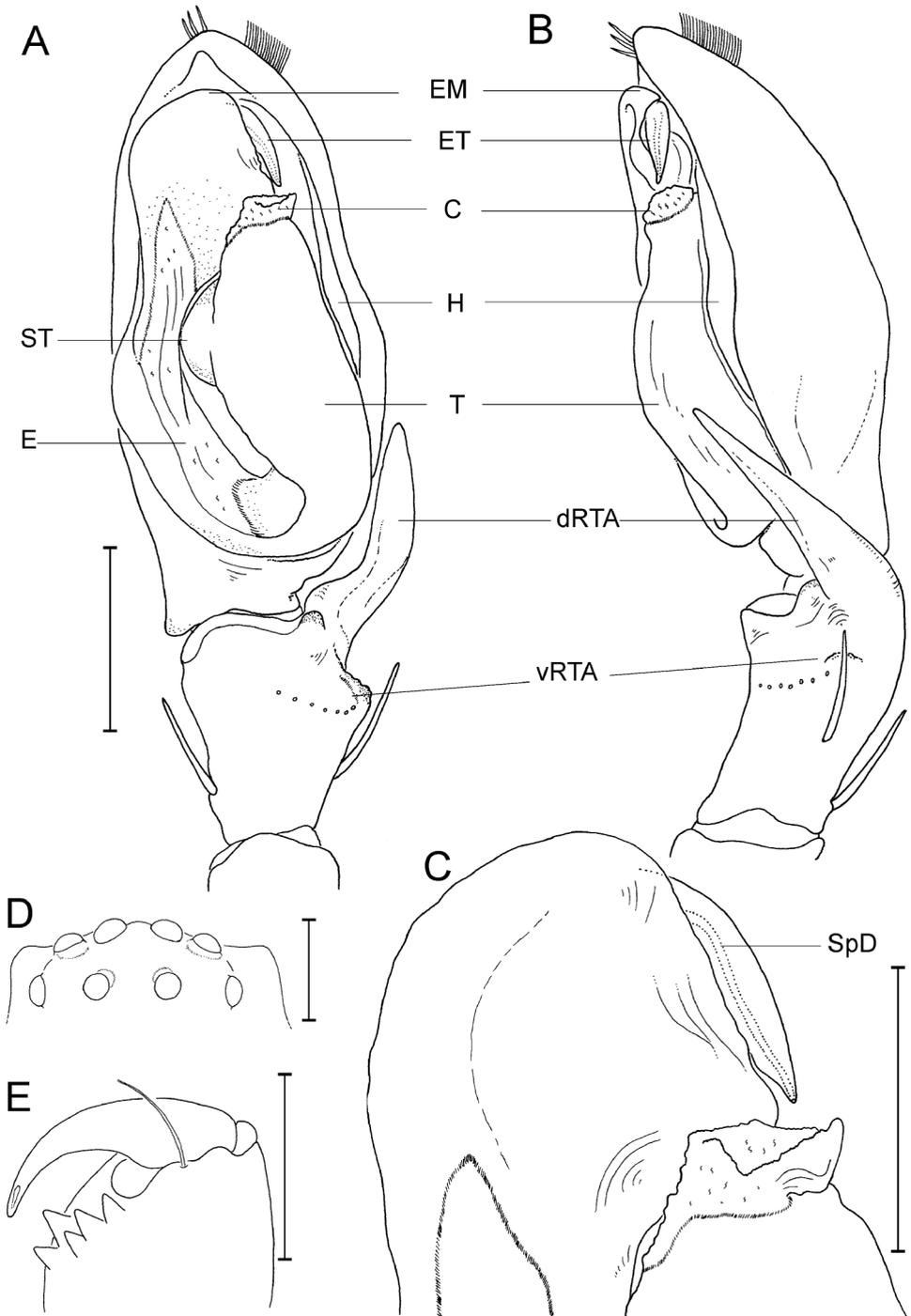


Figure 2. *Eusparassus dufouri* Simon, 1932, neotype male from Chanca, Portugal (SMF): (A) left palp, ventral; (B) left palp, retrolateral; (C) tip of embolus and conductor, ventral; (D) eye arrangement; (E) left chelicera, ventral. Abbreviations: C, conductor; dRTA, dorsal retrolateral tibial apophysis; E, embolus; EM, embolus membrane; ET, embolus tip; H, haematodocha; SpD, sperm duct; ST, subtegulum; T, tegulum; vRTA, ventral retrolateral tibial apophysis. Scale bars: (A, B, D, E) 1 mm, (C) 0.5 mm.

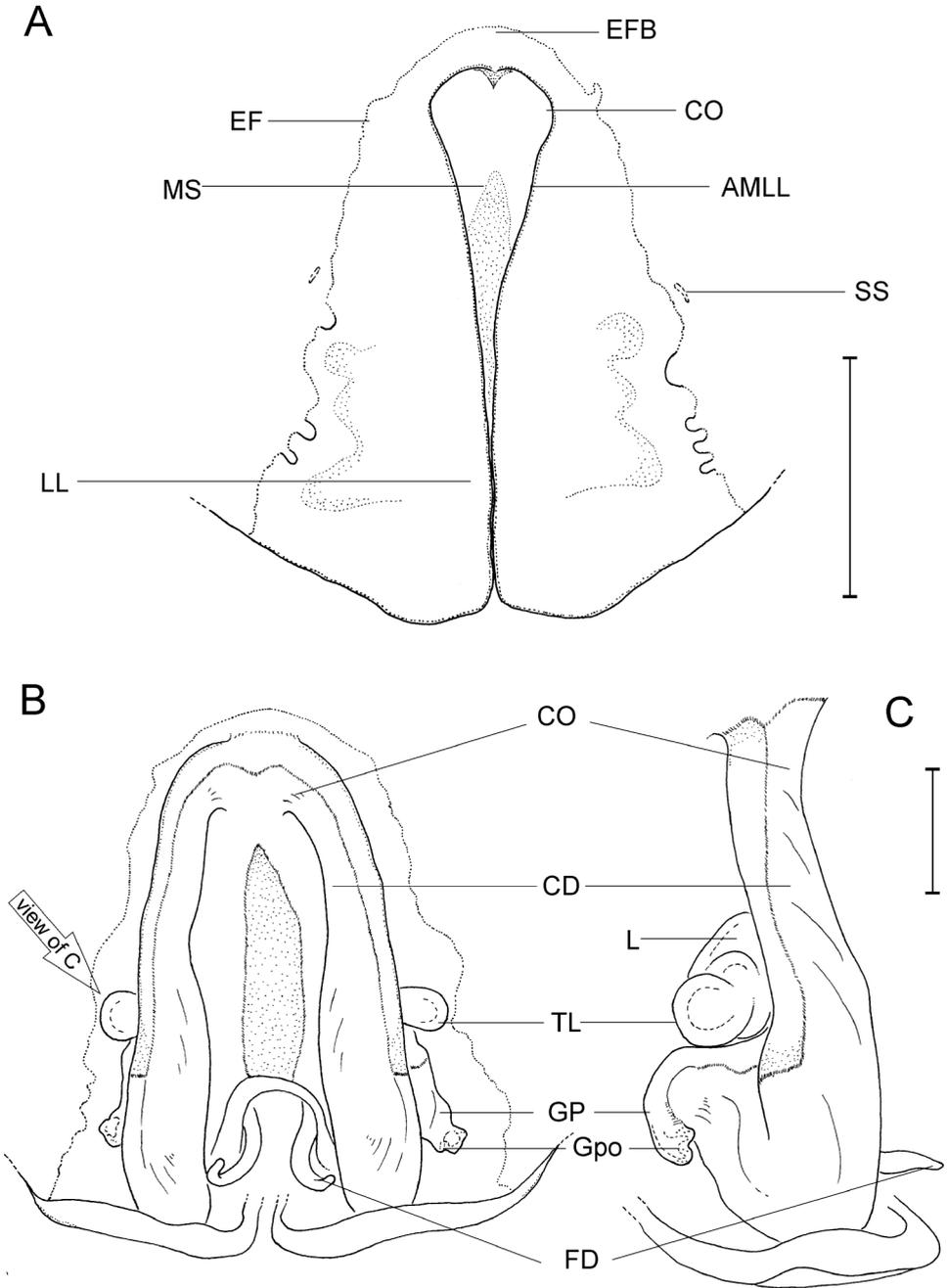


Figure 3. *Eusparassus dufouri* Simon, 1932, female from type locality (SMF): (A) epigyne, ventral; (B) vulva, dorsal; (C) left vulva, antero-dorso-lateral. Abbreviations: AMLL, anterior margin of LL; CD, copulatory duct; CO, copulatory opening; EF, epigynal field; EFB, epigynal field bridge; FD, fertilization duct; GP, glandular process; GPo, glandular pores; L, lumen; LL, lateral lobes; MS, median septum; SS, slit sensillum; TL, Turning Loop. Scale bars: (A, B) 1 mm, (C) 0.5 mm.

Colouration. Olive-brown with clearly banded legs; ventral opisthosoma with a V-shaped dark marking (Figure 23C).

Taxonomic notes

In the description of the genus *Sparassus*, Walckenaer (1805: 40) just listed *Sparassus argelasius* without a description (*nomen nudum*) along with the following nominal species: *S. samaragdulus* (Fabricius, 1793), *S. pallens* (Fabricius, 1794), *S. roseus* (Clerck, 1757) and *S. ornatus* (Walckenaer, 1802) [for more details see Jäger (1999: 3)]. One year later (Walckenaer 1806: 146, table 2) he published a description and illustration of a male under the name *Sparassus argelasius*, which was a misidentification and was later transferred to the genus *Olios*. Walckenaer's original description of *Sparassus* was actually based on species of the previously established genus *Micrommata* Latreille, 1804 and a single male of *Olios argelasius*. Latreille (1818) examining two female specimens from Spain tried to describe the female of Walckenaer's species, "*Sparassus argelasius*", and transferred it to *Micrommata* (sub *Micrommata argelasia*), but he failed to identify it correctly. This misidentification was pointed out later by Simon (1903: 1025), who described his new genus *Eusparassus* and cited Latreille's description and indicated the type species as *E. argelasius* Latreille. But the Latreille misidentification was based on Walckenaer (1805) and the species name was already occupied by *Olios argelasius* (sub *Sparassus*). Later, Simon (1932: 890) realized this confusion when he described and illustrated *O. argelasius* (Walckenaer) and proposed *E. dufouri* as a new replacement name (*nomen novum*) to substitute the previously established name *E. argelasius*. Simon noted that "the species described under the name *Sparassus argelasius* Latreille (in Simon 1875: 334) must take the new name (*nom. nov.*) as *Eusparassus dufouri*". Before proposing the genus *Eusparassus*, Simon in his publications (1875: 334; 1880: 290) used the nominal species "*Sparassus argelasius*" for describing *E. dufouri*. In the literature, *Sparassus* itself was used to record not only different species but also different generic taxa including *Micrommata*, *Olios* and *Eusparassus*.

Neotype designation

According to all the facts noted, Simon (1932) did not designate any name-bearing type specimen subsequently while referring to Latreille (1818). According to Article 72.4.2 of the International Commission on Zoological Nomenclature, when a new nominal species-group taxon (*E. dufouri*) is based on a published misidentification by an earlier author (*M. argelasia* Lat.), the type series consists of the specimens that had been misidentified. No material of Latreille can be traced in MNHN and it is generally understood that none exists. Consequently, it is necessary to designate a neotype for *E. dufouri* at this time to establish its identity, define the nominal taxon objectively and avoid taxonomic confusion with similar and closely related species in the Iberian Peninsula (i.e. *E. levantinus* Urones, 2006), in Northern Africa [i.e. *E. oraniensis* (Lucas, 1846)] and in the eastern Mediterranean (i.e. *E. walckenaeri*). There are two forms in the Iberian Peninsula, *E. dufouri* of uncertain identity, and *E. levantinus*, which was described by Urones (2006). The latter species is distributed in eastern and southern

Spain but is replaced by *E. dufouri* in the western Iberian Peninsula. Accordingly, a neotype is designated for *E. dufouri* from the western Iberian Peninsula on the border of Portugal and Spain, in Montalvão. Based on the distribution map presented by Urones (2006) and also using the distribution records of the present study, type locality is selected to be as far as possible from the distribution range of *E. levantinus*. Specimens were freshly collected and DNA samples are available.

Known geographical distribution and habitat

Western Iberian Peninsula in Spain and Portugal, mostly under stones; under old tree bark in the southeast of Portugal (Barrancos Valley), including in *Eucalyptus* trees. (S. Henriques, personal observation).

Doubtful record

Simon (1932: 890) stated that the single report of the species from France (Pyrenees-Orientales) was actually collected in a shipment from Spain, Iberia.

Eusparassus levantinus Urones, 2006
(Figures 4, 23D)

Eusparassus levantinus Urones, 2006: 108–112, figs 25–43 (description and illustration of male and female from Spain, holotype male and paratype female examined).

Type material examined

Holotype: male, SPAIN: Castellon Province, Almeria (La Mosquera), 20 May 2004, S. Montagud leg. (MVHN 200504LM1); Paratype: 1 female, Enix, Almeria, 18 April 1973, M. Rambla leg. (MNCN 20.02/16315).

Other material examined

SPAIN: 1♂, Andalusia, Almeria, Cabo de Gata, 36°43'18.8'' N, 2°11'34.69'' W, 21 May 2011, S. Henriques leg. (SMF); 1♂, Andalusia, reared by S. Heist, 25 June 2005, B. Hayen ded. (SMF); 1♀, Andalusia, Medina-Sidonia, Algeleurus, 36°28' N 5°55' W, 300 m altitude, T. Zieger leg. (SMF); 1♀, Andalusia, Medina-Sidonia, Algeleurus, 36°28' N 5°55' W, 300 m altitude, T. Zieger leg. (SMF); 1♀, Andalusia, 4 September 2001, St. Heist leg. (SMF); 1♀, Valencia Province: between Pego and Val de Ebo, 405 m altitude, Macchia with few interspersed trees, under stone, 2 June 2010, S. Huber and A. Schönhofer leg. (SMF).

Diagnosis

Similar to *E. dufouri* but distinguished by shape of embolus tip, which is smaller, slimmer and pointed in ventral view and dRTA which is straighter (Figure 4E–G); in vulva glandular pores situated on a semicircular process which is fused to entire body

of vulva (Figure 4D), in contrast they are present on a separated curved structure in *E. dufouri* females.

Redescription

Male ($n = 3$). Medium *Eusparassus* species; total length: 12.4–14.8, prosoma length 5.9–7.8, prosoma width 4.7–6.2, anterior width of prosoma 2.3–3.3, opisthosoma length 6.5–7.0, opisthosoma width 4.0–4.6. Eyes diameters: AME 0.43, ALE 0.42, PME 0.36, PLE 0.46; eye interdistances: AME–AME 0.29, AME–ALE 0.10, PME–PME 0.48, PME–PLE 0.58, AME–PME 0.32, ALE–PLE 0.31, clypeus height at AME 0.35, clypeus height at ALE 0.40.

Chelicerae with two anterior and three posterior teeth, Cheliceral furrow without denticles.

Leg formula: 2 4 1 3. Measurements of palp and legs: Palp 11.1 [3.1, 1.4, 1.3, 5.3], I 29.6 [8.1, 3.4, 7.1, 8.2, 2.8], II 32.8 [9.2, 3.9, 7.8, 9.1, 2.8], III 27.7 [8.2, 3.3, 6.4, 7.1, 2.7], IV 30.9 [8.9, 3.2, 7.3, 8.8, 2.7].

Spinination. Palp 131, 000/001, 1111; Legs: Femur I–III 323/424, IV 322/422; Patella I–IV 000(1)/101; Tibia I–IV 2224; Metatarsus I–III 1014/2024, IV 3034/3036.

Palp. As in diagnosis, with cymbium longer than tibia, embolic projection developed, embolus tip pointed proximad, dRTA strong and flattened, vRTA pointed in ventral view (Figure 4E–G).

Female ($n = 4$). Total length: 17.6–19.7, prosoma length 7.1–8.7, prosoma width 5.8–7.0, anterior width of prosoma 3.7–4.3, opisthosoma length 10.5–11.0, opisthosoma width 6.5–7.0. Eye diameters: AME 0.42, ALE 0.41, PME 0.35, PLE 0.41; eye interdistances: AME–AME 0.33, AME–ALE 0.15, PME–PME 0.54, PME–PLE 0.56, AME–PME 0.51, ALE–PLE 0.43, clypeus height at AME 0.21, clypeus height at ALE 0.33.

Chelicerae with two anterior and three posterior teeth, cheliceral furrow without denticles; basal segment of chelicerae at distal end with one bristle (Figure 4B).

Leg formula: 2 4 1 3. Measurements of palp and legs: Palp 9.8 [3.1, 1.4, 2.1, 3.2], I 29.0 [8.2, 4.0, 7.0, 7.5, 2.3], II 32.2 [9.5, 4.2, 7.8, 8.4, 2.3], III 27.4 [8.3, 3.6, 6.5, 6.7, 2.3], IV 30.0 [9.1, 3.3, 7.3, 8.0, 2.3].

Spinination. Palp 131, 000/001, 1111, 1013; Legs: Femur I–III 323/424, IV 322/422; Patella I–IV 000(1)/101; Tibia I–IV 2024; Metatarsus I–III 2024, IV 3034/3036.

Epigyne/vulva. As in diagnosis. Epigyne longer than wide; MS encircled entirely by AMLL, the latter fused together (Figure 4C); turning loop with antro-ventrad elongated tip (Figure 4D).

Colouration. Olive brown spider; ventral of opisthosoma with a dark V-shaped marking (like that of *E. dufouri*) but with an additional median band (Figure 23D).

Known geographical distribution and habitat

Eastern and southern Iberian Peninsula in Spain, mostly coastal areas under stones.

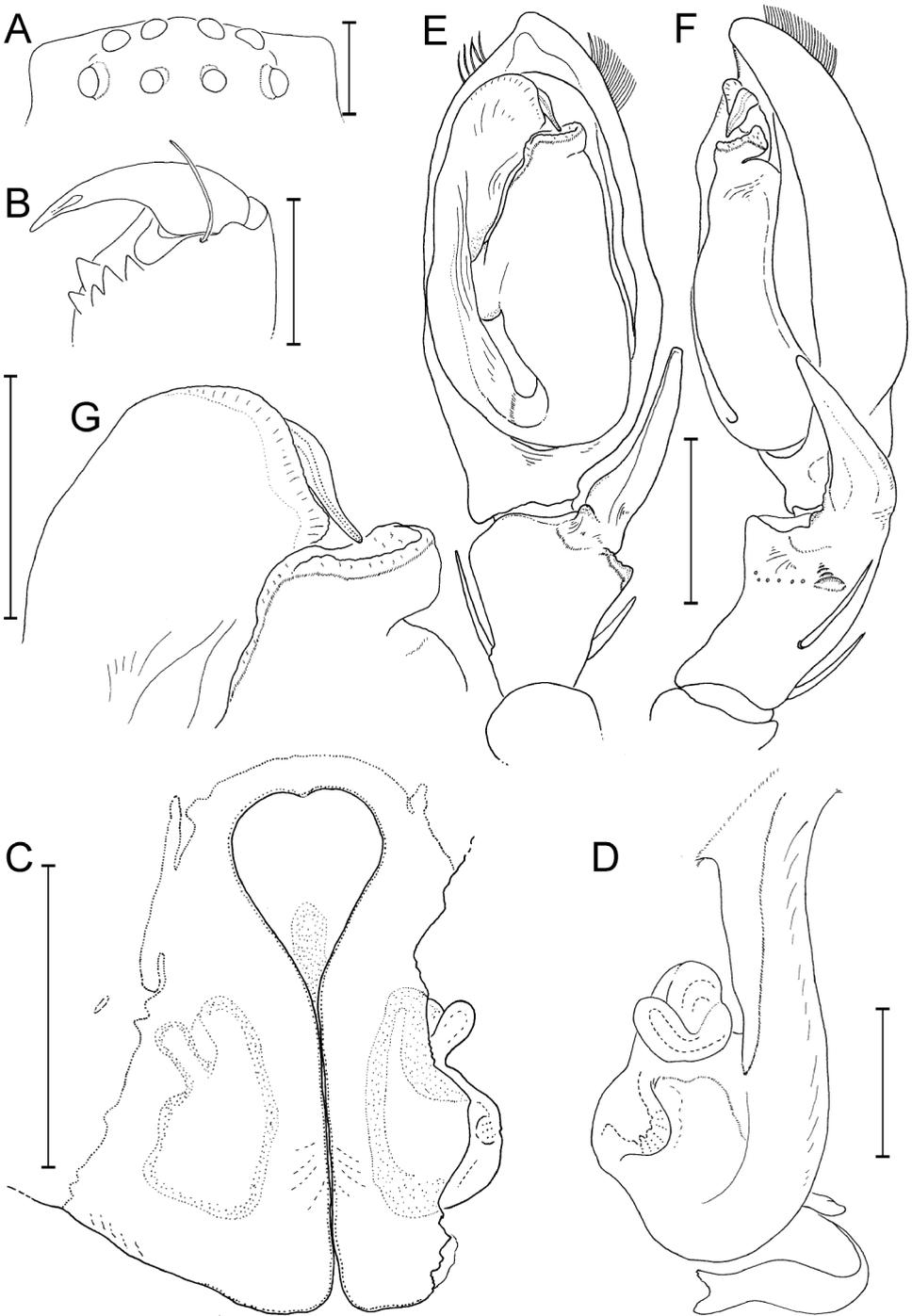


Figure 4. *Eusparassus levantinus* Urones, 2006, female paratype (A–D) from Almeria, Spain: (A) eye arrangement; (B) left chelicera, ventral; (C) epigyne, ventral; (D) left vulva, anterio-dorso-lateral. Male (E–G) from Andalusia, Spain: (E) left palp, ventral; (F) left palp, retro-lateral; (G) tip of embolus and conductor, ventral. Scale bars: (A–C, E, F) 1 mm, (D, G) 0.5 mm.

Eusparassus walckenaeri (Audouin, 1826)
(Figures 1B, 5, 6, 23A)

Philodromus walckenaerii Audouin, 1826: 390, pl. 6, fig. 1 (description of female, type not designated).

Philodromus linnaei Audouin, 1826: 390, pl. 6, fig. 2 (description of male, type not designated) [synonymy by Simon 1906].

Drassus civilis Reuss, 1834: 207 (description of juvenile; holotype, immature, Egypt: Sinai: Tor, 1827 Rüpell leg., SMF 4575 examined).

Sparassus walckenaeri – Walckenaer, 1837: 585 (transfer).

Pavesi, 1880: 364; 4; Levy, 1989: 132–138, figs 318.

Ocyptete tersa C. L. Koch, 1837: 83, fig. 305 (description of female; from Greece, type not available) [synonymy by Levy 1989]; C. L. Koch, 1845: 39, figs 980–981.

Sparassus tersa – Simon, 1880: 291 (in part, material from Greece, MNHN, examined).

Eusparassus tersa – Järvi, 1912: 57, fig. 48, pl. 4, figs 48 (transfer); Järvi, 1914: 173.

Sparassus cambridgii Simon, 1874: 257 (description of juvenile, from Egypt) [synonymy by Simon 1880].

Sparassus validus Thorell, 1875a: 80 (description of female; holotype, female, Taur. Merid., Ent.etikett nr=232, Nordmann leg. MZH 20.492, examined) [synonymy by Levy 1989] – Thorell, 1875b: 124.

Sparassus cognatus Pickard-Cambridge, 1876: 588 (description of female; syntypes, one female and 10 immatures, Egypt, not examined) [synonymy by Levy 1989].

Sparassus fontanieri Simon, 1880: 294 (description of male, holotype, locality not clear, MNHN, examined) [synonymy by Levy 1989].

Sparassus extensipes Karsch, 1880: 383, pl. 12, fig. 12. (description of male, holotype, male, Egypt: Cairo, not examined) [synonymy by Simon 1906].

Sparassus linnaei – Kulczyński, 1901: 43 (transfer, one male examined from Cairo in MIZ).

Sparassus walckenaerius – Simon, 1880: 292.

Heteropoda civilis – Strand 1916: 36 (unjustified combination).

Eusparassus walckenaeri – Strand 1908: 24; Simon, 1906: 1168; Denis, 1947: 50, pl. 2, figs 14–16.; Deltshv, 2011: 28; Gabriel, 2011: 9–12, figs 2, 9.

Type material

(type female from Egypt not designated, unavailable, see notes below) Neotype: male, with label “Egypt: Cairo” (30°3' N, 31°15' E), 1971 (SNSD).

Other material examined

EGYPT: 1♂, 1♀, with same data as for neotype (SMF); 1♂, Cairo, with label: “*Sparassus linnaei*, Cairo, det. Kulczyński, F.1691” (MIZ 212984). PALESTINE: 2♂♂, surrounding of Nablus, 25 June 1999, A. Hussein leg (CRB); 2♂♂, surrounding of Nablus, 6 May 1999, A. Hussein leg (CRB). ISRAEL: 1♀, Sede Boqer, Negev desert, between Béer Sheva and Mituzpe Ramon, 6–29 May 2003, M. Rezac leg. (SMF); 2♀♀, 10 juveniles, Jerusalem, F.166 (MIZ 212984). LEBANON: 1♀, Amioun, 1944, H.B. Cott leg., (NHM 1950.3.30.124); JORDAN: 1♀, Dana Natural Reserve, Wadi Dana, (30°41' N, 35°37' E), under stones, 16 April 2004, J. Altman and J. Meier leg. (SMF, SD8); 1♀, Petra, Al-Habis, April 1983, J. Wittenberg and Kinzelbach leg., (SMF); 1♀, Amman, Pine forest, July 2007, J. Wiehle leg. (SMF); 2♀♀, Al-Bala, 10 km south-east of Suwaylih, Al-Fuhays, summer 1980, F. Krupp and W. Schneider leg. (SMF); SYRIA: 13♂♂, 4♀♀, 5 juveniles, Golan, camp Faüar, June 1981, K. Kollnberger leg. (NHMW); 1♀, Damascus (ZMB); IRAQ: 1♀, Al-Anbar Province: Lake Tharthar (33°58' N, 43°11' E), 23 March 1986, M. Carl leg. (SMF); 1♀, Baghdad, Kálová leg. PGD 312003 (MMB); TURKEY: 1♀, Taurus Mountains, with label: [type, *Sparassus validus* Thorell 1875, Aranea, Taur. Merid., Ent.etikett nr=232] Nordmann leg. (MZH 20.492); 1♀, Muğla Province, Güllück Yeni Oba, 26 August 2010, R. Zeelen and D. Kunz leg. (SMF); 1♂, Muğla Province, Bafa Gölü/Bafa Lake, 7 September 2010, R. Zeelen and D. Kunz leg. (SMF); 1♀, Ankara, Güvecci, 25 October 2006, D. Kunz leg. (SMF); 1♂, Turkish Riviera, 25 km north of Anamur, mountain meadow, July 2007, S. Huber leg. (SMF); 1♀, Izmir, in crevices inside retreat, 24 April 1992, W. Braunstein leg. (SMF); GREECE: 1♂, Laconia, 4 km northeast of Jithion, with rivulet across the shore (Near East Excursion), 5 August 1980, R. Kinzelbach leg (SMF); 1♂, northern Aegean region, Sámos Island, near Vouliótes [=Vourilótoji], (37°47' N, 26°51' 30'' E), 400 m altitude, 25 June 2003, V. Vignoli leg (SMF); 1♀, Sámos Island, 26 June 2003, V. Vignoli leg. (SMF); 1♀, Lesbos Island, between Molivos and Kalloni, 3 July 2003, V. Vignoli leg. (SMF); 1♂, Sporades, Skiathos Island (39°10' N, 23°29' E), 31 May 1979, Liebegott leg. (SMF 30846/1); 1♂, Thessaly, Volos, A. Schönhofer leg. (SMF 30846); 1♀, *Lemnos Island*, August 1976, A. de Caboga leg (MHNG); 3♀♀, *Cyclades*, Paros Island, Parikia, 25 June 1968, A. Senglet leg. (MHNG); 3♀♀, *Cyclades*, Naxos Island, Polichni, 6 August 1968, A. Senglet leg. (MHNG); 1♀, Central mainland, Phthiotis (=Phthiotida), Tragana, (38°38' N, 23°06' E) 5 June 1980, A. Senglet leg. (MHNG); 1♀, Crete Island, Lassithi, Exo Moulia, 18 May 1970, A. Senglet leg. (MHNG); 1♂, Crete Island, Aptera, (SMF4618); 1♂, Crete Island, Stanion, 16 May 1979 J. Wunderlich leg. (SMF); 1♂, Arcadia, Paralia Astros, marshy area along mouth river Tanos, 26 May 1998, R. Bosmans leg. (CRB); 1♂, Attica, Thoriki, Velatouri, 16 May 1974, P. Goemare leg. (CRB); 1♂, Euboea (=Evia) Island, Psachna E., 100 m,

stones around ruin in open maquis shrubland, 10 May 2001, R. Bosmans leg. (CRB); 1♂, Peloponnese, Geráki, (36°59'44.11" N, 22°43'22.02" E), 25 February 2011, F. Štáhlavský and M. Peprný leg. (SMF); CYPRUS: 1♂, Phapos, May 1994, T. Zugles leg. (SMF); 1♀, Protaras, Ayios Elias Village, 17 May 1997, P.J. Haymoz leg. (MHNG); ITALY: 1♂, 4 juvenile males, Etruria (1896.VIII.181 NHMW).

Diagnosis

The species can be recognized by a combination of somatic and genital characters. Males can be distinguished by hyaline and slender ET pointed retrolaterad in left palp and twisted at its distal end (Figure 5E). In female, AMLL not fused anteriorly (Figures 5F, 6A,C) (fused in *E. dufouri*); glandular pores located on a circular depression in vulva, behind loop (Figures 5G, 6B,D) (in *E. mesopotamicus* sp. nov. and several other species on a projection part). Mostly a patch of intermarginal denticles (3–20) is present in cheliceral furrow (Figures 5B, 6E–G) (usually absent or if present one or two denticles in other Eurasian species).

Redescription

Male ($n = 33$). Medium to large Sparassidae (body length 10–20 mm).

Total length: 13.4–20.6, prosoma length 6.1–8.6, prosoma width 5.7–7.8, anterior width of prosoma 2.8–4.0, opisthosoma length 7.3–12.0, opisthosoma width 4.3–6.4. Eye diameters (neotype): AME 0.47, ALE 0.50, PME 0.48, PLE 0.55; eye interdistances: AME–AME 0.25, AME–ALE 0.06, PME–PME 0.38, PME–PLE 0.50, AME–PME 0.50, ALE–PLE 0.31, clypeus height at AME 0.33, clypeus height at ALE 0.47. Eyes subequal.

Chelicerae with two anterior and four to six posterior teeth, Cheliceral furrow with denticles (Figure 5B); the number of denticles is variable (3–20), 3 to 10 denticles arranged in a single line (Figure 6E–G) or cluster of 10 to 20 denticles (Figure 5B); variation in denticles is not correlated to geographical distributions or to sexes. In one case even without denticles (one female from Damascus, Syria, ZMB). Eyes subequal; Basal segment of chelicerae at distal end in most cases with a single bristle (Figure 5B) or two bristles (Figure 6G).

Leg formula: 2 4 1 3. Measurements of palp and legs (neotype): Palp 13.2 [3.6, 1.8, 2.1, 5.7], I 44.6 [12.0, 4.7, 12.1, 12.3, 3.5], II 49.8 [13.5, 4.4, 14.1, 14.3, 3.5], III 41.5 [12.0, 4.0, 11.5, 11.0, 3.0], IV 46.0 [12.7, 4.0, 12.4, 13.5, 3.4].

Spination. Palp 131, 000/101, 1111; Legs: Femur I–III 323, IV 322; Patella I–IV 000(1)/101; Tibia I–IV 2024/2224; Metatarsus I–III 2024, IV 3036.

Palp. As in diagnosis with cymbium and tibia elongated, Cymbium longer than tibia, ET slender and hyaline, dRTA flattened dorso-ventrally, vRTA prominent and triangular in ventral view (Figure 5C,D).

Female ($n = 33$). Total length: 16.9–25.3, prosoma length 6.0–10.0, prosoma width 5.2–8.6, anterior width of prosoma 3.6–5.0, opisthosoma length 10.9–15.3, opisthosoma width 6.5–10.5. Eyes (female from the neotype locality): AME 0.50, ALE 0.47, PME 0.46, PLE 0.51; eye interdistances: AME–AME 0.24, AME–ALE 0.07, PME–PME 0.43, PME–PLE 0.42, AME–PME 0.38, ALE–PLE 0.22, clypeus height at AME 0.43, clypeus height at ALE 0.52. Eyes subequal.

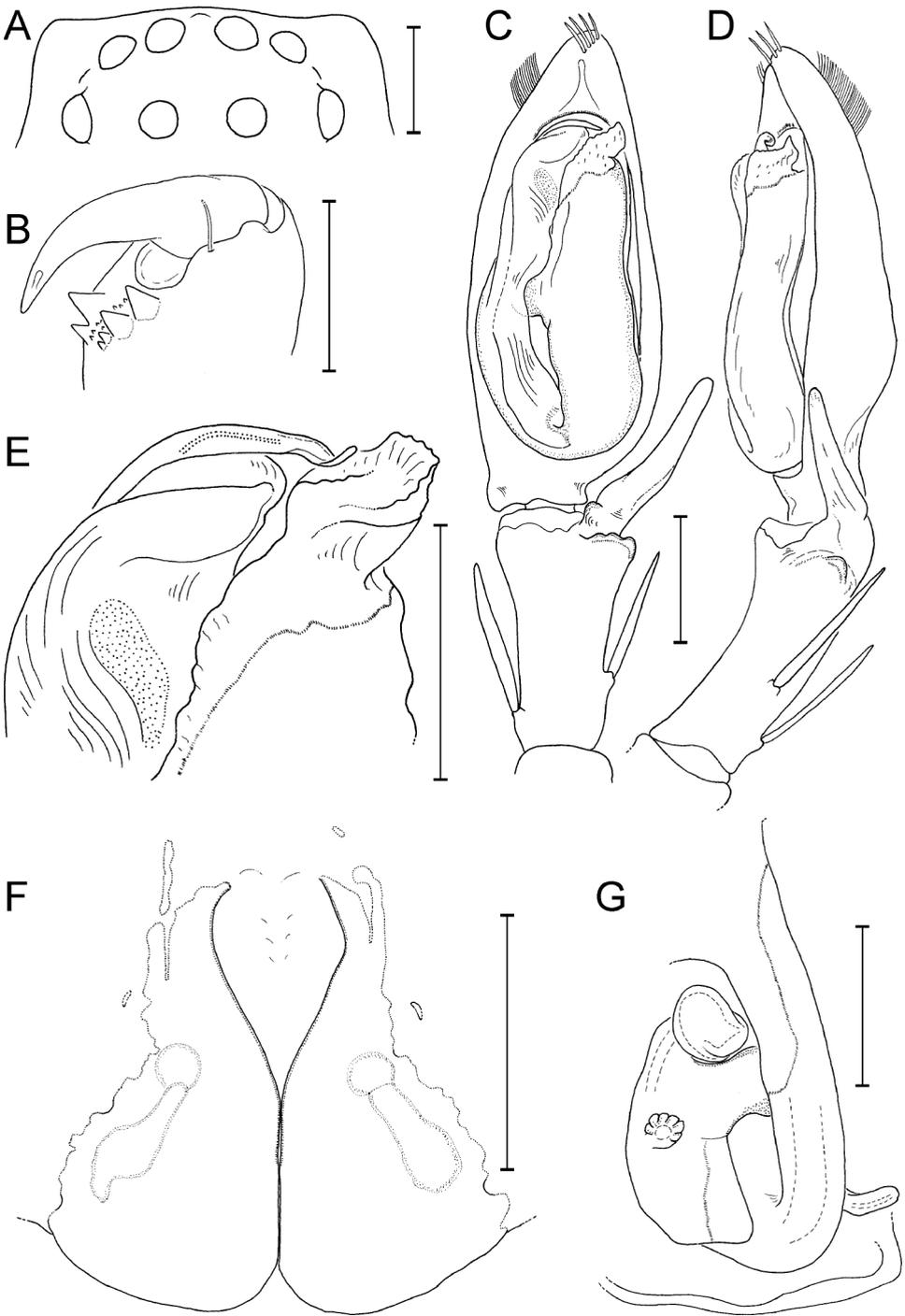


Figure 5. *Eusparassus walckenaeri* (Audouin, 1826), neotype male (A–E) from Cairo, Egypt (SNSD): (A) eye arrangement; (B) left chelicera, ventral; (C) left palp, ventral; (D) left palp, retrolateral, (E) tip of embolus and conductor, ventral. Female (F, G) from type locality: (F) epigyne, ventral (G) left vulva, anterio-dorso-lateral. Scale bars: (A–D, F) 1 mm, (E, G) 0.5 mm.

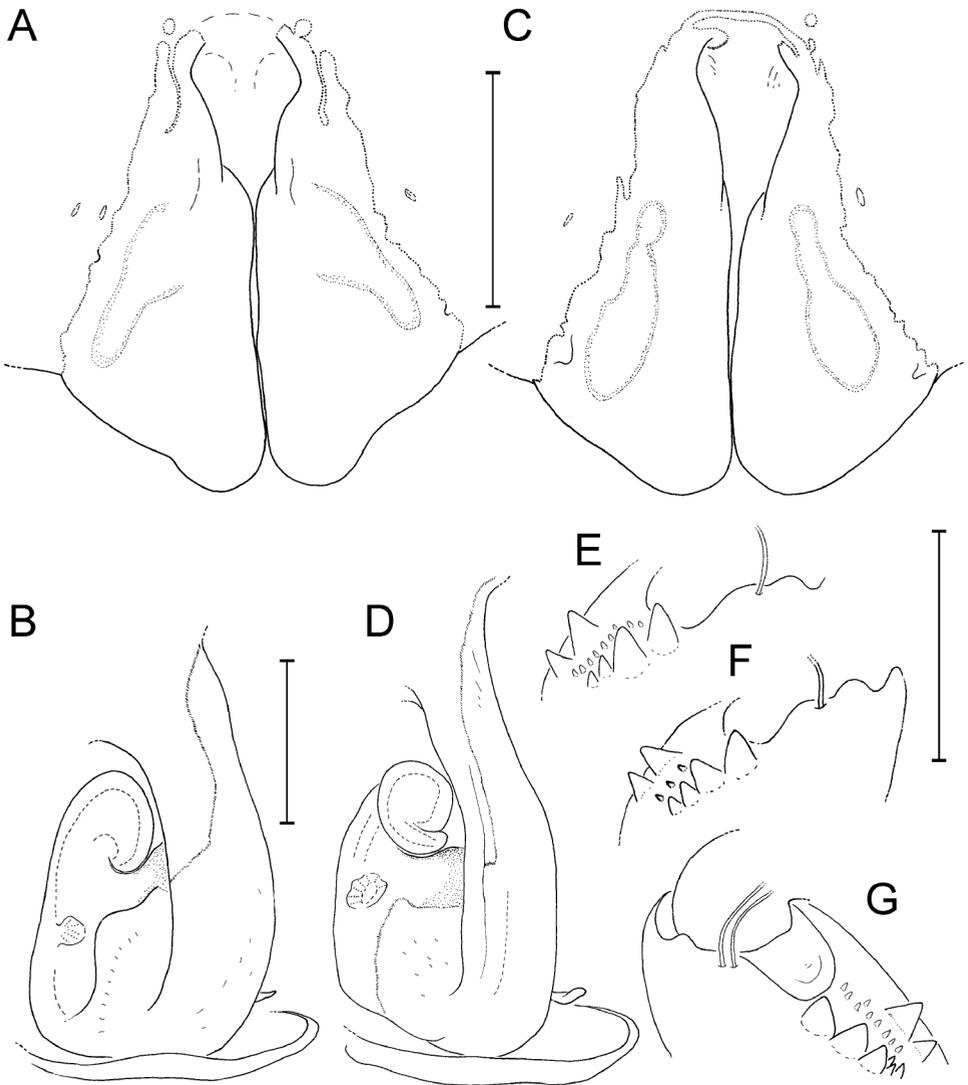


Figure 6. *Eusparassus walckenaeri* (Audouin, 1826), female copulatory organ variations: (A, B) female from Greece, Samos Island: (A) epigyne, ventral; (B) left vulva, antero-dorso-lateral; (C, D) female from Turkey, Milas: (C) epigyne, ventral; (D) left vulva, antero-dorso-lateral; (E–G) variations in chelicerae: number of bristles and intermarginal denticles, ventral. Scale bars: (A, C, E–G) 1 mm, (B, D) 0.5 mm.

Chelicerae with two anterior and four or five posterior teeth, Cheliceral furrow with denticles. Dentition similarly variable as in males. For instance, in three females (MHNG) from Naxos Island (Aegean region, Greece), intermarginal denticle variations are observed. A female from Cyprus has no denticles at the cheliceral furrow but the copulatory organ is assumed to the species. Specimens from Greece (Paros, Lakonia, Skiathos, Samos and Lesbos Islands) in most cases have a line of denticles.

Leg formula: 2 4 1 3. Measurements of palp and legs (female from the neotype locality): palp 9.8 [3.0, 1.5, 1.8, 3.5], I 31.5 [8.6, 3.7, 8.4, 8.5, 2.3], II 34.4 [10.0, 4.0, 9.1, 8.8, 2.5], III 29.6 [8.8, 3.5, 7.7, 7.4, 2.2], IV 32.6 [9.6, 3.1, 8.5, 9.0, 2.4].

Spination. Palp 131, 000/001, 1111, 1013; Legs: Femur I–III 323, IV 322; Patella I–IV 000(1)/101; Tibia I–IV 2024/2224; Metatarsus I–III 2024, IV 3036.

Epigyne/vulva. As in diagnosis, with slight variations in epigyne relative length; epigyne may be elongated beyond epigynal furrow (Figure 6A,C); EFB in most specimens absent (Figures 5F, 6A), but if present only as thin bridge (Figure 6C).

Colouration. Dark brown to orange-brown in Turkey and Greece to milky cream in the Negev desert with darker patterns on prosoma; legs with distinct darker bands; dorsal opisthosoma with a series of small chevron-like patterns, ventral opisthosoma without marking (Figure 23A).

Remarks

Type material of *E. walckenaeri* was collected by French naturalist J. C. Savigny (1777–1851), who accompanied Napoleon on his military expedition to Egypt (1798–1801). Savigny was responsible for studying and collecting invertebrates (Fransen et al. 1997). Back in Paris, he produced his famous plates for the “Description de l’Égypte” in which he illustrated the type specimens (plate 6, figs 1, 2) but without any description of them. Audouin (1826) briefly explained Savigny’s illustrations. In his sketchy explanation, Audouin proposed two names for the same species in the same plate. He named the female, fig. 1, “*Philodromus walckenaerii*” and the male, fig. 2, “*P. linnaei*”. The type specimens cannot be traced because he never designated any (Alderweireldt 1996) therefore the plates were treated as the only “types” for the name (Brignoli 1978). Since no name-bearing type material (other than the plate) is known to be extant, it is necessary to establish a neotype to maintain nomenclatural stability and reduce taxonomic confusion with morphologically similar species [i.e. *E. doriae* (Simon, 1874) stat. nov., *E. kronebergi* Denis, 1958 stat. nov.] within the distribution range.

Neotype designation

The detailed locality in which Savigny collected the types was not recorded. According to the history of the expedition, it is assumed that most likely the collecting took place around Cairo, as the scientists’ team spent most of the time there (Fransen et al. 1997). Hence, Cairo is thought to be putatively the type locality of this species. We select it as being as close as practicable to the original type locality. Two males and one female sampled in Cairo were found in the collection of SNSD, and one male is here designated as neotype. The neotype male and the other male and female from the type locality, Cairo (determined by the neotype) fit well with the fine illustrations of original plate 6 including general habitus, eye arrangements, chelicera and also accurate illustrated male palp (plate 6, fig. 2d).

Known geographical distribution and habitat

The distribution range is restricted to eastern Mediterranean countries from Egypt to Greece and its eastern-most distribution to Iraq in the Middle East. They are found in semi-dry areas under flat stones. In Greece, it is recorded that they are troglodytes, sporadically occurring underground (Deltshev 2011).

Note on doubtful records in Europe

A single male and four juveniles from Etruria, Italy (NHMW) were found to be conspecific. Levy (1989) considered this material to be mislabelled because there are no other records from Italy. In addition to these specimens, we found a vial containing three immatures from Sicily in NHMW for which somatic characters (presence of intermarginal denticles in chelicera, pale ventral opisthosoma and eyes arrangements) agree well with the *E. walckenaeri* description. Further records of *E. walckenaeri* in Europe from “Crimea, Ukraine” (sub *Sparassus validus*) [misunderstanding by Simon (1880) and Levy (1989)] cannot be correct because both the original description and label are noted “Taur.,” which refers to the Taurus Mountains in western Turkey, Anatolia.

***Eusparassus mesopotamicus* sp. nov.**

(Figures 7, 8)

Type material

Holotype: male, IRAN: Khuzestan Province: Shush (32°11'39" N, 48°14'37" E), with label: Perse, Suse, 1904, de Morgan leg. (MNHN).

Paratypes (1♂, 2♀♀) IRAN: Khuzestan Province: 1♂ with same data as for holotype (MNHN); 1♀, Ahwaz, semiarid desert, 1961, Schübart leg. (SMF); 1♀, 20 km north of Ahwaz, March 1958, Frank leg. (SMF).

Other material examined

1♀, IRAQ: Najaf, 19 July 1937, W.P. Kennedy leg. (NHM 1949.1.4.14).

Etymology

The species is named after Mesopotamia (the Land of Rivers), largely corresponding to modern day Iraq, southeastern Turkey and southwestern Iran where the species is distributed. Adjective.

Diagnosis

Males can be distinguished from other congeners by the robust embolus tip which is S-shaped and directed proximo-retrolatero-distad in left palp, ventral view (Figure 7E), females are similar to those of *E. walckenaeri* but differ in having glandular pores on distal end of glandular projection of vulva (Figure 8B, D, E); they differ from females

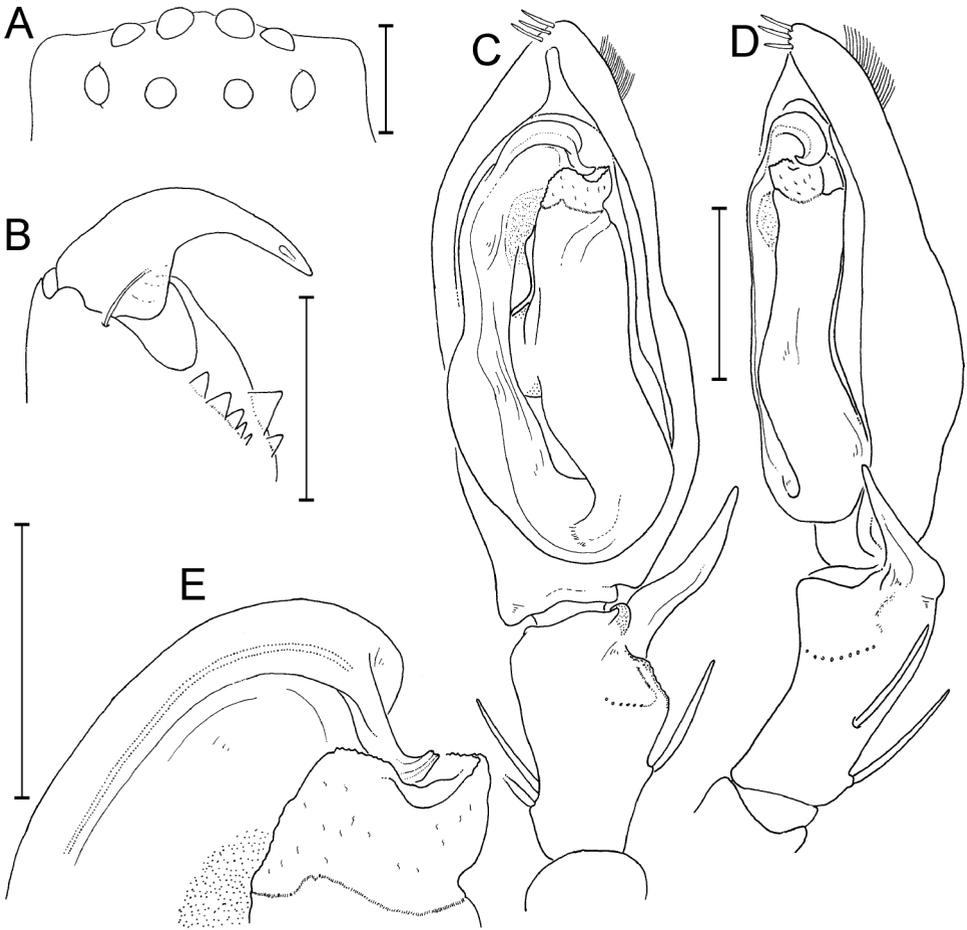


Figure 7. *Eusparassus mesopotamicus* sp. nov., holotype male from Shush, Khuzestan Province, Iran: (A) eye arrangement; (B) left chelicera, ventral; (C) left palp, ventral; (D) left palp, retrolateral; (E) tip of embolus and conductor, ventral. Scale bars: (A–D) 1 mm, (E) 0.5 mm.

of *E. doriae* stat. nov. in having AMLL of epigyne more extended and MS is longer than wide (Figure 8A,C) in contrast, latter species MS is wider than long.

Description

Male ($n = 2$). Males medium-sized; holotype, Total length: 16.1, prosoma length 7.6, prosoma width 6.7, anterior width of prosoma 3.5, opisthosoma length 8.5, opisthosoma width 5.5. Eyes diameters: AME 0.46, ALE 0.40, PME 0.35, PLE 0.40; eye interdistances: AME–AME 0.30, AME–ALE 0.08, PME–PME 0.52, PME–PLE 0.46, AME–PME 0.45, ALE–PLE 0.28, clypeus height at AME 0.35, clypeus height at ALE 0.43.

Chelicerae with two anterior and five posterior teeth, cheliceral furrow without denticles (Figure 7B). Leg formula: 2 4 1 3. Measurements of palp and legs: Palp 10.2

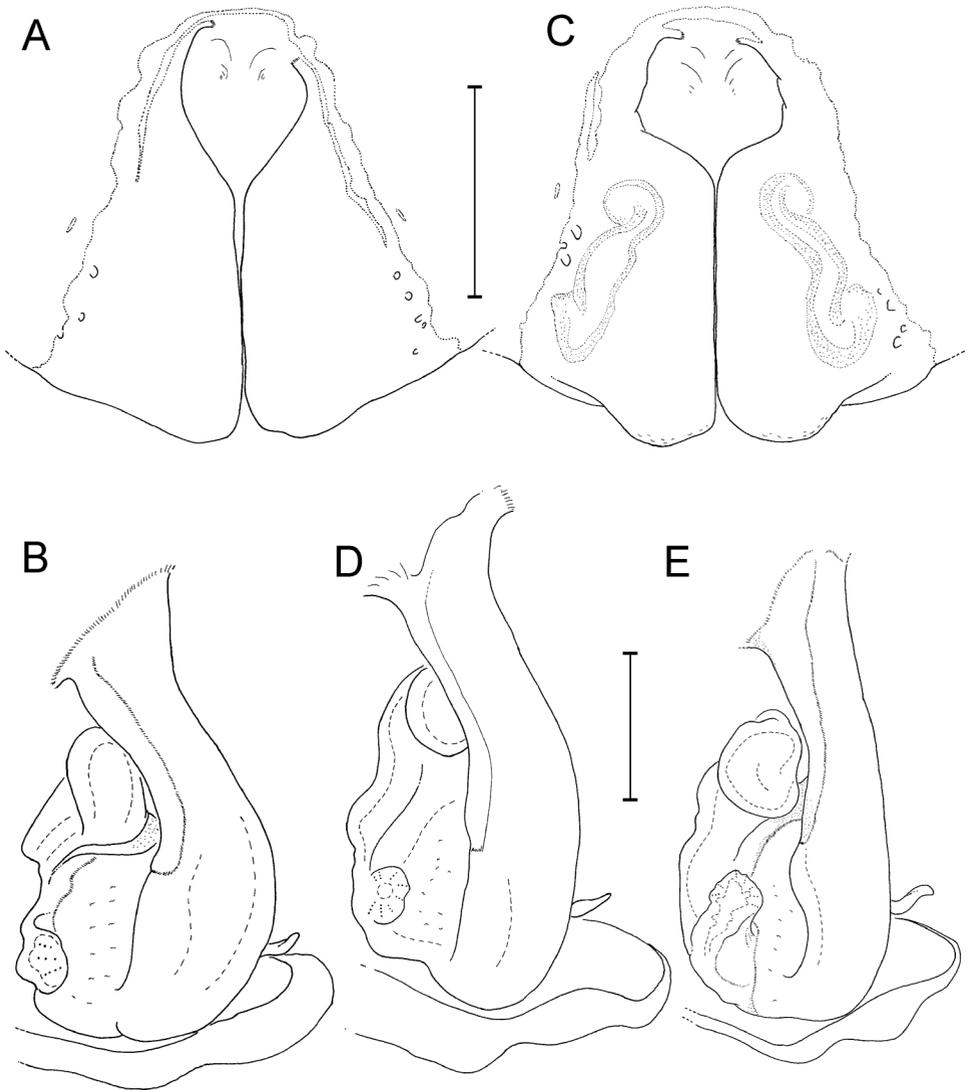


Figure 8. *Eusparassus mesopotamicus* sp. nov., (A, B) paratype female, from Ahwaz, Khuzestan Province, Iran: (A) epigyne, ventral; (B) left vulva, antero-dorso-lateral; (C, D) paratype female, same locality, variations: (C) epigyne, ventral; (D) left vulva, antero-dorso-lateral; (E) female from Nejeff, Iraq: variation left vulva, antero-dorso-lateral. Scale bars: (A, C) 1 mm, (B, D, E) 0.5 mm.

[2.5, 1.0, 1.2, 5.5], I 29.4 [8.2, 2.7, 8.1, 8.3, 2.1], II 32.2 [8.9, 3.0, 9.2, 8.6, 2.5], III 25.6 [7.3, 2.5, 7.2, 6.8, 1.8], IV 30.5 [8.6, 2.5, 8.1, 9.0, 2.3].

Spination. Palp 131, 000/001, 1111; Legs: Femur I–III 323, IV 322; Patella I–IV 001/101; Tibia I–IV 2124/2224; Metatarsus I–III 2024, IV 3034.

Palp. As in diagnosis with cymbium nearly twice as long as tibia, cymbium stout, dRTA compared to cymbium shortened, vRTA broad and not pointed (Figure 7C, D).

Female ($n = 3$). Total length: 20.5–25.5, prosoma length 8.5–9.5, prosoma width 7.0–7.8, anterior width of prosoma 4.3–4.7, opisthosoma length 12.0–16.0, opisthosoma width 7.2–9.5. Eye diameters: AME 0.55, ALE 0.47, PME 0.42, PLE 0.47; eye interdistances: AME–AME 0.31, AME–ALE 0.08, PME–PME 0.67, PME–PLE 0.68, AME–PME 0.55, ALE–PLE 0.38, clypeus height at AME 0.35, clypeus height at ALE 0.45.

Chelicerae with two anterior and five or six posterior teeth; cheliceral furrow without denticles. Leg formula: 2 4 1 3. Measurements of palp and legs: Palp 10.7 [3.5, 1.5, 2.0, 3.7], I 35.9 [10.3, 4.2, 9.5, 9.4, 2.5], II 39.3 [11.2, 4.5, 10.2, 9.8, 2.6], III 31.4 [9.3, 4.0, 8.3, 7.5, 2.3], IV 37.4 [11.3, 4.0, 9.7, 10.2, 2.2].

Spination. Palp 131, 001, 1111, 1013; Legs: Femur I–III 323, IV 321/322; Patella I–IV 000; Tibia I–IV 2024; Metatarsus I–III 2024, IV 3034.

Epigyne/vulva. As in diagnosis with EFB present as narrow band, AMLL developed but not fused together, AMLL encircling partially MS (Figure 8A,C).

Colouration [in ethanol]. Cream to pale orange; ventral opisthosoma pale in colour.

Known geographical distribution

Iran (Khuzestan Province), Iraq (Najaf) and Turkey? (Hakkari Province).

Eusparassus doriae (Simon, 1874) stat. nov.

(Figures 9, 10)

Sparassus doriae Simon, 1874: 254, pl. 5, fig. 6 (description of male and female; syntypes, one male and female, examined).

Sparassus tersa – Simon, 1880: 291 (Simon listed *Sparassus doriae* as synonym of *S. tersa*, material from Iran).

Eusparassus tersus – Roewer, 1955: 775 (misidentification; one male, one female and two juveniles examined, from Iran, Roewer collection, SMF).

Type material

Syntypes: 1 male, 1 female, IRAN: *Tehran Province*: Tehran, 1862–63, G. Doria leg. [(label: Jar n. 1663, Simon n. 1.557–Tehran (Doria) sub *Eusparassus tersa*] (MNHN).

Other material examined

1♂ and 4♀♀, IRAN: Kerman Province: 1♂, 1♀, 2 juveniles, Jiroft, Maskun, [(label: Arachn. Coll. Rwr.-Ltd. No. 11454, *Eusparassus tersus* (C. L. Koch, 1838), Iran, Sabzawaran, Roewer det.1955), “Osterreichische Iran-Expedition 1949/50”], F. Starmühlner, H. Löffler and P. Kaltenbach leg. (SMF RII/11454); IRAN: Yazd Province: 2♀♀, 10 km northeast of Bafq, Bafq, 1258 m, 10 April 2004, V. Vignoli and P. Crucitti leg. (SMF); 1♀, west of Baghdad-Abad, Taft, 1502 m, 9 April 2004, V. Vignoli and P. Crucitti leg. (SMF). 1 subadult ♀, 5 km southwest of Taft, 1556 m, 13 April 2004, V. Vignoli and P. Crucitti leg. (SMF).

Diagnosis

Males differ from other congeneric males by tip of embolus leaf-like and directed retrolatero-proximad in left palp, ventral view (Figure 9E), dRTA compared with *E. walckenaeri* is slimmer and bent proximally, dRTA and vRTA are more widely spaced (Figure 9C,D). Females can be distinguished by epigynal field as long as wide (longer than wide in *E. mesopotamicus* sp. nov.) and AMLL are not extended anteriorly (Figure 10A,C) (in *E. walckenaeri* extended).

Description

Male ($n = 2$) [syntype first]. Prosoma length 6.7 (6.2), prosoma width 5.6 (4.7), anterior width of prosoma 3.1 (2.8), opisthosoma length 7.0 (6.7), opisthosoma width 4.5 (4.2). Eyes diameters: AME 0.40, ALE 0.35, PME 0.33, PLE 0.36; eye inter-distances: AME–AME 0.20, AME–ALE 0.05, PME–PME 0.37, PME–PLE 0.37,

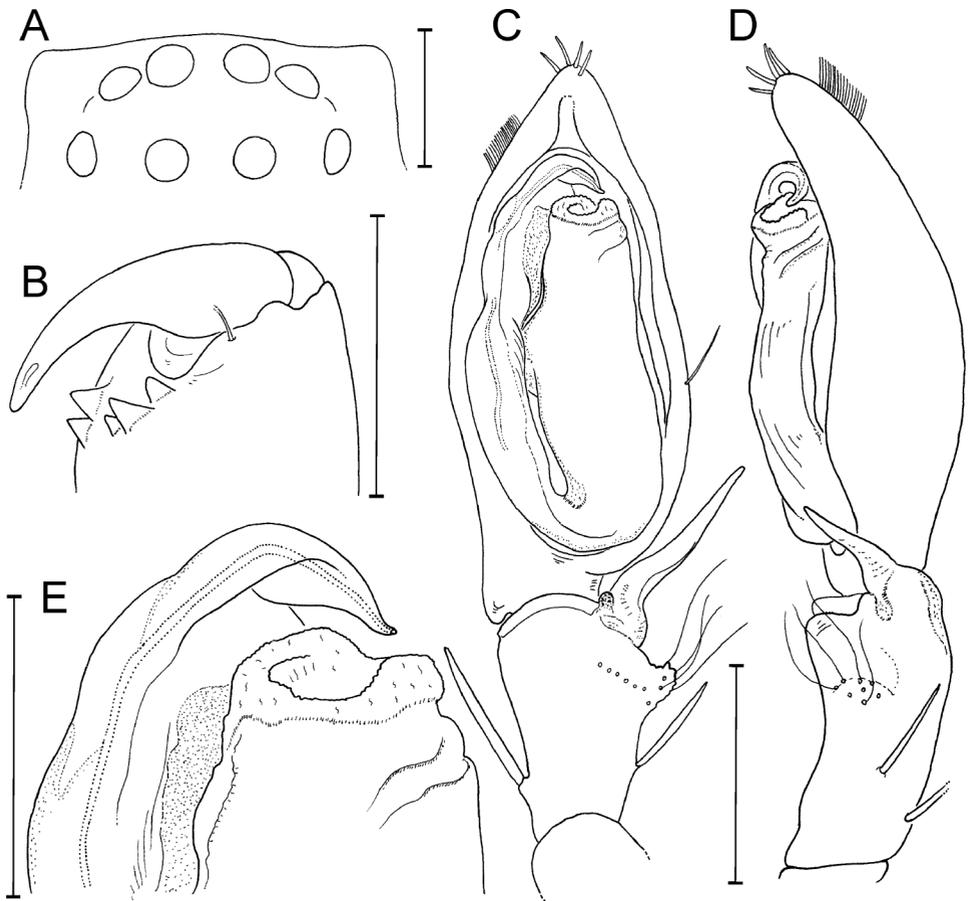


Figure 9. *Eusparassus doriae* (Simon, 1874) stat. nov., male from Jiroft, Kerman Province, Iran: (A) eye arrangement; (B) left chelicera, ventral; (C) left palp, ventral; (D) left palp, retrolateral; (E) tip of embolus and conductor, ventral. Scale bars: (A–D) 1 mm, (E) 0.5 mm.

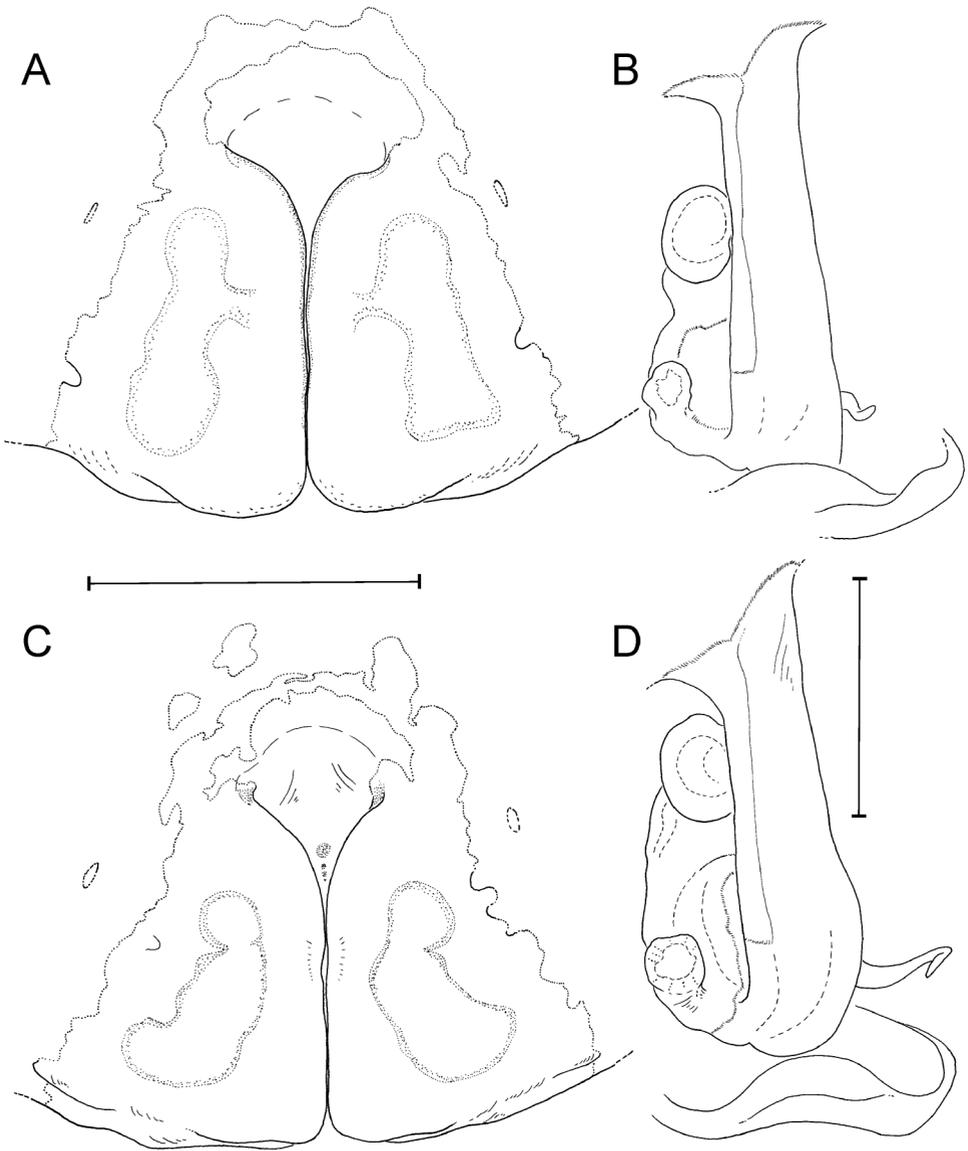


Figure 10. *Eusparassus doriae* (Simon, 1874) stat. nov., (A, B) syntype female from Tehran, Iran: (A) epigyne; (B) left vulva, antero-dorso-lateral; (C, D) female from Bafq, Yazd Province, Iran: (C) epigyne; (D) left vulva, antero-dorso-lateral. Scale bars: (A, C) 1 mm, (B, D) 0.5 mm.

AME–PME 0.37, ALE–PLE 0.25, clypeus height at AME 0.18, clypeus height at ALE 0.27.

Chelicerae with two anterior and three posterior teeth; cheliceral furrow without denticles (Figure 9B). Leg formula: 2 4 1 3. Measurements of palp and legs: Palp 8.5 [2.6, 1.2, 1.4, 2.9], I 30.4 [8.4, 3.1, 8.1, 8.2, 2.6], II 32.6 [9.3, 3.2, 9.0, 8.6, 2.5], III 27.7 [8.3, 2.9, 7.3, 7.1, 2.1], IV 32.2 [9.3, 2.7, 8.5, 9.2, 2.5].

Spination. Palp 131, 101, 1111; Legs: Femur I–III 323, IV 322; Patella I–IV 101; Tibia I–IV 2224; Metatarsus I–III 2024, IV 3034.

Palp. As in diagnosis with cymbium longer than tibia, vRTA developed (Figure 9C,D).

Female ($n = 5$). Total length: 11.8–15.2, prosoma length 6.5–8.7, prosoma width 5.3–6.5, anterior width of prosoma 3.3–4.5, opisthosoma length 8.0–11.2, opisthosoma width 3.5–7.5. Eye diameters (syntype): AME 0.44, ALE 0.40, PME 0.36, PLE 0.38; eye interdistances: AME–AME 0.20, AME–ALE 0.05, PME–PME 0.36, PME–PLE 0.42, AME–PME 0.40, ALE–PLE 0.23, clypeus AME 0.24, clypeus ALE 0.35.

Chelicerae with two anterior and three or four posterior teeth, cheliceral furrow without denticles; Leg formula: 2 4 1 3. Measurements of palp and legs: Palp 7.4 [2.2, 1.1, 1.6, 2.5], I 22.8 [6.5, 2.8, 6.0, 5.8, 1.7], II 25.6 [7.7, 3.2, 6.7, 6.2, 1.8], III 21.6 [6.6, 2.7, 5.6, 5.2, 1.5], IV 25.5 [7.8, 2.7, 6.6, 6.7, 1.7].

Spination. Palp 131, 001, 1111, 1013; Legs: Femur I–III 323, IV 322; Patella I–IV 000; Tibia I–IV 2024; Metatarsus I–III 2024, IV 3034.

Epigyne/vulva. Epigyne as in diagnosis, EFB wide, MS wider than long (Figure 10A,C); vulva as in diagnosis with glandular pores situated at distal end of glandular process (Figure 10B,D).

Colouration [in ethanol]. Cream to pale orange, dorsal opisthosoma with a patch and series of small chevron-like patterns and additional dots, ventral opisthosoma pale.

Remarks

Eusparassus doriae stat. nov. is re-established here. The species was described by Simon (1874) based on material obtained by the Italian naturalist Giacomo Doria from Tehran (1862–63). Unfortunately, types in MCSN could not be traced and were most probably destroyed by two floods in 1970 and 1990 (M.L. Tavano, personal communication). However, in the Simon collection (MNHN) we found one male and one female (syntypes) of the same expedition material, which were taken by Simon to Paris. After the original description by Simon (1874), he himself in 1880 mistakenly synonymized the species with *Sparassus tersa* (C.L. Koch), currently a junior synonym of *E. walckenaeri*. Following Simon, Roewer (1955) working on material of “Austrian Iran-Expedition (Österreichische Iran-Expedition 1949/50)” from central Iran, Kerman Province misidentified the material as *E. tersus*. Subsequently, Levy (1989) moved this species to *E. walckenaeri*. *Sparassus fontanieri* Simon, 1880 is another nominal species for which the type material was probably collected from Iran. The type material was collected by M. Fontanier but the type locality is not clear: “. . . origin uncertain, probably from Persia (=Iran) . . .”, Simon (1880: 75) stated. Despite not locating the type specimen, Levy (1989) synonymized *E. fontanieri* with *E. walckenaeri*. The holotype male was recovered by us from MNHN and proved to be a synonym of *E. walckenaeri*, as Levy (1989) clarified. However, we found that *E. doriae* stat. nov. is the only widespread *Eusparassus* in central Iran.

Known geographical distribution and habitat

This species is distributed in Central Iran (Tehran, Kerman and Yazd Provinces). It occurs under large flat stones in dry mountainous areas (V. Vignoli personal observation) and near orchards under stones (first author personal observation).

Eusparassus kronebergi Denis, 1958 stat. nov.

(Figure 11)

Eusparassus kronebergi Denis, 1958: 99, figs 26–28 (description of male and female; syntypes: one male, one female, examined, lectotype and paralectotype designated).

Sparassus walckenaeri – Levy 1989: 134 (listed *Sparassus kronebergi* as synonym of *S. walckenaeri*).

Type material

Lectotype: male, AFGHANISTAN: Seistan, Faizabad, 14 February 1949, K. Paludan leg. (ZMUC 5671); Paralectotype: 1 female, Afghanistan: Farah Province: Farah, (station 87), 18 June 1948, K. Paludan leg. (ZMUC 5675).

Other material examined

2 ♂♂, INDIA: Rajasthan, Suratgarh, D. Hummel leg. (NRM).

Diagnosis

Males of *E. kronebergi* can be distinguished from other congeners by vRTA (compared to that of *E. walckenaeri*) not well developed (Figure 11C,D) and embolus tip directed retrolatero-distad, in ventral view (Figure 11E); in contrast to *E. walckenaeri*, epigyne with MS as wide as long, and to *E. doriae* stat. nov., EF longer than wide (Figure 11F); vulva with a distinct crest laterally (Figure 11G).

Redescription

Male ($n = 3$) [lectotype first]. Males medium-sized. Total length: 12.8–18.2, prosoma length 5.6–8.9, prosoma width 4.8–7.6, anterior width of prosoma 2.6–3.7, opisthosoma length 7.2–9.3, opisthosoma width 4.5–5.5. Eyes (lectotype): AME 0.37, ALE 0.33, PME 0.32, PLE 0.33; eye interdistances: AME–AME 0.19, AME–ALE 0.07, PME–PME 0.40, PME–PLE 0.48, AME–PME 0.35, ALE–PLE 0.22, clypeus height at AME 0.23, clypeus height at ALE 0.38.

Chelicerae with two anterior and four posterior teeth; Cheliceral furrow without or with a single denticle, distal end of cheliceral basal segment with a single bristle (Figure 11B); Leg formula: 2 1 4 3. Measurements of palp and legs: Palp 10.5 [3.5, 1.6, 2.0, 3.4], I 26.6 [7.4, 2.9, 6.7, 7.3, 2.3], II 28.0 [7.9, 3.0, 7.5, 7.2, 2.4], III 23.4 [6.8, 2.6, 6.0, 6.1, 1.9], IV 26.2 [7.8, 2.5, 7.0, 7.5, 2.4].

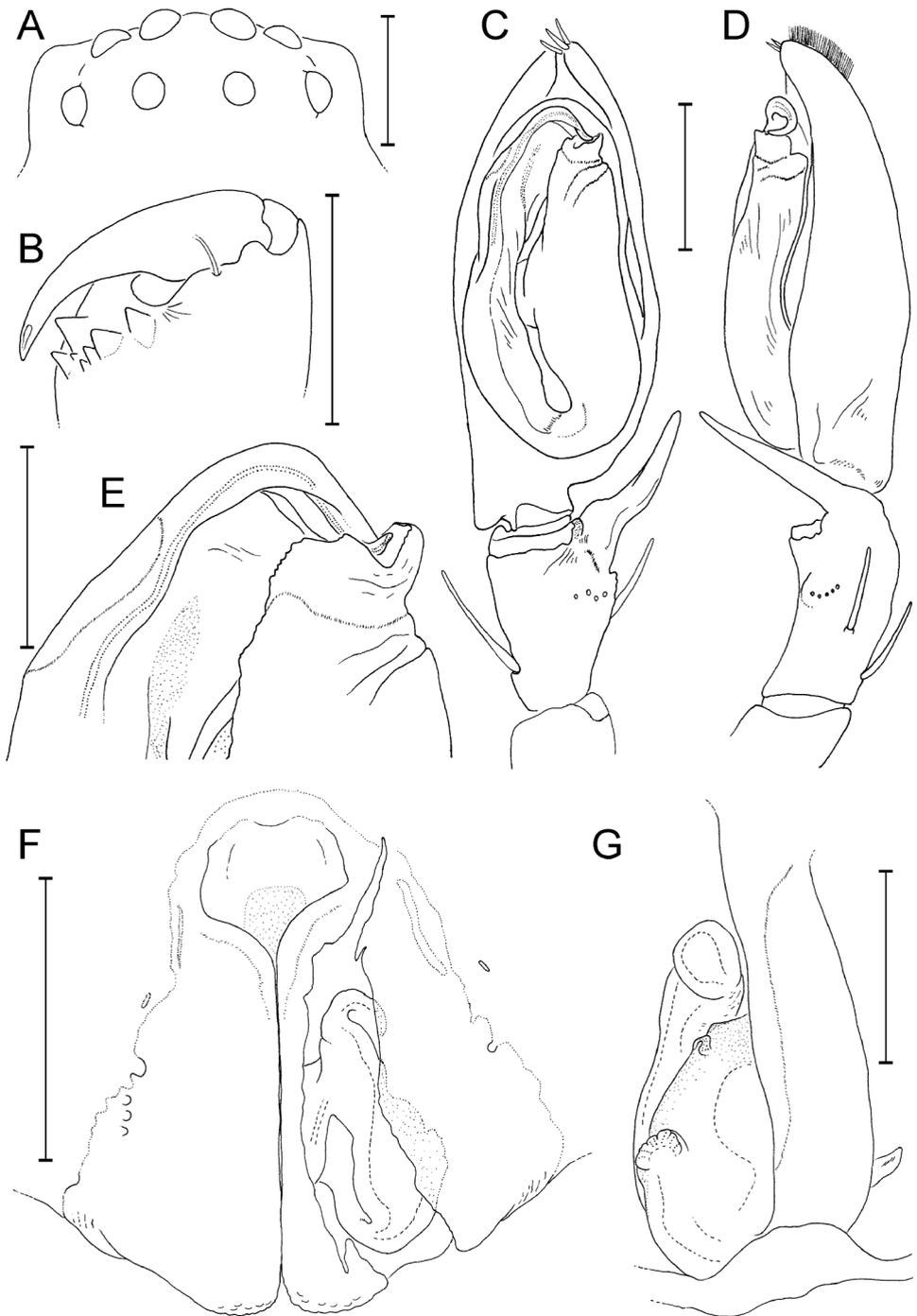


Figure 11. *Eusparassus kronebergi* Denis, 1958 stat. nov., (A–E) lectotype male from Faizabad, Sistan, Afghanistan: (A) eye arrangement; (B) left chelicera, ventral; (C) left palp, ventral; (D) left palp, retrolateral; (E) tip of embolus and conductor, ventral; (F, G) paralectotype female from Farah, Farah Province, Afghanistan: (F) epigyne; (G) left vulva, antero-dorso-lateral. Scale bars: (A–C, E) 1 mm, (D, F) 0.5 mm.

Spination. Palp 131, 000/001, 1111; Legs: Femur I–III 323, IV 322; Patella I–IV 001/101; Tibia I–IV 2024/2224; Metatarsus I–III 2024, IV 3034.

Palp. As in diagnosis, with cymbium longer than tibia.

Female ($n = 1$) paralectotype. Prosoma length 4.8, prosoma width 3.9, anterior width of prosoma 2.6, opisthosoma length, opisthosoma width. Eyes: AME 0.34, ALE 0.30, PME 0.28, PLE 0.32, AME–AME 0.20; eye interdistances: AME–ALE 0.05, PME–PME 0.37, PME–PLE 0.31, AME–PME 0.26, ALE–PLE 0.16, clypeus height at AME 0.18, clypeus height at ALE 0.28.

Chelicerae with two anterior and three or four posterior teeth; cheliceral furrow without denticles. Leg formula: 24=13 (leg IV and I are the same size). Measurements of palp and legs: Palp 6.6 [1.8, 0.9, 1.3, 2.6], I 18.6 [5.2, 2.2, 4.8, 4.7, 1.7], II 20.1 [5.9, 2.5, 5.3, 4.9, 1.8], III 16.5 [4.8, 2.1, 4.2, 3.9, 1.5], IV 18.7 [5.6, 2.1, 4.9, 4.5, 1.6].

Spination. Palp 131, 001, 1111, 1013; Legs: Femur I–III 323, IV 321; Patella I–IV 000; Tibia I 1024, II 2024, III (1014)2024, IV 2024; Metatarsus I–III 2024, IV 3036.

Epigyne/vulva. As in diagnosis with EF longer than wide, EFB present (Figure 11F); vulva has two separate glandular parts located near a ridge laterally (Figure 11G).

Colouration [in ethanol]. Pale brown, dorsal opisthosoma with a patch and series of small chevron-like patterns, ventral opisthosoma pale.

Remarks

Morphological evidence allows this species to be withdrawn from the synonymy (Levy 1989) with *E. walckenaeri*. Syntypes were collected in Afghanistan during “the 3rd Danish Expedition to Central Asia”. These are one male and one female collected allopatrically. There is the possibility that they are not conspecific. Consequently, to designate a unique bearer of the name of the nominal species (Article 74), we select the male to be the lectotype of *E. kronebergi* stat. nov. to fix the status of the species. Two other males sampled from Rajasthan were found to be conspecific. This is the first record of the species from India

Known geographical distribution

Western Afghanistan; India: Rajasthan (new record).

Eusparassus fuscimanus Denis, 1958 (Figures 12, 13, 14)

Eusparassus fuscimanus Denis, 1958: 100, fig. 29 (description of female; Syntypes, two females, Afghanistan, examined). – Roewer, 1962: 4, figs 82–84 (description of male; Lund collection, not available).

Sparassus fuscimanus – Levy, 1989: 137, fig. 27.

Type material

Syntypes: 1 female, AFHANISTAN: Nuristan, Wama (35°7'15" N, 70°44'30" E), 2250 m, under stone, 17 April 1948, K. Paludan leg. (ZMUC 5670); 1 female and 1 juvenile, Afghanistan: Central Afghanistan: Puistagoli, Koh-i-baba, 1 July 1948, N. Haarløv leg. (ZMUC 5673).

Other material examined

1♂, 5 ♀♀, AFGHANISTAN: Nangarhar Province: Jalal-abad (34°25'34" N, 70°27'5" E): countryside of Jalal-abad: 1♂, 01 March 1965, D. Povolný leg. (MMB); 10 km east of Jalal-abad: 1♀, 620 m altitude, 22 February 1966, Povolný and Tenora leg. (18 MMB); 12–20 km east of Jalal-abad: 1♀, 600 m altitude, 8 March 1966, Povolný and Tenora leg. (27 MMB); Jalal-abad: 1♀, 580 m altitude, 15 April 1967, D. Povolný leg. (97 MMB); Jalal-abad: 1♀, 580 m altitude, 3 May 1967, D. Povolný leg. (114 MMB); Dareyhe-Nur (34°44'11" N, 70°39'28" E), 1♀, 2470 m altitude, 19 March 1967, D. Povolný leg. (114 MMB).

Diagnosis

Female epigyne similar to that of *E. doriae* stat. nov. in having EF as long as wide but can be differentiated by AMLL extended anteriorly (Figure 13C, E), vulva exhibits a lateral ridge which separates the hyaline part of copulatory duct from the more sclerotized part of internal duct system (Figure 13D, F), this ridge is absent in vulvas of *E. doriae* stat. nov. *E. fuscimanus* can also be distinguished by the eye interdistances (Figure 13A), AME–ALE space is one-half of AME–AME (as in *E. pontii*) whereas in *E. doriae* stat. nov. this relative distance is one-quarter. Males can be distinguished from other *Eusparassus* males by long and enlarged embolus tip pointed proximad not covered by EM (Figure 12D).

Redescription

Male ($n = 1$). Total length: 16.1, prosoma length 8.1, prosoma width 6.4, anterior width of prosoma 3.5, opisthosoma length 8.0, opisthosoma width 6.0. Eye diameters: AME 0.43, ALE 0.40, PME 0.33, PLE 0.38; eye interdistances: AME–AME 0.19, AME–ALE 0.11, PME–PME 0.53, PME–PLE 0.47, AME–PME 0.31, ALE–PLE 0.24, clypeus height at AME 0.27, clypeus height at ALE 0.35.

Chelicerae with two anterior and six posterior teeth; cheliceral furrow without denticles. Leg formula: 2 4 1 3. Measurements of palp and legs: Palp 9.9 [3.5, 1.4, 1.3, 3.7], I 34.3 [9.3, 3.8, 9.2, 9.5, 2.5], II 37.4 [10.4, 4.1, 10.1, 10.3, 2.5], III 31.4 [9.1, 3.5, 8.5, 8.2, 2.1], IV 35.3 [10.0, 3.4, 9.5, 10.0, 2.3].

Spination. Palp 131, 101(0), 1111; Legs: Femur I–III 323, IV 322; Patella I–IV 101; Tibia I–IV 2224; Metatarsus I–III 2024, IV 3034.

Palp. As in diagnosis with cymbium around two times longer than tibia, dRTA slender and pointed distally, vRTA broad (Figure 12B,C); stout ET not covered by EM (Figure 12D).

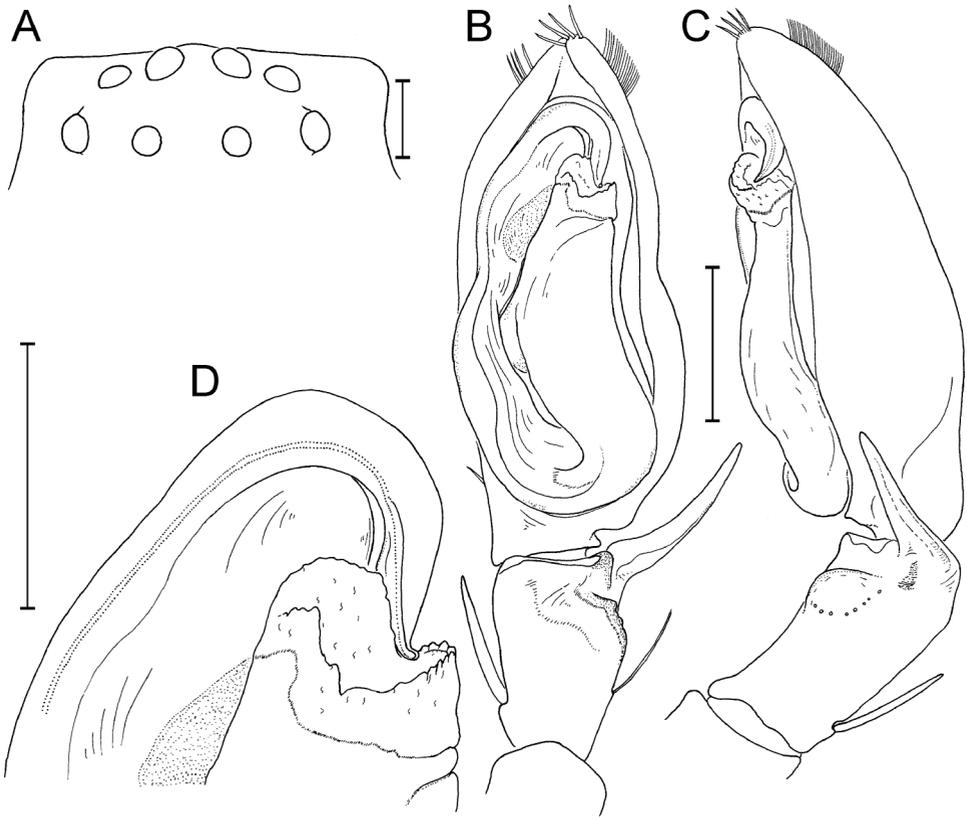


Figure 12. *Eusparassus fuscimanus* Denis, 1958, male from Jalalabad, Nangarhar Province, Afghanistan: (A) eye arrangement; (B) left palp, ventral; (C) left palp, retrolateral; (D) tip of embolus and conductor, ventral. Scale bars: (A–C) 1 mm, (D) 0.5 mm.

Female ($n = 7$). Total length: 16.1–18.3, prosoma length 5.9–8.0, prosoma width 5.0–6.3, anterior width of prosoma 3.0–4.0, opisthosoma length 10.2–10.3, opisthosoma width 7.0–7.3. Eyes diameters: AME 0.42, ALE 0.36, PME 0.35, PLE 0.34; eye interdistances: AME–AME 0.28, AME–ALE 0.18, PME–PME 0.55, PME–PLE 0.53, AME–PME 0.47, ALE–PLE 0.41, clypeus AME 0.24, clypeus ALE 0.35.

Chelicerae with two anterior and four to eight posterior teeth, posterior teeth with three large distal and one to five small proximal teeth, cheliceral furrow without denticles (Figure 13B).

Spination. Palp 131, 001, 1111, 1013; Legs: Femur I–III 323, IV 321; Patella I–IV 000; Tibia I–IV 2024; Metatarsus I–III 2024, IV 3034. Leg formula: 2 4 1 3. Measurements of palp and legs of the largest syntype female: Palp 8.8 [2.8, 1.4, 1.6, 3.0], I 23.3 [6.7, 3.0, 5.9, 5.6, 2.1], II 27.0 [8.1, 3.4, 6.8, 6.7, 2.0], III 23.1 [7.0, 3.1, 5.8, 5.4, 1.8], IV 25.9 [7.9, 3.0, 6.5, 6.7, 1.8].

Epigyne/vulva. As in diagnosis, EF as wide as long or slightly wider than long (Figure 14A,C); vulva with TL slightly variable in shape (Figure 14B,D,E).

Colouration [in ethanol]. Cream to pale orange, dorsal opisthosoma with a patch and series of small chevron-like patterns and additional dots, ventral opisthosoma pale.

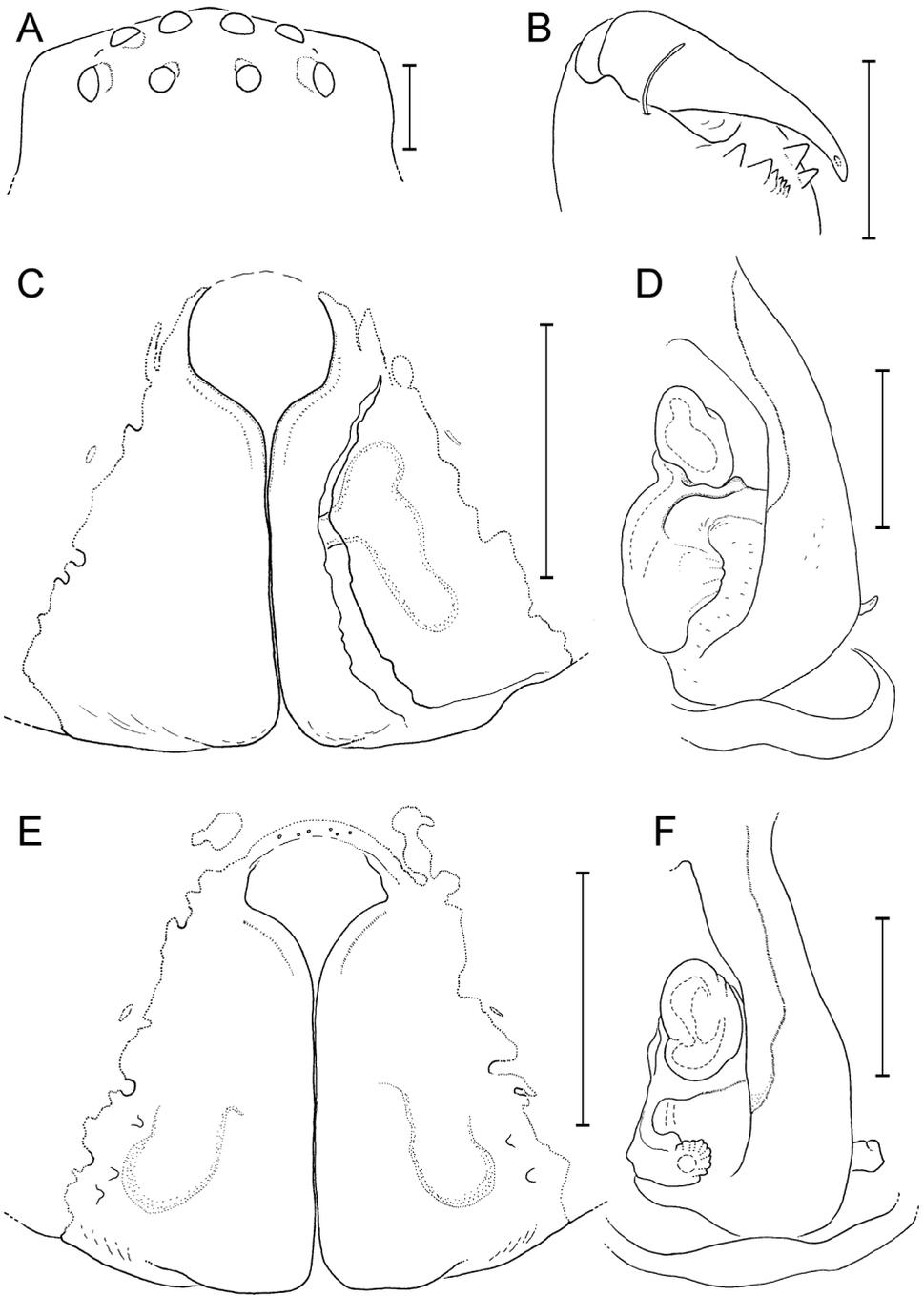


Figure 13. *Eusparassus fuscimanus* Denis, 1958, (A–D) syntype female from Nuristan, Wama, Afghanistan: (A) eye arrangement; (B) left chelicera, ventral; (C) epigyne, ventral; (D) left vulva, antero-dorso-lateral; (E, F) syntype female from Puistagudi, Kohi-baba, Afghanistan: (E) epigyne, ventral; (F) left vulva, antero-dorso-lateral. Scale bars: (A–C, E) 1 mm, (D, F) 0.5 mm.

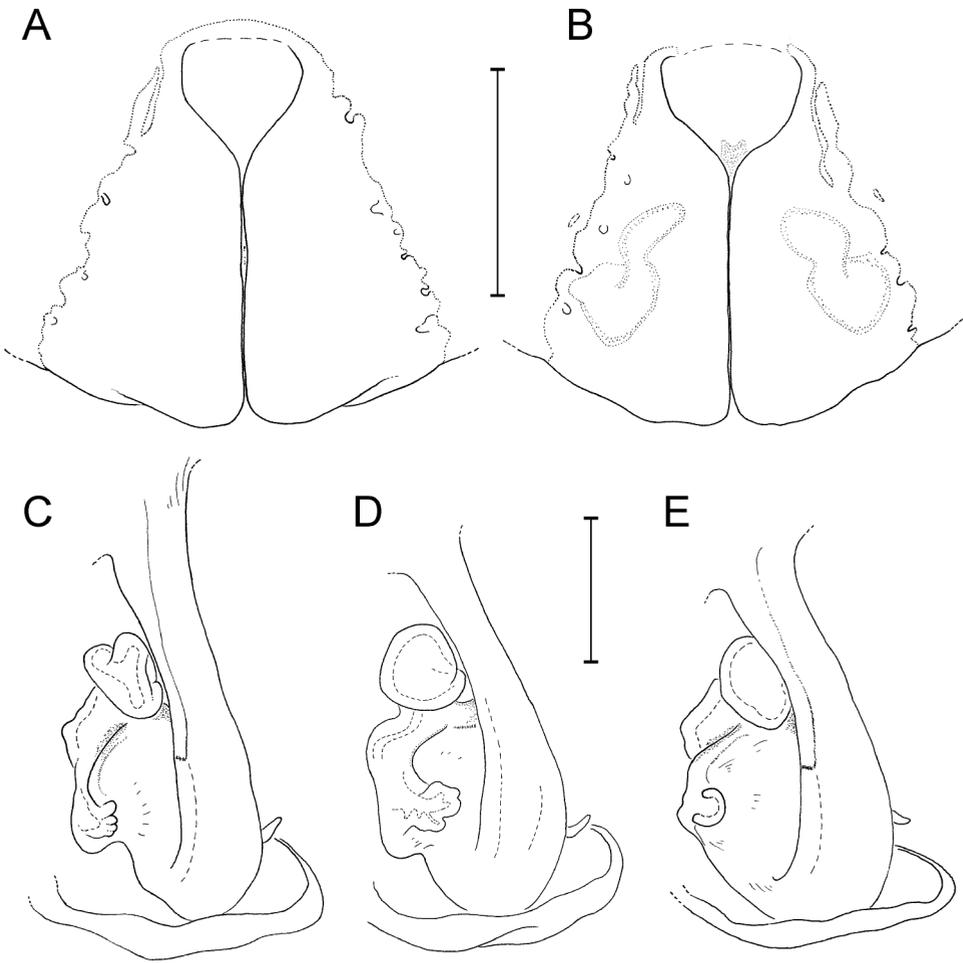


Figure 14. *Eusparassus fuscimanus* Denis, 1958, variations in females from Jalalabad, Nangarhar Province, Afghanistan: (A) epigyne, ventral; (B) left vulva, antero-dorso-lateral; (C) epigyne, ventral; (D) left vulva, antero-dorso-lateral; (E) left vulva, antero-dorso-lateral, variation from Dareye-noor, Afghanistan. Scale bars: (A, C) 1 mm, (B, D, E) 0.5 mm.

Remarks

The type specimens were collected during “the 3rd Danish Expedition to Central Asia” in Afghanistan conducted by K. Paludan (south and east) and N. Haarløv (north, west and centre) from May to August 1948. The specimens, two females and one juvenile, were deposited in ZMUC and described later by Denis (1958). Knut Lindberg (1892–1962) from Lund, Sweden, conducted an expedition to Afghanistan between 1957 and 1960. Later, Roewer (1962) found one female and one male in the collection of Knut Lindberg (MZLU) and described the male for the first time. Unfortunately, this material could not be traced but an important and rich collection of spiders from Jalal-Abad, Afghanistan exists in the MMB, which was included in the present study, several females and one male of *E. fuscimanus* are described properly here.

Known geographical distribution and habitat preferences

Eusparassus fuscimanus is recorded from a dry wooded valley in Wama, Nuristan (1500 m) to higher elevation in the Baba Mountain range, central Afghanistan (3500 m). Spiders were found under stones.

Eusparassus oculatus (Kroneberg, 1875)

(Figures 15, 16)

Sparassus oculatus Kroneberg, 1875: 29, pl. 5, fig. 45 (description of male and female; syntypes, one male and two females, examined). – Levy, 1989: 137, figs 28–29.

Eusparassus oculatus – Denis, 1958: 102, fig. 30 (transfer, one female from Afghanistan, examined); Reimoser, 1919: 200; Schenkel, 1936: 9, 283; Song et al., 1999: 467, fig. 268; Jäger and Yin, 2001: 132.

Type material

Syntypes: 1 male, 1 juvenile, UZBEKISTAN: Samarqand province (=Turkestan), Samarkand, 1870, Narkevich leg. (ZMMU 4261); Syntypes: 2 females, 1 juvenile, UZBEKISTAN: Samarqand province (=Turkestan), Samarkand, 1870, Narkevich leg. (ZMMU 1358).

Other material examined

UZBEKISTAN: 2 ♂♂, 1 ♀, Navoiy Province, Zarafshan, 20 April 1998, A. V. Gromov leg. (SZMN); 2 ♂♂, 1 ♀, 1 juvenile, Babatagh, Mt Range near Ak-Mechet, summer 1999, O. V. Lyakhov leg. (SZMN); 1 ♂, 2 juveniles, Navoiy Province, Zarafshan, 20 July 1998, A. V. Gromov leg. (SZMN); 1 ♀, Turkestan (SMF13366); TAJIKISTAN: 2 ♀♀, Aktau Range, near Gasavuti, 16 April 1973, A. P. Kohonean leg. (SZMN); 1 ♂, Gazavuti, Vakhsh riverside, 18 April 1974, A. P. Kononenko leg. (SZMN); 1 ♂, Hyssaz, Mt Range near Shuzkhak, 23 May 1974, Naszetdinov leg. (SZMN); TURKEMINISTAN: 1 ♀, 30 km northeast of Gazhgy, Kushka, Badkhyz Reserve, 09 April 1993, D. Logunov leg. (SZMN); 1 ♀, 12 km north of Chemenedit, 18 April 1994, A. A. Zyuzin leg. (SZMN); 1 ♀, Badkhyz Reserve, Kzyl-Dzhar Canyon, A. Gulikov leg. (SZMN); 1 ♂, Ashgabad, Croweb leg. (ZMB 31200); AFGHANISTAN: 1 ♀, Herat (st. 76), 14 June 1948, Central Asiatische Expedition. (ZMUC).

Diagnosis

This is the only *Eusparassus* species in Eurasia with AME strikingly larger than the other eyes (1.5 times larger than ALE) (Figure 15A). *E. oculatus* can also be recognizable by ET short and pointed proximo-ventrad (Figure 15E) (larger and stouter than in *E. kronebergi* stat. nov.); vRTA broad and not well developed (Figure 15C,D) (in contrast, that of *E. potanini* enlarged and prominent); in contrast to other species female, EFB absent and AMLL not developed around MS laterally (Figure 16A,B).

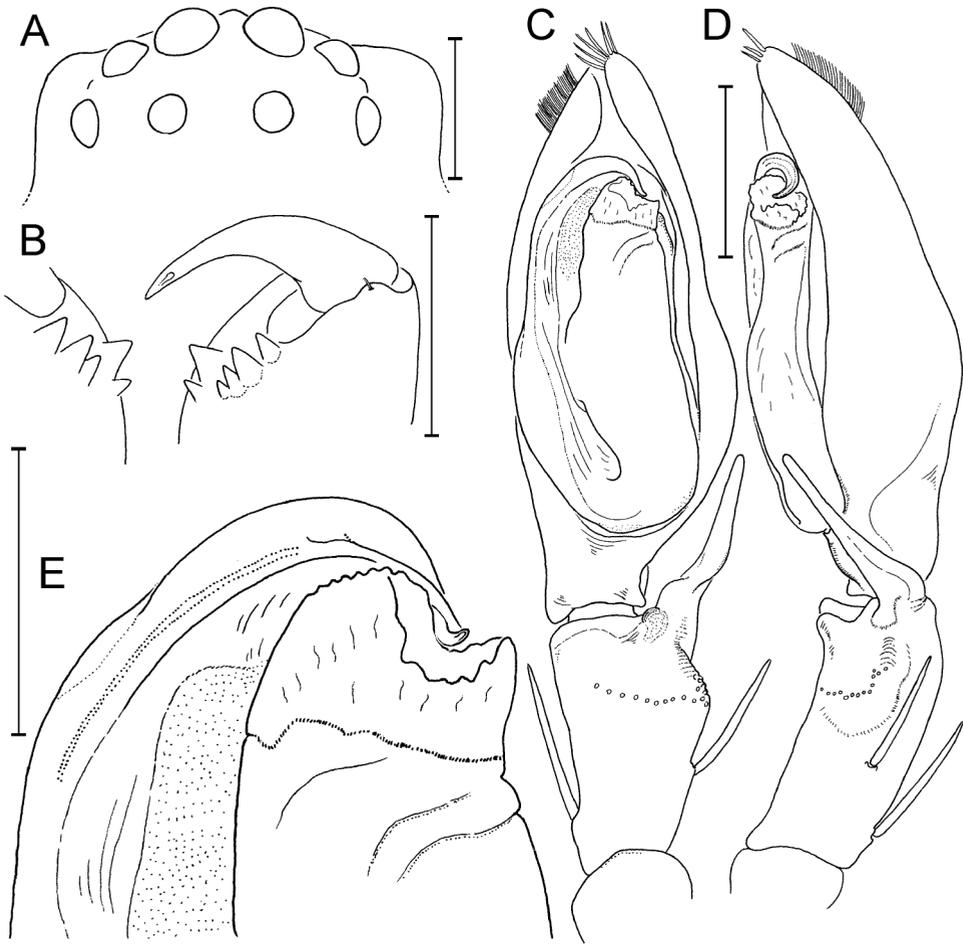


Figure 15. *Eusparassus oculatus* (Kroneberg, 1875), male from Zarafshan, Uzbekistan: (A) eye arrangement; (B) left and part of right chelicera, ventral; (C) left palp, ventral; (D) left palp, retrolateral; (E) tip of embolus and conductor, ventral. Scale bars: (A–D) 1 mm, (E) 0.5 mm.

Redescription

Male ($n = 8$). Total length: 10.1–15.1, prosoma length 5.1–6.3, prosoma width 4.5–5.6, anterior width of prosoma 2.5–3.1, opisthosoma length 5.0–8.8, opisthosoma width 2.6–4.5. Eyes diameters: AME 0.51, ALE 0.33, PME 0.34, PLE 0.33; eye inter-distances: AME–AME 0.17, AME–ALE 0.08, PME–PME 0.43, PME–PLE 0.42, AME–PME 0.33, ALE–PLE 0.26, clypeus height at AME 0.27, clypeus height at ALE 0.33.

Chelicerae with two anterior and three to five posterior teeth, cheliceral furrow without denticles (Figure 15B). Leg formula: 2 4 1 3. Measurements of palp and legs: Palp 9.7 [3.2, 1.3, 1.6, 3.6], I 35.0 [9.5, 3.5, 9.2, 9.8, 3.0], II 38.6 [10.4, 3.7, 10.5, 10.8, 3.2], III 31.8 [9.2, 3.1, 8.5, 8.3, 2.7], IV 36.6 [10.5, 3.0, 9.5, 10.6, 3.0].

Spination. Palp 131, 000/001, 1111; Legs: Femur I–III 323, IV 322; Patella I–IV 000/101; Tibia I–IV 2024/2124; Metatarsus I–III 2024, IV 3034.

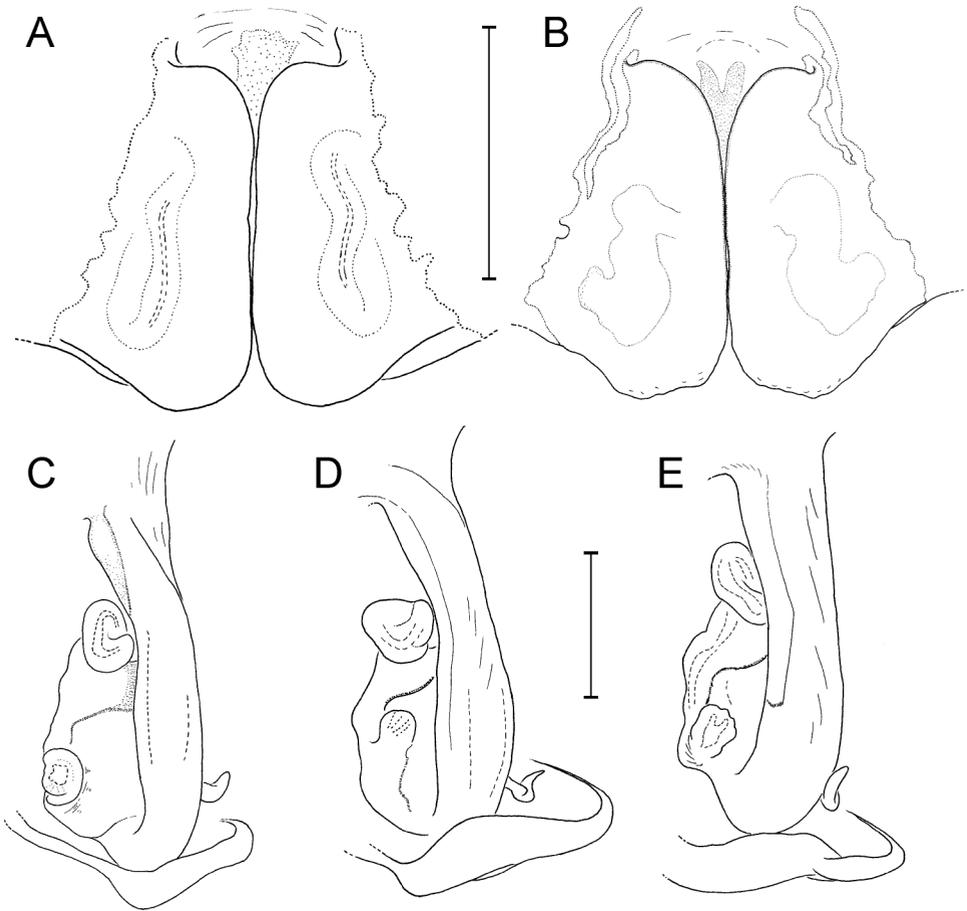


Figure 16. *Eusparassus oculatus* (Kroneberg, 1875): (A) epigyne, ventral, of syntype female from Samarkand, Uzbekistan; (B, C) female from Zarafshan, Uzbekistan (B) epigyne, ventral (C) left vulva, antero-dorso-lateral; (D) variation of vulva, female from Tajikistan; (E) variation of vulva, female from Turkmenistan. Scale bars: (A, B) 1 mm, (C–E) 0.5 mm.

Palp. As in diagnosis with embolus tip short, vRTA not well developed, dRTA slender and directed ventro-distad (Figure 15C,D).

Female ($n = 11$). Total length: 15.7–23.5, prosoma length 6.2–7.0, prosoma width 5.0–5.6, anterior width of prosoma 3.0–3.5, opisthosoma length 9.5–16.5, opisthosoma width 6.5–10.3. Eyes (largest female, MM96): AME 0.49, ALE 0.35, PME 0.31, PLE 0.34; eye interdistances: AME–AME 0.23, AME–ALE 0.07, PME–PME 0.48, PME–PLE 0.45, AME–PME 0.38, ALE–PLE 0.27, clypeus height at AME 0.31, clypeus height at ALE 0.40. Eyes other than AME are in similar size range, AME largest.

Chelicerae with two anterior and three to five posterior teeth. Cheliceral furrow without denticles. Leg formula: 2413. Measurements of palp and legs (largest female,

MM96): Palp 8.7 [2.5, 1.3, 1.8, 3.1], I 27.2 [7.6, 3.5, 7.0, 6.9, 2.1], II 29.8 [8.7, 3.5, 8.2, 7.2, 2.2], III 24.3 [7.3, 3.0, 6.3, 5.7, 2.0], IV 28.4 [8.5, 3.0, 7.2, 7.6, 2.1].

Spination. Palp 131, 000/001, 1111, 1013; Legs: Femur I–III 323, IV 322; Patella I–IV 000/101; Tibia I–IV 2024/2124; Metatarsus I–III 2024, IV 3034.

Epigyne/vulva. As in diagnosis with AMLL in parallel with epigastric furrow, AMLL not extended anteriorly, EFB absent (Figure 16A,B); in vulva glandular pores located at the tip of a projection, TL slightly variable in shape among different specimens (Figure 16CE).

Colouration [in ethanol]. Pale cream, dorsal opisthosoma with a patch and a series of small chevron-like patterns and additional dots, ventral opisthosoma pale.

Known geographical distribution

Central Asia including Afghanistan, Uzbekistan, Tajikistan, Turkmenistan and China: Xinjiang Uyghur.

Remarks

The type material was collected during the “Scientific Expedition to Turkestan” conducted by Alexis Fedtschenko to central Asia, Samarkand. After its original description by Kroneberg (1875) from Uzbekistan, it was recorded again by Denis (1958) from Afghanistan. Here we present further new records from Tajikistan and Turkmenistan based on material deposited in SZMN.

Eusparassus potanini (Simon, 1895) (Figure 17)

Sparassus potanini Simon, 1895: 340–341 (description of male; holotype, male, examined).

Eusparassus potanini Reimoser, 1919: 200.

Heteropoda nanjiangensis Hu and Fu, 1985: 92–93, figs 1–7. [description and illustration of male and female; female holotype, male paratype, label: Tulufan (Putuogou), Xinjiang Uygur Autonomous Region, 5.7. 1982, by J. L. Hu) IOZB, examined] – Hu and Wu, 1989: 310, figs 248, 1–7. New synonymy

Sparassus nanjianensis – Levy, 1989: 134 (suspected synonymy).

Eusparassus nanjianensis – Song et al., 1999: 467, fig. 268H, K.

Eusparassus nanjiangensis – Jäger and Yin, 2001: 132.

Type material

Holotype: male, CHINA: Nan-Shan-Kou, Tjan-Shan, 10 June 1877, M.G. Potanin leg. (ZIP 164).

Additional material examined

CHINA: Xinjiang Uyghur: 1 ♀, Kashi (Kashgar), 5 July 1975 (IOZB); 1 ♀, Kashi (Kashgar), 15 July 1996. (IOZB 107); 1 ♂, 1 ♀ and 2 juveniles, Jarkend, 1909, G. Raquelle leg. (NRM); 1 ♀, Turpan, Jh. Basfus leg. (ZMB); 2♀♀, (Label: Turkestan): Kashgar. (SMF 6085); 1 ♂, 1 immature ♀, Kashgar, E. Turkestan D. Lamsdell leg. (NHM 1889.4.25.2-3).

Diagnosis

Males of *E. potanini* are characterized by a combination of characters including beak-like dRTA, a deep retro-lateral incision at proximal part of cymbium (Figure 17C) and a broad retrolatero-distad embolus tip (Figure 17E); in female epigyne, EFB present but distinctly separated from AMLL, approximately as long as MS length (Figure 17F).

Redescription

Male ($n = 4$) [Holotype first]. Males medium-sized. Total length: 14.2–17.3, prosoma length 7.4–7.8, prosoma width 6.2–6.6, anterior width of prosoma 3.1–3.3, opisthosoma length 6.8–9.5, opisthosoma width 4.4–5.1. Eyes of holotype: AME 0.47, ALE 0.44, PME 0.36, PLE 0.45; eye interdistances: AME–AME 0.22, AME–ALE 0.10, PME–PME 0.42, PME–PLE 0.46, AME–PME 0.31, ALE–PLE 0.21, clypeus height at AME 0.37, clypeus height at ALE 0.42.

Chelicerae with two anterior and four or five posterior teeth. Cheliceral furrow without denticles (Figure 17B). Leg formula: 2 4 1 3. Measurements of palp and legs: Palp 10.3 [3.2, 1.5, 1.7, 3.9], I 35.6 [10.0, 3.4, 9.5, 9.3, 2.4], II 38.9 [10.6, 4.1, 10.7, 10.8, 2.7], III 31.6 [9.6, 3.4, 8.8, 8.5, 2.3], IV 36.6 [10.5, 3.4, 10.0, 10.3, 2.4].

Spination. Palp 131, 001, 1111; Legs: Femur I–III 323, IV 322/321; Patella I–IV 101; Tibia I–IV 2024; Metatarsus I–III 2024, IV 3034.

Palp. As in diagnosis with dRTA proximally wide and pointed distally, vRTA is triangular in ventral view (Figure 17C).

Female ($n = 6$). Total length: 15.7–19.6, prosoma length 7.3–8.1, prosoma width 6.0–7.0, anterior width of prosoma 3.5–4.0, opisthosoma length 8.4–11.5, opisthosoma width 6.0–8.1. Eyes: AME 0.48, ALE 0.40, PME 0.38, PLE 0.43; eye interdistances: AME–AME 0.28, AME–ALE 0.13, PME–PME 0.47, PME–PLE 0.50, AME–PME 0.36, ALE–PLE 0.23, clypeus height at AME 0.38, clypeus height at ALE 0.43.

Chelicerae as in males. Cheliceral furrow without denticles. Leg formula: 2 4 1 3. Measurements of palp and legs: Palp 9.4 [2.8, 1.3, 1.7, 3.6], I 31.6 [9.0, 3.8, 8.4, 8.3, 2.1], II 33.7 [9.8, 3.8, 9.2, 8.5, 2.4], III 28.4 [8.6, 3.4, 7.5, 6.7, 2.2], IV 32.2 [9.7, 3.2, 8.6, 8.3, 2.3].

Spination. Palp 131, 001, 1111, 1013; Legs: Femur I–III 323, IV 322; Patella I–IV 000; Tibia I–IV 2024; Metatarsus I–III 2024, IV 3034.

Epigyne/vulva. As in diagnosis with EF longer than wide, AMLL well developed anteriorly but not encircling MS entirely, EFB distinctly separated from AMLL (Figure 17F); glandular pores located on a globular process of vulva (Figure 17G).

Colouration [in ethanol]. Cream to dark yellow, ventral opisthosoma pale.

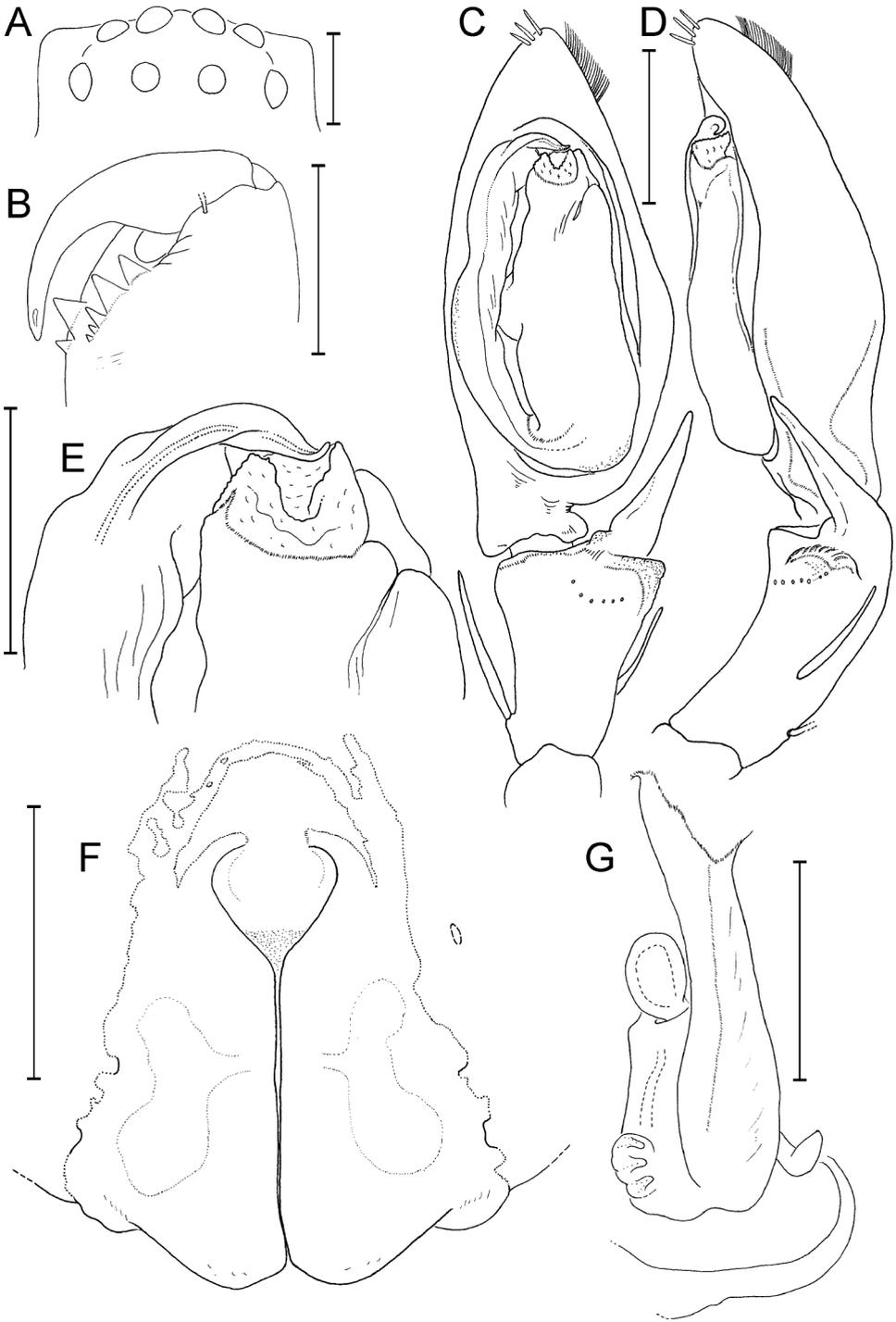


Figure 17. *Eusparassus potanini* (Simon, 1895), (A–E) holotype male from Nan-Shan-Kou, Tjian-Shan, China: (A) eye arrangement; (B) left chelicera, ventral; (C) left palp, ventral; (D) left palp, retrolateral; (E) tip of embolus and conductor, ventral; (F–G) female from Jarkend, Oyghur Autonomous region, China: (F) epigyne; (G) left vulva, antero-dorso-lateral. Scale bars: (A–D, F) 1 mm, (E, G) 0.5 mm.

Remarks

The description and illustration of *E. nanjiangensis* (sub *Heteropoda nanjiangensis*) by Hu and Fu (1985) as well as examination of the type series match fully with holotype male of *E. potanini*. Further females (along with sympatric males) examined from around the type locality, revealed conspecificity of them with the holotype female of *E. nanjiangensis*. Therefore, this species is proposed as a junior synonym of *E. potanini*.

Known geographical distribution

Autonomous region in Xinjiang Uyghur, China, the most northeastern distribution range of *Eusparassus* species.

***Eusparassus pontii* Caporiacco, 1935**
(Figure 18)

Eusparassus pontii Caporiacco, 1935: 216, pl. 6, fig. 4 (description of female; syntypes, two females, examined).

Type material

Syntypes: 1 female, PAKISTAN: Karakoram, Pajue oasis, 3500 m, 28 July 1929 (MNM); 1 female, Tsock meadow, 3940 m, 11 May 1929 (MNM); 1 juvenile, Tolti oasis, 2400 m, 20 April 1929 (MNM).

Additional material examined

1 ♀, 2 immatures, INDIA: Kashmir: 1 ♀, 1 juvenile, Ladakh, Shey, Trockerhay, 3400 m, 2 June 1976, J. Martens leg. (SMF); 1 subadult female, Ladakh, J. Martens leg. (SMF).

Diagnosis

Epigyne resembles that of *E. kronebergi* stat. nov. in having EFB fused to AMLL bordering MS (Figure 18C) but differs from it by presence of a strong continuous ridge at lateral side of vulva and one large glandular process (Figure 18D,E), in contrast vulva of *E. kronebergi* stat. nov. has two small and separated glandular parts; It can also be distinguished by the eye interdistances: AME–ALE spaced one-half of AME–AME (as in *E. fuscimanus*) but differs from this species in having EF longer than wide (Figure 18C).

Redescription

Female ($n = 3$). Total length: 14.9–18.9, prosoma length 6.4–9.1, prosoma width 5.7–7.8, anterior width of prosoma 3.2–4.7, opisthosoma length 8.5–9.8, opisthosoma width 6.5–7.4. eyes are the same size, eye diameters: AME 0.39, ALE 0.41, PME 0.40, PLE 0.40; eye interdistances: AME–AME 0.28, AME–ALE 0.15, PME–PME 0.43, PME–PLE 0.62, AME–PME 0.53, ALE–PLE 0.35, clypeus height at AME 0.32, clypeus height at ALE 0.46.

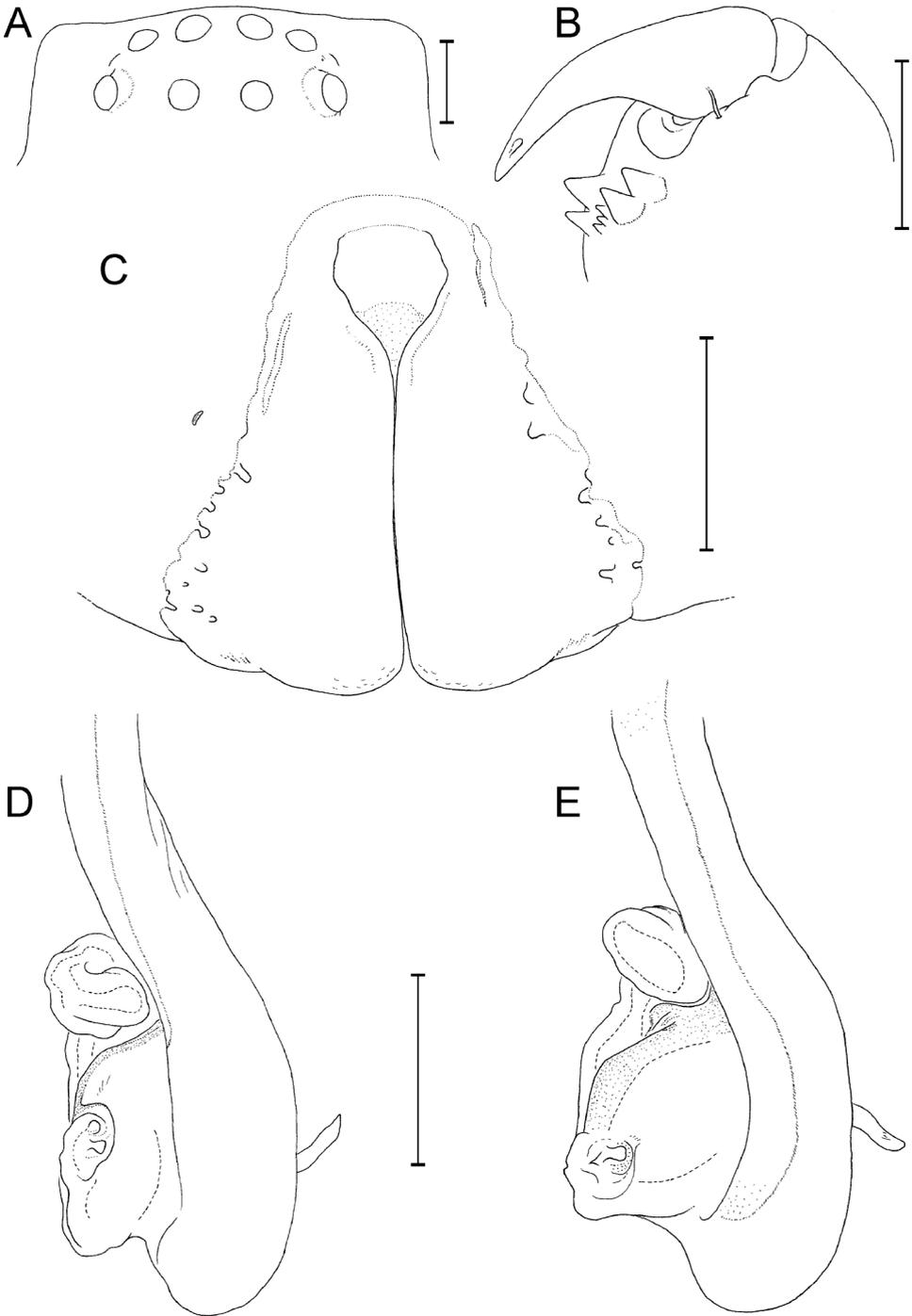


Figure 18. *Eusparassus pontii* Caporiacco, 1935, (A–D) syntype female from Karakoram, Pakistan: (A) eye arrangement; (B) left chelicera, ventral; (C) epigyne, ventral; (D) left vulva, antero-dorso-lateral; (E) variation of left vulva, antero-dorso-lateral. Scale bars: (A–C) 1 mm, (D, E) 0.5 mm.

Chelicerae with two anterior and four to six posterior teeth; cheliceral furrow without denticles (Figure 18B). Leg formula: 21=43. Measurements of palp and legs: Palp 10.6 [3.3, 1.6, 1.9, 3.8], I 34.7 [9.6, 4.3, 8.7, 9.5, 2.6], II 37.7 [10.7, 4.5, 10.1, 9.6, 2.8], III 31.1 [9.5, 3.8, 8.2, 7.3, 2.3], IV 34.6 [10.3, 3.9, 8.8, 9.1, 2.5].

Spination. Palp 131, 001, 1111, 1013; Legs: Femur I–III 323, IV 321/322; Patella I–IV 000; Tibia I–IV 2024; Metatarsus I–III 2024, IV 3034/3036.

Epigyne/vulva. As in diagnosis with two large black triangular LL, AMLL not fused but bordered by EFB (Figure 18C); vulva with a bulge at the area of glandular processes and marked by a continuous ridge (Figure 18D,E).

Male. Unknown.

Colouration [in ethanol]. Reddish brown, dark brown chelicera, dorsal opisthosoma with a patch and series of small chevron-like patterns and additional dots, ventral opisthosoma with pale markings.

Remarks

The type specimens were collected during “the Italian Mission to Karakoram (1929–VII)”. One of the type localities is Pajue, a campsite on the K2 Mountain. The species is recorded from high elevations (~ 4000 m), the highest altitude recorded for Sparassidae so far. This is the first record of the species after its original description out of the type locality, namely from Indian Himalaya, in Ladakh.

Known geographical distribution and habitat

High altitudes in mountainous Himalaya in Pakistan: Karakoram, K2 Mountain, and India: Ladakh (New record).

Eusparassus xerxes (Pocock, 1901) comb. nov. (Figures 19, 20, 23B)

Sparassus xerxes Pocock, 1901: 489–490 (description of male and female; syntypes, examined).

Olios xerxes – Gravely 1931: 240–241, figs 5A, 6A (transfer); Sethi and Tikader 1988: 35, figs 157–162.

Type material

Syntypes: 3 ♂♂, 1 ♀, 10 immatures, IRAN: Bushehr Province: 1 male, 1 female, 1 juvenile, Bushehr (sub Bushier), F.W. Townsend leg. (NHM 1882.109); 4 subadult males, 3 juveniles, Port Reshire near Bushier, F.W. Townsend leg. (NHM 0.5.9.36.41); 1 subadult male, 1 subadult female, 1 juvenile, Bushier, F.W. Townsend leg. (NHM 7.88.33); 1 male, PAKISTAN: Baluchistan Province: Ormara, Makran Coast, F.W. Townsend leg. (NHM 1899.10.6.7); 1 male, Ormara, Makran Coast, F.W. Townsend leg. (NHM 0.5.6.20).

Additional material examined

1 ♂, 5 ♀♀, PAKISTAN: 1 ♂, 4 ♀♀, Azad Kashmir: Panjur (Mozaffarabad: Kupwara, 34°28'10" N, 73°39'0" E), E. Zugmayer leg. (ZSM A20110058); 1 ♀, Azad Kashmir: Kedsch, E. Zugmayer leg. (ZSM A20110051).

Diagnosis

Large *Eusparassus* species (largest female: body length 30 mm, leg span 14 cm), with diagnostic vase-like black marking on venter of opisthosoma in both sexes (Figure 23B), which is absent in most Eurasian species (except *E. dufouri* and *E. levantinus* which is V-shaped). Palp similar to that of *E. fuscimanus* but differ in relative cymbium/tibia length: cymbium more than twice length of tibia in *E. fuscimanus*, compared with *E. xerxes*, where it is less than twice. ET more extended distally in *E. fuscimanus* than *E. xerxes* (Figure 19A–C).

Redescription

Male ($n = 4$). Total length: 21.3–24.8, prosoma length 10.8–12.3, prosoma width 9.5–10.0, anterior width of prosoma 5.4–5.8, opisthosoma length 10.5–12.5, opisthosoma width 7.0–7.7. Eye diameters: AME 0.61, ALE 0.60, PME 0.57, PLE 0.60; eye interdistances: AME–AME 0.32, AME–ALE 0.15, PME–PME 0.61, PME–PLE 0.57, AME–PME 0.64, ALE–PLE 0.40, clypeus height at AME 0.41, clypeus height at ALE 0.51.

Chelicerae with two anterior and three or four posterior teeth. Cheliceral furrow without denticles. Four thick inclined bristles at distal end of basal segment (Figure 19E). Leg formula: 2 4 1 3. Measurements of palp and legs: Palp 15.2 [5.3, 2.2, 2.6, 5.1], I 56.7 [16.2, 5.3, 15.7, 15.8, 3.7], II 63.1 [17.5, 6.0, 17.3, 18.5, 3.8], III 53.5 [15.7, 5.5, 14.5, 14.4, 3.3], IV 60.3 [17.0, 5.3, 16.3, 18.0, 3.7].

Spination. Palp 131, 000/001, 1111; Legs: Femur I–III 323, IV 322; Patella I–IV 000/101; Tibia I–IV 2024/23(2)24; Metatarsus I–III 2024, IV 3034/3036.

Palp. As in diagnosis with dRTA strongly bent and vRTA is not well developed, palp generally elongated, cymbium longer than tibia (Figure 19A,B); ET pointing proximo-ventrad (Figure 19C,F).

Female ($n = 6$). Total length: 21.5–29.8, prosoma length 10.5–13.0, prosoma width 8.4–10.7, anterior width of prosoma 6.0–7.3, opisthosoma length 11.0–16.8, opisthosoma width 8.2–10.5. Eye diameters: AME 0.63, ALE 0.62, PME 0.60, PLE 0.64; eye interdistances: AME–AME 0.43, AME–ALE 0.17, PME–PME 0.70, PME–PLE 0.78, AME–PME 0.70, ALE–PLE 0.50, clypeus height at AME 0.55, clypeus height at ALE 0.60.

Chelicerae with two anterior and three or four posterior teeth. Cheliceral furrow without denticles. Leg formula: 2 4 1 3. Measurements of palp and legs: Palp 15.5 [4.8, 2.3, 3.2, 5.2], I 51.9 [14.7, 6.1, 13.3, 14.5, 3.3], II 55.3 [16.1, 6.2, 15.0, 14.7, 3.3], III 47.1 [14.5, 5.5, 12.5, 11.8, 2.8], IV 52.4 [15.7, 5.5, 13.7, 14.3, 3.2].

Spination. Palp 131, 001, 1111, 1013; legs: Femur I–III 323, IV 322; Patella I–IV 000 (001); Tibia I–IV 2024–21(2)24; Metatarsus I–III 2024, IV 3034 (3036).

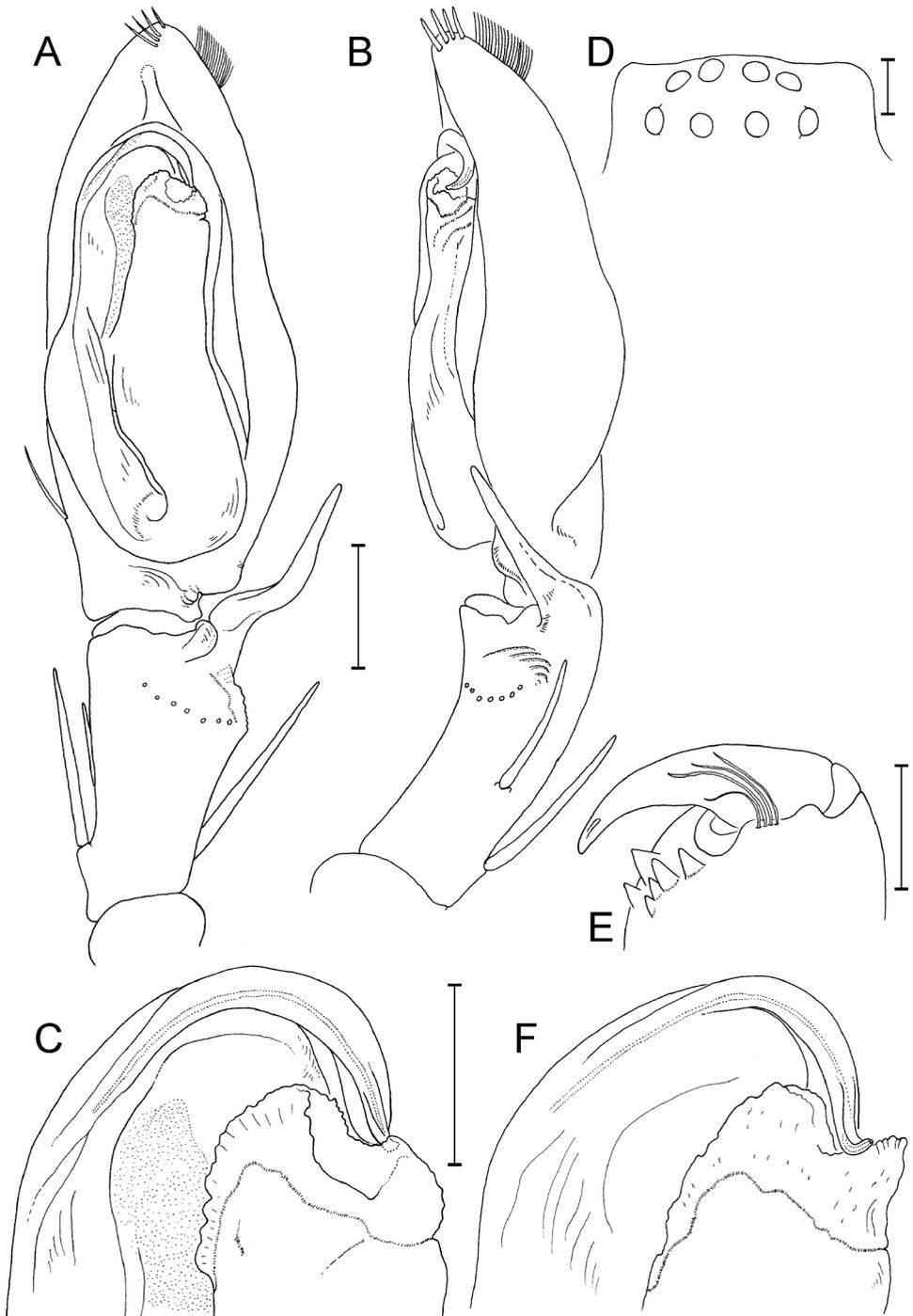


Figure 19. *Eusparassus xerxes* (Pocock, 1901) comb. nov., (A–C) syntype male from Ormara, Makran coast, Pakistan: (A) left palp, ventral; (B) left palp, retrolateral; (C) tip of embolus and conductor, ventral; (D–F) syntype male from Bushehr, Persian Gulf coast, Iran: (D) eye arrangement; (E) left chelicera, ventral; (F) tip of embolus and conductor from left palp, ventral. Scale bars: (A, B, D, E) 1 mm, (C, F) 0.5 mm.

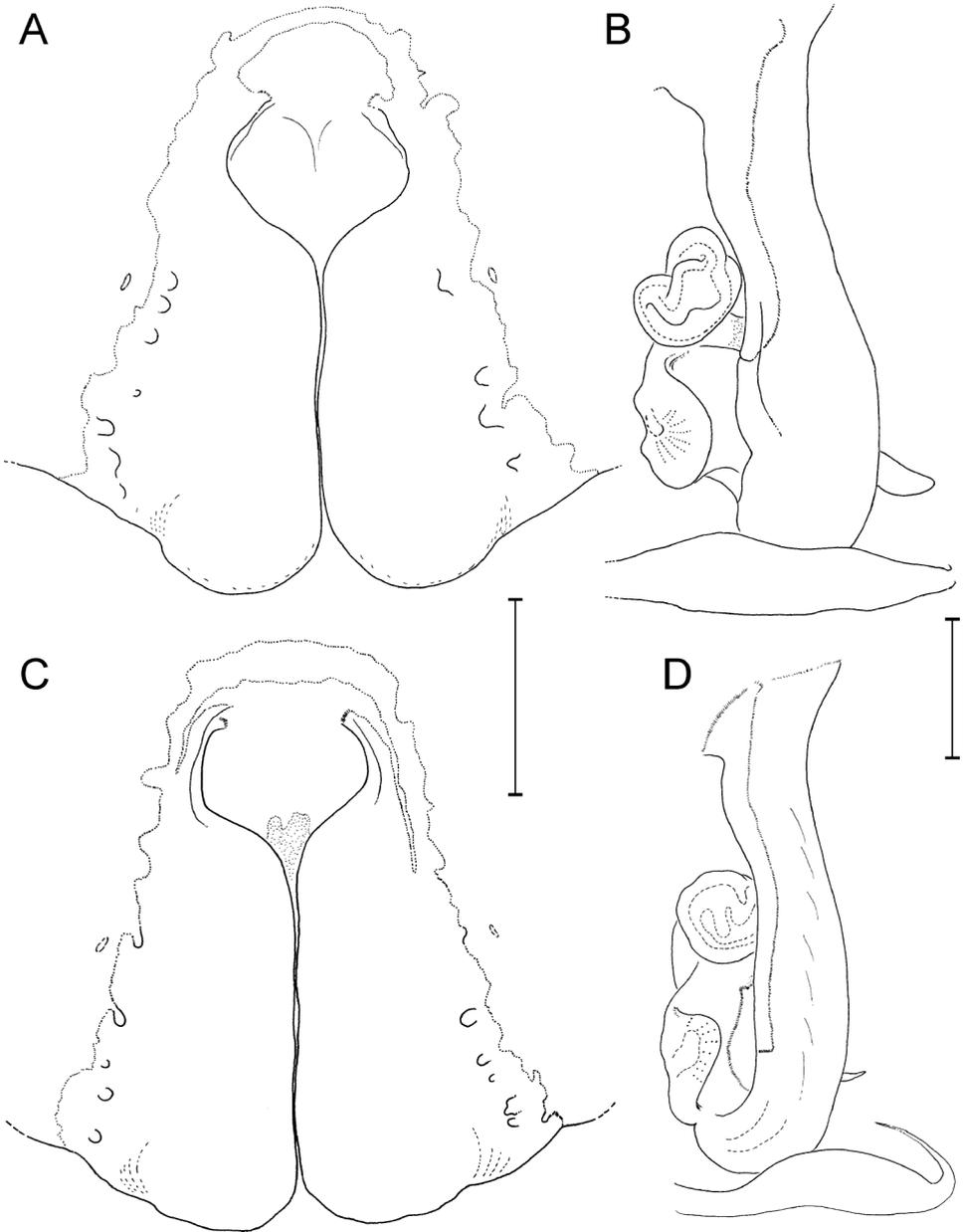


Figure 20. *Eusparassus xerxes* (Pocock, 1901) comb. nov., (A, B) syntype female from Bushehr, Persian Gulf coast, Iran: (A) epigyne, ventral; (B) left vulva, anterio-dorso-lateral; (C, D) female from Kedsh, Azad Keshmir, Pakistan: (C) epigyne, ventral; (D) left vulva, anterio-dorso-lateral. Scale bars: (A, C) 1 mm, (B, D) 0.5 mm.

Epigyne/vulva. EF longer than wide, AMLL well developed but not fused together, EFB present but not combined to AMLL; EF longer than wide (Figure 20A,C); vulva generally short and compact, glandular pores situated on a widened semicircular process (Figures 20B,D).

Colouration [in ethanol]. Prosoma and legs reddish brown with creamy opisthosoma, ventral opisthosoma as diagnosis.

Remarks

Gravely (1931), using an unreliable character at generic level (number of distal bristles at basal segment of chelicerae), transferred *E. xerxes* comb. nov. (sub *Sparassus* and along with unjustified former junior synonyms: *E. pearsoni* comb. nov. and *E. maynardi* comb. nov.) to *Olios*. *Eusparassus pearsoni* comb. nov. and *E. xerxes* comb. nov. have three and four bristles, respectively, whereas one bristle appears in most *Eusparassus* spp. This is the largest *Eusparassus* species in Eurasia (leg span 14 cm). After its original description from Makran coast in Iran and Pakistan (Pocock 1901), we describe conspecifics from Central Pakistan in Kashmir. The species exhibit dorsal tibial spines normally absent in other *Eusparassus* species. Ventral marking of opisthosoma resembles some *Eusparassus* species in African Sahara and Arabia.

Known geographical distribution

From southern Iran (Bushehr port in the Persian Gulf) to Makran Coast and Central Pakistan (Baluchistan and Azad Kashmir provinces).

Eusparassus maynardi (Pocock, 1901) comb. nov. stat. nov.
(Figure 21)

Sparassus maynardi Pocock, 1901: 490 (description of female and male; syntypes, one adult and two subadult females, three subadult males, lectotype adult female and paralectotypes immatures here designated) [see note below].

Olios xerxes – Gravely 1931: 240–241 (in part, misidentification and unjustified synonymy); Sethi and Tikader 1988: 35 (in part, misidentification).

Type material

Lectotype: female, PAKISTAN: Baluchistan Province, Baluchistan, F.W. Townsend leg. (NHM 1900.3.13.5.6); Paralectotypes: 2 subadult males and 1 immature female: 1 subadult male, Baluchistan Province, Baluchistan, F.W. Townsend leg. (NHM 1900.3.13.5.6); 1 subadult male, 1 subadult female, Sindh Province, Jacobabad, H.M. Phipson leg. (NHM 1899.4.10.24.29).

Note. The type material of *E. maynardi* consists of one adult female and several immatures. Consequently, to maintain species identity, the adult female is designated here as lectotype.

Additional material examined

PAKISTAN: 2♀♀, Sindh Province: with label “Jacobabad, H.M. Phipson/*Sparassus pallescens* Pocock Type”, Jacobabad, H.M. Phipson leg. (NHM 1899.7.10.27. 9); 1♀, Azad Kashmir: Kedsch, E. Zugmayer leg. (ZSM A20110052).

Diagnosis

The combination of characters including absence of EFB, long slender epigyne and not fused AMLL (Figure 21A,E) distinguishes *E. maynardi* comb. nov. from remaining congeners. This species lacks any black marking on venter of opisthosoma (unlike *E. xerxes* comb. nov.).

Redescription

Female ($n = 4$) [lectotype is the largest female]. Total length: 15.7–20.4, prosoma length 7.0–9.2, prosoma width 6.0–7.6, anterior width of prosoma 3.4–4.3, opisthosoma length 8.7–11.2, opisthosoma width 5.0–8.1. Eyes of lectotype: AME 0.54, ALE 0.47, PME 0.44, PLE 0.45; eye interdistances: AME–AME 0.27, AME–ALE 0.06, PME–PME 0.46, PME–PLE 0.53, AME–PME 0.35, ALE–PLE 0.26, clypeus height at AME 0.48, clypeus height at ALE 0.58.

Chelicera with two anterior and four to six posterior teeth; cheliceral furrow without denticles; one bristle at distal end of cheliceral basal segment (Figure 21D). Leg formula: 2 4 1 3. Measurements of palp and legs (lectotype): Palp 11.6 [3.5, 1.7, 2.3, 4.1], I 37.3 [10.4, 4.5, 10.1, 10.0, 2.3], II 40.4 [11.6, 4.6, 11.1, 10.5, 2.6], III 34.4 [10.4, 4.2, 9.3, 8.3, 2.2], IV 39.1 [11.1, 4.0, 10.5, 10.8, 2.7].

Spination. Palp 131, 001, 1111, 1013; Legs: Femur I–III 323, IV 322(3); Patella I–IV 000; Tibia I–IV 2024; Metatarsus I–III 2024, IV 3034.

Epigyne/vulva. As in diagnosis, with EF longer than wide, MS partially sclerotized (Figure 21A,E); longitudinal ridge at lateral side of vulva, glandular pores located on a semispherical process (Figure 21B).

Male. Unknown

Colouration [in ethanol]. Yellowish brown with irregular darker pattern on prosoma, ventral opisthosoma without marking.

Remarks

Additional conspecific females have been found close to the type locality in Baluchistan. In NHM there were two females from Jacobabad, Pakistan labelled by Pocock under name “*Sparassus pallescens*”. The name has never been published and looks to be a provisional name by Pocock. We found these females conspecific with *E. maynardi* comb. nov. It seems that Gravely (1931) considered generic diagnostic characters of the genus *Eusparassus* to synonymize this species (as well as *E. pearsoni* comb. nov.) with *E. xerxes* comb. nov. He stated that he failed to distinguish *E. maynardi* “vulva” (=epigyne) from those of the latter species.

Known geographical distribution

Pakistan: Baluchistan, Sindh and Azad Kashmir Provinces.

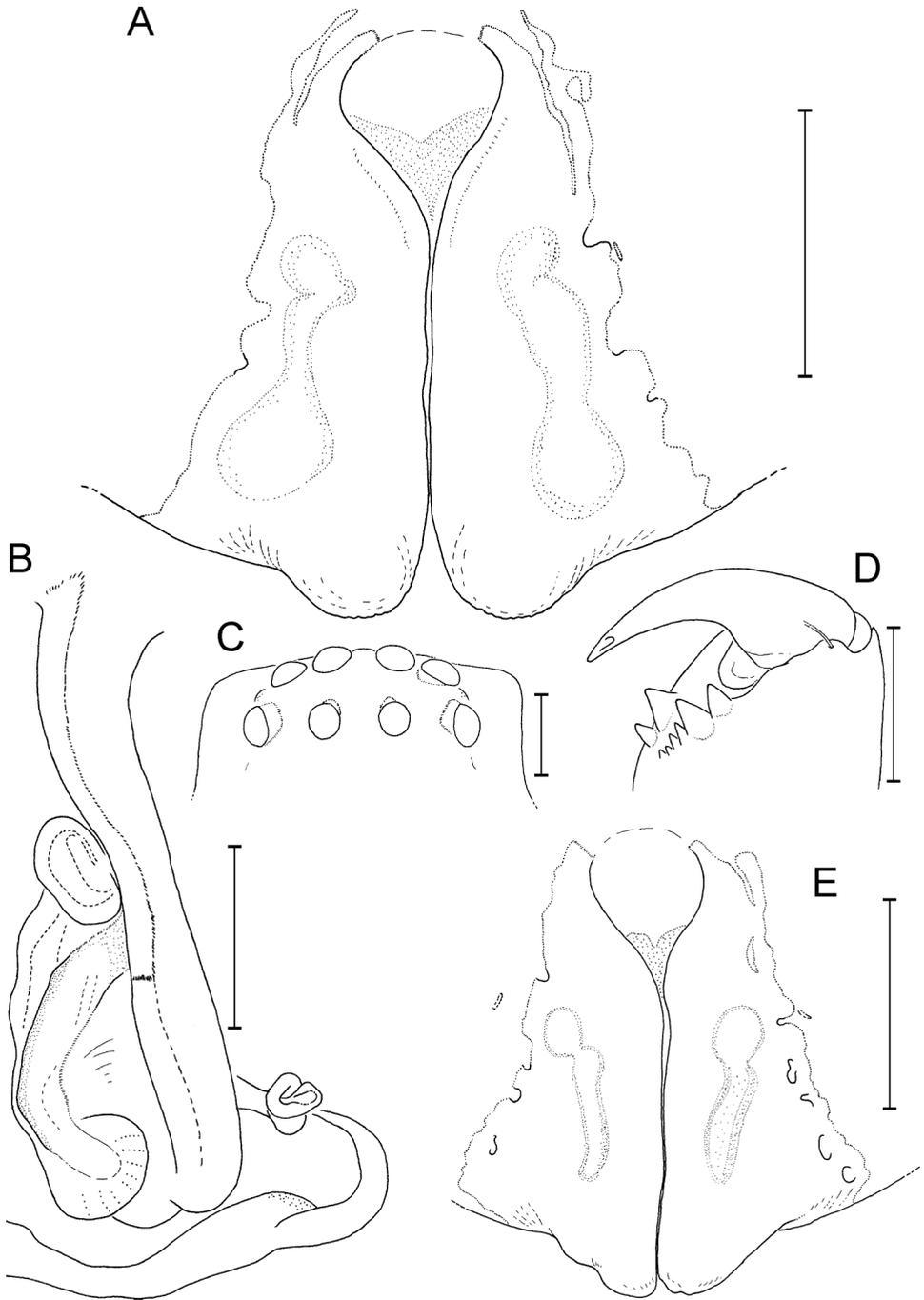


Figure 21. *Eusparassus maynardi* (Pocock, 1901) comb. nov., (A–D) lectotype female from Baluchistan, Pakistan: (A) epigyne, ventral; (B) left vulva, antero-dorso-lateral; (C) eye arrangement; (D) left chelicera, ventral; (E) variation of epigyne, ventral, female from Jacobabad, Sindh Province, Pakistan. Scale bars: (A, C–E) 1 mm, (B) 0.5 mm.

Eusparassus pearsoni (Pocock, 1901) comb. nov. stat. nov.
(Figure 22)

Sparassus pearsoni Pocock, 1901: 492–493 (description of female; syntypes examined, lectotype and paralectotypes designated) [see notes below].

Olios xerxes – Gravely 1931: 240–241 (in part, misidentification and unjustified synonymy); Sethi and Tikader 1988: 35 (in part, misidentification).

Type material

Lectotype: female, INDIA: Poona, Ghats, Madan leg. (NHM 99.11.2.177.199); Paralectotypes: INDIA: 13 ♀♀ and 30 juveniles, same data as for lectotype (NHM 99.11.2.177.199); 3 ♀♀, with label “*Sparassus pearsoni* Poc. East Khandesh, R. Pearson coll. Robt. Wroughton (p.)” (NHM 99.9.21.5.24.525); 33 ♀♀, with label: “Poona Dist., Bombay Nat. Hist. Soc./ Poona Dist” (NHM 1899.9.21.526-546); 85 ♀♀ and several immatures, with label “*Sparassus pearsoni* Poc. Pimparnar (W. Khandesh), R. Pearson coll. Robt. Wroughton (p.)” (NHM).

Note. Among this relatively huge number of syntypes, we found several immature specimens of *Olios* sp. and *Eusparassus* sp. Hence, to maintain the status and verify the identity of the species, an adult female is designated as lectotype from Poona, Ghats in India.

Diagnosis

Eusparassus pearsoni comb. nov. can easily be distinguished from remaining species by its peculiar MS of epigyne heart-shaped and fully hardened and sclerotized (Figure 22A,E).

Redescription

Female ($n = 135$). Total length: 16–21, prosoma length 7.5–9.4, prosoma width 6.4–8.2, anterior width of prosoma 4.0–5.2, opisthosoma length 8.5–11.6, opisthosoma width 5.2–6.8. Eyes of lectotype, eye diameters: AME 0.62, ALE 0.45, PME 0.38, PLE 0.44; eye interdistances: AME–AME 0.30, AME–ALE 0.15, PME–PME 0.68, PME–PLE 0.75, AME–PME 0.48, ALE–PLE 0.32, clypeus height at AME 0.53, clypeus height at ALE 0.61 (Figure 22C).

Chelicera with two anterior and three or four posterior teeth; cheliceral furrow without denticles; three bristles at distal end of cheliceral basal segment (Figure 22D). Leg formula: 2 4 1 3. Measurements of palp and legs (lectotype): Palp 10.4 [3.3, 1.5, 2.0, 3.6], I 30.1 [8.8, 4.3, 7.2, 7.8, 2.0], II 32.5 [9.8, 4.2, 8.0, 8.3, 2.2], III 29.0 [9.1, 4.0, 6.8, 7.1, 2.0], IV 31.5 [9.6, 3.7, 7.7, 8.4, 2.1].

Spination. Palp 131, 001, 1111, 1013; Legs: Femur I–III 323, IV 322; Patella I–IV 000/001; Tibia I–IV 0024/2024; Metatarsus I–III 2024, IV 3036.

Epigyne/vulva. As in diagnosis with MS enlarged, EF quadrate in shape; EFb combined with AMLL; AMLL are not fused but continued into hardened MS

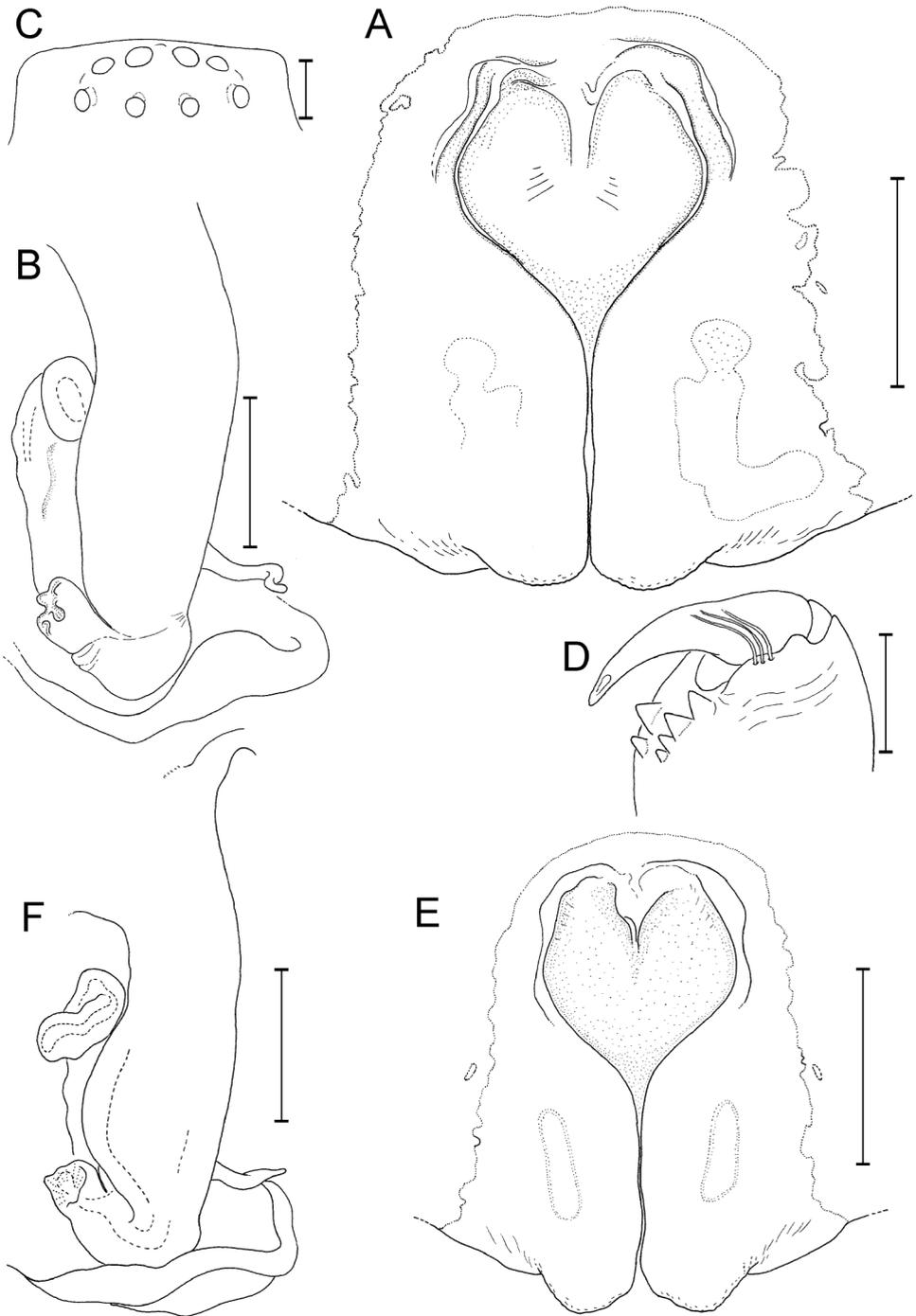


Figure 22. *Eusparassus pearsoni* (Pocock, 1901) comb. nov., (A–D) lectotype female from Poona, western Ghats, India: (A) epigyne, ventral; (B) left vulva, antero-dorso-lateral; (C) eye arrangement; (D) left chelicera, ventral; (E, F) paralectotype female from Eastern Khandesh, India: (E) variation of epigyne, ventral; (F) variation, left vulva, antero-dorso-lateral. Scale bars: (A, C–E) 1 mm, (B, F) 0.5 mm.

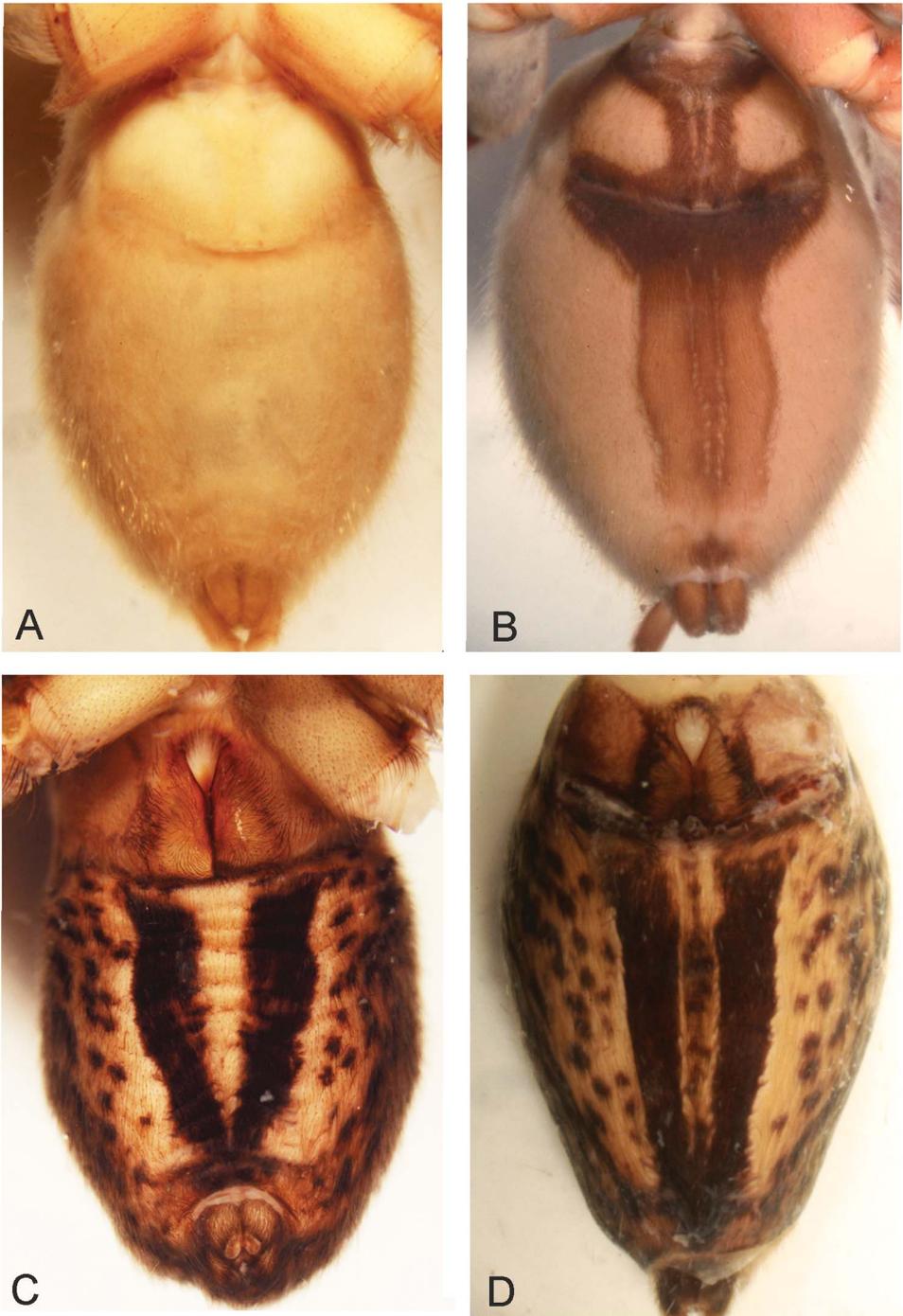


Figure 23. Ventral opisthosoma colouration, (A) *Eusparassus walckenaeri*; (B) *Eusparassus xerxes* comb. nov., (C) *Eusparassus dufouri*, (D) *Eusparassus levantinus*.

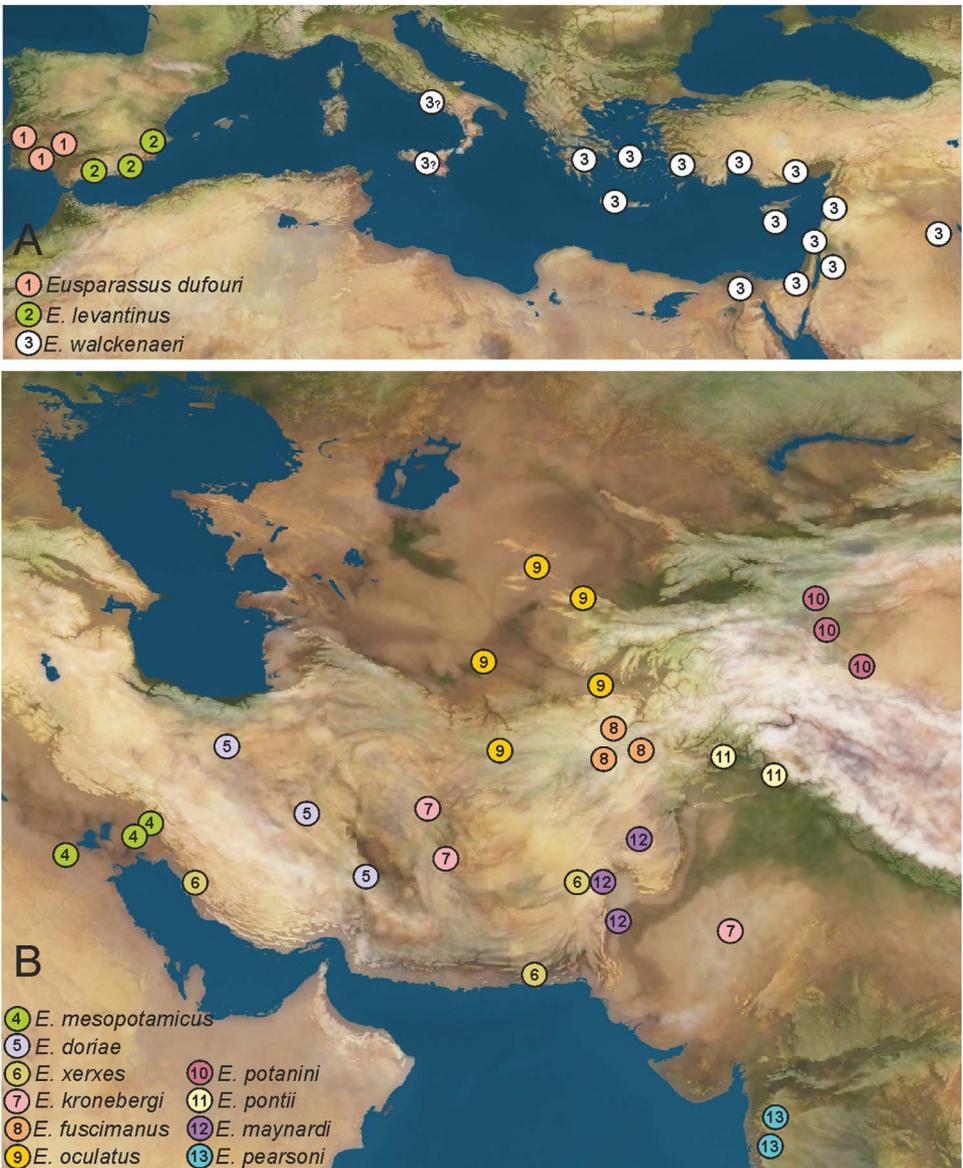


Figure 24. Distribution map of Eurasian *Eusparassus* species in (A) Mediterranean region, (B) Middle East, Central and South Asia.

(Figure 22A, E); vulva with glandular pores located at tip of glandular process (Figure 22F).

Male. Unknown.

Colouration [in ethanol]. Reddish brown with dark patches on prosoma, grey opisthosoma, ventral opisthosoma pale.

Remarks

Gravely (1931) erroneously synonymized *E. pearsoni* comb. nov. along with *E. maynardi* with *E. xerxes*, despite noting the peculiar differences in the epigyne of *E. pearsoni*, which is noticeably distinguishable from *E. xerxes* Pocock (1901), in “the Fauna of India series”, did not include illustrations to his description of all his new species. Later, Gravely (1931) only provided drawings of *E. xerxes*. Consequently, drawings of *E. pearsoni* (as well as *E. maynardi*) have never appeared in publications before and are presented here for the first time.

Known geographical distribution

Known only from the type localities including Khandesh, Ghats and Poona (=Pune) in Indian Peninsula.

Eusparassus lilus Strand, 1907 nomen dubium

E. lilus Strand, 1907: 437 (description of male, from Java in Indonesia, holotype in Zoologisches Institut Tübingen, destroyed in World War II).

Remarks

Strand (1907) did not provide any drawing of the species and the description does not support any diagnostic character of *Eusparassus*. According to the known distribution range and preferable habitats of *Eusparassus* species, Java is thought to be out of the distributional limits. The species probably belongs to *Olios* and this genus is proved by Jäger (2003) to occur in Java [e.g. *O. nigrifrons* (Simon, 1897)]. The species is considered a *nomen dubium* here.

Misplaced species

Olios flavovittatus (Caporiacco, 1935) comb. nov.

Eusparassus flavovittatus Caporiacco, 1935: 217, pl. 5, fig. 11 (description of juvenile; holotype from Karakoram, juvenile, examined).

Type material

Holotype: juvenile (severely damaged), PAKISTAN: Karakoram, Garhi, agris aridis, altitude 1200 m, April 1929 (MCSM).

Remarks

This badly damaged juvenile was received from MCSM. Only parts of right chelicerae, the prosoma and opisthosoma are available. Examinations of pattern of the eyes and prosoma, which is as long as wide, as well as presence of several bristles (more than

seven) at distal end of chelicera basal segment (instead of one or maximum four bristles in *Eusparassus* spp.) revealed that the species actually should be transferred to *Olios*.

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