

A review of the *eremocanus* species group of the genus *Xenaporus* Ashmead, 1902 (Hymenoptera: Pompilidae)

IRINA ZONSTEIN¹ & SERGEI ZONSTEIN²

Department of Zoology, The George S. Wise Faculty of Life Sciences, Tel Aviv University,
Tel Aviv 69978, Israel. ¹E-mail: irina@post.tau.ac.il; ²E-mail: znn@post.tau.ac.il

ABSTRACT

A new species group, *eremocanus*, is proposed in *Xenaporus* for the following species: *X. eremocanus* Wolf (Central Asia), *X. tamerlan* Zonstein (Uzbekistan), *X. vulpecula* n. sp. (Uzbekistan), and *Gonaporus freidbergi* Wolf, new combination (Egypt (Sinai) and Israel). A key to species is given, descriptions and illustrations are provided for each species.

KEW WORDS: Pompilidae, *Xenaporus*, *eremocanus* group, *X. eremocanus*, *X. freidbergi*, *X. tamerlan*, *X. vulpecula*.

INTRODUCTION

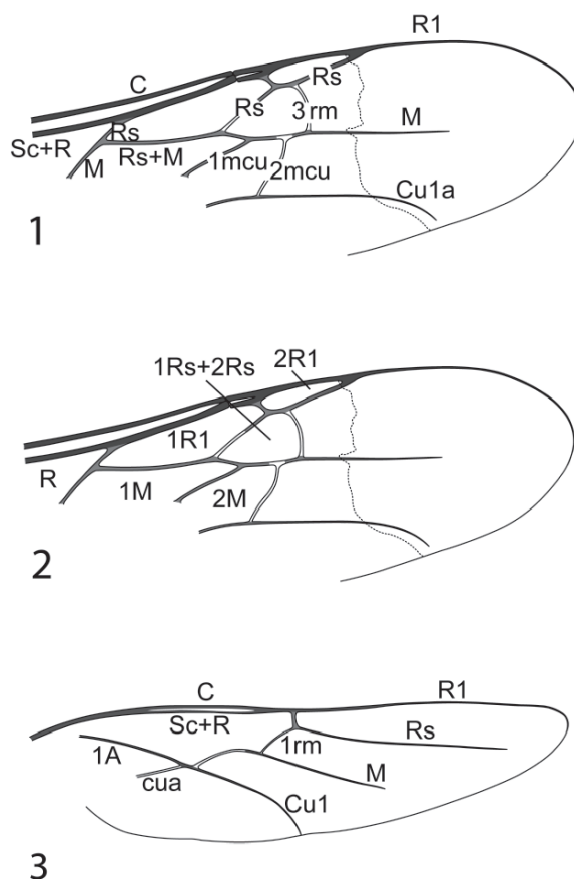
The genus *Xenaporus* was reviewed by H. Wolf (1990) who considered it to include the subgenera *Xenaporus* s. str. and *Baguenaia* Giner Mary, 1942, but without any species groups. The first species group, the *eremocanus* species group, is proposed here to include *X. eremocanus* Wolf, 1990, *X. freidbergi* (Wolf, 1990), n. comb., *X. tamerlan* Zonstein, 2002, and *X. vulpecula* n. sp.

MATERIAL AND METHODS

This study is primarily based on specimens deposited in the entomological collection of Tel Aviv University (TAUI), including the holotypes of *X. eremocanus* and *X. tadschikicus* (a synonym of *X. eremocanus*) that were borrowed from the pompilid collection of the Zoological Institute, St. Petersburg (ZISP). Terminology and abbreviations essentially follow Wolf (1992, 1994), and S. Zonstein (2002a). Terminology of wing venation follows Tobias (1978) with minor modification to match wing vein reduction of *Xenaporus* (Figs. 1–3). Ratios are based on at least five measurements whenever possible.

Abbreviations, ratios and terms are as follows:

Head: OOD – ocular-ocellar distance; POD – postocellar distance; antennal ratio – length of antennal segments 1–4 divided by length of pedicellus; eye ratio – longest diameter divided by shortest diameter.



Figs 1–3. Wing. 1. Forewing veins. 2. Forewing cells. 3. Hindwing veins.

Forewing: MM – ratio between combined lengths of posterior borders of cells 1R1 and 1Rs+2Rs and the distance between the crossing point of vein 3rm with vein M, and the apex of the forewing. MR – ratio between lengths of posterior border and oblique proximal border of cell 1Rs+2Rs.

Hindwing: RQ – ratio between length of first section of vein Rs and length of vein 1rm.

Foretarsomere ratio – length of each tarsomere of the foreleg divided by the length of the fourth tarsomere.

We use the term “postnotal junction” for metapostnotum following S. Zonstein (2002a).

TAXONOMY

Xenaporus Ashmead, 1902

The *eremocanus* species group

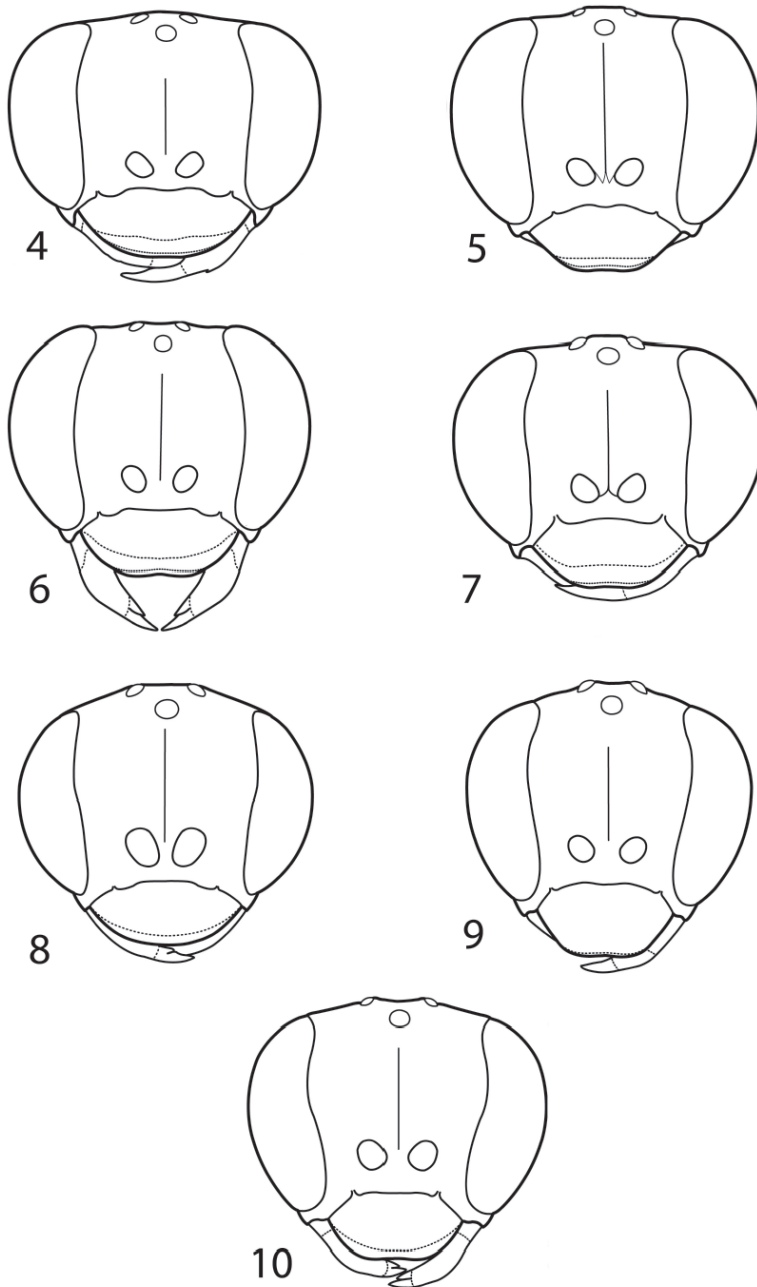
Diagnosis

Species of this group are characterized by the long postnotal junction, antenna and legs, and also by the comparatively long and narrow eye, and narrow malar space. They resemble species of the subgenus *Baguenaia* Giner Mari primarily in the shape of the claw, which has a lateral tooth, but they differ from them in the shape of the truncated apical flagellomere, length of spines of female tarsal comb, and in the pale subhyaline wings (*Baguenaia* species have darkened brown or brownish wings). Females of the group possess a comparatively long apical flagellomere and thin, moderately long, acuminate spines in the tarsal comb. Males of the group differ from males of other *Xenaporus* and *Gonaporus* species by their relatively long and thin antenna (which is shorter in other *Xenaporus* and stouter in the *Gonaporus* males), the longer and modified postnotal junction, and a characteristic shape of 1Rs+2Rs (that is constricted but not inclined, as in *Gonaporus*).

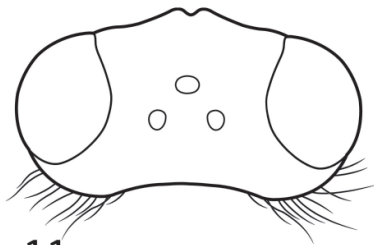
Description

Female. Structure. Head (Figs. 4–7, 11–14): 1.2–1.6 times as wide as high and 1.3–1.7 times as wide as pronotum; face as in Figs. 4–7; eye ratio 1.7–2.0; eye 3.0–5.3 times as long as temple in dorsal view; malar space 0.10–0.32 times as high as apical width of first flagellomere; POD/OOD ratio 0.75–1.15; anterior ocellar angle 70°–80°; antenna as in Figs. 18–21; antennal ratio = 2.3–3.1 : 1.0 : 3.3–4.0 : 2.8–3.5; first flagellomere 4.6–5.6 times as long as wide apically; apical flagellomere truncated, 3.3–4.3 times as long as wide basally. **Mesosoma**: Scutellum 2.4–3.0 times as long as postscutellum; postnotal junction long, 0.8–1.1 times as long as postscutellum (Figs. 25–28). **Legs**: Foretarsomere ratio = 3.4–4.3 : 1.2–1.9 : 1.3–1.6 : 1.0 : 1.3–1.8; first tarsomere 4.6–7.8 times as long as wide apically; apical spine of first tarsomere 0.25–0.40 times as long as first tarsomere (1.64–2.62 as long as apical width of first tarsomere) and 0.5–0.9 times as long as second tarsomere; first tarsomere with 2 or 3 thin acuminate lateral spines (Figs. 32–35); claws with tiny ventral tooth (Fig. 37). **Wing**: Venation as in Figs. 39–43 and Figs. 47–50; in two species (*X. eremocanus* and *X. vulpecula*) cell 1Rs+2Rs usually wide anteriorly, 0.25–0.34 times as wide anteriorly as posteriorly, although in one female of *X. eremocanus* this ratio 0.19 (Fig. 40); in two species (*X. freidbergi* and *X. tamerlan*) cell 1Rs+2Rs narrow anteriorly, 0.10–0.17 times as wide anteriorly as posteriorly; MM = 0.69–1.10; MR = 1.20–1.36; RQ = 0.30–0.55. Body length 5.4–8.6 mm.

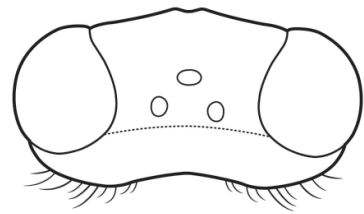
Coloration. Head: Mostly black; clypeus mostly black, usually reddish or light brown to brown apically, with smooth and shiny anterior margin; mandible usually blackish-brown basally, yellow to yellowish-brown medially, dark reddish-brown to dark brown apically; malar space dark brown to black; labrum and palpi brown; antenna mostly blackish-brown to black; scapus usually narrowly brown to dark brown ventroapically; pedicellus narrowly brown to dark brown apically; in *X. vulpecula* antenna mostly



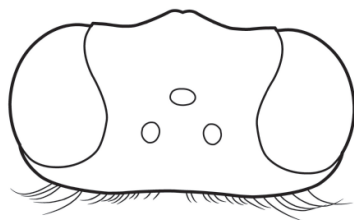
Figs. 4–10. Head, anterior view. 4–7. Females. 8–10. Males. 4, 8. *X. eremocanus*. 5, 9. *X. freidbergi*. 6, 10. *X. tamerlan*. 7. *X. vulpecula*.



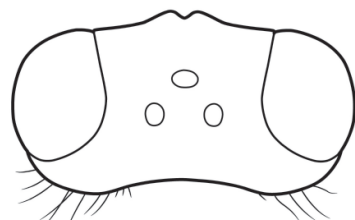
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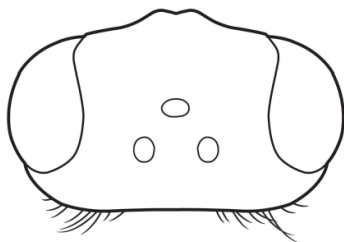
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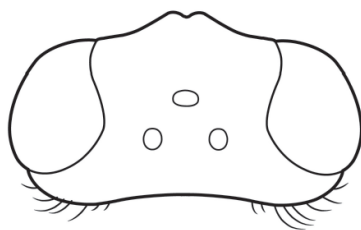
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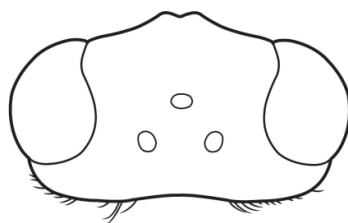
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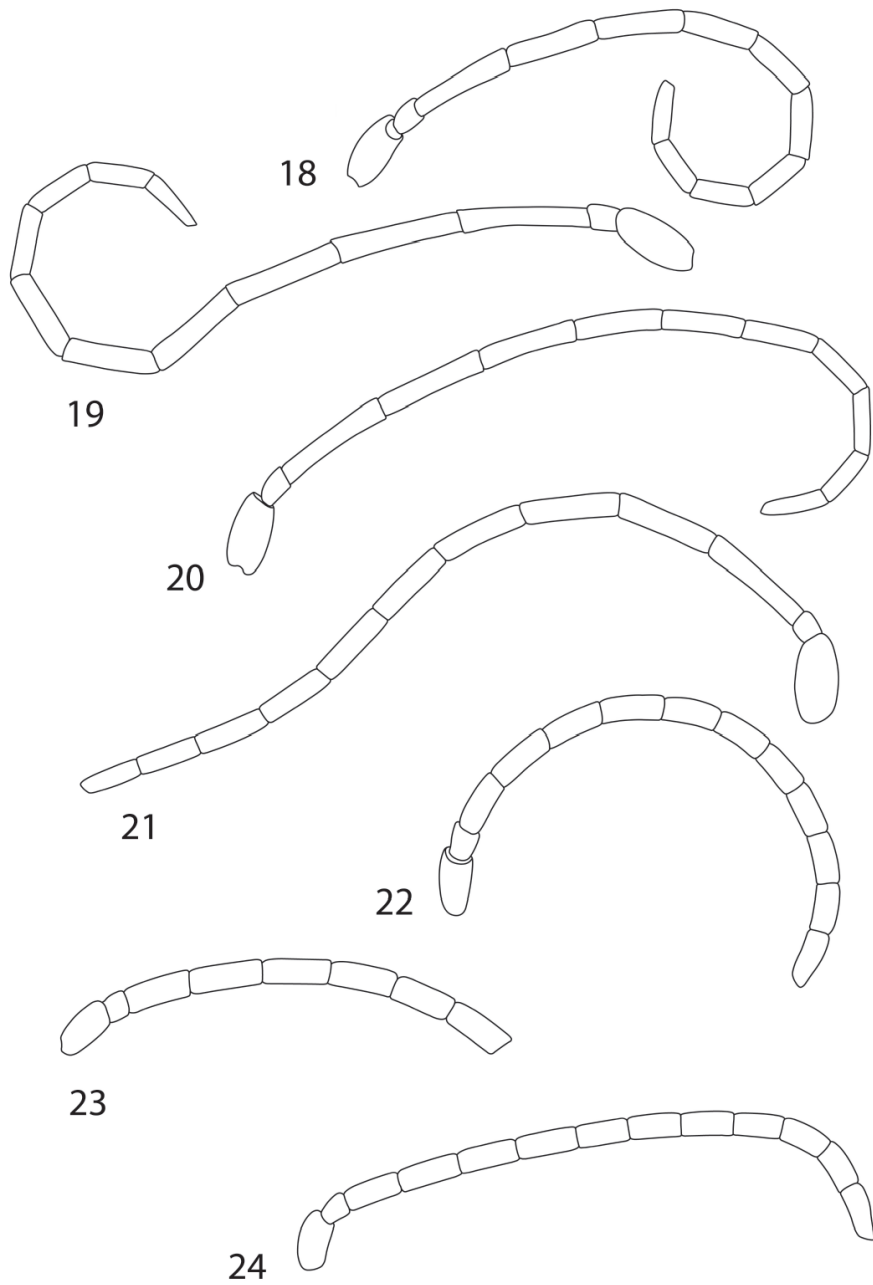
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Figs. 11–17. Head, dorsal view. 11–14. Females. 15–17. Males. 11, 15. *X. eremocanus*. 12, 16. *X. freidbergi*. 13, 17. *X. tamerlan*. 14. *X. vulpecula*.

blackish-brown dorsally and reddish-brown ventrally. **Mesosoma:** Mostly black except narrowly brown posterior and lateral margins of pronotum; sometimes pronotum entirely black; tegula reddish or brownish-yellow to blackish-brown; postnotal junction (Figs. 25–28) subshiny, with conspicuous shiny median groove, widened to small smooth shiny triangular depression posteriorly. **Legs:** Coloration variable, from mostly blackish- to mostly reddish-brown; coxae with lighter brown tips; femora usually lighter apically; tibiae usually lighter basally; foretibia usually lighter apically and basally; sometimes all tibiae with black preapical spots ventrally; tarsi darkened apically; each tarsomere also darkened apically; claws dark basally, lighter apically; spurs usually blackened apically; spines of tarsal comb yellowish-brown to dark reddish-brown; other leg spines yellowish-brown to dark reddish-brown. **Wings** (Figs. 39–43, 47–50): Subhyaline; forewing with large pale brown to brown spot apically; pterostigma brown to dark brown; veins light brown to blackish-brown; forewing veins: C, Sc+R, R₁ usually darkest – dark brown to blackish-brown; Cu_{1a} and distal part of M dark – brown to dark brown; Rs, 3m and 2mcu lightest – brown to light brown; hindwing veins: distal parts of longitudinal veins darker – brown to dark brown; transverse veins lighter – brown to light brown. **Metasoma:** In *X. eremocanus* and *X. freidbergi* almost entirely black; in *X. tamerlan* and *X. vulpecula* at least tergites 1–2 mostly brownish-orange or yellowish-orange; segments 1–5 usually with lighter posterior margins; pygidium brown to black, shiny to dull.

Vestiture. Pubescence: Body predominantly with silver-gray pubescence, partially hiding integument, longer on head and mesosoma, shorter on coxae, antenna, other leg segments and metasoma; temple, occiput and anterior part of orbit with pubescence rather longer than on other head parts; postnotal junction with or without pubescence; metasoma mostly with fine gray pubescence; tergites 1–5 with weak light marginal fasciae. **Setae:** Vertex and anterior part of orbit with few long fine dark brown setae; ventral part of temple and occiput, and propleuron with long, moderately dense, fine whitish setae; clypeus usually with single short to long whitish to light brown setae; mandible usually with few long yellowish-brown setae; forecoxa with several long fine whitish setae; hindtibia with brush of golden-brown to blackish-brown short setae posteriorly; ventral spur of hindtibia with black setae ventrobasally; first tarsomere of hindleg with light brown to dark brown setae ventrobasally; tergite 6 and sternite 6 (sometimes also sternites 3–5) with long, stout erect dark brown setae.

Male. Structure. Head (Figs. 8–10, 15–17): 1.1 times as wide as high and 1.2–1.5 times as wide as pronotum; face as in Figs. 8–10; eye ratio 1.7–1.9; eye 2.6–4.0 times as long as temple in dorsal view; malar space narrow, 0.26–0.50 times as high as apical width of first flagellomere; POD/OOD ratio 0.87–1.10; anterior ocellar angle 75–90°; antenna as in Figs. 22–24; antennal ratio = 1.7–2.1 : 1.0 : 1.7–2.4 : 1.9–2.7; first flagellomere 2.4–2.8 times as long as wide apically; apical flagellomere truncated, 2.5–2.8 times as long as wide basally. **Mesosoma:** Scutellum 2.4–3.0 times as long as postscutellum; postnotal junction long, 0.9–1.1 times as long as postscutellum (Figs. 29–31). **Legs:** First tarsomere of foreleg 5.6–7.3 times as long as wide apically; apical tarsomere of



Figs. 18–24. Antenna. 18–21. Females. 22–24. Males. 18, 22. *X. eremocanus*. 19, 23. *X. freidbergi*. 20, 24. *X. tamerlan*. 21. *X. vulpecula*.

foreleg 2.5–2.8 times as long as wide medially; claws (Fig. 38) with tiny ventral tooth.

Wings: venation as in Figs. 44–46 and 59–61; cell 1Rs+2Rs 0.10–0.35 times as wide anteriorly as posteriorly; MM = 0.69–1.00; MR = 1.27–1.44; RQ = 0.33–0.50; body length 4.8–5.7 mm. **Hypopygium** (Figs. 54–56): Hirsute, broad-lanceolate or broad-oval, with weak or strong median keel and short to long marginal spines; ventral surface more or less concave, with or without spines. **Genitalia:** As in Figs. 57–59.

Coloration. Head: Mostly black; clypeus mostly black, yellowish-brown to brown apically; mandible blackish basally, yellow medially, brown to dark brown apically; malar space blackish-brown to black; labrum and palpi brown to dark brown; antenna mostly blackish-brown; scapus usually lighter brown apically and ventrally; pedicellus brown ventroapically or apically. **Mesosoma:** Black except posterior and lateral margins of pronotum slightly brown; tegula brownish-yellow to dark brown; postnotal junction with fine shiny median groove, widened to small smooth shiny triangular depression posteriorly (Figs. 29–31). **Legs:** Mostly dark reddish-brown to black; coxae with lighter, yellowish-brown to brown, tips; femora lighter apically; foretibia lighter basally and apically; tarsi darkened apically; each tarsomere also darkened apically; claws darker basally, lighter apically; spurs yellowish-brown to blackish-brown; leg spines brown to black. **Wings** (Figs. 44–46, 51–53): Subhyaline; forewing with large light brown to brown spot apically; pterostigma brown to dark brown; veins mostly brown; forewing veins: C and Sc+R and R₁ blackish-brown; Rs and 2mcu light brown to brown; 3rm usually lightest, light brown to brown; hindwing veins: longitudinal veins brown to dark brown; transverse veins light brown to brown. **Metasoma:** Almost entirely black or blackish-brown with slightly brown posterior margins; segments 1–2 partially brown.

Vestiture. Pubescence: Body predominantly with silver-gray pubescence, partially hiding integument, longer on head and mesosoma, shorter on coxae, antenna, other leg segments and metasoma; temple, occiput and anterior part of orbit with pubescence rather longer than on other head parts; mid- and hindfemora usually with dorsoapical triangular areas formed by bronze-brown pubescence; postnotal junction in some species almost entirely covered by short silver-gray pubescence, in other species entirely tomentless; metasoma with fine gray pubescence forming weak light fasciae along distal margins of tergites 1–5 and sternites 1–4; tergites 6–7 lateromarginally, sternite 5 in apical half and sternites 6–7 usually with short brown pubescence. **Setae:** Vertex and anterior part of orbit with few long fine dark brown setae; propleuron and ventral parts of temple and occiput with long, moderately dense, fine whitish setae; clypeus sometimes with single fine short yellowish setae; mandible with few short to long yellowish-brown setae; forecoxa with few short to long whitish setae.

Key to the species of the *eremocanus* group

1. Cell 1Rs+2Rs wide anteriorly (0.25–0.35 times as wide anteriorly as posteriorly, except one female 0.19) (Figs. 39, 43, 44); postnotal junction covered by short silver gray pubescence at least submedially (Figs. 25, 28, 29); female first tarsomere of foreleg with 3 lateral spines (Figs. 32, 35)..... **2**
- Cell 1Rs+2Rs narrow anteriorly (0.10–0.19 times as wide anteriorly as posteriorly) (Figs. 41, 42, 45, 46); postnotal junction without pubescence (Figs. 26, 27, 30, 31); female first

- tarsomere of foreleg with 2 lateral spines (Figs. 33, 34) 3
2. Metasoma entirely black; spines of tarsal comb moderately long (Fig. 32) (East Turkmenistan, Uzbekistan, south Kyrgyzstan, south-eastern Kazakhstan, Mongolia) ... *X. eremocanus* Wolf
- Metasomal segments 1–3 entirely yellowish-orange; metasomal segments 4–5 with reddish coloration; spines of tarsal comb short (Fig. 35) (Uzbekistan)
..... *X. vulpecula* I. Zonstein and S. Zonstein, n. sp.
3. Metasoma entirely black; female clypeus trapezoidal (Fig. 5) (Egypt (Sinai), Israel).....
..... *X. freidbergi* Wolf
- At least tergites 1–2 of metasoma brownish-orange; female clypeus rounded, with weak emargination apically (Fig. 6) (Uzbekistan)..... *X. tamerlan* S. Zonstein

X. eremocanus Wolf, 1990

(Figs. 4, 8, 11, 15, 18, 22, 25, 29, 32, 37–40, 44, 47, 51, 54, 57)

X. eremocanus Wolf, 1990: 646; S. Zonstein, 2002a: 106; 2002b: 140.

X. tadschikicus Wolf, 1990: 664; Wolf, 1998a: 348. Zonstein, 2002a: 106 (Synonymy).

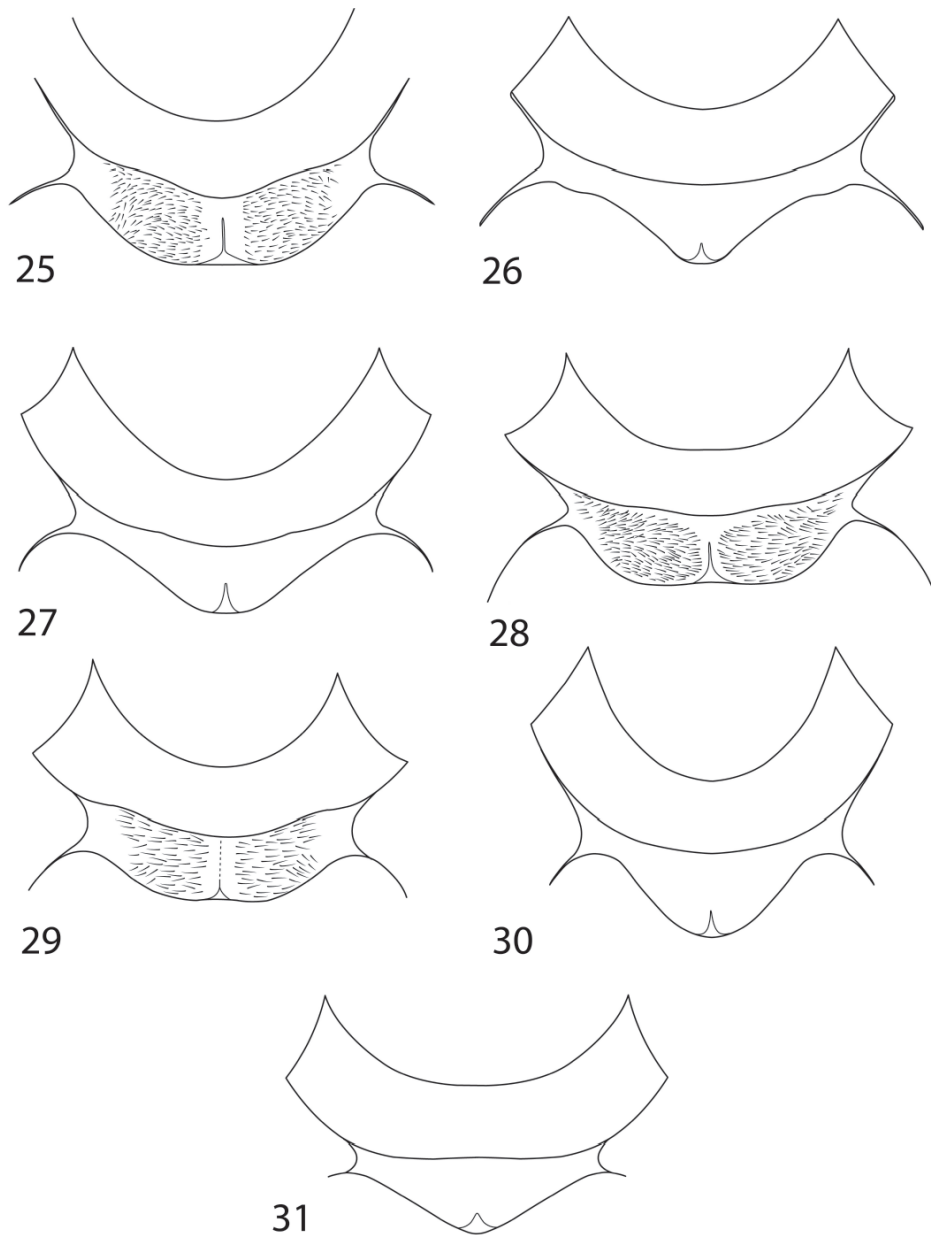
Diagnosis

This species is similar to *X. vulpecula* n. sp., the two species sharing cell 1RS wide anteriorly, postnotal junction hirsute and slightly broadened medially, and the presence of 3 lateral spines on the first foretarsomere. *X. eremocanus* differs from *X. vulpecula* in the mostly black metasoma (except for brownish margins of the segments), darker wing veins, moderately long spines of the female tarsal comb and shorter antenna.

Redescription

Female. Structure. Head (Figs. 4, 11): 1.2–1.3 times as wide as high and 1.5–1.7 times as wide as pronotum; face as in Fig. 4; eye ratio 1.7; eye 4.3–5.3 times as long as temple in dorsal view; malar space 0.1–0.2 times as high as apical width of first flagellomere; POD/OOD ratio 0.75–0.85; anterior ocellar angle 75°–80°; antenna as in Fig. 18; antennal ratio = 2.4–2.6 : 1.0 : 3.3–3.6 : 2.8–3.3; first flagellomere 4.6–5.6 times as long as wide apically; apical flagellomere truncated, 3.8–4.3 times as long as wide basally. **Mesosoma**: Scutellum 2.6–2.9 times as long as postscutellum; postnotal junction 0.8–1.1 times as long as postscutellum. **Legs**: Foretarsomere ratio = 3.4–3.9 : 1.5–1.9 : 1.3–1.4 : 1.0 : 1.6–1.8; first foretarsomere 5.5–6.0 times as long as wide apically; apical spine of first tarsomere 0.3–0.4 times as long as first tarsomere (1.64–2.36 as long as apical width of first tarsomere) and 0.60–0.85 times as long as second tarsomere; first tarsomere with 3 thin acuminate lateral spines (Fig. 32). **Wings**: Venation as in Figs. 39–40 and 47; cell 1Rs+2Rs in most females 0.25–0.34 times as wide anteriorly as posteriorly, in one female 0.19 (Fig. 40); MM = 0.69–0.80; MR = 1.03–1.34; RQ = 0.35–0.45; body length 5.4–6.8 mm.

Coloration. Head: Mostly black; clypeus mostly black, apical 0.33 yellowish-brown, with smooth and shiny anterior margin; mandible blackish-brown basally, yellow



Figs. 25–31. Postnotal junction. Figs. 25–28. Females. Figs. 29–31. Males. 25, 29. *X. eremocanus*. 26, 30. *X. freidbergi*. 27, 31. *X. tamerlan*. 28. *X. vulpecula*. 29. *X. eremocanus*. 30. *X. freidbergi*. 31. *X. tamerlan*.

medially, dark brown on apical 0.4, with sharp border between tints; malar space dark brown to black; labrum and palpi brown; antenna mostly brownish-black, only scapus and pedicellus dark brown apically, and scapus with narrow longitudinal brown stripe or spot ventroapically. **Mesosoma**: Black except narrowly brown posterior and lateral margins of pronotum; sometimes pronotum entirely black; tegula brownish-yellow to brown; postnotal junction (Fig. 25) subshiny, with conspicuous shiny median groove, widened to small smooth shiny triangular depression posteriorly. **Legs**: Mostly black; coxal tips brown; femora brown apically; tibiae usually brown basally, foretibia also brown apically; tarsomeres dark brown to blackish-brown, slightly blackened apically; claws (Fig. 37) blackish-brown basally and yellowish-brown apically; spurs dark yellowish-brown, blackened apically; spines of tarsal comb yellowish-brown; other leg spines yellowish-brown to brown. **Wings** (Figs. 39–40, 47): Subhyaline; forewing with large brown spot apically; pterostigma brown; veins mostly brown; forewing veins: Rs, 3r_m and 2mcu light brown; C, Sc+R, R₁, Cu_{1a} and distal half of M dark brown; hindwing veins: distal parts of Rs, M and Cu₁ brown. **Metasoma**: Mostly black; segments 1–5 narrowly dark brown apically; pygidium black and shiny.

Vestiture. Pubescence: Body predominantly with silver-gray pubescence, partially hiding integument, longer on head and mesosoma, shorter on coxae and antenna, other leg segments and metasoma. Temple, occiput and orbit with pubescence longer than on other head parts; vertex with shorter bronze pubescence; pubescence on scapus and pedicellus and basal half of first flagellomere gray; apical half of first flagellomere and other antennal segments with dark brown pubescence; postnotal junction (Fig. 25): submedial area (about 0.66 of postnotal junction width) covered by short silver-gray pubescence, directed laterally, not hiding integument and leaving narrow area lacking pubescence adjacent to median groove; lateral area (about 0.33 of postnatal junction width) with or without sparse pubescence; tarsomeres 1–2 with gray pubescence on basal halves and brown pubescence more apically; other tarsomeres with brown pubescence; tergites and sternites 1–3 with moderately long silver-gray pubescence; tergite and sternite 4 either with silver-gray pubescence, or with silver-gray pubescence basally and bronze pubescence apically, or only with bronze pubescence; tergite 5 and sternites 5–6 with bronze pubescence; tergite 6 with bronze pubescence, apically often mixed with silver-gray pubescence. **Setae**: Vertex and anterior part of orbit with few long fine dark brown setae; temple and occiput (ventral to dorsal margin of occipital foramen), labrum, and propleuron with long, moderately dense, fine whitish setae; clypeus and mandible with single such setae; forecoxa with several long fine whitish setae; hindtibia with brush of short dark brown setae posteriorly; ventral spur of hindtibia with black setae ventrobasally; first tarsomere of hindleg with light brown setae ventrobasally; tergite and sternite 6 with long, stout, erect dark brown setae.

Male

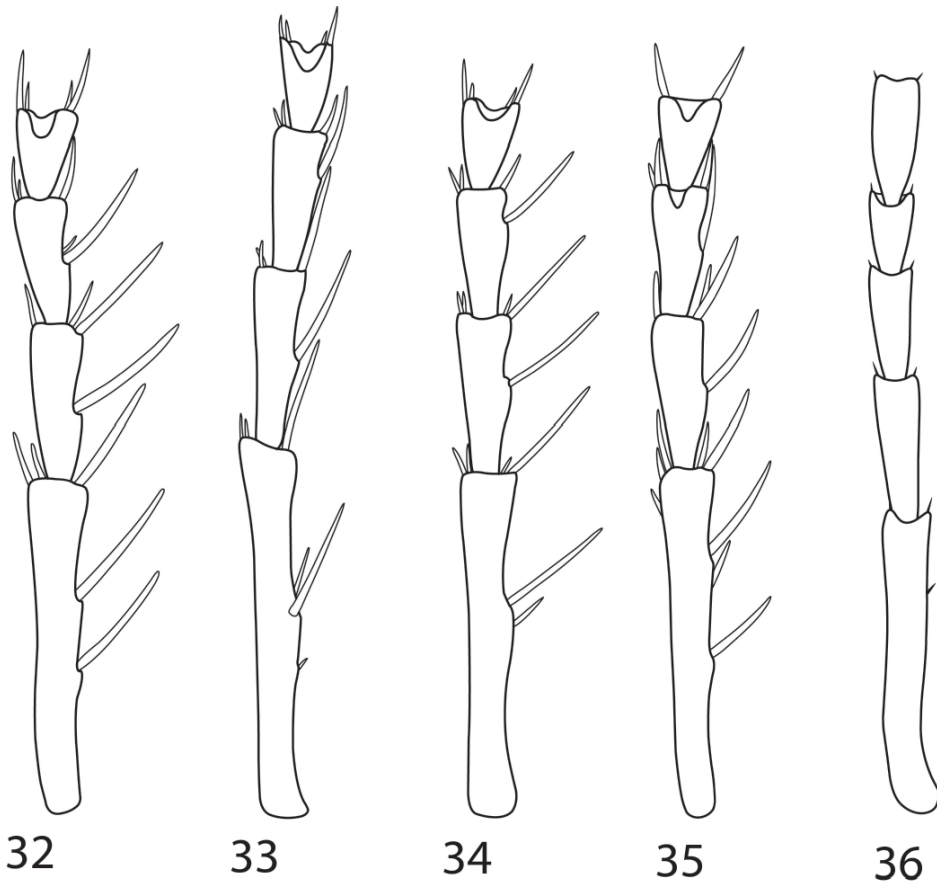
Structure. Head (Figs. 8, 15): 1.1 times as wide as high and 1.4 times as wide as pronotum; face as in Fig. 8; eye ratio 1.7; eye 2.6 times as long as temple in dorsal view; malar space narrow, 0.3 times as high as apical width of first flagellomere; POD/OOD

ratio 0.87; anterior ocellar angle 75°; antenna as in Fig. 22; antennal ratio = 1.7 : 1.0 : 1.7 : 1.9; first flagellomere 2.4 times as long as wide apically; apical flagellomere truncated, 2.8 times as long as wide basally. **Mesosoma**: Scutellum 3 times as long as postscutellum; postnotal junction as long as postscutellum, broad trapeziform posteriorly (Fig. 29).

Legs: First tarsomere of foreleg 5.6 times as long as wide apically; apical tarsomere of foreleg 2.6 times as long as wide medially. **Wings**: Venation as in Figs. 44 and 51; cell 1Rs+2Rs 0.35 times as wide anteriorly as posteriorly; MM = 0.69; MR = 1.38; RQ = 0.33; body length 4.9 mm. **Hypopygium** (Fig. 54): Hirsute, broad-lanceolate, keeled, triangular in cross section, with long marginal spines, ventral surface concave, with spines. **Genitalia**: As in Fig. 57.

Coloration. Head: Mostly black; clypeus mostly black, apical 0.25 yellowish-brown; mandible blackish-brown basally, yellow medially, dark brown on apical 0.33; malar space black; labrum and palpi brown; antenna mostly dark blackish-brown; scapus brown ventrally; pedicellus brown ventroapically. **Mesosoma**: Mostly black, except slightly brown posterior and lateral margins of pronotum; tegula brownish-yellow; postnotal junction with fine shiny median groove, widened to small smooth shiny triangular depression posteriorly (Fig. 29). **Legs**: Coxae mostly black with yellowish-brown tips; trochanters black; femora mostly black, slightly yellowish-brown apically, more extensively ventrally; tibiae mostly blackish-brown; foretibia lighter brown basally and apically; tarsomeres of foreleg brown, slightly blackened apically; mid- and hindtarsi dark blackish-brown; claws (Fig. 38) blackish-brown basally and brown apically; spurs dark yellowish-brown to blackish-brown; leg spines brown to blackish-brown. **Wings** (Figs. 44, 51): Subhyaline; forewing with large brown spot apically; pterostigma dark brown; veins C and Sc+R and R₁ blackish-brown; Rs, 3m, 2m_{cu} and 1A light brown; remaining veins mostly brown; hindwing: longitudinal veins brown; transverse veins light brown. **Metasoma**: mostly black, with narrow brown posterior margins; in males from Mongolia tergites 1–2 and sternite 1 brown laterally.

Vestiture. Pubescence: Body predominantly with silver-gray pubescence, partially hiding integument, longer on head and mesosoma, shorter on coxae, antenna, other leg segments and metasoma. Temple, occiput and orbit with pubescence rather longer than on other head parts; vertex with shorter bronze pubescence; antenna with mostly short silver-gray pubescence, denser on scapus and pedicellus; longitudinal stripe lacking sensillae on flagellum, with brown pubescence; tarsi mostly with short brown pubescence; first tarsomere of all legs with gray pubescence basally; postnotal junction (Fig. 29): submedial area (about 0.66 of postnatal junction width) subshiny, covered by short silver-gray pubescence, directed laterally, not hiding integument and leaving narrow tomentless area adjacent to median groove; lateral area (about 0.33 of postnatal junction width) tomentless; metasomal segments with fine moderately long silver-gray pubescence. **Setae**: Vertex and anterior part of orbit with few long fine dark brown setae; propleuron and ventral parts of temple and occiput with moderately dense long fine whitish setae; clypeus with single fine short yellowish setae; mandible with few long fine yellowish setae; forecoxa with few relatively short whitish setae apically and with few short whitish setae anteriorly.



Figs. 32–36. Foretarsus. 32. *X. eremocanus*, female. 33. *X. freidbergi*, female. 34. *X. tamerlan*, female. 35. *X. vulpecula*, female. 36. *X. tamerlan*, male.

Material examined

Holotype, ♂: UZBEKISTAN: Khiva, 21.v.1927, V. Gussakovskij (ZISP). TURKMENISTAN: Farab, 12–28.v.1929, A. Shestakov (2 ♀, including the holotype of *X. tadshikikus* Wolf, 1990). UZBEKISTAN: Yazyavan, 18.v.1994, D. A. Milko (1 ♀). KAZAKHSTAN: Dubun, 26.vi.1996, V. L. Kazenas (3 ♀); sands 4 km NNE Bakanas, 12.vi.2000, S. L. Zonstein (1 ♂, 2 ♀); MONGOLIA: Gobi, 100 km SW Dalanzadgad, Bayanzag, des. Saxaulus, 1–2.VII. 2003. J. Halada (2 ♂) (All in TAUI).

Distribution

East Turkmenistan, Uzbekistan, south Kyrgyzstan, south-eastern Kazakhstan (Zonstein, 2002a), Mongolia.

X. freidbergi (Wolf, 1990), n. comb.

(Figs. 5, 9, 12, 16, 19, 23, 26, 30, 33, 41, 45, 48, 52, 55, 58)

Gonaporus freidbergi Wolf, 1990: 632; Wolf, 1998b: 252.

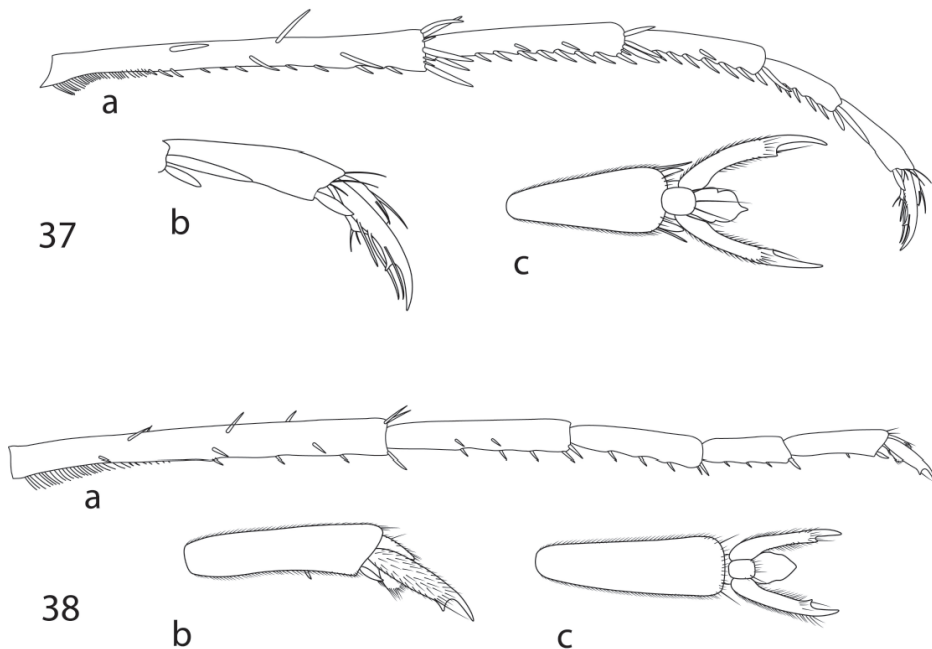
Diagnosis

This species is transferred here from *Gonaporus* to *Xenaporus* and, more specifically, to the *eremocanus* species group, because it has the same shape of claw, leg setation, shape of tarsal comb, and wing venation, and similar pubescence, shape of face and postnotal junction as in the other species of the group. It is similar to *X. tamerlan*, and both species share the shape of cell 1RS that is anteriorly narrower than in the other species. They also share a conspicuously broadened medially and tomentless postnotal junction, and 2 lateral spines on the first tarsomere of the foreleg. *X. freidbergi* differs from *X. tamerlan* in the almost entirely black metasoma without reddish coloration, darker wing venation and trapezoidal female clypeus. In *X. tamerlan* the basal tergites are reddish, wing venation lighter, and female clypeus rounded apically.

Redescription

Female. Structure. Head (Figs. 5, 12): 1.2 times as wide as high and 1.6 times as wide as pronotum; face as in Fig. 5; eye ratio 2.0; eye 4.6 times as long as temple in dorsal view; malar space 0.2 times as high as apical width of first flagellomere; POD/OOD ratio 1; anterior ocellar angle 80°; antenna as in Fig. 22; antennal ratio = 2.6 : 1.00 : 3.8 : 3.5; first flagellomere 5.3 times as long as wide apically; apical flagellomere truncated, 3.6 times as long as wide basally. **Mesosoma**: Scutellum 2.4 times as long as postscutellum; postnotal junction as long as postscutellum (Fig. 26), strongly widened medially, slightly transversely wrinkled medially, strongly transversely wrinkled laterally, and slightly depressed medially. **Legs**: Foretarsomere ratio = 4.2 : 1.9 : 1.4 : 1.0 : 1.6; first tarsomere 7.8 times as long as wide apically; apical spine of first tarsomere 0.25 times as long as first tarsomere (1.9 as long as apical width of first tarsomere) and 0.56 times as long as second tarsomere; first tarsomere of foreleg with 2 thin acuminate lateral spines (Fig. 33); wing venation as in Figs. 41 and 48; cell 1Rs+2Rs 0.1 times as wide anteriorly as posteriorly; MM = 1.05; MR = 1.36; RQ = 0.55; body length 6.7 mm.

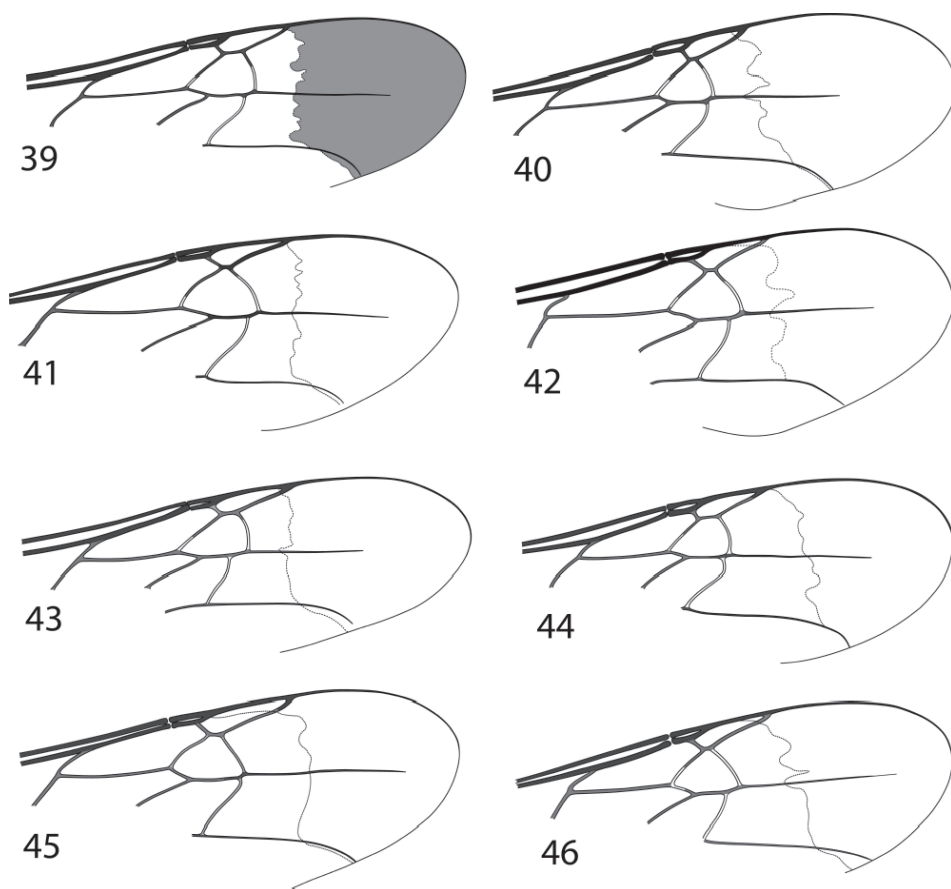
Coloration. Head: Mostly black; clypeus mostly black, narrowly brown apically; anterior margin narrowly smooth and shiny; basal 0.33 of mandible black, medial 0.33 yellow, apical 0.33 dark reddish-brown, with sharp border between yellow and brown areas; malar space black; palpi dark brown; antenna blackish-brown; apex of pedicellus light brownish ventrally. **Mesosoma**: Black except slightly brown cervical edge of pronotum; tegula black basally, dark brown distally, postnotal junction (Fig. 26) subshiny medially, shiny laterally, with smooth shiny triangular depression posteriorly. **Legs**: Mostly black; tips of mid- and hind coxae slightly brownish; femora slightly brown apically; foretibia dark yellowish-brown, narrowly light brownish basally and apically; mid- and hindtibia blackish-brown; all tibiae with black preapical spots ventrally; tarsomeres 1–4 dark



Figs. 37–38. *Xenaporus* spp. hindtarsus. 37a–c. *X. eremocanus*, female. 37a. Anterior view. 37b. Tip of hindtarsus, anterior view. 37c. Tip of hindtarsus, dorsal view. 38a–c. *X. eremocanus*, male. 38a. Anterior view. 38b. Tip of hindtarsus, anterior view. 38c. Tip of hindtarsus, dorsal view.

brown, blackened apically; apical tarsomere blackish-brown; claws blackish-brown basally and brown apically; spurs blackish-brown; leg spines including spines of tarsal comb dark reddish-brown. **Wings** (Figs. 41, 52): Subhyaline; forewing with large light brown spot apically; pterostigma dark brown; veins C, Sc+R, and R_1 blackish-brown; R_s , 3rm and 3mcu brown; remaining veins mostly dark brown; hindwing: longitudinal veins dark brown; transverse veins brown. **Metasoma**: Mostly black; tergites 1–5 with narrowly brown margins; pygidium black, shiny.

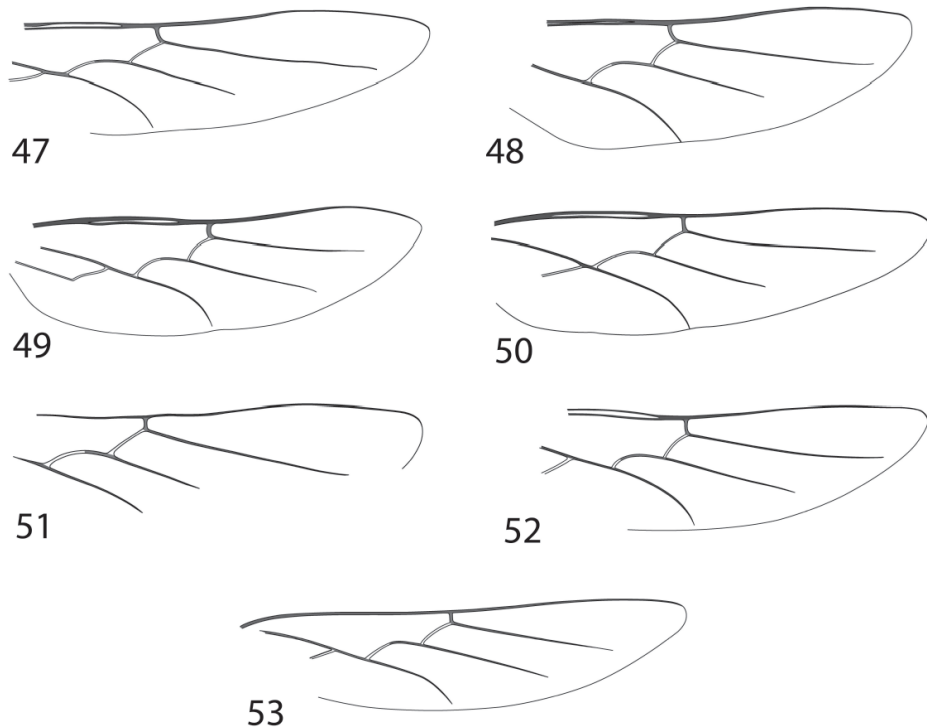
Vetiture. Pubescence: Body predominantly with fine gray pubescence, partially hiding integument, longer on head and mesosoma, slightly shorter on coxae and antenna, other leg segments and metasoma. Anterior part of orbit with denser pubescence, than other head parts; pubescence on scapus gray; pedicellus with mostly gray pubescence mixed with brown pubescence; first flagellomere with gray pubescence basally and brown pubescence elsewhere; other antennal segments with brown pubescence; mid- and hindfemora with dorsoapical triangular areas formed by bronze-brown pubescence; tarsi with fine brown pubescence; postnotal junction lacking pubescence; metasoma mostly with fine gray pubescence, on tergites 1–5 forming weak light fasciae along distal margins; tergite 6 and sternites 5–6 with brownish-gray pubescence. **Setae**: Vertex and anterior part of orbit with few long fine dark brown setae; temple, occiput and



Figs. 39–46. Forewing. 39–43. Females. 44–46. Males. 39–40, 44. *X. eremocanus*. 41, 45. *X. freidbergi*. 42, 46. *X. tamerlan*. 43. *X. vulpecula*.

propleuron with long moderately dense, fine whitish setae, setae shorter on dorsal part of occiput; clypeus with single short brownish setae; mandible with few long yellowish setae; forecoxa with few long fine whitish setae; hindtibia with brush of short, blackish-brown setae posteriorly; medial spur of hindtibia with black setae ventrobasally; first tarsomere of hindleg with dark brown setae ventrobasally; tergite 6 and sternite 5–6 with long, stout, erect dark brown setae.

Male. Structure. Head (Figs. 9, 16): 1.1 times as wide as high and 1.2–1.4 times as wide as pronotum; face as in Fig. 9; eye ratio 1.8 times; eye 3–4 times as long as temple in dorsal view; malar space narrow, 0.39–0.50 times as high as apical width of first flagellomere; POD/OOD ratio 1.00–1.13; anterior ocellar angle 80°; antenna as in Fig.



Figs. 47–53. Hindwing. 47–50. Females. 51–53. Males. 47, 51. *X. eremocanus*. 48, 52. *X. freidbergi*. 49, 53. *X. tamerlan*. 50. *X. vulpecula*.

23; antennal ratio = 2.1 : 1.0 : 2.1–2.4 : 2.4–2.7; first flagellomere 2.8 times as long as wide apically. **Mesosoma:** Scutellum 2.5–2.6 times as long as postscutellum; postnotal junction (Fig. 30) 1.0–1.1 times as long as postscutellum, strongly widened medially, strongly transversely wrinkled anteriorly and laterally, slightly shagreened medially. **Legs:** First tarsomere of foreleg 6.8–7.1 times as long as wide apically; apical tarsomere of foreleg 2.8 times as long as wide medially; wing venation as in Figs. 45 and 52; cell 1Rs+2Rs 0.10–0.17 times as wide anteriorly as posteriorly; MM = 0.88–1.00; MR = 1.43–1.45; RQ = 0.45–0.55; body length 5.2–5.7 mm. **Hypopygium** (Fig. 55): Hirsute, oval, with weak median keel, with short marginal spines, ventral surface slightly concave, without spines. **Genitalia:** As in Fig. 58.

Coloration. Head: Mostly black; clypeus mostly black, with narrow brown apical margin; mandible blackish-brown basally, light yellow medially, brown apically; malar space black; palpi brown; antenna mostly dark brown; scapus black, slightly brown apically and ventroapically; pedicellus mostly black, slightly brown apically. **Mesosoma:** Black except slightly brown cervical edge of pronotum; tegula dark brown;

postnotal junction (Fig. 30) shiny anteriorly and laterally, subshiny medially; with weak median depression medially and fine shiny median groove, posteriorly widened to small triangular smooth shiny depression.

Legs: Dark brown to brownish-black; coxae and trochanters brownish-black to black; tips of coxae slightly brownish; femora mostly brownish-black, slightly brownish apically; forefemur lighter brown anteriorly; tibia and tarsi blackish-brown; foretibia slightly lighter brown apically; tarsomeres 1–4 dark brown, blackened apically; apical tarsomere blackish-brown; claws blackish-brown basally, brown apically; spurs blackish-brown; leg spines blackish-brown to black. **Wings** (Figs. 45, 52): Subhyaline; forewing with large light brown spot apically; pterostigma dark brown; veins C, Sc+R, R₁ blackish-brown; Rs, 3m and 2mcu brown; remaining veins mostly dark brown; hindwing: longitudinal veins dark brown; transverse veins brown. **Metasoma:** Mostly dark blackish-brown; tergites 1–5 and sternites 2–4 with lighter brown marginal bands.

Vestiture. Pubescence: Body predominantly with fine gray pubescence, partially hiding integument, longer on head and mesosoma, shorter on coxae, antenna, other leg segments and metasoma. Anterior part of orbit with denser pubescence than other head parts; pubescence on scapus gray; pedicellus with gray pubescence mixed with grayish-brown pubescence; other antennal segments mostly with grayish-brown pubescence; longitudinal stripe lacking sensilla on flagellum, with tiny blackish-brown pubescence; postnotal junction (Fig. 30) tomentless; mid- and hindfemora with dorsoapical triangular areas formed by bronze-brown pubescence; tarsi with grayish-brown pubescence; metasoma mostly with gray pubescence, on tergites 1–5 and sternites 1–4 slightly denser on margins; tergites 6–7 lateromarginally and sternites 5–7 with brown pubescence. **Setae:** Vertex and anterior part of orbit with few long fine dark brown setae; propleuron and ventral parts of temple and occiput with long, moderately dense, fine whitish setae; mandible with few short yellowish-brown setae; forecoxa with few long whitish setae posteriorly.

Material examined

Holotype, ♂: EGYPT: Sinai, Dahab, 23.v.1981, A. Freidberg (TAUI). Paratypes: EGYPT: Sinai, Taba, 5.ix.1977, A. Freidberg (1♂; TAUI). ISRAEL: Ne'ot Semadar, 10.x.1995, A. Freidberg (1♀; TAUI).

Distribution

Egypt (Sinai), Israel.

Xenaporus tamerlan S. Zonstein, 2002

(Figs. 6, 10, 13, 17, 20, 24, 27, 31, 34, 36, 42, 46, 49, 53, 56, 59)

Xenaporus tamerlan Zonstein, 2002: 108.

Diagnosis

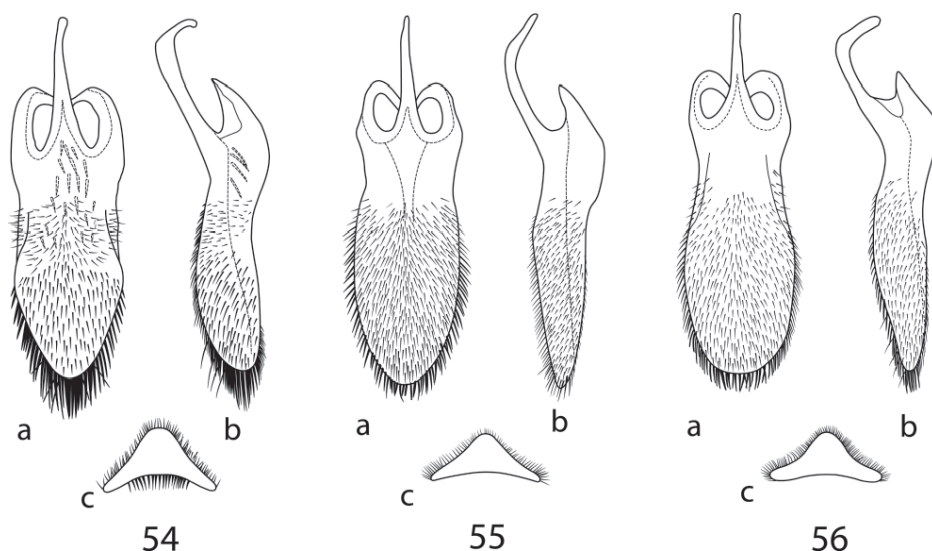
This species is similar to *X. freidbergi*, and both species share the shape of cell IRS

that is anteriorly narrower than in the other species. They also share a conspicuously broadened medially and tomentless postnotal junction, and 2 lateral spines on the first tarsomere of the foreleg. *X. tamerlan* differs from *X. freidbergi* in the reddish tergites 1–2 or 1–3, lighter wing venation and the apically rounded female clypeus. In *X. freidbergi* the metasoma is entirely black, wing venation darker and female clypeus trapezoidal.

Redescription

Female. Structure. Head (Figs. 6, 13): 1.1–1.2 times as wide as high and 1.3–1.5 times as wide as pronotum; face as in Fig. 6; eye ratio 1.8–1.9; eye 3.1–3.5 times as long as temple in dorsal view; malar space 0.14–0.32 times as high as apical width of first flagellomere; POD/OOD ratio 1.00–1.15; anterior ocellar angle 80°; antenna as in Fig. 20; antennal ratio = 2.3–2.5 : 1.0 : 3.3–3.6 : 2.9–3.3; first flagellomere 4.9–5.6 times as long as wide apically; apical flagellomere truncated, 3.3–4.4 times as long as wide basally. **Mesosoma**: Scutellum 2.7–3.0 times as long as postscutellum; postnotal junction 1.0–1.1 times as long as postscutellum. **Legs**: Foretarsomere ratio = 3.8–4.3 : 1.7–1.8 : 1.3–1.6 : 1.0 : 1.6–1.7; first tarsomere 4.6–6.4 times as long as wide apically; apical spine of first tarsomere 0.28–0.36 times as long as first tarsomere (1.86–2.62 as long as apical width of first tarsomere) and 0.70–0.88 times as long as second tarsomere; first tarsomere of foreleg with 2 thin acuminate lateral spines (Fig. 34); **Wings**: Venation as in Figs. 42 and 49; cell 1Rs+2Rs 0.14–0.17 times as wide anteriorly as posteriorly; MM = 0.92–1.08; MR = 1.28–1.33; RQ = 0.46–0.53; body length 5.4–8.6 mm.

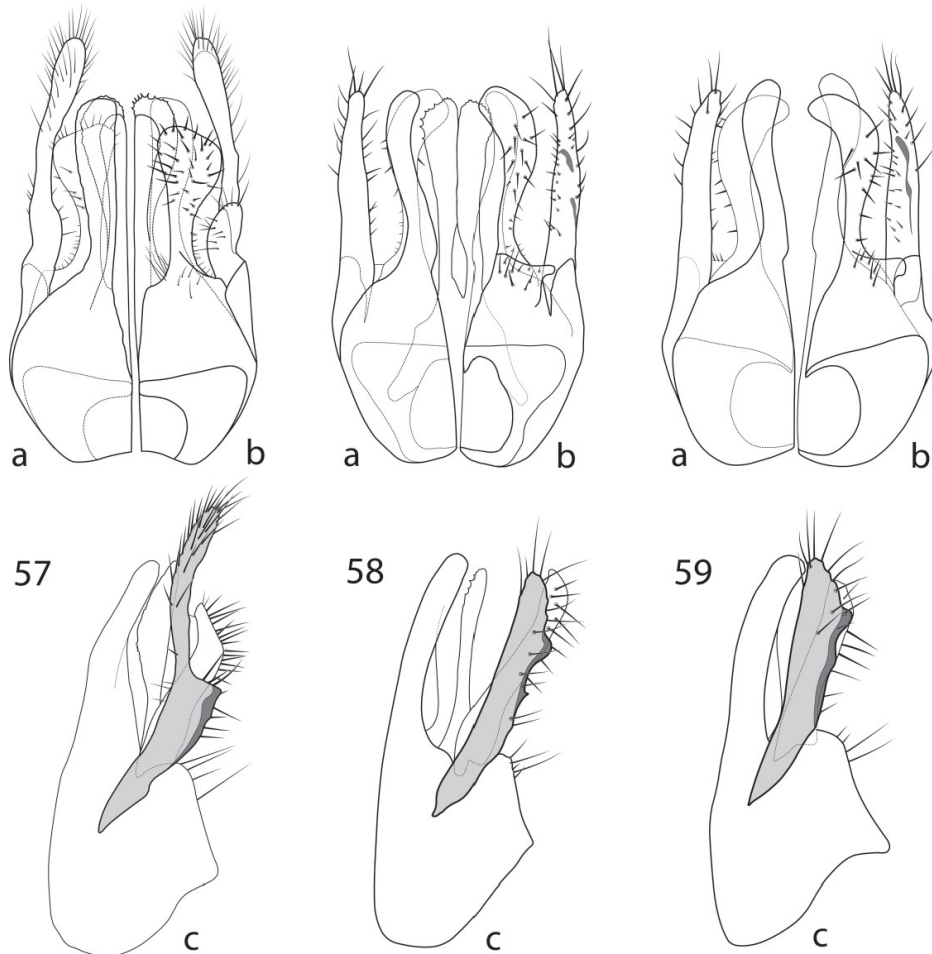
Coloration. Head: Mostly black; clypeus mostly black, apical 0.25 yellowish-brown to brown; anterior margin narrowly smooth and shiny; mandible blackish basally, yellowish-brown medially, darkened gradually to dark brown apically; malar space black; labrum blackish-brown; palpi brown; antenna mostly black; scapus brownish ventrally and pedicellus brownish apically. **Mesosoma**: Entirely or predominantly black, except slightly brown posterior edge and cervical edge of pronotum; tegula black basally, yellowish-brown distally; postnotal junction (Fig. 27) subshiny, with shagreened sculpture medially and shiny, transversely wrinkled laterally; with shallow median groove. **Legs**: Black to reddish; coxae, trochanters and femora mostly black; coxal tips light reddish; femora light reddish apically, more extensively ventrally; foretibia reddish-black to predominantly reddish, blackened dorsally, reddish basally and apically; mid- and hindtibia predominantly reddish, blackened dorsally; all tibiae with black preapical spots ventrally; tarsi blackish-brown; claws blackish-brown basally and brown apically; spur of foretibia yellowish-brown basally, blackish-brown apically; spurs of mid- and hindtibia blackish-brown; spines of tarsal comb dark reddish-brown; spines on mid- and hindfemora dark reddish-brown, on other parts of legs dark brown. **Wings** (Figs. 42, 49): Subhyaline; forewing with large light brown spot apically; pterostigma dark brown; veins mostly brown; forewing veins: C and R₁ blackish-brown; Sc+R, Cu_{1a} dark brown; hindwing veins: distal parts of Rs, M and Cu₁ dark brown. **Metasoma**: Segments 1–2 or 1–3 usually brownish-orange; last segments predominantly black; segments 1–5 with light brown to brown marginal bands, on segments 2–4 bands widened medially; tergite 1 mostly brownish-orange, narrowly black basally, in one female this tergite with



Figs. 54–56. Male, hypopygium. a. Ventral view. b. Lateral view c. Cross-section. 54. *X. eremocanus*. 55. *X. freidbergi*. 56. *X. tamerlan*.

2 blackish spots on apical 0.33; tergite 2 mostly brownish-orange with irregular blackish preapical fascia bent anteriorly; tergite 3 mostly blackish, usually (in two females) narrowly brownish-orange basally; tergites 4–5 mostly black; tergite 6 black; sternite 1 brownish-orange to blackish-brown; sternite 2 mostly brownish-orange in basal half and mostly black in apical half; sternite 3 mostly black, in two females brownish-orange basally; sternites 4–5 mostly black; sternite 6 black; pygidium brown, weakly shiny.

Vestiture. Pubescence: Body predominantly with silver-gray pubescence, partially hiding integument, longer on head and mesosoma, shorter on coxae, antenna, other leg segments and metasoma. Pubescence on scapus gray; pedicellus with gray pubescence mixed with brown pubescence; other antennal segments with brown pubescence; postnotal junction tomentless; first tarsomeres with gray pubescence mixed with brown pubescence; other tarsomeres with brown pubescence; mid- and hindfemora with dorsoapical triangular areas formed by brown pubescence; metasoma mostly with fine gray pubescence forming weak light fasciae along distal margins of tergites 1–5; tergite 5 lateromarginally, tergite 6 entirely, sternite 4 marginally, and sternites 5–6 entirely with short brownish pubescence. **Setae:** Vertex and anterior part of orbit with few long fine dark brown setae; temple, occiput and propleuron with long, moderately dense, fine whitish setae, setae shorter on dorsal part of occiput; clypeus and mandible with few long yellowish-brown setae; forecoxa with few long fine whitish setae; brush of hindtibia with short, dark brown setae posterodorsally and with short, golden-brown setae posteroventrally; medial spur of hind tibia with black setae ventrobasally; first tarsomere of hindleg with golden-brown setae basoventrally; tergite 6, sternites 5–6 and, sometimes, sternites 3–4 with long, stout, erect dark brown setae.



Figs. 57–59. Male, genitalia. a. Dorsal view. b. Ventral view. c. Lateral view. Fig. 57. *X. eremocanus*. Fig. 58. *X. freidbergi*. Fig. 59. *X. tamerlan*.

Male. Structure. Head (Figs. 10, 17): 1.1 times as wide as high and 1.2–1.3 times as wide as pronotum; face as in Fig. 10; eye ratio 1.8–1.9; eye 3.6 times as long as temple in dorsal view; malar space narrow, 0.34–0.46 times as high as apical width of first flagellomere; POD/OOD ratio 0.88–0.94; anterior ocellar angle 75–90°; antenna as in Fig. 24; antennal ratio = 1.9 : 1.0 : 1.7–1.8 : 1.8; first flagellomere 2.6–2.8 times as long as wide apically; apical flagellomere truncated, 2.6 times as long as wide basally. **Mesosoma**: Scutellum 2.4–2.5 times as long as postscutellum; postnotal junction 0.9 times as long as postscutellum. **Legs**: First tarsomere of foreleg 7.1–7.3 times as long as wide apically; apical tarsomere of foreleg 2.5–2.7 times as long as wide medially.

Wings: Venation as in Figs. 46 and 53; cell 1Rs+2Rs 0.14–0.18 times as wide anteriorly as posteriorly; MM = 0.82–0.89; MR = 1.43–1.44; RQ = 0.35; body length 4.8–4.9 mm.

Hypopygium (Fig. 56): Hirsute, broad-oval, with weak median keel and short marginal spines; ventral surface slightly concave, without spines. **Genitalia:** As in Fig. 59.

Coloration. Head: Mostly black; clypeus mostly black, apical 0.25 yellowish-brown; mandible blackish-brown basally, light yellow medially, brown apically; malar space blackish-brown; labrum and palpi dark brown; antenna mostly dark blackish-brown; scapus ventrally and pedicellus ventrally and apically yellowish-brown. **Mesosoma:** Black, except slightly brownish cervical edge and posterior lobe of pronotum; tegula brown; postnotal junction (Fig. 31) subshiny, moderately wrinkled medially and stronger wrinkled laterally; with shallow median groove, more conspicuous posteriorly. **Legs:** Dark reddish-brown to blackish-brown; tips of coxae narrowly brown; forecoxa dark reddish-brown; mid- and hindcoxae mostly black; foretrochanter dark reddish-brown; mid- and hindtrochanters blackish; femora mostly dark reddish-brown to reddish-black, slightly yellowish-brown apically, more extensively ventrally; foretibia mostly blackish-brown, slightly yellowish-brown basally and apically; mid- and hindtibiae dark blackish-brown; tarsi blackish-brown, darkened apically; tarsomeres 1–4 darkened apically; claws dark blackish-brown basally and brown apically; spur of foretibia yellowish basally, blackish apically to entirely blackish; spurs of mid- and hindtibia dark blackish-brown; spines on mid- and hindtibia black; other leg spines blackish-brown. **Wings** (Figs. 46, 53): Subhyaline; forewing with large light brownish spot apically; pterostigma brown; veins mostly brown; forewing veins: C and R₁ blackish-brown; 3m and 3mcu light brown; hindwing veins: longitudinal veins brown; transverse veins yellowish-brown.

Metasoma: Segments 1–2 or 1–3 brown; tergites 1–5 and sternites 2–4 with light brown marginal bands; tergites 1–2 brown, brownish-black medially; tergite 3 brownish-black to black; tergites 4–5 black; tergites 6–7 dark brown; tergite 7 with large white median spot; sternite 1 dark brown; sternite 2 dark brown to brownish-black; sternite 3 black to dark brown basally and black medially; sternite 4 black; sternites 5–7 dark brown.

Vestiture. Pubescence: Body predominantly with silver-gray pubescence, partially hiding integument, longer on head and mesosoma, shorter on coxae, antenna, other leg segments and metasoma; longitudinal stripe lacking sensilla on flagellum, with brownish pubescence; postnotal junction tomentless; mid- and hindfemora with dorsoapical triangular areas formed by brown pubescence; metasoma with fine gray pubescence forming weak light fasciae along distal margins of tergites 1–5 and sternites 1–4; tergites 6–7 lateromarginally, sternite 5 in apical half and sternites 6–7 with short brownish pubescence. **Setae:** Vertex and anterior part of orbit with few long fine dark brown setae; propleuron and ventral parts of temple and occiput with long, moderately dense, fine whitish setae; mandible with few short yellowish-brown setae; forecoxa with few long whitish setae posteriorly.

Material examined

Holotype, ♀: UZBEKISTAN: Shakhrisabz, 6.vii.1999, S. L. Zonstein (TAUI). Paratypes: Same collection data (2♀, 2♂; TAUI).

Distribution

Uzbekistan.

X. vulpecula I. Zonstein and S. Zonstein, n. sp. (Figs. 8, 16, 24, 32, 40, 50, 58)

Diagnosis

This species is similar to *X. eremocanus*, and the two species share cell 1RS wider anteriorly, postnotal junction hirsute and slightly broadened medially, and the presence of 3 lateral spines on the first tarsomere of the foreleg. *X. vulpecula* differs from all other known species of the *eremocanus* group in the entirely yellowish-orange tibia, entirely brownish-orange segments 1–3 of the metasoma and the relatively short spines of the tarsal comb. *X. vulpecula* differs from *X. eremocanus* by the longer antenna.

Redescription

Female. Structure. Head (Figs. 7, 14): 1.2 times as wide as high and 1.6 times as wide as pronotum; face as in Fig. 7; eye ratio 1.8; eye 3.4 times as long as temple in dorsal view; malar space 0.16 times as high as apical width of first flagellomere; POD/OOD ratio 1.13; anterior ocellar angle 70°; antenna as in Fig. 21; antennal ratio = 3.1 : 1.0 : 3.9 : 2.9; first flagellomere 5.2 times as long as wide apically; apical flagellomere absent (we assume that it is truncated). **Mesosoma**: Scutellum 2.9 times as long as postscutellum; postnotal junction 0.9 times as long as postscutellum. **Legs**: Foretarsomere ratio = 4.0 : 1.2 : 1.4 : 1.0 : 1.3; first tarsomere 6.2 times as long as wide apically; apical spine of first tarsomere 0.27 times as long as first tarsomere (1.67 times as long as apical width of first tarsomere) and 0.9 times as long as second tarsomere; first tarsomere with 3 thin acuminate lateral spines (Fig. 35). **Wings**: Venation as in Figs. 43 and 50; cell 1Rs+2Rs 0.26 times as wide anteriorly as posteriorly; MM = 0.77; MR = 1.22; RQ = 0.35; body length 7.0 mm.

Coloration. Head: Mostly black; clypeus mostly black, apical 0.25 brown, with slightly concave, smooth and shiny anterior margin; mandible yellowish-brown basally and medially, dark reddish-brown on apical 0.4; malar space blackish-brown; labrum and palpi brown; antenna mostly blackish dorsally and yellowish-brown ventrally. **Mesosoma**: Mostly black; pronotum mostly black with yellowish-brown posterior and lateral margins, and also slightly yellowish-brown anteriorly; tegula light reddish; postnotal junction (Fig. 28) subshiny, with conspicuous shiny median groove, widened to small smooth shiny triangular depression posteriorly. **Legs**: Coxae black except yellowish-brown tips; trochanters reddish-black; basal 0.66 of femora brownish-black, apical 0.33 of femora yellowish-orange; tibiae mostly yellowish-orange with black spots at bases of spurs; first tarsomeres of all legs and second tarsomere of foreleg mostly yellowish-orange, blackish-brown apically; other tarsomeres dark brown, blackened apically; claws dark brown basally and yellowish-brown apically; spurs mostly reddish, blackened apically; spines of tarsal comb light reddish; other leg spines light reddish

to reddish. **Wings** (Figs. 43, 50): Subhyaline; forewing with large brown spot apically; pterostigma dark brown; veins light brownish to dark brown; forewing veins: C, Sc+R and R_1 dark brown; M and Cu_{1a} brown; Rs, 3rm and 3mcu slightly brownish; other veins light brown to brown; hindwing veins: Rs and cua light brownish; other veins light brown. **Metasoma**: Segments 1–3 yellowish-orange; segments 4–5 mostly black: yellowish-orange laterally and apically, with large black posteriorly rounded submedial spots almost fused medially; tergite 4 also yellowish-orange basally; tergite 6 blackish basally, brownish-orange apically; sternite 6 brownish-black; pygidium blackish-brown and dull.

Vestiture. Pubescence: Body predominantly with moderately dense silver-white pubescence, partially hiding integument, longer on head and mesosoma, shorter on coxae, antenna, other leg segments and metasoma. Frons and vertex with pubescence rather shorter than on other head parts; vertex with mixed bronze and gray pubescence; postnotal junction (Fig. 28): submedial area (about 0.66 of postnatal junction width) covered by short silver-white pubescence, directed laterally, partially hiding integument and leaving narrow tomentless area adjacent to median groove; lateral area (about 0.33 of postnatal junction width) with sparser pubescence; metasoma mostly with fine white to yellowish pubescence, on tergites 1–5 forming weak light fasciae along distal margins. **Setae**: Vertex and anterior part of orbit with few long fine dark brown setae; temple and occiput (ventral to dorsal margin of occipital foramen) and propleuron with long, moderately dense, fine whitish setae; mandible with single long yellowish setae; forecoxa with several long fine whitish setae; hindtibia with brush of short yellowish-orange setae posteriorly; medial spur of hindtibia with brown setae ventrobasally; first tarsomere of hindleg with yellowish-orange setae ventrobasally; tergite 5 and sternites 2–5 with single long reddish-brown setae; sternite 6 with long, stout, erect dark brown setae.

Material examined

Holotype, ♀: Southern Uzbekistan, sands nr. Sherabad, Surkhan-Darya r. valley, 2.vi.1995, S. Zonstein (TAUI).

Distribution

South Uzbekistan.

Etymology

The specific name *vulpecula* (in Latin fox) refers to the extensive reddish coloration of the legs and metasoma.

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