

## A synopsis of Middle Asian species of the spider wasp genera *Gonaporus* Ashmead, 1902 and *Microphadnus* Cameron, 1904 (Hymenoptera, Pompilidae)

S.L. Zonstein

Institute for Biology & Pedology, Tchui prospekt 265, Bishkek, 720071, Kyrgyzstan

Small and nimble xerophilous spider wasps of the genera *Gonaporus* Ashmead, 1902 and *Microphadnus* Cameron, 1904 poorly represented in the entomological collections were inadequately investigated hitherto within the Middle Asian region. H. Wolf, in his detail study of 1990 reviewing the Palearctic species of *Gonaporus* and related genera mentioned only a single female of *Microphadnus pumilus* (Costa) from Romit, Tadjikistan.

The given study is based partially on the examination of the material deposited in Zoological Institute of Russian Academy of Sciences, St.-Petersburg (ZISP) that was not included into the last work dealt with these genera (Wolf, 1990). Other part of the specimens used for the present study was collected during my field collecting trips of 1997–2000. In addition, few specimens were received for examination from Dr. V.L.Kazenas. The holotype specimens are either returned or added to the collection of ZISP. Part of paratype specimens of *M. griseus* sp. n. is distributed between ZISP, Zoological Museum of the Moscow University (Russia), Tel-Aviv University (Israel) and Oberösterreichischen Landesmuseum Linz (Austria).

The major part of indexes is accurate to 0.1, only in those cases when the more precise ratios were required the appropriate indexes are specified to 0.01.

Abbreviations used below are the follows: OOL – ocular-ocellar line; POL – post-ocellar line; MM – ratio of two distances: first of them is a distance between the beginning of medial vein and the ending of second radiomedial vein, and the second one is a distance between the last point and the apical margin of fore wing; MR – ratio of total length of the first radiomedial vein and length of the sector of medial vein that is located between the crossings with the first and the second radiomedial veins;  $r_1-r_3$  – segments (cuts) of radial vein; RM – radiomedial cells in fore wing; rm – radiomedial veins in fore wing; RQ – ratio of distance between the beginning of radial vein in hind wing and the point of its crossing with radiomedial vein on the one hand and total length of the last vein on the second.

### Genus *Gonaporus* Ashmead, 1902

*Notes.* According to H. Wolf (1990) the genus includes 7 species: 6 Mediterranean congeners distributed mainly within North Africa and Near East and *G. centralasiaticus* Wolf, 1992, described from a uncertain locality in Central Asia (“Palu-Pass”, most probably – from Afghanistan or Pakistan). The examination of material on Middle Asian pompilids deposited in ZISP showed that at least three additional representatives distributed within this region should be included into the genus; two of them are newly described below, whereas the last is transferred here from the genus *Telostegus* Costa, 1887.

### Key for the subgenera of the genus *Gonaporus* Ashmead, 1902

- 1 Pterostigma large to very large (as shown on Figs. 29–31). ♀: fore tarsi with retrolateral row of 4-5 long flattened paddle-shaped spines. ♂: fore tarsi with row of retrolateral spines at least in some species ..... *Stigmaporus* subgen. n.
- Pterostigma relatively small (as shown on Figs. 28, 29). ♀: fore tarsi with retrolateral row of 3 long and slightly flattened needle-shaped spines. ♂: fore tarsi with few short apical spines only..... *Gonaporus* s. str.

### Subgenus *Gonaporus* s. str.

*Notes.* The nominative subgenus includes 7 species: *G. gracilis* (Klug, 1834) – the type species, *G. alfieri* Priesner, 1955, *G. maureanus* Wolf, 1990, *G. freidbergi* Wolf, 1990, *G. omanicus* Wolf, 1990, *G. ecbatanus* Wolf, 1990 and *G. flamingo* sp. n.

Key for the species of subgenus *Gonaporus s. str.*

1. ♀♀ (unknown for *G. freidbergi*)..... 2
- ♀♀ (unknown for *G. ecbatanus* and *G. maureanus*) ..... 7
- 2 In fore wing  $r_2$  less than 1.5 times shorter than  $r_3$ ; distance between ending of  $rm_2$  and inner margin of dark preapical spot much lesser than length of  $RM_2$  (as shown on Fig. 27) ..... 3
- In fore wing  $r_2$  more than twice shorter than  $r_3$ ; corresponding distance almost equal to length of  $RM_2$  or longer it (Wolf, 1990, Abb. 173, 176, 177) ..... 5
- 3 Head and thorax black, covered with dense greyish pubescence they appear to be light-grey ..... 4
- Most part of head and whole thorax light red, covered with dense whitish-grey pubescence they appear to be rose ..... *G. (s. str.) flamingo sp. n.*
- 4 Last tarsal segment of hind leg with ca. 20 small ventral spines (Wolf, 1990, S. 632). First and second tarsal segments of fore leg with apical spine noticeably exceeding following segment in length (Ibid., Abb. 130) ..... *G. (s. str.) ecbatanus* Wolf, 1990
- Last tarsal segment of hind leg without spines (Wolf, 1990, S.634). First and second tarsal segments of fore leg with apical spine noticeably equal in length to following segment (Ibid., Abb. 133) ..... *G. (s. str.) omanicus* Wolf, 1990
- 5 First tarsal segment of fore leg with apical spine approximately equal in length to following segment or shorter than it (Ibid., Abb. 128, 132). In fore wing  $r_2$  equal in length to  $r_1$  or longer than it (Ibid., Abb. 173) ..... 6
- Corresponding segment with more long apical spine achieving middle part of third segment (Ibid., Abb. 131). In fore wing  $r_2$  noticeably shorter than  $r_1$  (Ibid., Abb. 176).....*G. (s. str.) gracilis* (Klug, 1834)
- 6 First tarsal segment of fore leg with apical spine slightly longer than following segment (Ibid., Abb. 128). Most part of head and thorax black ..... *G. (s. str.) alfieri* Priesner, 1955
- First tarsal segment of fore leg with apical spine shorter than following segment (Ibid., Abb. 132). Most part of head and whole thorax light red ..... *G. (s. str.) maureanus* Wolf, 1990
- 7 In fore wing distance between ending of  $rm_2$  and inner margin of dark preapical spot exceeds length of  $RM_2$  (as shown on Ibid., Abb. 216, 218) ..... 8
- In fore wing corresponding distance lesser than length of  $RM_2$  (as shown on Fig. 28) ..... 9
- 8 In fore wing  $r_2$  approximately equal to  $r_1$  (Wolf, 1990, Abb. 218) ..... *G. (s. str.) gracilis* (Klug, 1834)
- In fore wing  $r_2$  longer than  $r_1$ ; (Ibid., Abb. 216) ..... *G. (s. str.) alfieri* Priesner, 1955
- 9 In fore wing  $r_2$  considerably longer than  $r_1$  (as shown on Fig. 28) ..... 10
- In fore wing  $r_2$  shorter than  $r_1$  (Wolf, 1990, Abb. 217) ..... *G. (s. str.) freidbergi* Wolf, 1990
- 10 Thorax partially light red ..... *G. (s. str.) flamingo sp. n.*
- Whole thorax black ..... *G. (s. str.) omanicus* Wolf, 1990

*Gonaporus (s. str.) flamingo sp. n.*

(Figs. 1, 2, 8, 9, 15, 19, 22, 27, 28, 34, 35, 42-44, 51)

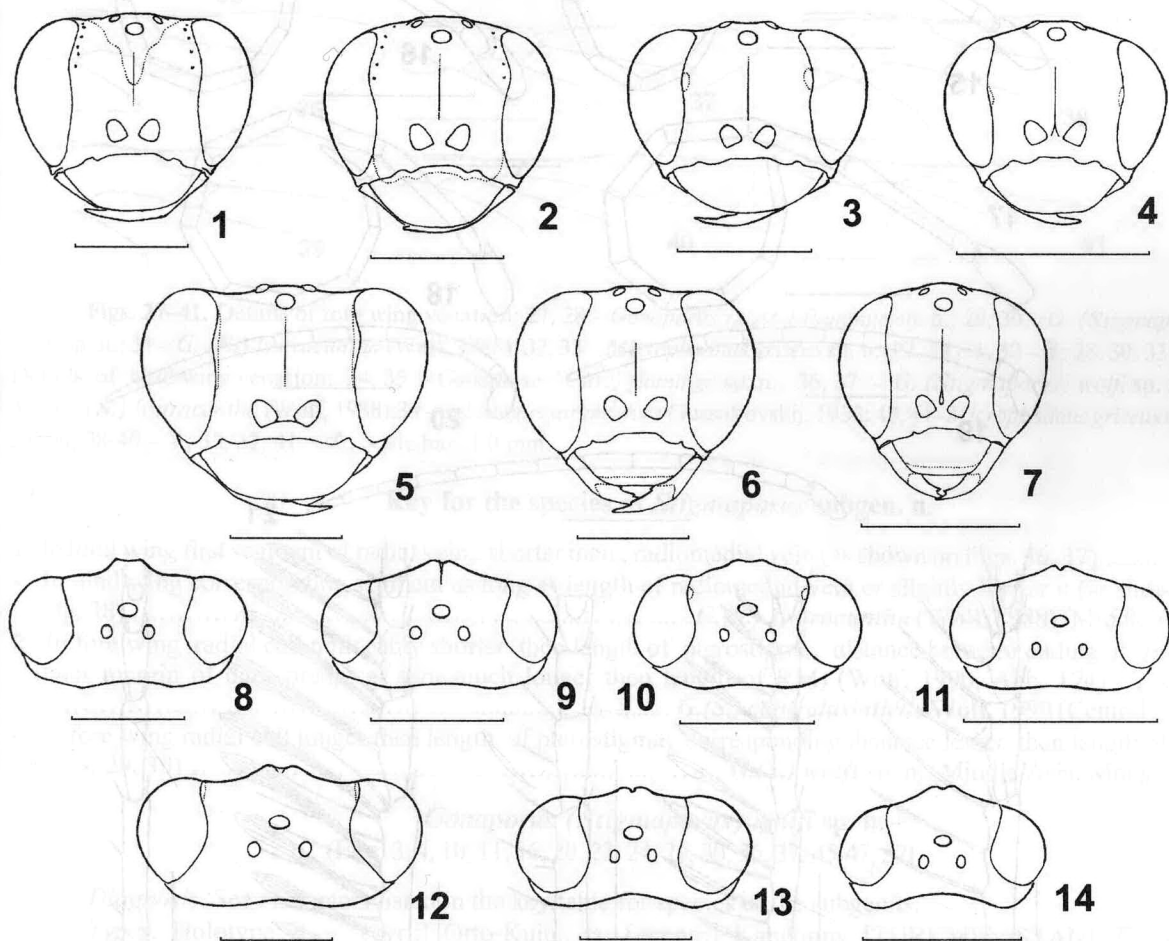
*Diagnosis.* See characters listed in the key table for species of the subgenus.*Material.* Holotype ♀ – “[cyr.:] Stalinabad (Dushambe). Gussakovskij, 5 VIII 935”, “Tachyagetes roseus n. ♀, Gussakovskij det. 1939”, “Holotype. ♀ *Gonaporus flamingo* sp. n., Zonstein det. 2000” (ZISP). Paratypes: 2♀, 2♂. TAJKISTAN: ibidem, 15.08.1935 – 1♀, 1♂ (ZISP). UZBEKISTAN: “25 km E Baisun, S-Uzb., 700 m, foothills, Baisun Mts., 38°05'N 67°26'E, S. Zonstein, 5.06.1997” – 1♀, 1♂.

Female. Head (Figs. 1, 8) 1.1–1.2 times as broad as long and ca. 1.5 times as broad as maximal width of pronotum. Temples 3.8–4.0 times shorter than eye (viewed from above). Ratio POL-OOL 1.05–1.17. Ocellar angle 85°. Antennae as shown on Fig. 19. Ratio of 1–4 antennal segments: 2.9 - 1 - 5.5 - 4.2. Third antennal segment 5.5–6.0 times as long as broad apically. Postnotal junction 1.6–1.7 times shorter than metanotum. Propodeum with indistinct median groove. Ratio of 1–5 tarsal segments of fore leg: 4.3 - 2.0 - 1.6 - 1 - 1.9; first segment with 3 long retrolateral spines (Fig. 22). Apical spine 3.2 times as long as maximal width of first segment and equal 1.2 length of second segment. Claws bifid, inferior tooth well developed. Pterostigma, radial and radiomedial cells of fore wing as shown on Fig. 27. MM = 0.78–0.82. MR = 1.30–1.48. Details of hind wing venation as shown on Fig. 34. RQ = 0.54–0.58. Whole body and legs light red; vertex blackened; tips of mandibles dark red; antennae (except light red first and second segments) and tarsi darkened. Wings hyaline with brown preapical spot, pterostigma and veins dark brown. Pubescence greyish-white. Inner orbitae with few dark bristles. Length 8.5–9.0 mm.

Male. Head (Figs. 2, 9) 1.1 times as broad as long and 1.4–1.5 times wider than pronotum. Temples 2.5–2.8 times shorter than eye (viewed from above). Ratio POL-OOL 1.12–1.14. Ocellar angle 90°. Ratio of 1–4 antennal segments: 2.3 - 1 - 2.3 - 2.5. Third antennal segment 2.4 times as long as broad apically. Postnotal

junction ca. 1.4 times shorter than metanotum. Propodeum as in female. Claws dentate, inferior tooth almost indistinct. Pterostigma, radial and radiomedial cells of fore wing as shown on Fig. 28. MM = 0.73–0.76. MR = 1.43–1.48. Details of hind wing venation as shown on Fig. 35. RQ = 0.45–0.47. Hypopygium broadly lanceolate with obtuse apical margin; its ventral surface domed and glabrous, whereas dorsal one deeply excavate and hirsute; numerous short hairs confined to dorsal side of hypopygium are visible through semi-transparent chitinous surface from ventral side (Figs. 42–44). Genitalia as shown on Fig. 50. Coloration more dark than in female: head and thorax mostly black, only clypeus, lower parts of inner orbitae, mandibles save darkened tips, antennal segments 1, 2 ventrally (other parts of antennae darkened), pronotum except paired posterolateral darkened spots, central parts of scutum and scutellum, tegulae, episternae partially, dorsal part of propodeum, coxae, legs save darkened calcarae and tarsi, tergites and sternites I–III light red; tergites IV, V brownish-black in basal parts, with transverse triangle light red fasciae apically; tergite VI black with similar white apical fasciae; tergite VII white with wide black margins. Color of wings, veins, bristles and pubescence in general as in female, but face with more developed white to yellowish-white feather-like toment. Length 6.8–8.0 mm.

*Habitat and biology.* Male and female from the surroundings of Baisun were found inhabiting small sandy areas near the river bank in the foothill clay desert locality.



**Figs. 1–14.** Head, dorsal view: 1, 2 – *Gonaporus (s.str.) flamingo* sp. n., 3, 4 – *G. (Stigmaporus) wolfi* sp. n.; 5 – *G. (S.) lystracantha* (Wolf, 1988); 6, 7 – *Microphadnus griseus* sp. n.; 1, 3, 5, 6 – ♀; 2, 4, 7 – ♂; Head, frontal view: 8, 9 – *Gonaporus (s.str.) flamingo* sp. n., 10, 11 – *G. (Stigmaporus) wolfi* sp. n.; 12 – *G. (S.) lystracantha* (Wolf, 1988); 13, 14 – *Microphadnus griseus* sp. n.; 8, 10, 12, 13 – ♀; 9, 11, 14 – ♂. Scale bar: 1.0 mm.

### *Stigmaporus* subgen. n.

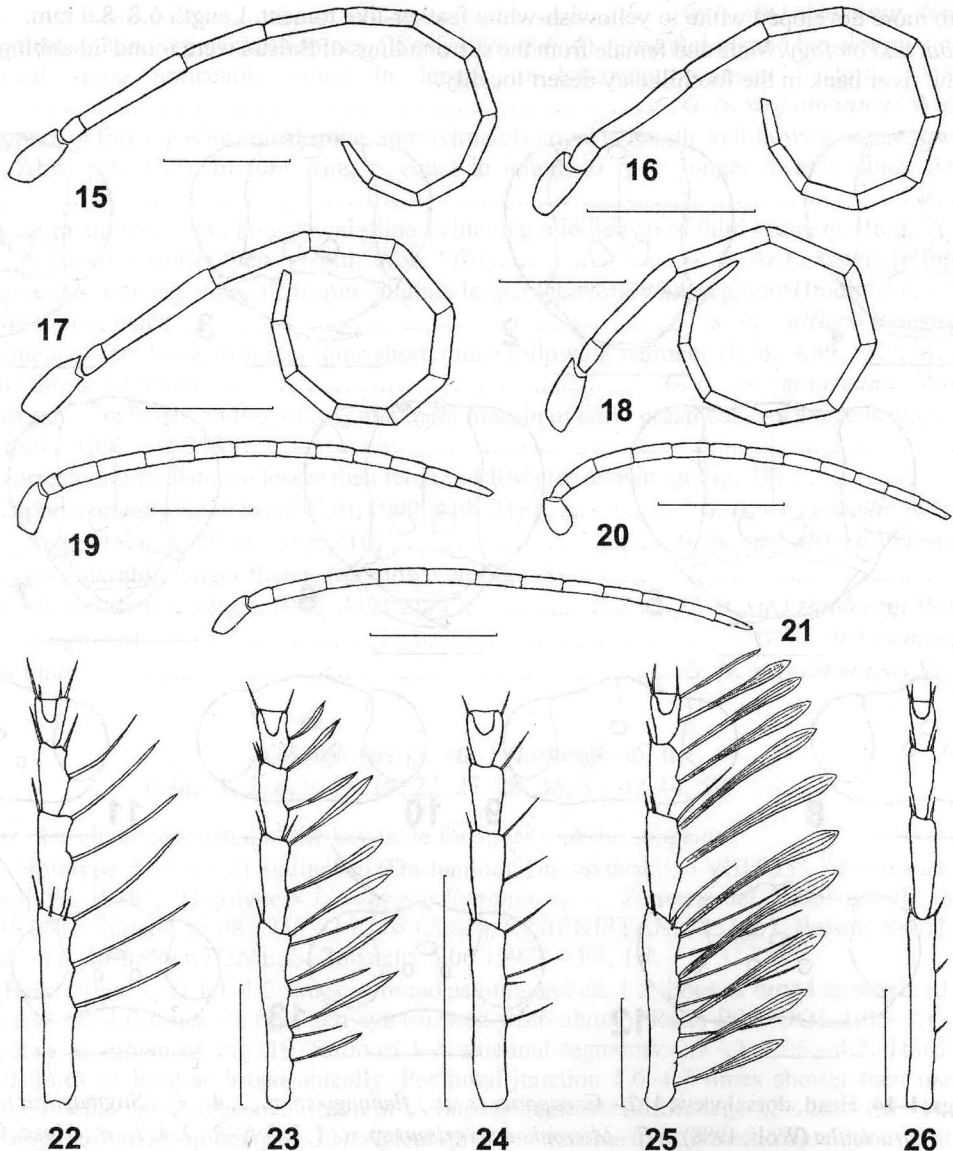
*Type species.* *Gonaporus (Stigmaporus) wolfi* sp. n., by the present designation.

*Diagnosis.* Differs from the nominative subgenus by having the enlarged pterostigma; besides, males differ by the presence of digging spines on fore tarsi – the character unusual for the pompilids, females differ by

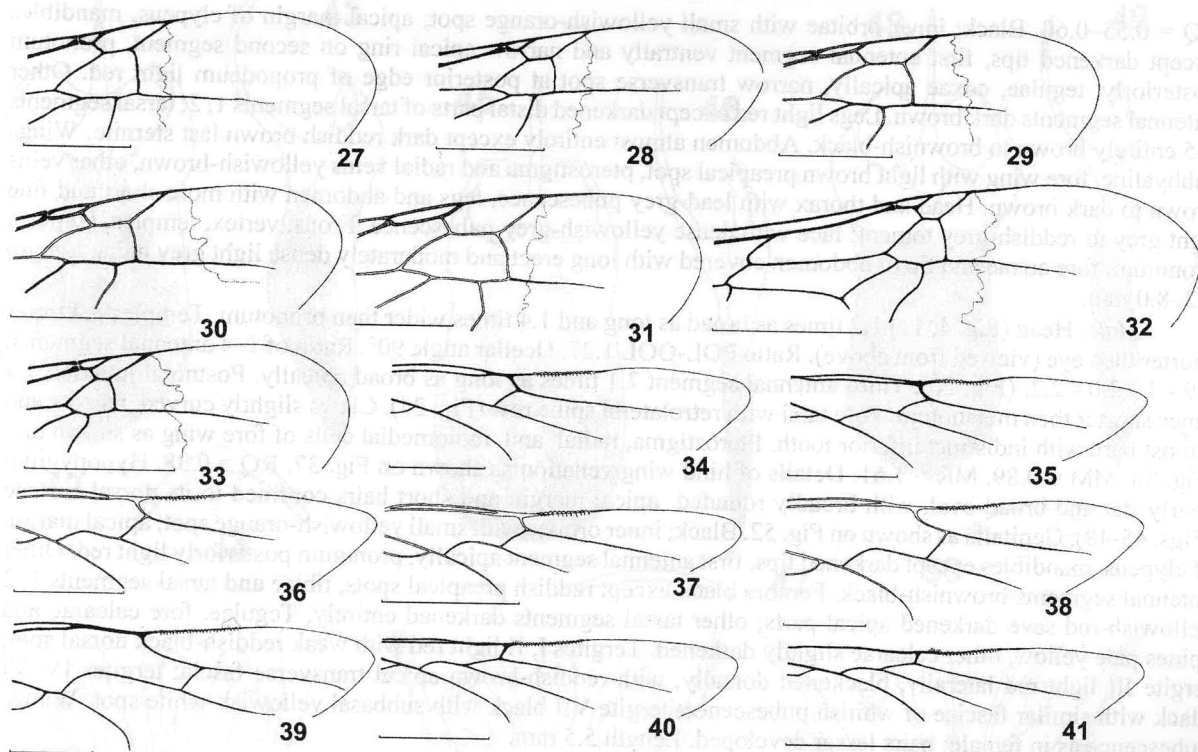
having more numerous (4–5 on the first tarsal segment of fore leg) retrolateral digging spines modified into the long paddle-shaped structures which are flattened and dilated apically. Tooth on tarsal claw is less developed than in representatives of *Gonaporus s. str.*

*Notes.* The new subgenus includes 3 species: *G. lystracantha* (Wolf, 1988) – see note above, *G. centralasiaticus* Wolf, 1992 transferred here from the nominative subgenus, and *G. wolfi* sp. n. It seems that a new taxon could be mounted to a distinct genus although most closely related to *Gonaporus*. Nevertheless, it should be more correct to still include it into the last genus until the male characters of *Stigmaporus* are known better.

*Etymology.* The subgeneric name is derived from Greek *stigma* emphasizing the unusual large size of the pterostigma in the representatives of the subgenus and *Aporus* - the generic name used in the same family; the gender is masculine.



**Figs. 15–26.** Antennal segments: 15, 19 – *Gonaporus (s.str.) flamingo* sp. n., 16, 20 – *G. (Stigmaporus) wolfi* sp. n.; 17 – *G. (S.) lystracantha* (Wolf, 1988); 18, 21 – *Microphadnus griseus* sp. n.; 15-18 – ♀; 19-21 – ♂; Tarsal segfore leg: 22 – *Gonaporus (s.str.) flamingo* sp. n., 23, 24 – *G. (Stigmaporus) wolfi* sp. n.; 25 – *G. (S.) lystracantha* ments 1–4 of (Wolf, 1988); 26 – *Microphadnus griseus* sp.n.; 22, 23, 25, 26 – ♀; 24 – ♂. Scale bar: 0.5 mm.



**Figs. 27–41.** Details of fore wing venation: 27, 28 – *Gonaporus (s.str.) flamingo* sp. n., 29, 30 – *G. (Stigmaporus) wolfi* sp. n.; 31 – *G. (S.) lystracantha* (Wolf, 1988); 32, 33 – *Microphadnus griseus* sp. n.; 27, 29, 31, 32 – ♀; 28, 30, 33 – ♂; Details of hind wing venation: 34, 35 – *Gonaporus (s.str.) flamingo* sp. n., 36, 37 – *G. (Stigmaporus) wolfi* sp. n.; 38 – *G. (S.) lystracantha* (Wolf, 1988); 39 – *Telostegus sargadensis* Gussakovskij, 1932; 40, 41 – *Microphadnus griseus* sp. n.; 34, 36, 38–40 – ♀; 35, 37, 41 – ♂. Scale bar: 1.0 mm.

### Key for the species of *Stigmaporus* subgen. n.

- 1 In hind wing first segment of radial vein.. shorter then.. radiomedial vein (as shown on Figs. 36, 37)..... 2
- In hind wing corresponding segment as long as length of radiomedial vein or slightly longer it (as shown on Fig. 38) ..... *G.(S.) lystracantha* (Wolf, 1988) (Middle Asia)
- 2 In fore wing radial cell noticeably shorter then length of pterostigma; distance between ending of  $rm_2$  and inner margin of dark preapical spot much longer then length of  $RM_2$  (Wolf, 1990, Abb. 174) .....
- ..... *G.(S.) centralasiaticus* Wolf, 1990 (Central Asia?)
- In fore wing radial cell longer then length of pterostigma; corresponding distance lesser then length of  $RM_2$  (Figs. 29, 30) .....
- ..... *G.(S.) wolfi* sp. n. (Middle Asia, Mongolia).

### *Gonaporus (Stigmaporus) wolfi* sp. n.

(Figs. 3, 4, 10, 11, 16, 20, 23, 24, 29, 30, 36, 37, 45–47, 52)

**Diagnosis.** See characters listed in the key table for species of the subgenus.

**Types.** Holotype ♀ – “[cyr.:] Orto-Kuju., tz. [=centr.] Karakumy [TURKMENISTAN], E. Arens, 26.V.953”, “Holotype. ♀ *Gonaporus (Stigmaporus) wolfi* sp. n., Zonstein det. 2000” (ZISP). Paratypes: 1♂, 2♀. UZBEKISTAN: “[cyr.:] Uzbekistan, Kyzylkum, 70 km S Gazli, M.A. Kozlov, 27.V.1965” – 1♀ (ZISP); KAZAKHSTAN: “[cyr.:] Kazakhstan, Ulkun-Kapkan, P.Marikovskij, 12.VI. 1969” – 1♀; MONGOLIA: “[cyr.:] Kobdosskiy aimak, ur. Elkhon 20 km SE Altaya. Tchogsem, 27.VII.970” – 1♂ (ZISP).

**Female.** Head (Fig. 3, 10) 1.2 times as broad as long and 1.4 times as broad as maximal width of pronotum. Temples 4.0–4.3 times shorter than eye (viewed from above). Ratio POL–OOL 1.23–1.25. Ocellar angle 90°. Ratio of 1–4 antennal segments: 2.3 - 1 - 3.8 - 3.2. Third antennal segment 5.0–5.6 times as long as broad apically. Postnotal junction ca. 1.5 times shorter than metanotum. Ratio of 1–5 tarsal segments of fore leg: 4.2 - 2.2 - 1.7 - 1 - 2.0; first segment with long pale spines: 4 retrolateral spines flattened and dilated apically, and 3 ventral needle-shaped ones (Fig. 23). Apical spine 3.9 times as long as maximal width of first segment and equal 1.2 length of second segment. Claws bifid, inferior tooth narrow. Pterostigma, radial and radiomedial cells of fore wing as shown on Fig. 29. MM = 1.03–1.06. MR = 1.75–1.82. Details of hind wing venation as shown on Fig. 36.

RQ = 0.55–0.60. Black; inner orbitae with small yellowish-orange spot; apical margin of clypeus, mandibles except darkened tips, first antennal segment ventrally and narrow apical ring on second segment, pronotum posteriorly, tegulae, coxae apically, narrow transverse spot at posterior edge of propodeum light red. Other antennal segments dark brown. Legs light red except darkened distal parts of tarsal segments 1, 2; tarsal segments 3–5 entirely brown to brownish-black. Abdomen almost entirely except dark reddish brown last sternite. Wings subhyaline, fore wing with light brown preapical spot, pterostigma and radial veins yellowish-brown, other veins brown to dark brown. Head and thorax with lead-grey pubescence, legs and abdomen with more short and fine light grey to reddish-grey toment; face with dense yellowish-grey pubescence. Frons, vertex, temples, clypeus, pronotum, fore coxae and tip of abdomen covered with long erect and moderately dense light grey hairs. Length 6.2–8.0 mm.

*Male.* Head (Fig. 4, 11) 1.2 times as broad as long and 1.4 times wider than pronotum. Temples 3.4 times shorter than eye (viewed from above). Ratio POL-OOL 1.27. Ocellar angle 90°. Ratio of 1–4 antennal segments: 1.9 - 1 - 2.0 - 2.2. (Fig. 20). Third antennal segment 2.1 times as long as broad apically. Postnotal junction 1.4 times shorter than metanotum. Fore tarsi with retrolateral spine row (Fig. 24). Claws slightly curved, narrow and almost bare with indistinct inferior tooth. Pterostigma, radial and radiomedial cells of fore wing as shown on Fig. 30. MM = 0.89. MR = 1.61. Details of hind wing venation as shown on Fig. 37. RQ = 0.38. Hypopygium nearly flat and broad-oval, with broadly rounded apical margin and short hairs confined to its dorsal surface (Figs. 45–48). Genitalia as shown on Fig. 52. Black; inner orbitae with small yellowish-orange spot; apical margin of clypeus, mandibles except darkened tips, first antennal segment apically, pronotum posteriorly light red. Other antennal segments brownish-black. Femora black except reddish preapical spots, tibiae and tarsal segments 1, 2 yellowish-red save darkened apical parts; other tarsal segments darkened entirely. Tegulae, fore calcarae and spines pale yellow, other calcarae slightly darkened. Tergites I, II light red with weak reddish-black dorsal spot; tergite III light red laterally, blackened dorsally, with reddish-brown apical transverse fascia; tergites IV–VI black with similar fasciae of whitish pubescence; tergite VII black with subbasal yellowish-white spot. Wings, pubescence as in female; hairs lesser developed. Length 5.5 mm.

*Habitat and biology.* Judging from the character of its areal, the species belong to a number of the specialized psammophiles inhabiting sand desert biotopes.

*Etymology.* The specific epithet is given after Mr. Heinrich Wolf, the well-known recent German specialist on the Pompilidae and some other groups of the aculeate hymenopterous insects, whose works dealt, in particular, with the representatives of *Gonaporus* and related spider wasp genera.

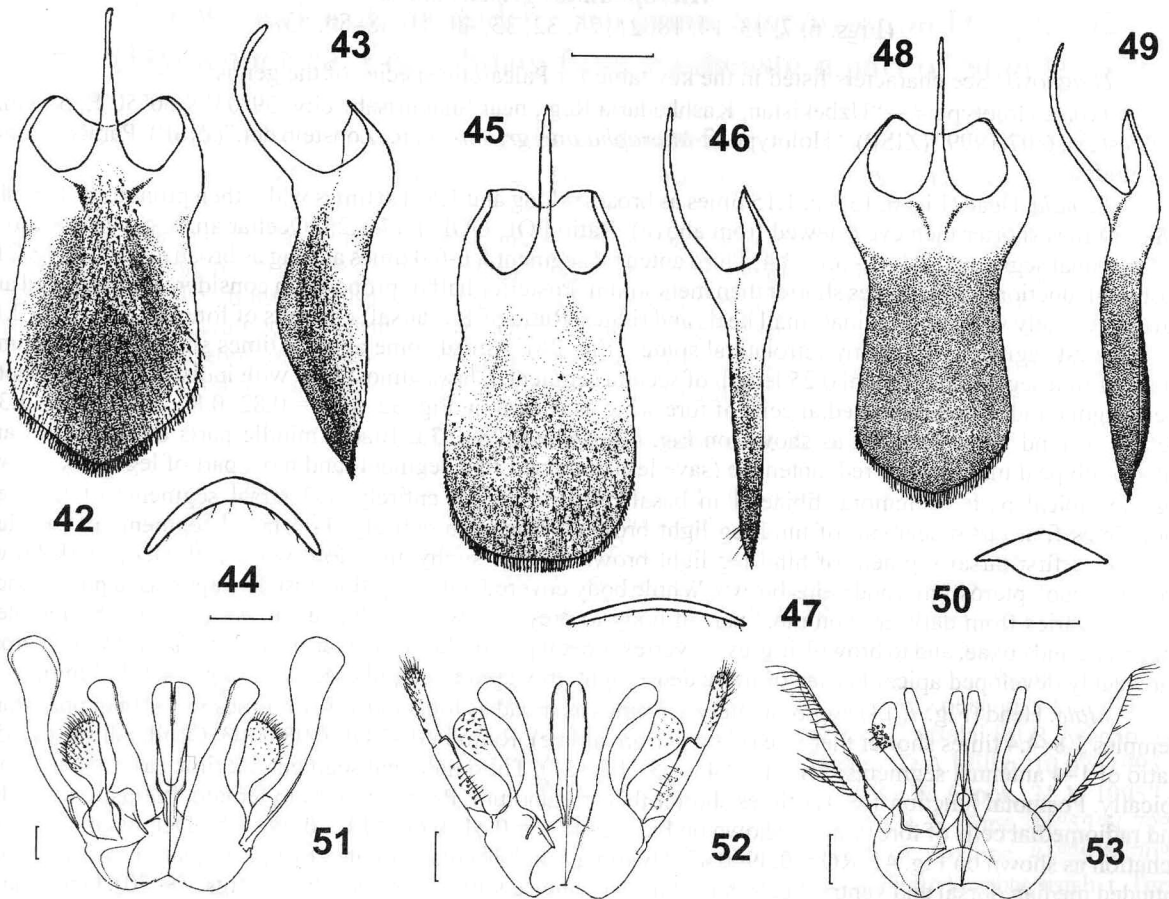
***Gonaporus (Stigmaporus) lystracantha* (Wolf, 1988), comb. n.**

(Figs. 5, 12, 17, 25, 31, 38)

*Material.* TURKMENISTAN: "Molla-Kara, Turkmenia, near Dzhebel, V. Popov, 6 VI 1936" – 1♀ (ZISP); "[cyr.:] Turkmeniya, SE Karakumy, 10 km NW Tchardzhou, M.A. Kozlov, 30.V.1965" – 1♀ (ZISP); "S.-E Turkmenia, Repetek, 3.05.1965, Coll. *Ponomaryova*" – 1♀ (ZISP); "sands nr. Repetek, SE-Karakum desert, Turkmenia, V. Kazenas, 4.05.1990" – 1♀; *ibidem*, V. Kaplin, 7.06.1992" – 1♂; "near Kyzyl-Arvat, W. Turkmenia, Zonstein, 7.V.1985" – 2♀.

*Notes.* Describing this species Wolf (1988) placed it into *Telostegus* Costa, 1887 apparently due to its large RQ (0.9–1.2 in the specimens examined vs. 0.3–0.5 in *Gonaporus* spp.), although other characters showed considerable contradictions with their analogs in the true representatives of *Telostegus*. Six examined species of the last genus [*T. inermis* (Brulle, 1832), *T. argyrellus* (Klug, 1834), *T. melanurus* (Klug, 1834), *T. apicalis* Gussakovskij, 1932, *T. marginalis* Gussakovskij, 1932 and *T. sargadensis* Gussakovskij, 1932] possess a very uniform appearance and share some characters: relatively small pterostigma, face and clypeus more or less flattened frontally, narrow but dilated medially U-shaped postnotal junction, convex pronotum, scutum highly elevated over dorsal surface of other thoracic segments, propodeum narrowed posteriorly, few long and thin digging spines on fore tarsi of females. At least some of them, especially constructive features of the thorax belong to a number of the possible group synapomorphies and could emphasize a relationship between this genus and *Episyron* Schiodte, 1837 plus related genera. None of these characters is occurred in *G. (S.) lystracantha*. Due to its peculiarities the last species could drawn together only with *G. (S.) wolffi* sp.n.; the last species belongs, with some reservation because of its enlarged pterostigma and some other features, to the genus *Gonaporus* taken in the broad sense.

Some female characters – head (dorsal and frontal view), antennal segments, tarsal segments 1–4 of fore leg, details of fore wing venation, the same for hind wing – as shown on Figs. 5, 12, 17, 25, 31, 38, respectively. Since the only male specimen is preserved being damaged, the full-value description seems to be impossible until a more entire conspecific male is found. Anyway, the mentioned specimen possesses the characteristic retrolateral spine row on fore tarsi consisting of noticeably more long spines than in male of *G. (S.) wolffi* sp. n.



**Figs. 42–53.** Male hypopygium: 42–44 – *Gonaporus (s.str.) flamingo* sp.n., 45–47 – *G. (Stigmaporus) wolfi* sp.n.; 48–50 – *Microphadnus griseus* sp. n.; 42, 45, 48 – ventral view; 43, 46, 49 – ditto, lateral view; 44, 47, 50 – ditto, cross-section. Scale bar: 0.1 mm. Male genitalia: 51 – *Gonaporus (s.str.) flamingo* sp. n., 52 – *G. (Stigmaporus) wolfi* sp. n.; 53 – *Microphadnus griseus* sp. n.; left half – ventral view; right half – dorsal view. Scale bar: 0.1 mm.

### Genus *Microphadnus* Cameron, 1904

Notes. Only 2 species of *Microphadnus* were known hitherto within the Palearctic region: *M. pumilus* (Costa, 1882) – the paleo-Mediterranean widespread species distributed from Portugal and Morocco to Mongolia, and *M. insperatus* Priesner, 1967 from Turkey (Wolf, 1990). A first description of the one more Palearctic congener found in Uzbekistan as well as new data on the distribution of *M. pumilus* within Middle Asian region are given here.

#### Key for the Palearctic species of the genus *Microphadnus* Cameron, 1904

1. Whole body black with grey to brownish pubescence; legs darkened .....2
- Head and thorax black, tergites I-II and legs reddish-brown ..... *M. insperatus* Priesner, 1967
2. RM<sub>2</sub> narrow; tergites posteriorly with fasciae of light appressed pubescence... *M. pumilus* (Costa, 1882)
- RM<sub>2</sub> relatively broad (Figs. 40, 41); tergites with almost indistinct light fasciae ..... *M. griseus* sp.n.

#### *Microphadnus pumilus* (Costa, 1882)

**Material.** KAZAKHSTAN: "S.-E. Kazakhstan, 3 km ENE Burandysu vill., 30 km E Chilik, Almaty Region., V.L. Kazenas, 8.08.1999" – 1 ♀; UZBEKISTAN: "nr. Shurob, Uzbekistan, 1450 m, Djubere-Olend Mts., 38°12'N 66°52'E, Zonstein, 27.05.1997" – 1 ♀; "Uzbekistan, Hissar Mt. R., N-slope, near Tashkurgan, 38°46'N 67°16'E, 2000 m, S.L. Zonstein, 15.07.1999" – 1 ♂. KYRGHYZSTAN: "South Kyrgyzstan, hills 1 km E Dzhahal-Abad, 40°55'N 73°02'E, 800 m., S.L. Zonstein, 20.07.2000" – 1 ♂, 1 ♀.

**Habitat and biology.** Within Middle Asia this species is distributed from the desert plains to the subarid foothills and low mountains covered with shrubs and low open forests at 800–2000 m. Specimens from Kyrgyzstan were collected on flowering *Alchagi kirghisorum* Schrenk.

***Microphadnus griseus* sp. n.**

(Figs. 6, 7, 13, 14, 18, 21, 26, 32, 33, 40, 41, 48–50, 53)

*Diagnosis.* See characters listed in the key table for Palearctic species of the genus.*Types.* Holotype ♀ – “Uzbekistan, Kashkadaria Reg., near Shakhrisabz city, 39°03'N 66°50'E, 650 m. S. Zonstein, 6.07.1999” (ZISP). “Holotype. ♀ *Microphadnus griseus* sp. n., Zonstein det.” (ZISP). Paratypes: 5♂, 9♀ – ibidem.*Female.* Head (Fig. 6, 13) ca. 1.15 times as broad as long and 1.5–1.6 times wider than pronotum. Temples 4.8–5.5 times shorter than eye (viewed from above). Ratio POL-OOL 1.17–1.25. Ocellar angle ca. 75°. Ratio of 1–4 antennal segments: 2.1 - 1 - 3.8 - 3.4. Third antennal segment 5.6–6.0 times as long as broad apically (Fig. 21). Postnotal junction 1.8–2.0 times shorter than metanotum. Posterior half of propodeum considerably narrowed and covered densely with longitudinal small keels and ridges. Ratio of 1–5 tarsal segments of fore leg: 5.8 - 2.9 - 2.1 - 1 - 2.3; first segment with 3 tiny retrolateral spines (Fig. 26). Apical spine about 2 times shorter than maximal width of first segment and equal 0.25 length of second segment. Claws almost bare with indistinct inferior tooth. Pterostigma, radial and radiomedial cells of fore wing as shown on Fig. 32. MM = 0.82–0.87. MR = 1.23–1.33. Details of hind wing venation as shown on Fig. 40. RQ = 0.28–0.35. Black; middle parts of mandibles and anterior clypeal margin dark red; antennae (save less darkened first segment) and most part of legs dark brown; tegulae, apical parts of femora, tibiae II in basal third, tibiae III entirely, 1–3 tarsal segments of fore leg, sometimes first tarsal segment of hind leg light brown. Wings sub entirely, 1–3 tarsal segments of fore leg, sometimes first tarsal segment of hind leg light brown. Wings subhyaline, fore wing with sharp dark brown preapical spot, pterostigma and veins brown. Whole body covered with very fine dust-like appressed pubescence; its color varies from dark-grey on most part of body to greyish-silver on clypeus, lower part of face, temples, episternae and coxae, and to brownish-grey on vertex, dorsal part of thorax and tergites. Tergites II–IV with broad but weakly developed apical fasciae of more dense light grey appressed pubescence. Length 6.5–9.2 mm.*Male.* Head (Fig. 7, 14) approximately 1.1 times as broad as long and 1.5–1.6 times wider than pronotum. Temples 3.8–4.4 times shorter than eye (viewed from above). Ratio POL-OOL 0.98–1.03. Ocellar angle ca. 85°. Ratio of 1–4 antennal segments: 2.1 - 1 - 2.4 - 2.5. (Fig. 21). Third antennal segment 3.2 times as long as broad apically. Postnotal junction 1.6–1.7 times shorter than metanotum. Propodeum as in female. Pterostigma, radial and radiomedial cells of fore wing as shown on Fig. 33. MM = 0.61–0.66. MR = 0.98–1.22. Details of hind wing venation as shown on Fig. 41. RQ = 0.39–0.42. Hypopygium lanceolate, dilated by apical quarter, with low and rounded median dorsal and ventral keels, apical margin obtuse with dense short hairs (Figs. 48–50). Genitalia as shown on Fig. 53. Black; legs and antennae darker than in female; fore wings with less intensively colored brown preapical spot; light grey pubescence as in female, but it less developed on tergites VI–VII which appear to be more darker colored than other body parts; face with more developed greyish-silver toment. Length 5.5–6.5 mm.*Habitat and biology.* The species was found visiting walls made of clay, where wasps were hunting on the salticid spiders inhabiting the same microtopes. Some specimens were occurred on flowers *Capparis spinosa* L.*Acknowledgements.* I am appreciated to Prof. V.I. Tobias and Dr. Yu.A. Pesenko (St.-Petersburg) for a kindful loan of the *Gonaporus* specimens deposited in ZISP, as well as to Dr. V.L. Kazenas, the head of Laboratory of Entomology, Institute of Zoology (Almaty) for some additional material used in the study.**References****Wolf H., 1988.** Über einige von Gussakovskij, F. Morawitz und Radoszkovski beschriebene sowie zu einigen anderen Wegwespen (Hymenoptera, Pompilidae). *Linzer biol. Beitr.*, 20(1):217–252.**Wolf H., 1990.** Zur Kenntnis der Wegwespen-Gattung *Gonaporus* Ashmead, 1902 und verwandter Gattungen (Hymenoptera, Pompilidae). *Linzer biol. Beitr.*, 22 (2):619–716.**Резюме****Зонштейн С. Л. Обзор среднеазиатских видов дорожных ос родов *Gonaporus* Ashmead, 1902 и *Microphadnus* Cameron, 1904 (Hymenoptera, Pompilidae).**В Ср. Азии *Gonaporus* Ashmead, 1902 и *Microphadnus* Cameron, 1904 представлены соответственно тремя и двумя видами. *Gonaporus* разделен на два подрода: номинативный, в котором дополнительно описывается *G. (s. str.) flamingo* sp. n. (Ю. Узб., Тадж.), и *Stigmaporus* subgen. n., включающий 3 вида.*G. (S.) wolffi* sp. n. - типовой вид (Туркмения, Казахстан, Монголия), *G. (S.) lystracantha* (Wolf, 1988), comb. n. (Туркмения) переведен сюда из р. *Telostegus* Costa, 1887; *G. (S.) centralasiaticus* Wolf, 1992 известен за пределами Ср. Азии. Новый таксон, возможно представляющий собой самостоятельный род, отличается от родственных форм наличием у его представителей модификаций в строении копательных шипов на передней паре ног, в том числе и у самцов, а также конфигурацией необычно крупной и удлиненной птеростигмы. Для видов р. *Microphadnus* приведены новые данные по пунктам обнаружения в Ср. Азии (Казахстан, Киргизия, Узбекистан) широко распространенного *M. pumilus* (Costa, 1882) и описание *M. griseus* sp. n. из Ю. Узбекистана.