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Pseudomicroides, a New Digger Wasp Genus of the Tribe Oxybelini (Hymenoptera, Sphecidae, Crabroninae). A Revision of the World Fauna

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Abstract—The genus *Belomicroides* Kohl, 1899 (sensu Bohart and Menke, 1976) is divided into 2 genera: the exclusively African genus *Belomicroides* (s. str.) and mainly Palaearctic genus *Pseudomicroides* gen. n. Species of the latter are characterized by the absence of lower lobe of mandibles and lateral carinae of the propodeum, presence of prominences on median lobe of clypeus and on lower part of female gena, and unmodified fore coxae and absence of pubescent foveae on the male abdominal tergites III and IV. The new genus includes 13 species, 5 of these are new: *P. mochii* from Syria, *P. nitidus* from Tunisia, *P. pulawskii* from Mauritania, *P. schwarzi* from Mali, and *P. sinaiticus* from Egypt. Descriptions of, and a key to species of the genus are given.

The tribe Oxybelini includes a group of genera united by such characters as the abdomen with convex sternites and tergites without lateral carinae and also the absence of posterolateral scales on the scutellum and dorsomedial spine on the propodeum. This group includes the South African genus *Minimicroides* Antropov, 2000, and also the genus *Belomicroides* Kohl, 1899, occurring exclusively in the Old World. Until recently, the genus *Belomicroides* has been treated as a single taxon (Pate, 1931, 1940; Bohart and Menke, 1976; Kazenas, 1979; Krombein, 1982; Gayubo, 1983; Antropov, 1994). However, a detailed examination of type specimens and the available comparative material has shown that species of this genus form two separate groups.

The first group includes exclusively African species with developed lower lobes of mandibles and with distinct (frequently coarse) sculpture of propodeum bearing lateral carinae. Unmodified genae and median lobe of clypeus are typical of their females, and ventrally depressed fore coxae and pubescent lateral foveae in anterior part of abdominal tergites III and IV, of males. Sexual dimorphism in coloration is also lack in this group. The second group includes part of Mediterranean and Asian species differing in the absence of lower lobes of mandibles and fine sculpture of propodeum not provided with lateral carinae. Unpaired prominences of varied shape on the median lobe of clypeus and angular prominences in lower part of genae are typical of their females and unmodified fore coxae and abdominal tergites without pubescent foveae, of males. In this group, sexual dimorphism in coloration is evident: in some cases, females are distinctly paler than males.

The mentioned characters of habitual and geographical hiatus (ranges adjoining each other only in North Africa) indicate an independent taxonomic status of these groups. Since the type species *Belomicroides schmeideknechtii* Kohl, 1899 belongs to the first group, the generic name *Belomicroides* Kohl, 1899 must be attributed to this group. The second group is treated by me as separate genus *Pseudomicroides* gen. n.

The present work is a revision of the world fauna of species of *Pseudomicroides*. However, taking into account a recently published review of Asian species of this genus (Antropov, 1994), I decided to give only a brief diagnosis of species from this list, indicating differences between them.

The work is based on material from the following private and museum collections, provided for examination by courtesy of curators: Dr. Alessandro Mochi, Museo Regionale di Scienze Naturali, Torino, Italy (AM); California Academy of Sciences, San Francisco, USA (CAS); Dr. Maximilian Schwarz, Ansfelden, Austria (MS); Museo Nacional de Ciencias Naturales, Madrid, Spain (MNCN); Musèe Zoologique, Lausanne, Switzerland (MZL); US National Museum of Natural History, Washington, D.C. (USNM); Zoo-

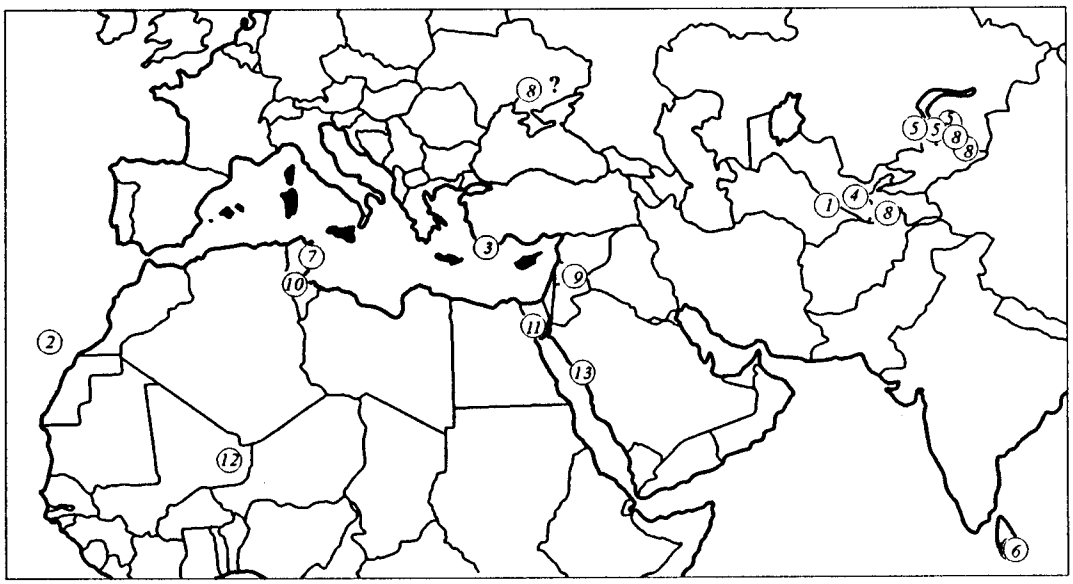

Fig. 1. Distribution of species of the genus *Pseudomicroides* gen. n.: (*1*) *P. desertus* (Antropov, 1994); (*2*) *P. elvirae* (Gayubo, 1983); (*3*) *P. fergusoni* (Beaumont, 1960); (*4*) *P. melas* (Antropov, 1994); (*5*) *P. olgae* (Kazenas, 1979); (*6*) *P. rostratus* (Krombein, 1982); (*7*) *P. santschii* (Schulthess, 1925); (*8*) *P. zimini* (Gussakovskij, 1952); (*9*) *P. mochii*, sp. n.; (*10*) *P. nitidus* sp. n.; (*11*) *P. pulawskii* sp. n.; (*12*) *P. schwarzi* sp. n.; (*13*) *P. sinaiticus* sp. n.

logical Institute, Russian Academy of Sciences, St. Petersburg, Russia (ZISP); and Zoological Museum, Moscow State University, Moscow, Russia (ZMUM).

The following abbreviations are used in the text: (*IOD*) ratio of the distance between inner eye orbits at the level of median ocellus to that between these orbits at the level of antennal sockets; (*OOD* : *OD* : *POD*) ratio of the distance between inner eye orbit of vertex and lateral ocellus to diameter of lateral ocellus to distance between lateral ocelli; (*d*) intervals between punctures; (∅) puncture diameter. All measurements were done at magnification 50×.

Pseudomicroides Antropov, gen. n.

Type species *Belomicroides olgae* Kazenas, 1979, designated here.

Diagnosis. Frons slightly convex, without depression behind scapes; inner eye orbits more or less converging upwards in female or running nearly in parallel in male; genae and vertex uniformly and roundly convex; vertex plates distinct in both sexes, oval or rounded; in female, median lobe of clypeus with median and genae with lower prominences (Figs. 3, *1c*; 6, *1b*; 7, *1c*; 9, *1a–1c*; 2*c*; 11, *3b*); in male, genae unmodified; mandibles without lower and preapical lobes, rarely with obtuse lower angle in male; palpal formula 6–4; at least in females, psammophore distinct on gena and lower surface of mandible. Pronotal carina convex, located somewhat lower than mesoscutum, without transverse carina. Mesoscutum moderately convex; premedial lines fine, reaching as far as 0.25–0.80 of length of mesoscutum; parapsidal grooves usually indistinct (distinct only in pale species); adlateral lines very short, in shape of grooves and fine carinae; prescutellar groove fine, without ridges. Scutellum convex, without carinae and posterolateral teeth. Metanotum short, convex, unmodified or with indistinct posterolateral fringes. Mesopleura flatly concave in anteroventral part; episternal suture developed; omaulus, acetabular carina, sternaulus, hypersternaulus, verticaulus, and precoxal tooth absent. Metapleura unmodified. Male fore coxa unmodified; digging comb of fore tarsus distinct, at least in female. Marginal cell of fore wing narrowly truncate, frequently with trace of additional cell; *cu-a* antefurcal. Hind wing with closed cells and jugal lobe; *cu-a* antefurcal. Propodeum without dorsal spine and lateral carinae, smooth or with indistinct sculpture; posterior surface of propodeum with shallow pit. Abdomen weakly flattened dorsoventrally, with lateral carina only on tergite I; in male, tergites II and III without tight bands, and tergites III and IV without pubescent foveae in anterior parts; in female, pygidial plate narrow and more or less compressed; in male, pygidial field narrowly trapezoid; in both sexes, this plate flat, bordered by lateral carinae; in female, sternite VI compressed (Fig. 3, *5*).

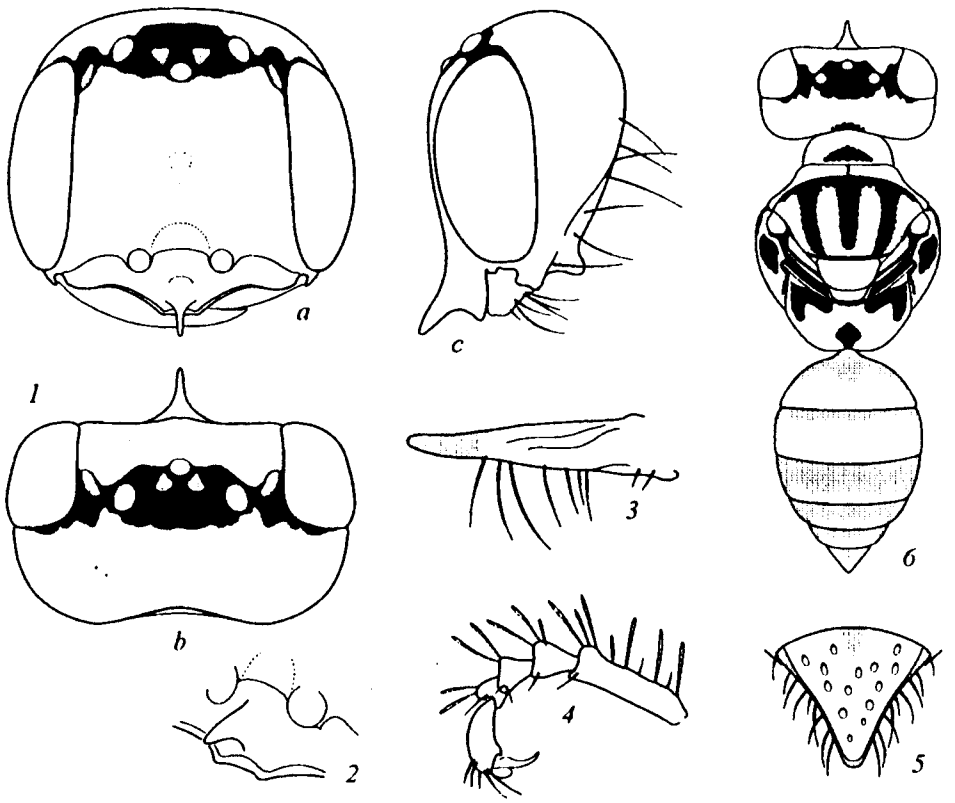

Fig. 2. *Pseudomicroides desertus* (Antropov), female, holotype: (*1*) head in anterior (*a*), dorsal (*b*), and lateral (*c*) view; (*2*) median lobe of clypeus, anterolateral view; (*3*) mandible, outer view; (*4*) fore tarsus, dorsal view; (*5*) abdominal tergite VI, dorsal view; (*6*) pattern of body coloration, dorsal view.

Distribution. Species of the genus *Pseudomicroides* are rare, but widespread in the northern Hemisphere of the Old World (Fig. 1), mainly in the southern part of Palaearctic Region and adjoining territories. All known species have been collected in dry arid regions.

Biology. Nowadays, no data on the biology of species of *Pseudomicroides* are available. At the same time, according to the developed psammophore and digging comb of the fore tarsus in females of this genus, one can assume that they make nests in friable soil.

Comparison. The new genus differs from *Minimicroides* in the absence of frontal depression behind scapes, hypersternaulus, precoxal tooth of mesopleura, lateral fringes of scutellum and short metanotum, dorsomedial and lateral carinae of propodeum, and tight bands in anterior parts of abdominal tergites II and III; in the inner eye orbits not converging downwards; in the unmodified metapleura; and in the presence of psammophore, closed cells, and jugal lobe of hind wing. From *Belomicroides*, the new genus differs in the presence of developed prominences on median lobe clypeus and gena of female, absence of lower lobe of mandible and lateral carinae of propodeum, and also in unmodified fore coxa and absence of pubescent lateral foveae on abdominal tergites III and IV in male. *Belomicroides* and *Pseudomicroides* are, undoubtedly, sister groups, forming a monophyletic group together with the genus *Minimicroides*. At the same time, revealing of phylogenetic relations between this group and other genera of the tribe Oxybelini needs further examination.

Notes. I designated *Belomicroides olgae* Kazenas, 1979 as the type species of the genus *Pseudomicroides*, because this is the first species for which both sexes were described. In addition, I include in this genus *Oxybelus* (*Belomicroides*) *santschii* Schulthess, 1925, basing only on the original description.

Etymology. The generic name was formed by the word ψευδής, the Greek for "false", and a part of the generic name *Belomicroides*.

Pseudomicroides desertus (Antropov, 1994), comb. n.

Belomicroides desertus Antropov, 1994: 93 ♀: Turkmenistan (ZMUM), holotype examined.

Material. 1 ♀, "Repetek, Alhagi camel., 22.VII.1937 (G. Kostylev)" (ZMUM, holotype).

Description. Female. Head rounded in front view (Fig. 2, 1a). *IOD* = 34 : 42; median lobe of clypeus truncate, with small lateral teeth and pointed beak-shaped median prominence slightly bent downwards; vertex plates oval, flat, submat (Fig. 2, *1b*); *OOD* : *OD* : *POD* = 7 : 5 : 15; genae with strong prominence in lower part (Fig. 2, *1c*); segments of flagellum shorter than wide, except for ultimate segment.

Punctation of body fine, on head and thorax uniform; on prominence of median lobe of clypeus, on lower part of genae, on apex of dorsal surface of propodeum, and on abdominal segments (especially on sternites), punctation dense, smoothed. On frons, vertex, genae, pronotal carina, mesoscutum, scutellum, and upper part of mesopleura, *d* = 0.5–1.0–1.5 ∅; on lower part of mesopleura, on sides of propodeum, and on abdominal tergite I, *d* = 1.5–2.0 ∅; abdominal tergites II–V and sternites I–IV with micropunctures in anterior part. Pygidial field smooth, with large punctures (Fig. 2, *5*).

Frons, vertex, genae, thorax, and lateral surface of propodeum and abdomen with sparse, short, semierect, silvery pubescence. Sides of face in lower part and clypeus (except for prominence of median lobe), covered with denser appressed hairs, nearly concealing sculpture. Psammophore on genae and lower surface of mandibles distinct; length of setae 1.5 times, or equal to basal width of mandible (Fig. 2, *1c*, *3*). Digging comb formed by 5 or 6 compressed setae on 1st and 2 apical setae on 2nd–4th segments of fore tarsus (Fig. 2, *4*).

Body coloration (Fig. 2, *6*) whitish yellow in general. Apical third of mandible, transverse spot between ocelli on vertex, transverse spot before pronotal carina, upper part of mesopleura, anterolateral spots near dorsal surface and median spot on posterior surface of propodeum, spots on coxae, trochanters, and proximal half of hind femur, anterolateral spots on tergite I and sternites I–III, narrow transverse anterior spot on tergite II and wide anterior stripes on tergites III–V and sternites IV and V, and abdominal sternite VI entirely, all fuscous. Three longitudinal stripes on mesoscutum black.

Body length 3.6 mm.

Male unknown.

Differential diagnosis. In the shape of prominence of median lobe of clypeus, the new species is similar to *P. rostratus* (Krombein, 1982) and *P. elvirae* (Gayubo, 1983), differing from the first species in the somewhat finer prominence of truncate median lobe of clypeus and narrower mandibles, and also in the presence of pale stripes on mesoscutum and continuous pale bands on abdominal tergites I and II; from the second species, *P. desertus* differs in more distinct pale pattern of the body (the head, mesopleura, propodeum, and abdominal tergites I and II, all are almost entirely whitish yellow). In the pale coloration, female of *P. desertus* is similar to female of *P. pulawskii* sp. n., differing from this species, in the first place, in the long and laterally compressed prominence of median lobe of clypeus.

Pseudomicroides elvirae (Gayubo, 1983), comb. n.

Belomicroides elvirae, Gayubo, 1983: 39. ♀: Canary Islands (MNCN), holotype examined.—Hohmann et al., 1993: 243; Leclercq, 1993: 44.

Material. 1 ♀, "Fuerteventura, Gran Taraja. 3.X.1933, *Messerschmidia fruticosa* L. fil., 1981 (S.F. Gayubo)" (MNCN, holotype).

Description. Female. Head slightly shorter than wide in front view (Fig. 3, *1a*), inner eye orbits diverging downward, *IOD* = 35 : 40; vertex plates oval, smooth (Fig. 3, *1b*); *OOD* : *OD* : *POD* = 7 : 5 : 14; genae with pointed triangular prominence in lower part (Fig. 3, *1c*); median lobe of clypeus with short, slightly rounded apically prominence in the middle; frontally, lobe with wide, rounded emargination, bordered by obtuse angles (Fig. 3, *2*). Pronotal carina without median depression; metanotum short, with weak rounded lateral carinae. Pygidial plate rounded at apex (Fig. 3, *4*).

Punctation of frons and vertex fine and dense, with shining intervals ($d \geq \varnothing$), on genae, punctures elongate; thorax with similar punctation; propodeum with fine dense indistinct punctation on lateral surface, indistinct longitudinal ridges in anterior part, and with smoothed sculpture and strongly shining in posterior part of dorsal surface; its posterior surface shining, with shallow medial pit and indistinct smoothed sculpture; abdominal tergites I–V micropunctate, with smooth intervals between punctures, tergite VI coarsely and sparsely punctate (*d* = 2–5 ∅).

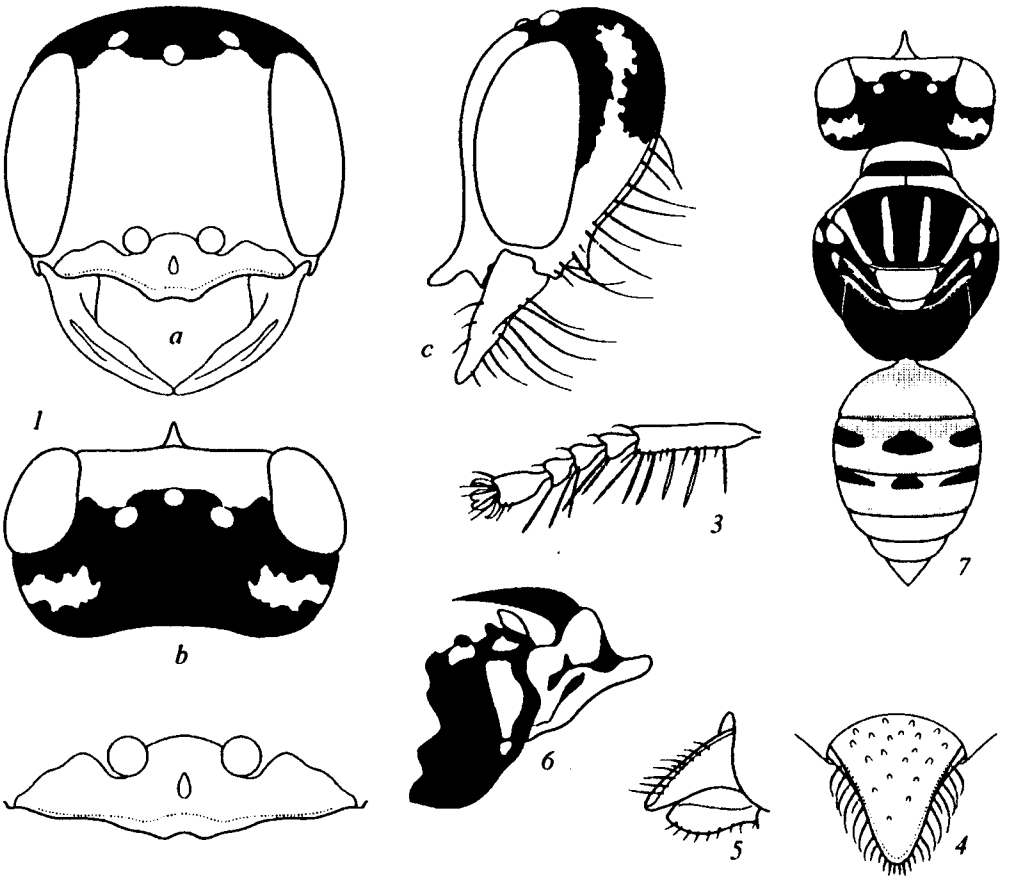

Fig. 3. *Pseudomicroides elvirae* (Gayubo), female, holotype: (*1*) head in anterior (*a*), dorsal (*b*), and lateral (*c*) view; (*2*) clypeus, front view; (*3*) fore tarsus, outer view; (*4*) abdominal tergite VI, dorsal view; (*5*) abdominal segment VI, lateral view; (*6*) pattern of thorax coloration, lateral view; (*7*) pattern of body coloration, dorsal view.

Body with short, mainly appressed silvery pubescence not concealing sculpture; mandible and gena bearing very long fine setae of psammophore (Fig. 3, *1c*); fore trochanter with shorter setae; setae on the outside of fore femur longer than those on trochanter, forming no regular rows. Digging comb formed by 6 or 7 setae on 1st and 2 apical setae (no less than twice as long as subsequent segment) on 2nd–4th segments of fore tarsus (Fig. 3, *3*).

Body coloration mixed (Fig. 3, *6, 7*). Pronotal carina in upper part, rounded spots under wing bases, large vertical oval spot before episternal suture and small spot somewhat lower than this suture, middle and hind coxae in distal part; middle and hind trochanters at base, spot on inner side of middle femur, tegulae in anterior part; wing and veins, wide preapical band on tergite I, and narrow preapical bands on tergites II and III, all white. Frons as far as ocelli, clypeus almost entirely, mandible in basal third, scape on inner side and other antennal segments on lower side, pronotum in anterior and lateral parts, pronotal carina and humeral calli, lateral stripes on mesoscutum, scutellum and metanotum entirely, propleura, fore coxa, fore trochanter on lower side, fore femur on outer side, bands on tergites IV and V, median stripe on sternite I, transverse anterior stripe, and basally fusing premedial stripes on abdominal sternite II, all white-yellow. Spots on upper part of gena; gena on lower part as far as base of mandible; and two narrow premedial stripes on mesoscutum, converging near scutellum, all yellow. Occiput under junction, fore tarsus, and middle tibia on outer side, all yellow-rufous. Lower fringe of clypeus and prominence of median lobe; fore tibia on inner side; middle femur on anterior side and, partly, on posterior side; middle tarsus; translucent posterior fringe on tergite I; and colorless posterior fringes of abdominal sternites III–V, all rufous. Scape posteriorly and rest antennal segments distally, fore trochanter on upper side, and anterior 2/3 of abdominal tergite I, all fuscescent rufous. Pronotum between carina and anterior margin, pair of small spots at sides of pronotum, fore and middle femora in posterior part,

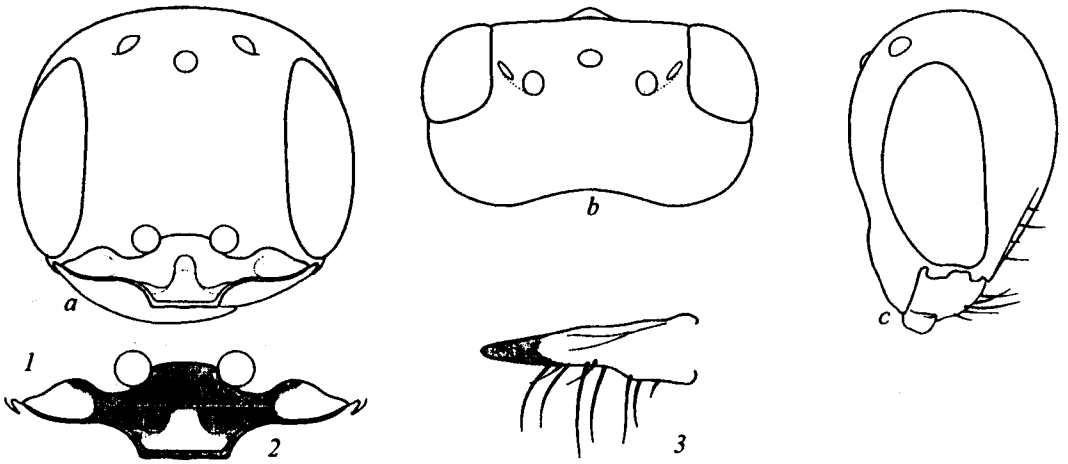

Fig. 4. *Pseudomicroides fergusoni* (Beaumont), holotype, male; (*1*) head, anterior (*a*), dorsal (*b*), and lateral (*c*) view; (*2*) clypeus, front view; (*3*) mandible, outer view.

abdominal tergites II and III almost entirely, tergite VI, sides of sternite I, and sternite II in general, all fuscous. Vertex and occiput in upper part, mesoscutum and mesopleura in anterior part, and propodeum entirely, all black. Abdominal sternites III–V mainly black-fuscous. Mandible in middle red-rufous, at apex red-fuscous.

Body length 3.7 mm.

Male unknown.

Differential diagnosis. In the shape of prominence of median lobe of clypeus, *P. elvirae* is similar to *P. rostratus* and *P. desertus*, differing from the former in the finer prominence of median lobe of clypeus, and also in the presence of pale stripes on mesoscutum and continuous pale bands on abdominal tergites; and from the latter, in a less distinct pale pattern of the body (the occiput, mesoscutum, mesopleura, and propodeum are black, with fuscous spots on abdominal tergites II and III).

Pseudomicroides fergusoni (Beaumont, 1960), comb. n.

Belomicroides fergusoni Beaumont, 1960: 24. ♂: Rhodes, (MZL), holotype examined.—Bohart and Menke, 1976: 360; Gayubo, 1983: 42; Leclercq, 1993: 44.

Material. 1 ♂, "RHODES, Kremasti [Kremastí], 23.VI.1958 (Mavromoustakis)" (MZL, holotype).

Description. Male. Head rounded in front view; eyes noticeably diverging downward (Fig. 4, *1a*), *IOD* = 35 : 40; frons with shallow oval pit in middle; vertex plates narrow, lanceolate, convex, matte (Fig. 4, *1b*); *OOD* : *OD* : *POD* = 4 : 5 : 16; median lobe of clypeus moderately convex, in middle flattened; anterior margin of lobe truncate, with distinct lateral angles (Fig. 4, *2*) mandible blunt, widened on lower side in basal third (Fig. 4, *3*). Pronotal carina with indistinct medial depression; admedial lines of mesoscutum strongly converging, forming weak rib nearly reaching metanotum; parapsidal lines weak, slightly convex; adlateral line thin; scutellum with rounded lateral carinae in anterior part; metanotum with smoothed lateral carinae, concave in middle.

Body with uniform, fine and smoothed sculpture. Median lobe of clypeus with several large punctures before lower margin and smooth in middle; frons micropunctate in lower part, somewhat stronger punctate in upper part, shining (in middle, $d = \varnothing$; in upper part and laterally, $d \leq \varnothing$); vertex densely micropunctate, $d \leq \varnothing$; ocellar triangle submat; occiput and gena densely punctate, only in lower part, near eyes, punctures forming vertical grooves. Pronotal carina finely and densely punctate, $d \leq \varnothing$; mesoscutum shining, uniformly and finely punctate (in anterior part, $d = \varnothing$; in middle, d = 1.5–2.0 $\varnothing$), in posterior part with narrow and short longitudinal rugulae; scutellum shining, with finer punctation, d = 2–4 $\varnothing$; mesopleura shining, with micropunctures at bases of semierect hairs, most dense in upper part; metapleura with sparse longitudinal rugulae in upper part, with weak sculpture in lower part. Propodeum with sparse short radial ridges in anterior part, rest of surface of propodeum with smoothed sculpture, micropunctate dorsally and rugulose laterally; on posterior surface, propodeum with

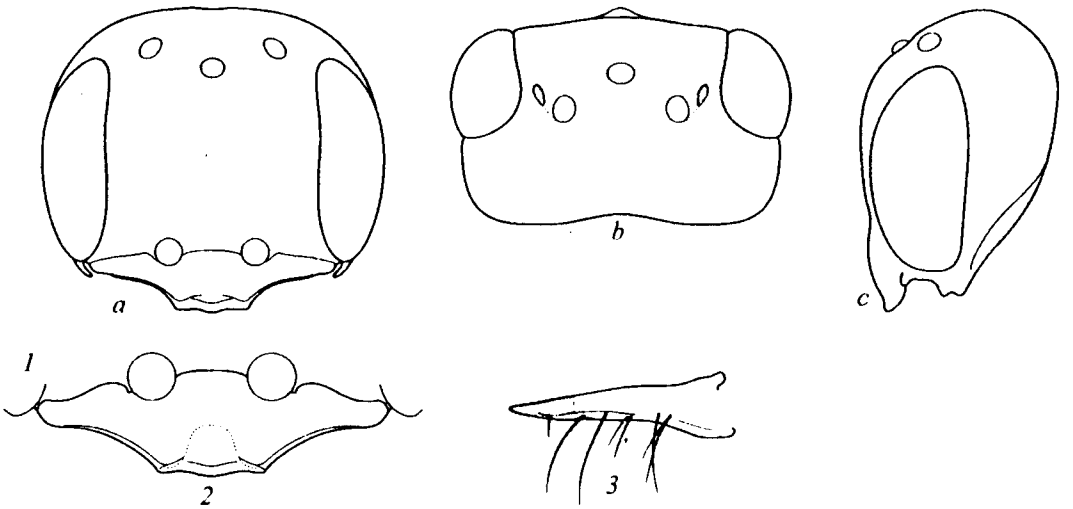

Fig. 5. *Pseudomicroides melas* (Antropov), holotype, male; (*1*) head in anterior (*a*), dorsal (*b*), and lateral (*c*) view; (*2*) clypeus, front view; (*3*) mandible, outer view.

oval medial pit (the latter without distinct borders). Abdominal tergites with uniform micropunctation at bases of appressed hairs; tergites VI and VII coarsely and uniformly punctate, d = 1.0–1.5 ∅; sternites with smoothed sculpture, sternites IV–VII with preapical fields formed by coarse punctures.

Pubescence silvery, very short, appressed, not concealing sculpture. Psammophore (Fig. 4, *1b, 3*) on gena indistinct (sparse hairs only somewhat longer than diameter of anterior ocellus); setae on lower side of mandible long, not shorter than basal width of mandible; hairs on fore trochanter of different length, shorter hairs on lower side of fore femur. Digging comb formed by 3 or 4 compressed setae on 1st and 1 or 2 apical setae (somewhat longer than subsequent segment) on 2nd–4th segments of fore tarsus.

Body black in general. Basal part of mandible, lateral lobes of clypeus (Fig. 4, *2*) and fore tibia almost entirely, middle and hind tibiae on outer surface, posterior part of humeral calli, tegulae and wing veins, all white. Premarginal part of median lobe of clypeus; scape and 1st and 2nd segments of flagellum on lower side; fore coxa at apex, fore and middle trochanters at base, fore femur on lower side and at apex, middle and hind femora at apex, fore tibia and tarsus entirely, middle and hind tibiae on outer side, all yellowish white. Most part of median lobe of clypeus and its semitransparent marginal fringe, fore and middle femora on inner side, and narrow inner spot on middle tibia, all rufous. Scape and 1st and 2nd segments of flagellum on upper side, posterior fringe of pronotum, fore coxa in general, middle and hind coxae entirely, fore and middle trochanters almost entirely, and hind trochanter entirely, fore femur on posterior side, middle femur on upper side, and hind femur almost entirely, semitransparent marginal fringes of abdominal tergites I–IV and sternites I–VII, and entire tergite VII, all fuscous. Median lobe of clypeus in lower part yellow. Middle and hind tarsi rufescent. Mandible red-fuscous apically.

Body length 3.9 mm.

Female unknown.

Differential diagnosis. Among species with dark head and thorax, *P. fergusoni* is similar to *P. melas* (Antropov, 1884), *P. schwarzi* sp. n., and *P. zimini* (Gussakovskij, 1952), differing in white rounded lateral spots on clypeus and white humeral calli.

Pseudomicroides melas (Antropov, 1994), comb. n.

Belomicroides melas Antropov, 1994: 94. ♂: Uzbekistan (ZMUM), holotype examined.

Material. 1 ♂: "Uzbekistan, 35 km SE of Bukhara, 1.VI.1991 (V. Gorbatovskii)" (ZMUM, holotype).

Description. Male. Head slightly shorter than wide, rounded in front view, *IOD* = 32 : 36 (Fig. 5, *1a*; vertex plates narrow, oval, matte (Fig. 5, *1b*); *OOD* : *OD* : *POD* = 6 : 4 : 18; marginal fringe of median lobe of

clypeus oval, convex, laterally with small but distinct teeth (Fig. 5, *2*); all segments of flagellum shorter than wide, except for ultimate segment. Metanotum with distinct posterior fringe running along sides and median depression.

Body shining between dense punctures (on frons and vertex, d = 0.5–1.0 ∅, on mesoscutum, anterior part of scutellum, and upper part of mesopleura, d = 1.5–3.0 ∅); these punctures becoming indistinct in lower part of median lobe of clypeus, in lower part of gena, and in posterior part of dorsal field of propodeum. Lower part of mesopleura, propodeum, and abdominal segments (except for tergite VII), possessing fine punctation on background of fine striation. Abdominal tergite VII with several largest punctures.

Pubescence silvery, scarce, very short, appressed, not concealing sculpture. Psammophore on gena indistinct; in lower part of mandibles formed by sparse long setae (Fig. 5, *1c, 3*). Digging comb formed by 4 or 5 erect setae on 1st segment and 2 apical setae on 2nd–4th segments of fore tarsus.

Body black in general. Basal 2/3 of mandible, small basal spots on distal part of fore femur, and wing veins, all whitish. Antennal flagellum on outer surface, humeral calli in posterior part, tarsi, fore tibia in general, middle tibia on outer surface, and hind tibia in general, all yellowish rufous. Lower part of clypeus, scape, pedicel, and flagellum on upper side, humeral calli in anterior part, tegulae, and apex of abdomen, all fuscous.

Body length 3.2 mm.

Female unknown.

Differential diagnosis. Among all mostly dark-colored species of the genus, *P. melas* is similar to *P. schwarzi* sp. n. in the entirely black head and thorax, differing from this species in the oval, projecting clypeus with shining triangular plate and dark fuscous lower margin; black scape; 1st–10th segments of flagellum shorter than wide, and distinct psammophore on fore tarsus.

Pseudomicroides olgae (Kazenas, 1979), comb. n.

Belomicroides olgae Kazenas, 1979: 172. ♀: Kazakhstan (ZISP), holotype examined.—Gayubo, 1983: 42; Antropov, 1994: 90, ♂.

Material. 1 ♂: "70 km NW of Furmanovka, Dzhambul Province, 24.VI.1975 (Kazenas), 75–634b" (ZISP, holotype); 1 ♀: SE Kazakhstan, 17 km NW of Lake Bakanas, Ili River, 28.VI.1970 (Kazenas) 70–19V" (ZISP, paratype); 1 ♂: "Kazakhstan, Aksuek Vill., 27.VI.1979 (Yu. Pesenko) (ZMUM); 1 ♀: "Kazakhstan cent., Lake, 50 km S Balkhash, 26–27.VI. 1992 (J. Halada)" (MS).

Description. Female. Head rounded, shorter than wide in front view (Fig. 6, *1a*); *IOD* = 36 : 48; vertex plates convex, oval, and smooth (Fig. 6, *1b*) *OOD* : *OD* : *POD* = 8 : 5 : 16; genae with apically rounded lower prominence (Fig. 6, *1c*); median lobe of clypeus with ovally emarginate margin and laterally compressed, apically truncate, and basally emarginate median prominence (Fig. 6, *1c, 3*). Pygidial field narrow, distinctly squeezed laterally before posterior margin (Fig. 6, *8*).

Pubescence of body silvery, mostly short, sparse, appressed, not concealing sculpture. Psammophore on gena and lower surface of mandible formed by setae 1.5–2.0 times as long as basal width of mandible (Fig. 6, *1c, 4*). Digging comb formed by 6 or 7 compressed setae on 1st and 2 apical setae on 2nd–4th segments of fore tarsus (Fig. 6, *7*).

Body coloration mixed (Fig. 6, *6, 9*). Head in general pale, thorax and propodeum black, abdomen pale dorsally and black-fuscous ventrally. Lateral lobes of clypeus and lower part of frons laterally, mandible at base; pronotal carina and humeral calli, terminal ends of propleura, distal part of middle and hind coxae, fore and middle femora on lower surface, hind femur in distal part, all tibiae on outer surface, tegulae, wing veins, bands on abdominal tergites I and III, large lateral spots on tergite II, tergites IV and V in general, pygidial plate at base, and median stripes on abdominal sternites III and IV, all white. Mandible in middle, antenna on lower side, lateral stripes on mesoscutum, metanotum, spots on mesopleura before episternal suture, fore trochanter entirely and middle and hind trochanters in anterior part, medial stripe on abdominal sternite I, and median basal spot on sternite II, all yellow-white. Middle of frons and its upper part, middle of gena, and scutellum entirely, all yellow. Antenna on upper side, mesopleura in lower anterior part and along median line, fore femur in general, fore tibia on inner side, and all tarsi, all yellow-rufous. Gena in upper part, lower part of head; apex of prominence on median lobe of clypeus, propleura at base, middle tibia on inner side, abdominal tergites I, III, and IV in ante-

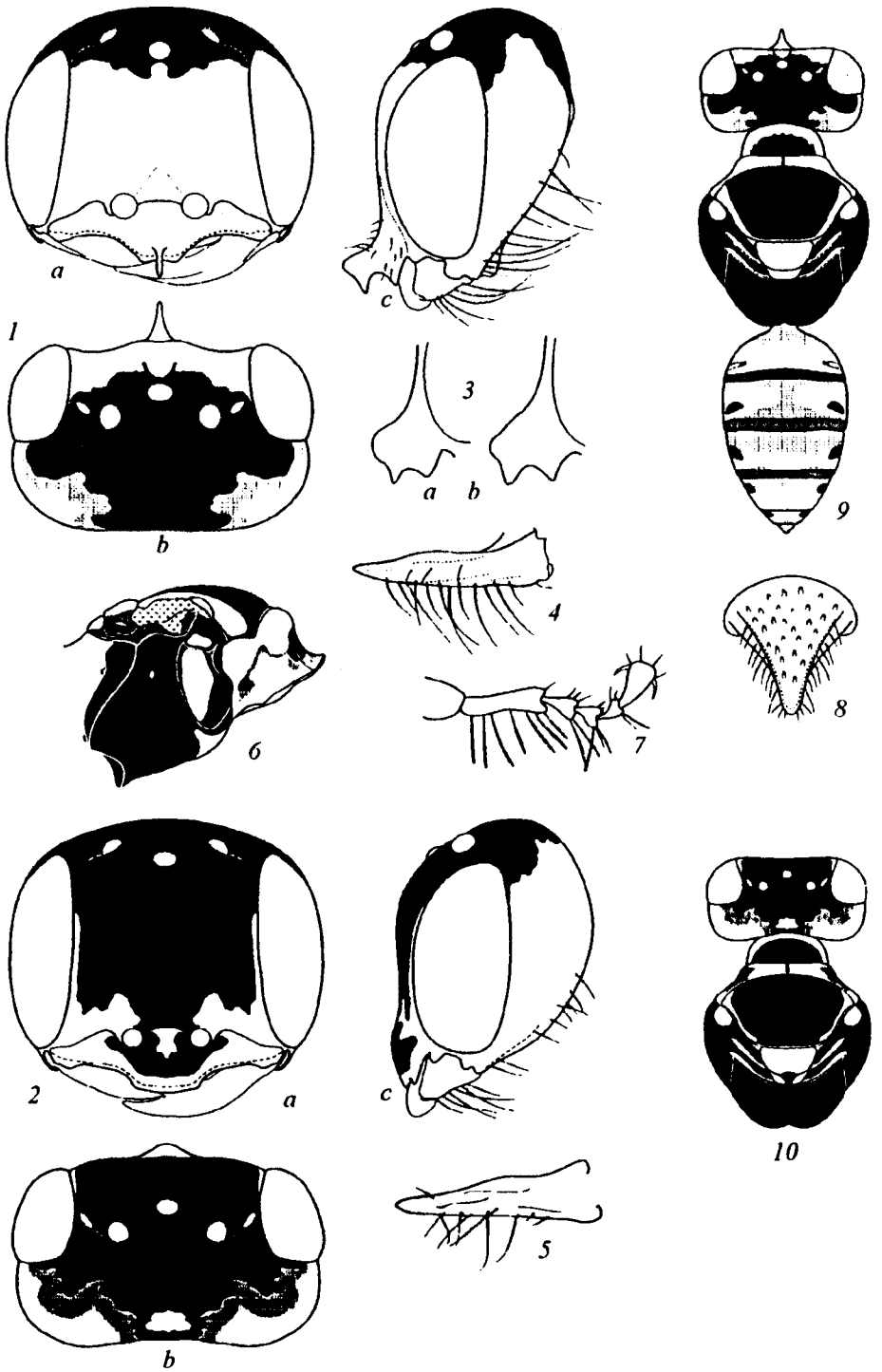

Fig. 6. *Pseudomicroides olgae* (Kazenas): (*1, 3, 4, 6–9*) holotype, female; (*2, 5, 10*) male: (*1*) female head in anterior (*a*), dorsal (*b*), and lateral (*c*) view; (*2*) the same view of male head; (*3*) prominence of median lobe of clypeus, lateral view: (*a*) paratype, 17 km NW of Lake Bakanas, (*b*) 50 km S of Lake Balkhash; (*4*) mandible of female, outer view; (*5*) mandible of male, outer view; (*6*) schematic pattern of thorax coloration, lateral view; (*7*) fore tarsus, outer view; (*8*) abdominal tergite VI, dorsal view; (*9–10*) schematic pattern of female (*9*) and male (*10*) coloration, dorsal view.

rior part, and tergite II and pygidial plate in general, all rufous. Vertex fuscous-rufous in posterior and lateral parts; mandible red-fuscous at apex; middle femur mostly fuscous, hind tibia with large black spot on inner side, tergites II–V with small fuscous lateral spots.

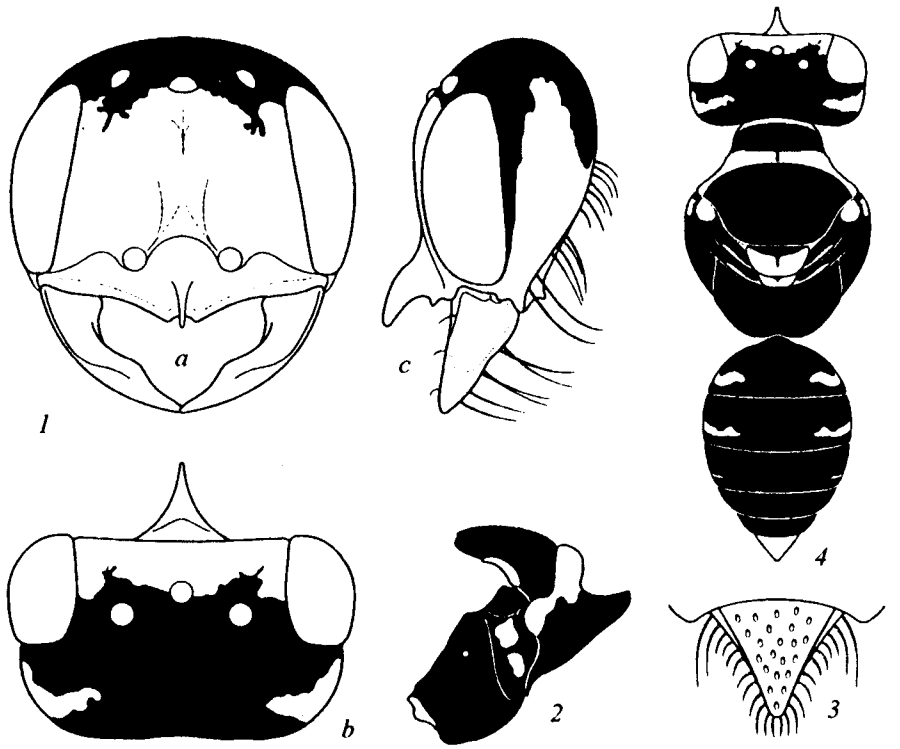

Fig. 7. *Pseudomicroides rostratus* (Krombein), holotype, female: (*1*) head in anterior (*a*), dorsal (*b*), and lateral (*c*) view; (*2*) pattern of thorax coloration, lateral view; (*3*) abdominal tergite VI, dorsal view; (*4*) schematic pattern of body coloration, dorsal view.

Body length 4.3 mm.

Male. Head rounded, slightly shorter than wide in front view (Fig. 6, *2a*), *IOD* = 36 : 41; vertex plates oval, convex (Fig. 6, 2b); *OOD* : *OD* : *POD* = 7 : 5 : 15; median lobe of clypeus slightly oval at lower margin, with obtuse lateral angles; segments of flagellum (except for ultimate segment) shorter than wide; pronotal carina with indistinct median depression; metanotum with weak lateral fringe, slightly depressed medially.

Body with more or less uniform dense punctation on shining background; punctation becoming indistinct in lower part of median lobe of clypeus, in lower part of gena, and posterior part of dorsal surface of propodeum; in middle of frons, on pronotum, in anterior angles of mesoscutum, and in upper parts of mesopleura, *d* = 0.5–1.0 ∅; in lower and lateral parts of frons, on vertex, in middle and posterior parts of mesoscutum, on scutellum, and in lower part of mesopleura, *d* = 1.5–3.0 ∅. Dorsal surface of propodeum in anterior part with fine micro-reticulation, lateral and posterior surfaces with denser reticulation. Abdominal segments with dense and fine punctation on background of transverse microstriation; pygidial plate smooth and very scarcely and coarsely punctate (*d* = 3–4 ∅).

Pubescence of body as that in female. Setae of psammophore on gena half as long as setae on lower side of mandible (Fig. 6, *2c*, *5*).

Body in general black (Fig. 6, *10*). Basal 2/3 of mandible, clypeus laterally and spot on its median lobe near upper margin, face laterally to antennal sockets, narrow stripes along inner eye orbits near level of median ocellus, all tibiae on outer surface, base of tegulae, and wing veins, all yellowish white. Antenna on lower side, lower posterior part of gena, pronotal carina and humeral calli in posterior part, sides of mesoscutum, scutellum entirely, metanotum laterally, axillary sclerites partly, mesopleura behind humeral calli, fore femur widely on lower surface and middle femur in distal part of lower side, fore tibia in general, and all tarsi, except for ultimate segments, all yellow. Antenna on upper side, gena in posterior part, and occiput entirely, pronotum in anterior part and in lower corners; propleura in posterior part, middle tibia on inner surface, and ultimate segments of tarsi, all rufous. Median lobe of clypeus in general, adjoining parts of lateral lobes, scape on inner side and pedicel almost entirely, propleura in anterior part, fore coxa

and trochanter partly, and pygidial plate entirely, all fuscous.

Body length 4.0 mm.

Differential diagnosis. Female of *P. olgae* differs from females of all the known species of the genus, first of all, in the truncate apex of laterally compressed prominence of median lobe of clypeus. In coloration of the body, it is similar to females of *P. mochii* and *P. elvirae*, differing from the former in the presence of a black spot on vertex, reaching to occiput, and generally rufous abdomen; and from the latter, in the absence of pale premedial stripes on mesoscutum. Male of *P. olgae* distinctly differs from males of all other known species of the genus mostly in a yellow-rufous posterior part of the head and entirely yellow scutellum.

Pseudomicroides rostratus (Krombein, 1982), comb. n.

Belomicroides rostratus Krombein, 1982: 31. ♀: Sri Lanka (USNM), holotype examined.—Antropov, 1994: 92.

Material. 1 ♀: "SRI LANKA: Ham. Dist. Palatupana Tank, 21–22 June 1978 (K.V. Krombein, P.B. Karunaratne)," (USNM, holotype no. 100322).

Description. Female. Head rounded, slightly shorter than wide in front view (Fig. 7, *1a*); inner eye orbits diverging in lower part, *IOD* = 35 : 48; vertex plates oval, matte (Fig. 7, *1b*), *OOD* : *OD* : *POD* = 6 : 5 : 17; genae in lower part with moderate triangular prominence (Fig. 7, *1c*); median lobe of clypeus roundly emarginate at lower margin, with strong, compressed beak-shaped prominence (Fig. 7, *1c*); mandibles thickened, dilated in middle of inner margin; pygidial plate slightly compressed laterally (Fig. 7, *3*).

Pubescence of body silvery, indistinct, not concealing body sculpture. Psammophore on gena and lower surface of mandible distinct, setae on mandible 1.2–1.5 times as long as basal width of mandible (Fig. 7, *1c*).

In general, coloration black. (Fig. 7, *2, 4*). Mandible in general, clypeus, frons as far as median ocellus, head in lower part, wide stripe on gena, anterior margin and carina of pronotum and humeral calli, propleura, spots on mesopleura before episternal suture, mesopleura in lower part (except for anterior part), narrow stripe on mesopleura before middle coxa, scutellum as far as 2/3 of its length from posterior margin, metanotum in posterior half, fore coxa, fore and middle femora in general, tibiae on outer side and tarsi entirely, tegulae, wing veins, small lateral spots on abdominal tergites I–III, pygidial plate, premarginal fringe of sternite II, and sternites III and IV in middle, all yellow or whitish yellow. Scape, antennal flagellum on lower side, trochanters and femora on posterior surface, and hind tibia on lower side, all rufous.

Body length 4.0 mm.

Male unknown.

Differential diagnosis. Female of *P. rostratus* differs from females of other species with untruncated and laterally compressed prominence of median lobe of clypeus (*P. elvirae* and *P. desertus*) in the entirely black pronotum without pale lateral and premedial stripes, partly divided pale spots on scutellum and metanotum, and small pale lateral spots on abdominal tergites I–III.

Pseudomicroides* (*?*) *santschii (Schulthess, 1925), comb. n.

Oxybelus (*Belomicroides*) *santschii* Schulthess, 1925: 187. Holotype: ♀, "Tunisia, Hammamet (Santschi)", (IPES): probably, lost.

Belomicrus (*Belomicroides*) *santschii*: Schulthess, 1926: 219.

Belomicroides santschii: Pate, 1931: 113; Beaumont, 1960: 25; Bohart and Menke, 1976: 360; Gayubo, 1983: 42; Leclercq, 1993: 44.

Description is given according to Schulthess (1925), with alterations. **Female.** Head large, wider than thorax, strongly wider than long; frons not sloping, without median pit; inner eye orbits diverging downward; minimum distance between eyes situated at level of lateral ocelli and approximately equal to distance between ocelli and antennal sockets; *OOD* : *POD* = 1 : 2; gena rather wide; median lobe of clypeus slightly convex, projecting; mandible without emargination on lower surface; distances between antennal sockets and between each socket and eye margin are rather equal; 4th segment of flagellum wider than long, 0.75 times as long as 3rd segment; 3rd segment somewhat shorter but significantly thinner than 2nd; other segments, except for ultimate one, approximately as wide as long. Pronotal carina slightly lower than mesoscutum, unmodified; mesoscutum significantly wider than long; adlateral grooves indistinct; tegulae

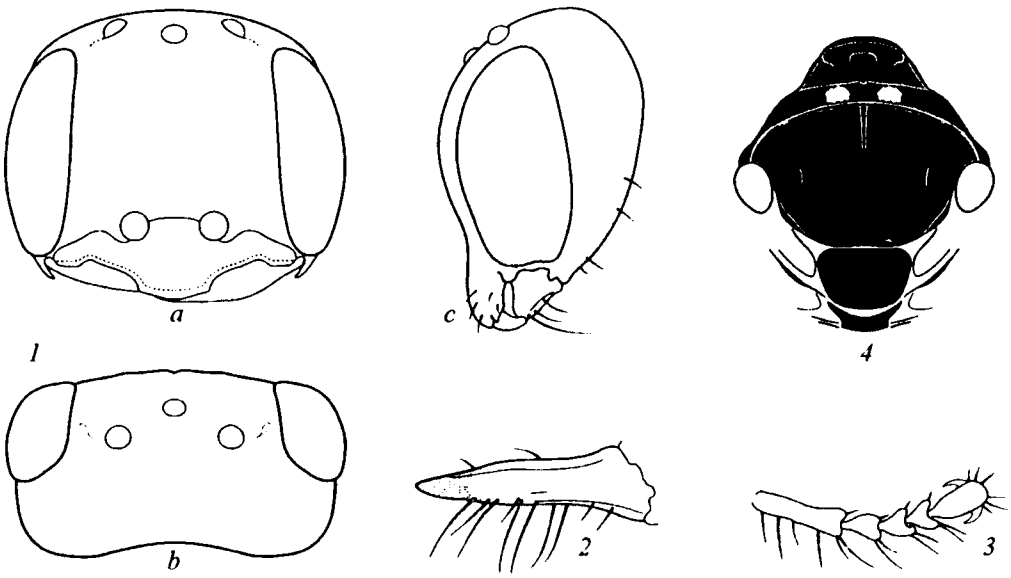

Fig. 8. *Pseudomicroides zimini* (Gussakovskij), lectotype, male: (*1*) head in anterior (*a*), dorsal (*b*), and lateral (*c*) view; (*2*) mandible, outer view; (*3*) fore tarsus, dorsal view; (*4*) pattern of body coloration, dorsal view.

small; scutellum rather strongly swollen and convex; metanotum forming transverse carina and (as in *B. schmiedeknechtii*) without scales. Posterior surface of propodeum rounded laterally.

Frons with very dense and fine punctation (visible at magnification 30×). Gena less densely punctate than frons, longitudinally rugose. Mesoscutum and scutellum punctate similarly to vertex but somewhat coarser. Mesopleura scarcely punctate. Dorsal surface of propodeum very densely and finely rugulose-punctate; its lateral surface at border with its punctate posterior surface rugulose and very finely and densely punctate. Abdomen very finely transversely striate, with disperse punctures at bases of erect hairs. Pygidial plate shining, with solitary enlarged punctures, fringed laterally.

Psammophore on gena absent, mandible with distinct setae. Tarsal carina thin.

Body infuscate. Head in general; pronotum; mesoscutum laterally near tegulae, tegulae, 2 longitudinal, strongly narrowed stripes on mesoscutum, partly becoming indistinct in anterior part; scutellum and metanotum; thorax laterally and ventrally; legs; stripes on sides of propodeum; and wide posterior bands on all abdominal tergites and sternites, slightly narrowing in the middle anteriorly, all yellow. Wing veins pale. Apex of mandible and narrow fringes along posterior margin of abdominal segments I–III, all fuscous. Vertex, narrow stripes running along outer eye orbits; mesoscutum; propodeum in general; and abdominal segments I–III in anterior part, all black.

Male unknown.

Taxonomic position of *Oxybelus santschii* remains unclear for me because of the unavailability of the holotype. According to information from curator Dr. Bernhard Merz (Institut für Pflanzenwissenshaften Entomologische Sammlung, ETH Zentrum, Zürich, Switzerland), a label with the name of this species is present in the collection of Schulthess, but the specimen itself is absent and, probably, lost. Unfortunately, I could not find any comparative material related to this species in other collections.

At the same time, although an important information about the structure of clypeus, gena, propodeum, and abdomen is either absent or obscure in the original description, such characters mentioned by the author as inner eye orbits converging on vertex, projecting median part of clypeus, absence of ventral emargination on mandibles, and also fine sculpture on the dorsal surface of propodeum and absence of propodeal lateral carinae indicate that the species most probably belongs to the genus *Pseudomicroides* rather than to *Belomicroides* (s. str.). The body coloration typical of females of the new genus also supports this conclusion: in the known females of *Belomicroides* (s. str.), the head is black (sometimes, except for clypeus), pale stripes on mesoscutum are absent, and propodeum is entirely black.

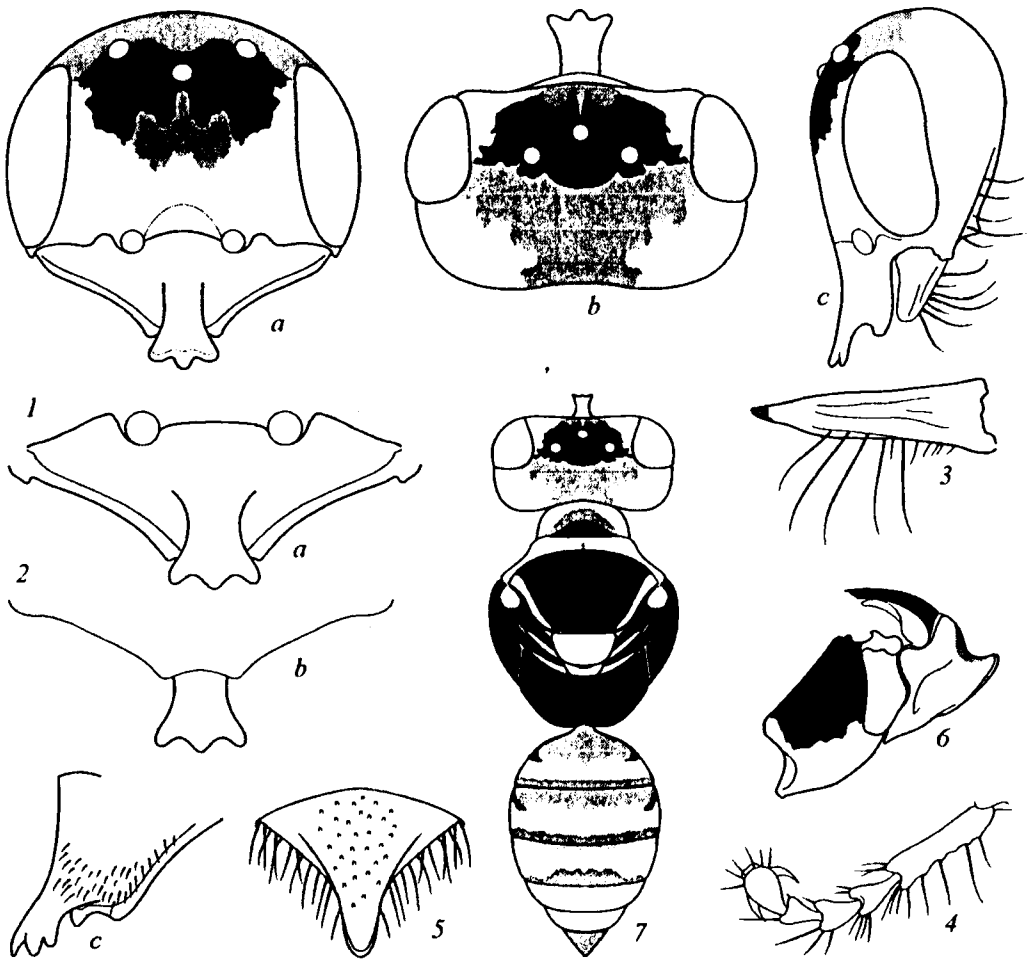

Fig. 9. *Pseudomicroides mochii* sp. n. holotype, female: (*1*) head in anterior (*a*), dorsal (*b*), and lateral (*c*) view; (*2*) clypeus in anterior (*a*), posterior (*b*), and laterally oblique (*c*) view; (*3*) mandible, outer view; (*4*) fore tarsus, outer view; (*5*) abdominal tergite VI, dorsal view; (*6*) pattern of thorax coloration, lateral view; (*7*) pattern of body coloration, dorsal view.

According to the description, one may conclude that *P. santschii* is most similar to *P. elvirae* in the coloration of thorax and abdomen, differing in the paler head and solid infuscate anterior bands on abdominal tergites I–III. In the coloration of the head, *P. santschii* is similar to *P. desertus*, differing from the latter in darker thorax and abdomen. At the same time, absence of a laterally compressed prominence on the median lobe of clypeus distinguishes *P. santschii* from both species mentioned. In the weakly projecting median lobe of clypeus, *P. santschii* resembles *P. pulawskii* sp. n., differing from this species in the weaker pale coloration: black vertex, mainly black mesoscutum with narrow pale lateral and premedial stripes, propodeum with narrow lateral stripes, and also in the distinct black anterior and dark fuscous posterior bands on abdominal tergites I–III.

Pseudomicroides zimini (Gussakovskij, 1952), comb. n.

Belomicrus (*Belomicroides*) *zimini* Gussakowskij, 1952: 258. 1 ♂: Tajikistan (ZISP), lectotype examined.

Belomicroides zimini Beaumont, 1960: 25; Bohart and Menke, 1976: 360. Kazenas, 1979: 173; Krombein, 1982: 32; Gayubo, 1983: 42; Leclercq, 1993: 44; Antropov, 1994: 90.

Material. 1 ♂: "Dzhilikul, Vakhsh River, Tajik[istan]. 13.VI.1934 (Gussakovskij)" (ZISP, lectotype); 1 ♂: "Ak-Yala, Atrek River, 22.VII.1932 (A. Ushinskii)" (ZISP); 1 ♂: "Aleshki, 12.VII.1926 (L. Zimin)" (ZISP, lost specimen); 1 ♂: "Southest[ern] Kazakhstan, env[irons] of Kapchagai, 12.VII.1979, (V. Kazenas)" (ZMUM); 2 ♂: "Kazakh SSR: Kas-

kelen River (50 km N of Alma-Ata), 21.VI.1976, 12.VII.1977 (W.J. Pulawski)" (CAS).

Description. Male. Head wider than long in front view, inner eye orbits moderately diverging downward (Fig. 8, *1a*), *IOD* = 28 : 32; vertex plates narrowly oval, bent, small (Fig. 8, *1b*); *OOD* : *OD* : *POD* = 5 : 4 : 12; median lobe of clypeus oval, convex at lower margin.

Body pubescence very sparse, short, and pale. Psammophore on gena indistinct (solitary short setae); setae on lower surface mandible not shorter than basal width of mandible (Fig. 8, *1c, 2*); digging comb formed by 4 or 5 fine setae on 1st and 2 apical setae on each of 2nd–4th segments of fore tarsus (Fig. 8, *3*).

Body in general black (Fig. 8, *4*). All tibiae on outer surface; middle femur on lower side of distal part, and hind femur in distal part, all black. Mandible in general, antenna on lower side, small spots on lateral lobes of clypeus near eyes and less frequently in lower part of gena, pair of small spots on pronotal carina (sometimes red-fuscous), fore femur on lower surface, fore tibia on inner surface, all tarsi, tegulae, and wing scales, all white-yellow. Clypeus in general, antenna on upper side, and base of trochanters, all rufous. Pronotum in anterior part and laterally, humeral calli, and apex of abdomen, all red-fuscous. Apex of mandible, , middle femur, and spots on inner side of middle tibia, all fuscous.

Body length 3.3 mm.

Female unknown.

Differential diagnosis. Among species with dark head and thorax, the new species is most closely related to *P. fergusoni*, differing from it in the absence of white spots on clypeus and humeral calli, and from other similar species (*P. melas* and *P. schwarzi* sp. n.) in the rufous clypeus and fuscous or red-fuscous anterior part of prothorax, paler than mesothorax and propodeum, and a pair of yellow or fuscescent spots on the pronotal carina.

Pseudomicroides mochii Antropov, sp. n.

Material. Holotype, ♀: :Siria [Syria], Mezzé, Damasco [Damascus], 21.IX.1954 (Coll. A. Mochi)" (AM).

Description. Female. Head wider than long in front view (Fig. 9, *1a*); frons without median groove; eyes distinctly diverging downward, *IOD* = 49 : 60; vertex plates oval, weakly convex, shining, with solitary fine punctures (Fig. 9, *1b*); *OOD* : *OD* : *POD* = 10 : 5 : 20; gena in lower part with small oval-triangular prominences (Fig. 9, *1c*); median lobe of clypeus with long, dorsoventrally compressed, apically dilated and bearing three teeth median prominence, overhanging marginal fringe, limited by distinct angles (Fig. 9, *2*); segments of flagellum slightly longer than wide; ultimate segment approximately twice as long as its maximum width. Pronotal carina with translucent median stripe; admedian lines of mesoscutum narrow, running closely to each other, reaching as far as 1/3 of its length; parapsidal lines indistinct; adlateral lines short, convex, shining; metanotum very short, without posterolateral carinae.

Frons with uniform, very fine punctation, $d < \varnothing$; vertex submat, with shining impunctate stripe in median part behind eyes; punctation of gena similar to that of vertex. Pronotum without median depression; punctation of mesoscutum similar to that in upper part of frons, intervals between punctures shining, $d < \varnothing$ and $d = \varnothing$, on anterior and posterior parts, respectively; scutellum with sparser and finer punctation; mesopleura and mesoscutum with similar punctation. Propodeum with short longitudinal rugae nearly metanotum, general surface with smoothed microsculpture indistinct in posterior part of dorsal surface; posterior surface with shallow oval pit. Abdominal tergites with micropunctures at bases of hairs. Pygidial plate with larger and sparser punctures, diameter of these punctures 0.17–0.20 times that of anterior ocellus; sternites with weak transverse microstriation.

Pubescence silvery, mainly short, appressed or semi-erect, not concealing sculpture. Lateral lower parts of frons and clypeus bearing densest hairs. Similar but sparser hairs found in upper part of mesopleura, and longest hairs on sides of abdominal tergites IV–VI. Psammophore formed by rather sparse setae: on gena, these setae approximately twice as long as width of scape; on lower surface of mandible, 1.5–2.0 times as long as temporal setae (Fig. 9, *1c, 3*); on fore femur, setae sparse, shorter than those on gena. Digging comb (Fig. 9, *4*) formed by 6 setae on 1st segment (their length decreasing to distal end of segment) and 2 apical setae (approximately 1.5 times as long as subsequent segment) on each of 2nd–4th segments.

Coloration mixed (Fig. 9, *1a, 1b, 6, 7*). Lower part of frons laterally as far as vertex pits, mandible in general, stripes running along lateral margins of mesoscutum, scutellum and metanotum entirely, and

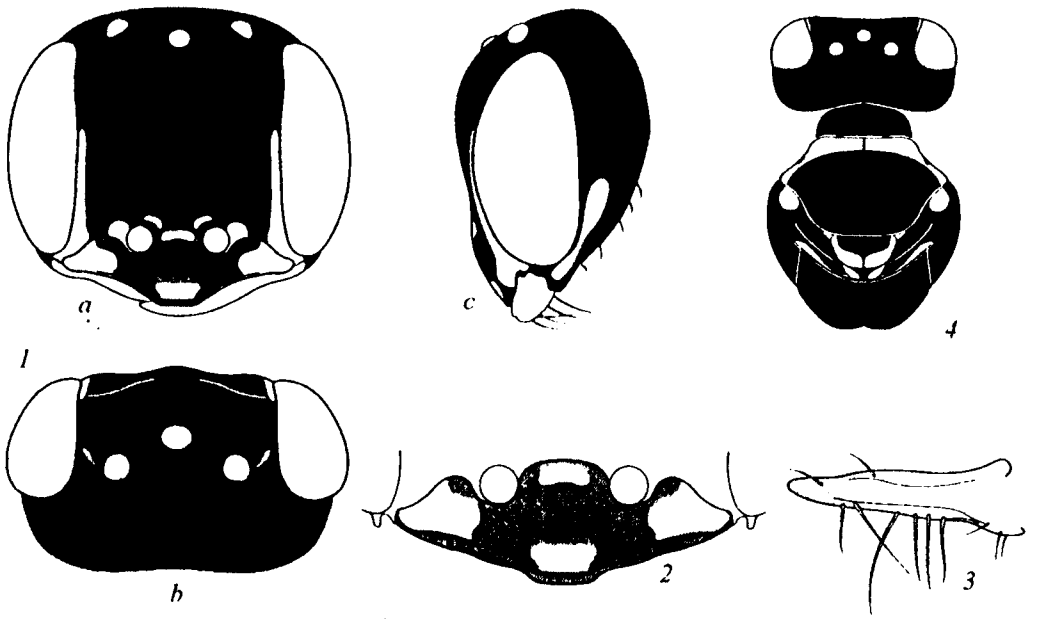

Fig. 10. *Pseudomicroides nitidus* sp. n. holotype, male: (*1*) head in anterior (*a*), dorsal (*b*), and lateral (*c*) view; (*2*) clypeus, front view; (*3*) mandible, outer view; (*4*) pattern of coloration of head and thorax, dorsal view.

semi-translucent tegulae and wing veins, all white. Clypeus, scape and 2nd segment of flagellum entirely, propleura, all coxae, fore trochanter entirely, middle trochanter in general, hind trochanter on upper surface, fore femur in general, middle femur on lower surface, and hind femur in distal part, all tibiae on outer surface, continuous bands on abdominal tergites I–IV, tergite V entirely, tergite VI in anterior part, and sternites I–IV in general, all cream-colored-white. All tarsi and abdominal tergite VI in posterior part, all yellow-white. Antennal flagellum on lower side, pronotum, and mesopleura in lower and anterior parts, all yellowish rufous. Translucent marginal fringe of clypeal prominence, middle femur on upper surface, and fore and middle tibiae on inner surface, all rufous. Anterior 2/3 of abdominal tergite I, anterior 1/4 of tergite II, and tergites III and IV in anterior part, all rufescent fuscous. Mandible at apex, vertex, and median spots in upper dorsal part of frons (with paler rufous median stripe), all red-rufous. Mesopleura behind episternal suture red fuscous. Antennal flagellum on upper side, transverse spot before pronotal carina, hind trochanter on lower side, hind femur in proximal part, small lateral spots on abdominal tergites I and II, lateral spots on sternites I–IV (including largest spots situated on sternite III), and sternites V and VI entirely, all fuscous. Ocellar triangle, and spots in upper part of frons, mesoscutum in general, metapleura and propodeum, hind femur in general, and hind tibia on inner side, all black.

Body length 4.9 mm.

Male unknown.

Differential diagnosis. A female of *P. mochii* sp. n. distinctly differs from females of all known species of the genus in the dorsoventrally compressed prominence of median lobe of clypeus, bearing three teeth. In the body coloration, especially in the generally black mesoscutum, entirely pale scutellum and metanotum, and white bands on abdominal tergites, *P. mochii* sp. n. is most similar to *P. olgae*, differing from the latter in a less distinct black spot on vertex, more extensive pale coloration of mesopleura, and also in the continuous white band on abdominal tergite II and entirely white tergite IV.

Etymology. The species is named for a talented Italian collector of aculeates, Dr. Alessandro Mochi (Rome, Italy), who had untimely and tragically left all his colleagues and friends.

Pseudomicroides nitidus Antropov, sp. n.

Material. Holotype ♂: "Tunisien: Nafta [Naftah], 15.IV.1984 (leg. Max. Schwarz)" (MS).

Description. Male. Head rounded in frontal part (Fig. 10, *1a*); inner eye orbits slightly diverging

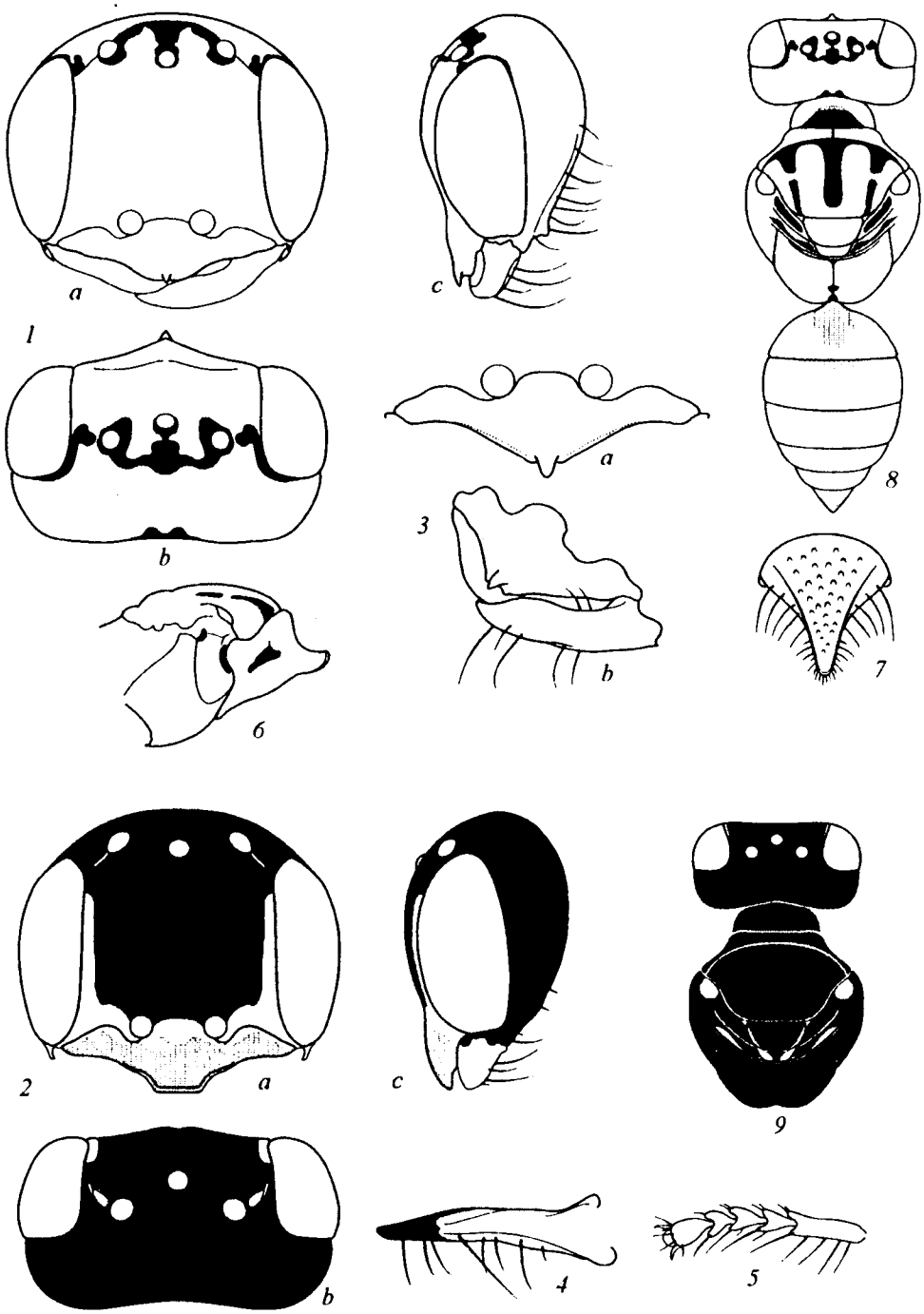

Fig. 11. *Pseudomicroides pulawskii* sp. n.: (*1*, *3*, *6–8*) holotype, female; (*2*, *4*, *5–9*) paratype, male: (*1*) head in anterior (*a*), dorsal (*b*), and lateral (*c*) view; (*2*) similar view of male head; (*3*) clypeus in front (*a*) and lateral (somewhat oblique) (*b*) view; (*4*) mandible, outer view; (*5*) fore tarsus, outer view; (*6*) pattern of thorax coloration, lateral view; (*7*) abdominal tergite VI, dorsal view; (*8–9*) pattern of body coloration, dorsal view, in female (*8*) and male (*9*).

downward, *IOD* = 30 : 33; frons with indistinct median groove in middle; vertex plates oval, flat, smooth (Fig. 10, *1b*); *OOD* : *OD* : *POD* = 5 : 4 : 13; median lobe of clypeus truncate, limited by rounded angles (Fig. 10, 2); segments of flagellum, except for 1st and ultimate segments, wider than long; 1st segment longer than wide; ultimate segment approximately 1.5 times as long as its maximum width. Pronotal carina with translucent median stripe; scutellum with vertical posterior part, slightly projecting over meta-

notum; metanotum short, without traces of postlateral ridges.

Body with sparse and fine punctation; intervals between punctures shining. On head, punctures distributed uniformly, sparsely, being very fine (d = 1.0–1.5 ∅ in lower part of frons and $d > 3$ ∅ in upper part of frons). On vertex, punctures becoming indistinct; on mesoscutum, punctures situated irregularly, being fine (d = 1–2 ∅ in anterior part, and $d > 4$–5 ∅ in middle and posterior part); on scutellum, punctures sparse and fine ($d > 3$ ∅); on mesopleura, punctures obscure and fine (d = 1.5 ∅) in inner part; on rest of surface, punctures practically indistinct; metapleura with indistinct sculpture; lateral surfaces of propodeum with smoothed irregular sculpture; its posterior surface with downward-pointed oval median pit; dorsal surface with fine, sparse radial; rugulae in anterior part; abdominal tergites I–V with smoothed micropunctures at bases of hairs and transverse microstriation; tergite VI with large punctures (d = 1.5–2.0 ∅); tergite VII in anterior part with smooth, convex triangular area bordered with lateral grooves formed by merging large punctures; abdominal sternites with micropunctures at bases of hairs.

Pubescence silvery, sparse, short, mainly appressed, mostly distinct on abdomen, especially on sides of abdominal tergites V and VI. Psammophore on gena practically indistinct, consisting of 5 or 6 erect setae shorter than diameter of anterior ocellus (Fig. 10, *1c*); setae at lower margin of mandible 1.5 times as long as its basal width (Fig. 10, *3*); setae on lower surface of fore femur as long as or shorter than setae on gena, forming denser row; digging comb formed by 2 erect on 1st segment and 2 apical setae (1.3 times as long as subsequent segment) on each of 1st–4th segment of fore tarsus.

Body in general black (Fig. 10, *4*). Mandible, except for apex, anterior part of tegulae, wing veins, all white. Spots on sides of lateral lobes of clypeus and spots situated before upper margin of median lobe of clypeus, as well as spots situated laterally and above antennal sockets; narrow stripes along inner orbit of eyes, reaching to their middle; scape and flagellum on lower side, except for ultimate segment; pronotal carina and posterior part of humeral calli; fore femur on lower surface; middle femur on lower surface of distal part part; hind femur at distal end; fore and middle tibiae in general; and hind tibia on outer surface, all yellow-white. Elongate spots in lower part of gena stretching along outer eye orbits; lateral spots on scutellum and metanotum, adjoining backward; and small spots in anterior part of mesopleura, all yellow. Ultimate segment of antenna, antennal flagellum on upper side, fore trochanter on lower surface, middle tibia on inner surface, and all tarsi, all yellow-rufous.

Body length 3.4 mm.

Female unknown.

Differential diagnosis. Among species with mostly black body, but with developed pale pattern, *P. nitidus* sp. n. is most similar to *P. pulawskii* sp. n., mainly in the black frons provided with narrow yellowish white stripes running along inner eye orbits, differing from this species in the large pale lateral spots on scutellum and metanotum, in the mainly white pronotal carina, and also in the significantly sparser punctation of frons and mesoscutum situated on the polished background.

Etymology. The species name originates from the Latin word *nitidus*, "shining" in English.

Pseudomicroides pulawskii Antropov, sp. n.

Material. Holotype, ♀: "MAURITANIA: 25 km SW Tidjikia [Tidjikdja], 30.X.1993 (W.J. Pulawski)"; paratype, 1 ♂: "MAURITANIA: 25 km SW Tidjikja, 30.X.1993 (W.J. Pulawski)" (CAS).

Description. Female. Head rounded in front view (Fig. 11, *1a*); inner eye orbits slightly converging near upper third, *IOD* = 35 : 43; without distinct median pit; vertex plates oval, submat, weakly convex (Fig. 11, *1b*); *OOD* : *OD* : *POD* = 6 : 4 : 18; genae with distinct triangular ventral prominence in lower part (Fig. 11, *1c*); median lobe of clypeus roundly convex, with short pointed tooth-shaped prominence situated closely to lower margin (Fig. 11, *3*), and narrowly truncate, somewhat depressed marginal fringe with rounded lateral teeth; 1st and 2nd segments of flagellum as long as wide, 3rd–10th segments wider than long, ultimate segment approximately 1.5 times as long as its maximum width. Pronotal carina with translucent median stripe; admedial stripes on pronotum strongly approximate, in middle fusing into narrow shining stripe, nearly reaching to scutellum; parapsidal lines indistinct and very short; adlateral lines looking like indistinct short grooves; scutellum with sloping posterior part; metanotum short, with indistinct translucent lateral carinae at base. Posterior surface of propodeum with shallow median pit.

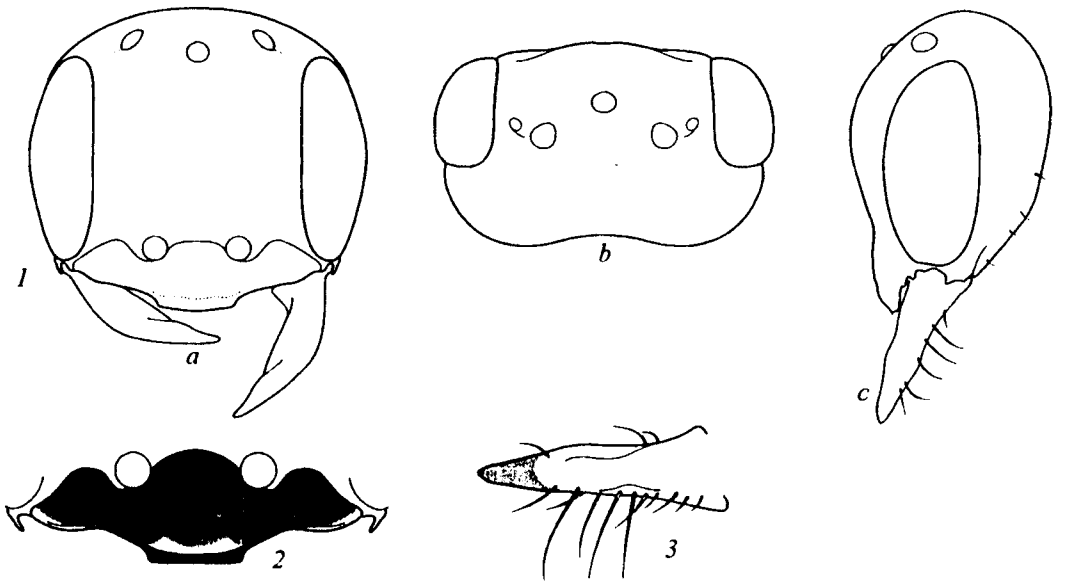

Fig. 12. *Pseudomicroides schwarzi* sp. n., holotype, male: (*1*) head in anterior (*a*), dorsal (*b*), and lateral (*c*) view; (*2*) clypeus, front view; (*3*) mandible, outer view.

On shining background, punctation dense, fine, and more or less uniform. Upper part of frons densely ($d \leq \varnothing$), finely and uniformly punctate, submat; vertex shining, matte between ocelli; punctation of frons and vertex similar, finer on genae. Mesoscutum uniformly, densely, and finely punctate ($d \leq \varnothing$); posterior part of mesoscutum with sparser punctation; scutellum punctate similarly to posterior part of mesoscutum; punctation of mesopleura similar to that of frons, but with more smoothed punctures. Propodeum in anterior part of dorsal surface with indistinct radial ridges, rest of propodeum with irregular fine sculpture. Abdominal tergites I–IV shining, bearing micropunctures at bases of semi-erect hairs (d = 1.5–2.0 $\varnothing$); pygidial field (Fig. 11, *7*) with coarse punctures constituting 1/3 of diameter of anterior ocellus (d = 1–3 $\varnothing$); abdominal sternites indistinctly transversely rugose, with micropunctures at bases of hairs and distinct punctures at bases of erect preapical hairs on abdominal tergites II–IV and on surface of sternite V.

Pubescence silvery, indistinct, very short, semi-erect, not concealing sculpture; longest hairs found on sides of abdominal tergites V and VI, densest hairs on sides of lower part of frons and clypeus. Psammophore on gena and lower surface of mandible formed by setae 1.5–2.0 times as long as basal width of mandibles (Fig. 11, *1c*); on fore femur, short setae forming no distinct rows; digging comb formed by 4 erect setae on 1st segment and 2 apical setae (approximately 1.5 times as long as subsequent segment) on each of 2nd–4th segment of fore tarsus.

Body coloration in general whitish yellow (Fig. 11, *1*, *6*, *8*). Lower part of frons along eyes, clypeus, scape, pronotal carina and sides, humeral calli, tegulae, wing veins, all white. Mandible (except for red-fuscous apex), antennal flagellum on lower side, head in general, pronotum anteriorly, mesoscutum in general, scutellum and metanotum, propleura and legs entirely, and propodeum and abdomen in general, all white-yellow. Middle and upper parts of frons, all yellow. Antennal flagellum on upper side, marginal fringe of clypeus, main part of abdominal tergite I, anterior part of tergite II, and posterior part of tergite IV, pair of lateral spots on sternite II, and sternite VI entirely, all rufous. Large dorsal transverse spot in middle of pronotum, small spots in anterior part of humeral calli, spots on propodeum near its posterior end, along median line, around shallow median pit on posterior surface, and along median line of its dorsal surface, and also spots situated along border with metanotum, all fuscous. Spots on vertex plates, around lateral ocelli and between them behind anterior ocellus, spot in upper part of occiput, apices of mandibles, stripes on mesoscutum, running along border between mesoscutum and pronotum, and also stripes running along median line and reaching nearly to scutellum , being interrupted at level of adlateral lines and reaching as far as scutellum laterally, all dark fuscous.

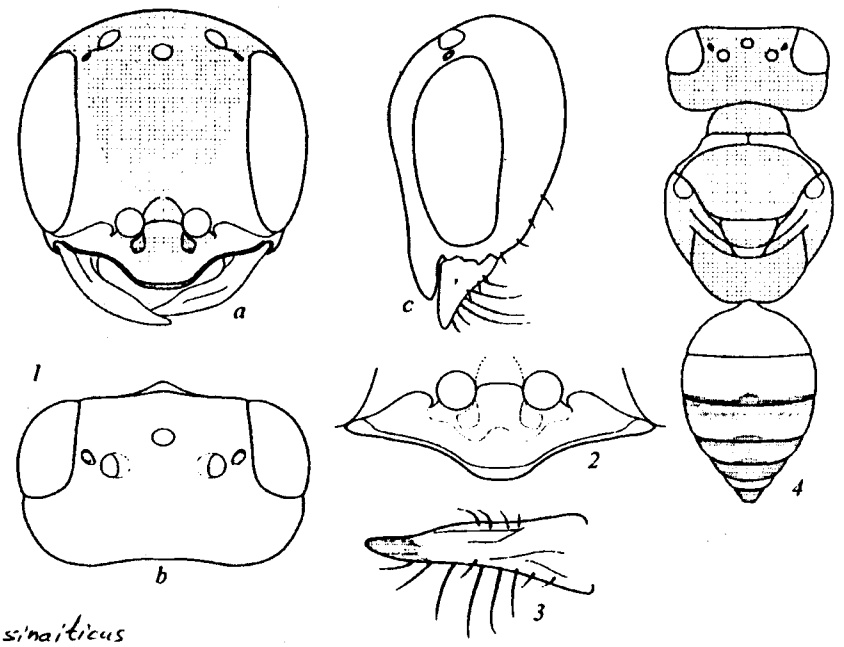

Fig. 13. *Pseudomicroides ~~schwarzi~~* sp. n., holotype, male: (*1*) head in anterior (*a*), dorsal (*b*), and lateral (*c*) view; (*2*) clypeus, front view; (*3*) mandible, outer view.

Body length 4.1 mm.

Male. Similar to female, except for gender characters. Head rounded in front view (Fig. 11, *2a*). *IOD* = 30 : 35. Vertex pits small, rounded, submat (Fig. 11, *2b*). *OOD* : *OD* : *POD* = 5 : 4 : 14; median lobe of clypeus straightly truncate at lower margin, with distinct lateral angles; mandible narrow.

Body sculpture similar to that in female, except for finer punctation of last tergites of the abdomen.

Psammophore on gena practically indistinct, on lower surface of mandible, it formed by setae (approximately as long as basal width of mandible) (Fig. 11, *2b, 4*); digging comb of fore tarsus narrow (Fig. 11, *5*).

Body coloration varying from black-fuscous to black (Fig. 11, *9*). Sides of median lobe of clypeus and its upper part, sides of lower part of frons and narrow stripes reaching to 3/4 of height of inner eye orbits, lower part of gena near base of mandible, most of mandible, anterior part of tegulae, wing veins, all femora distally, fore and middle tibiae in general, and hind tibia near distal end, all white. Antenna on lower side, trochanters at base, and fore tarsus, all white-yellow. Scape on posterior side, middle and hind trochanters and coxae distally, middle and hind tarsi, and narrow stripes running along margins of scutellum, all yellowish rufous. Median lobe of clypeus in general, antennal flagellum on upper side, middle tibia on inner surface, posterior semi-translucent fringes on all abdominal segments, and abdominal tergite VII, all rufescent fuscous. Fore coxa, fore and middle femora on posterior side, hind femur, and small spots on inner side of hind tibia, all fuscous.

Body length 3.5 mm.

Differential diagnosis. In the generally pale body coloration, female of *P. pulawskii* sp. n. is most similar to female of *P. desertus*, differing from it in the short spine-shaped and laterally-uncompressed prominence of median lobe of clypeus, and in the less developed dark pattern on the vertex, interrupted by dark lateral stripes on mesoscutum and entirely yellow-white legs and sides of thorax. In the distinct narrow stripes running along inner eye orbits, males of *P. pulawskii* sp. n. are similar to males of *P. nitidus* sp. n., differing from the latter in the entirely black pronotum, absence of white lateral and preapical spots on clypeus, narrow pale lateral stripes on scutellum and metanotum, and also in the densely punctate frons and mesoscutum with submat intervals between punctures.

Etymology. The species is named for one of the leading sphecid taxonomists, Dr. Wojcieh J. Pulawski (California Academy of Sciences, San Francisco, US).

Pseudomicroides schwarzi Antropov, sp. n.

Material. Holotype, ♂: "MALI, 60 km SW of Segou [Ségou], 1.VIII.1991 (leg. Max. Schwarz)" (MS).

Description. Male. Head rounded in front view (Fig. 12, *1a*); eyes nearly not diverging downward; *IOD* = 29 : 30; vertex plates indistinct, rounded, convex, shining (Fig. 12, 1b); *OOD* : *OD* : *POD* = 6 : 4 : 18; median lobe of clypeus convex, roundly truncate at

lower margin, with distinct lateral angles (Fig. 12, *2*); segments of flagellum, except for 9–11th ones, wider than long; segments 9 and 10 weakly longer than wide; ultimate segment approximately twice as long as its basal width. Admedial lines of mesoscutum strongly converging and indistinct; parapsidal lines indistinct; adlateral lines convex, fine, short, and shining; scutellum with vertical posterior part, overhanging above metanotum, and with short rounded lateral carinae in anterior part; metanotum somewhat depressed in the middle, with weak, laterally rounded carinae. Propodeum with posterior oval medial infringed pit with distinct bottom.

Body with fine, mainly uniform punctation, dispersed over shining background. Median lobe of clypeus with polished triangular field in the middle, laterally uniformly punctate ($d = \varnothing$); frons densely ($d = \varnothing$), finely, and uniformly punctate; vertex with fine and dense punctation at bases of hairs; ocellar triangle densely punctate ($d \leq \varnothing$); gena indistinctly punctate, without grooves. Pronotal carina with fine punctation; mesoscutum densely ($d = \varnothing$) and uniformly punctate, with sparse (d = 1.5–2.0 $\varnothing$) punctation in middle of posterior part; scutellum uniformly punctate ($d = \varnothing$ laterally and $d \geq \varnothing$ medially); in middle of posterior part, punctures forming shallow depression; mesopleura with micropunctation at bases of appressed hairs; metapleura with indistinct sculpture. Propodeum with short, but distinct radial carinae at anterior margin; rest of propodeum with irregularly rugulose, except for smooth area on posterior surface above medial pit. Abdominal sternites and tergites with transverse irregular microstriation and slightly distinct punctures at bases of hairs; tergite VI with distinct regular punctation ($d \geq \varnothing$); tergite VII with several large punctures in middle and near outer corners.

Pubescence silvery, very short, mainly appressed, not concealing sculpture. Psammophore on gena and fore femur and tibia indistinct; setae on lower surface of mandible not shorter than basal width of mandible (Fig. 12, *1c, 3*). Digging comb indistinct; 1st segment of fore tarsus bearing only 2 lateral setae; apical setae on 2nd–4th segments approximately as long as subsequent segment.

Body in general black. Median lobe of clypeus in lower part before marginal fringe, lateral lobes of clypeus laterally, basal 2/3 of mandible, small spots situated behind eyes in lower part of gena near mandible base, antenna on lower side as far as ultimate segment, fore tibia entirely, middle tibia in general, hind tibia along outer margin and at distal end, distal part of fore femur on lower side, middle and hind femora on outer side near distal end, tegulae, and wing veins, all yellow. Translucent marginal fringe of clypeus, ultimate segment of antenna on lower side, and all tarsi, all rufescent. Most part of clypeus, entire antenna on upper side, humeral calli, fore femur and middle tibia on inner side, semi-translucent narrow posterior fringes of abdominal tergites I–III and of all sternites, and abdominal segment VII entirely, all fuscous.

Body length 3.3 mm.

Female unknown.

Differential diagnosis. Among species with mostly dark body, *P. schwarzi* sp. n. is similar to *P. melas* in the entirely black head and thorax, differing from the latter in a truncate median lobe of clypeus, which bears a yellow stripe running along lower margin; yellow scape on lower surface; elongate 9th and 10th segments of flagellum; and absence of the digging comb on fore tarsus.

Etymology. The species is named for a well-known Austrian investigator and collector of aculeates, Dr. Maximilian Schwarz (Ansfelden, Austria).

Pseudomicroides sinaiticus Antropov, sp. n.

Material. Holotype, ♂: "EGYPT: Sinai, Wadi Gharandal [Wadi Huraydin] (30 km NW Abu Zenima [Abū Zenīmah]), 22.V.1993 (W.J. Pulawski)" (CAS).

Description. Male. Head rounded in front view (Fig. 13, *1a*); inner eye orbits running nearly in parallel; *IOD* = 28 : 31; frons with short, fine median groove in middle; vertex plates small, oval, and convex (Fig. 13, *1b*); *OOD* : *OD* : *POD* = 5 : 4 : 18; median lobe of clypeus weakly convex, oval and truncate at lower margin, without distinct lateral angles (Fig. 13, *2*); segments of flagellum wider than long; ultimate segment approximately 2.5 times as long as its basal width. Pronotal carina with distinct shallow medial depression; admedian lines of mesoscutum short and strongly approximate; parapsidal lines narrow, not longer than admedian ones; adlateral lines short and narrow, looking like grooves; metanotum weakly depressed in middle, bearing short rounded lateral carinae. Propodeum on posterior surface with shallow median pit.

Body with fine, more or less uniform and, in general, sparse punctation on shining background. Median lobe of clypeus polished in middle and posterior parts, finely punctate on sides ($d = \varnothing$); frons with fine, smoothed and uniform punctation ($d \leq \varnothing$); vertex and

gena weakly punctate, without grooves. Pronotal carina uniformly micropunctate; mesoscutum more densely punctate laterally and in anterior part ($d \leq \varnothing$) and sparser punctate in middle part ($d = 2\ \varnothing$); scutellum similarly punctate, densely ($d = \varnothing$) in anterior part and sparser in middle part ($d > 3\ \varnothing$); mesopleura indistinctly punctate ($d < \varnothing$ in upper part; $d \approx \varnothing$ in lower and middle parts); metapleura punctate in upper part, without longitudinal folds. Propodeum with short fine radial rugulae near anterior margin; rest of propodeum irregularly rugulose. Abdominal sclerites with fine micropunctation at bases of hairs; tergite VI with distinct flat punctures ($d = 2$–$3\ \varnothing$); tergite VII smooth, with several flat punctures.

Pubescence silvery, short, mainly appressed, not concealing sculpture. Psammophore on gena, fore femur, and tibia absent (only some setae no longer than anterior ocellus diameter present); setae on lower surface of mandible longer than basal width of mandible (Fig. 13, *1c*, *3*); 1st segment of fore tarsus bearing two lateral setae; apical setae on 1st–4th segments of fore tarsus not shorter than subsequent segment.

Coloration mainly yellow (Fig. 13, *1a*, *4*). Lateral sides of lower part of frons, lateral lobes of clypeus, mandibles in general, 1st and 2nd flagellar segments on lower side, pronotal carina, metanotum, tegulae, and wing veins, all cream-colored-white. Lower fringe of clypeus and antennal flagellum on upper side, posterior parts of abdominal segments III–VI, and entire abdominal segment VII, all rufous. Apex of mandible, vertex plates, ocelli, arolia, apices of claws, and pair of lateral spots on abdominal sternite II, all fuscous.

Body length 3.2 mm.

Female unknown.

Differential diagnosis. *P. sinaiticus* sp. n. differs from other known males of the genus in the whitish yellow body (except for infuscate apices of mandibles, vertex plates, two lateral rounded spots on abdominal sternite II, arola, and claw apices).

Etymology. The species name is a toponym.

Key to Species of the Genus Pseudomicroides of the World Fauna

1. Females: median lobe of clypeus with unpaired prominence; lower part of gena with triangular prominence; ultimate abdominal sternite laterally compressed ..... 2.

—Males: clypeus without median prominence; lower part of gena without prominence; ultimate abdominal sternite not compressed ..... 8.

2. Median lobe of clypeus with 3-dented prominence, compressed dorsoventrally (Syria) .... *P. mochii* sp. n.

—Median lobe of clypeus with unmodified, not compressed, or compressed laterally prominence .... 3.

3. Median lobe of clypeus with weak prominence in shape of a tubercle or a spine ..... 4.

—Median lobe of clypeus with strong and laterally compressed prominence ..... 5.

4. Prominence of clypeus short, spine-shaped; body in general yellow-white; lateral infuscate stripes on mesoscutum interrupted (Mauritania) .... *P. pulawskii* sp. n.

—Prominence of clypeus short, but nor spine-shaped; body with poorer yellow coloration; upper surface of head, mesoscutum, and anterior part of abdominal tergites I–III mainly black; dark stripes on mesoscutum continuous (Tunisia) .... *P. santschii* (Schulthess, 1925).

5. Prominence of clypeus non-truncate at apex (Kazakhstan) ..... *P. olgae* (Kazenas, 1979)

—Prominence of clypeus not truncate ..... 6.

6. Mesoscutum and propodeum without pale spots; abdominal tergites I–III with small lateral spots (Sri Lanka) ..... *P. rostratus* (Krombein, 1982).

—Mesoscutum with pale lateral and premedian stripes; at least abdominal tergites I and II with pale bands ..... 7.

7. Propodeum black; mesopleura in general black, bearing pale spots only before episternal suture, in posterior corners, and before middle coxae; occiput black; pale spots on genae separated; pale premedial stripes on generally black mesoscutum very narrow; abdominal tergites I and II with wide and narrow pale bands, respectively; pygidium dark fuscous (Canary Islands) .... *P. elvirae* (Gayubo, 1983).

—Propodeum (except for median spot on posterior surface and lateral stripes near anterior margin); mesopleura (except for parts situated behind episternal suture); head (except for a stripe between upper eye margins, including ocellar triangle); abdominal tergites I and II almost entirely (except anterior parts); and pygidium whitish yellow (Turkmenistan) ..... *P. desertus* (Antropov, 1994).

8. Body entirely (except for apices of mandibles, two lateral round spots on abdominal sternite II, arolia, and apices of claws) whitish yellow (Egypt) ..... *P. sinaiticus* sp. n.

—Body in general black, with or without pale spots ..... 9.

9. Head on posterior surface and scutellum entirely, all yellow ..... *P. olgae* (Kazenas, 1979).

—Head on posterior surface black, less frequently with slightly distinct stripes on lower part of gena ..... 10.

10. Lower part of frons with fine yellowish white stripes running along inner eye orbits ..... 11.

—Frons entirely black ..... 12.

11. Pronotal carina, scutellum, and metanotum, all with yellow spots; frons and pronotum finely and sparsely punctate, with polished intervals between punctures (Tunisia) ..... *P. nitidus* sp. n.

—Pronotum entirely black; scutellum and metanotum with narrow lateral yellow stripes; frons and pronotum densely punctate, with submat intervals between punctures (Mauritania) .... *P. pulawskii* sp. n.

12. Lateral lobes of clypeus and humeral calli with distinct whitish yellow spots (Rhodes Island) .... *P. fergusoni* (de Beaumont, 1960).

—Clypeus black or bearing fuscous-rufous spots; humeral calli colorless, fuscous ..... 13.

13. Prothorax fuscous or red-fuscous, noticeably paler than rest of thorax and propodeum; pronotal carina sometimes with a pair of indistinct rufescent spots; clypeus rufous, getting paler toward lower margin (Ukraine?, Kazakhstan, Tajikistan) .... *P. zimini* (Gussakovskij, 1952).

—Thorax and propodeum entirely black ..... 14.

14. Clypeus with median tooth and shining obtuse-triangular lower plate, black, with dark rufous lower margin of median lobe; 1st–10th segments of flagellum wider than long, yellow-rufous on lower side and fuscous on upper side; scape black; fore basitarsus with digging comb formed by 5 setae; scutellum uniformly and sparsely punctate (Uzbekistan) ..... *P. melas* (Antropov, 1994).

—Lower margin of median lobe of clypeus truncate, without median tooth; median lobe convex, without special plate, with shining triangular area; entire lower margin of clypeus with yellow stripe; 1st–10th segments of flagellum elongate; scape yellow on lower side; fore basitarsus without digging comb (2 or 3 setae); scutellum punctate, significantly denser and coarser in posterior part than in anterior one (Mali) ..... *P. schwarzi* sp. n.

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