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Two New Genera of Digger Wasps of the Tribe Oxybelini (Hymenoptera, Sphecidae, Crabroninae) with Reduced Hind-wing Venation

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Abstract—Two new genera of digger wasps of the tribe Oxybelini (Hymenoptera, Sphecidae, Crabroninae) from SW Africa are described. Both genera are characterized by reduced hind-wing venation without closed cells and jugal lobe. They include *Minimicroides* gen. n. with a single species, *M. perexiguus* sp. n., and *Belomicrinus* gen. n. with two species, *B. minutissimus* (Arnold, 1936) and *B. luteosquamatus* sp. n. The genus *Minimicroides* gen. n. is similar to species of *Belomicroides* (s. lato) in the unmodified abdominal segments, differing from them in the 5–3 palpal formula, dilated metapleural carinae, and developed median carina on propodeum. The genus *Belomicrinus* gen. n. is similar to species of the genus *Belomicrus* (s. lato) in the presence of lateral carinae on terga and in the flat abdominal sterna, differing in the presence of deep depression in posterior part of propodeum, restricted by two triangularly dilated carinae, and absence of psammophore in both sexes. Relations between *Minimicroides* gen. n. and *Belomicrinus* gen. n. and closely related genera of the tribe Oxybelini are discussed.

The tribe Oxybelini belongs to the subfamily Crabroninae both in the strict (Bohart and Menke, 1976; Finnamore, 1993) and broad sense (Menke, 1988; Menke and Fernandez, 1996). Until recently, the tribe comprised 6 genera: *Belomicroides* Kohl, 1899 (7 species from the Old World), *Belomicrus* A. Costa, 1871 (115 species from the Old World and North America, including Mexico), *Wojus* Antropov, 1999 (1 species from South Africa), *Brimocelus* Arnold, 1927 (3 species from South Africa), *Enchemicrum* Pate, 1929 (1 species from the Nearctic), and *Oxybelus* Latreille, 1796 (more than 220 species from both the Old and New Worlds, including the Neotropical Region). Hitherto, Oxybelini have not been recorded only from Australia.

In Bohart and Menke's (1976) opinion, a distinctive fore-wing venation with fused submarginal and discoidal cells, and also the structure of metanotum bearing developed posterolateral scale-like prominences (=squamae) and propodeum bearing dorsal spine (=mucro), typical of the tribe Oxybelini, distinguish this tribe from other species of the subfamily Crabroninae. In contrast to the overwhelming majority of species of the tribe Crabronini, in most species of Oxybelini distance between inner eye orbits in dorsal and ventral parts of the face is almost equal.

It should be noted, however, that only the first of the mentioned characters is completely true for the genus *Belomicroides* (sensu Bohart and Menke, 1976). In species of *Belomicroides*, the propodeum bears no spine and the metanotum possesses an indistinct, if at all present, lamelliform margination along posterior edge. The two characters mentioned above are typical of the genus *Belomicrus* (s. lato): in some of its species-groups, no spine is present on the propodeum. Inner eye orbits distinctly converge in the lower part of frons in some species of the genus *Belomicrus*, in *Wojus*, and also in all species of the genera *Minimicroides* gen. n. and *Belomicrinus* gen. n., described below. Consequently, fusion of 1st submarginal and 1st discoidal cells remains the only autapomorphy uniting all Oxybelini. The two new genera described below also possess this character and must be, beyond doubt, included in the tribe Oxybelini. However, both possess two features untypical of Oxybelini: reduced hind-wing venation (no closed cells present) and absence of the jugal lobe.

Reduced hind-wing venation in the new genera is not unique feature in the family Sphecidae. It is more or less pronounced in species of several recent genera of Sphecidae, e.g., *Ammoplanellus* Gussakovskij, 1931, *Ammoplanus* Giraud, 1869, *Timberlakena* Pate, 1939, and *Xysma* Pate, 1937 (Pemphredoninae, Pemphredonini), or *Nitela* Latreille, 1809 (Crabroni-

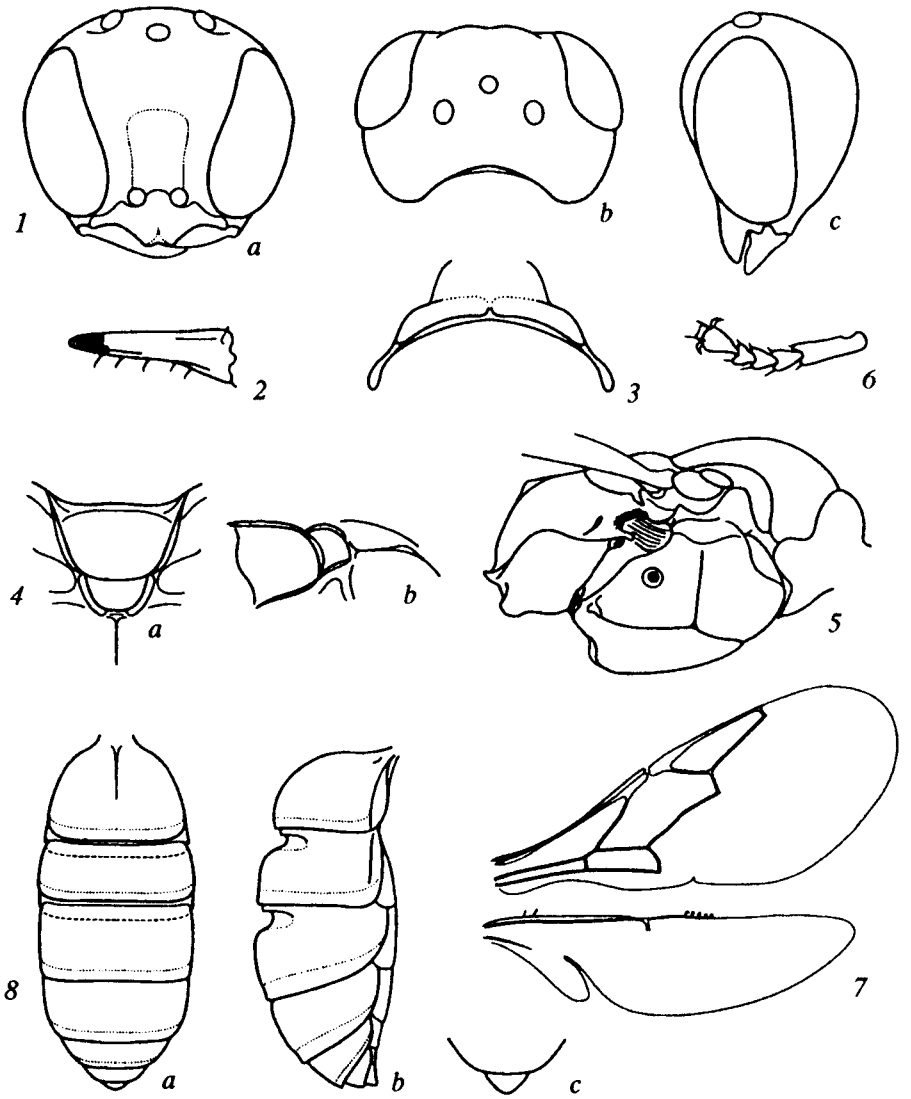

Fig. 1. *Minimicroides perexiguus* gen. et sp. n., male: (*1*) head: (*a*) front, (*b*) dorsal, and (*c*) lateral view; (*2*) mandible, outer view; (*3*) pronotum, dorsal view; (*4*) scutellum and metanotum: (*a*) dorsal and (*b*) dorsolateral view; (*5*) thorax and propodeum, lateral view; (*6*) fore tarsus, dorsal view; (*7*) wings; (*8*) abdomen: (*a*) dorsal, (*b*) lateral view; (*c*) tergum VII, dorsal view.

nae, Miscophini). In the mentioned subfamilies, reduction of hind-wing venation is typical of the most "advanced" genera and its independent origin is beyond doubt (at least in each subfamily). In my opinion, the reduction of hind-wing venation clearly correlates with the progressive diminishing of the body size, typical of species of all the genera where it has been found.

The absence of the jugal lobe in hind wing is also typical of species belonging to several recent genera of Sphecidae, e.g., *Ampulex* Jurine, 1807 (Ampulicinae, Ampulicini), *Aphelotoma* Westwood, 1841 and *Austrotoma* Riek, 1955 (Ampulicinae, Dolichurini), and also *Auchenophorus* Turner, 1907, *Miscophoidellus* Menke, 1976, *Miscophoides* Brauns, 1896, and *Saliostethoides* Arnold, 1924 (Crabroninae, Miscophini), or *Nursea* Cameron, 1902 (Nyssoninae, Nyssonini). Independence of the loss of the jugal lobe in these taxa is also beyond doubt. However, in contrast to the reduction of hind-wing veins, no relations have been established yet between the disappearance of the jugal lobe and changes in other morphological characters. In particular, even though most species of the mentioned genera have a rather small size (3–6 mm), in some species of *Aphelotoma* and *Ampulex* possess it exceeds 10–15 mm.

The work is based on examination of the material from the following collections: Plant Protection Re-

search Institute (Pretoria, South Africa—PPR), South African Museum (Cape Town, South Africa—SAM), Natural History Museum (London, UK—BMNH), and Zoological Museum, Moscow State University (Moscow, Russia—ZMMU).

Minimicroides Antropov, gen. n.

Type species *Minimicroides perexiguus* sp. n.

Diagnosis. Frons concave ventrally, convex dorsally, with distinct depression behind scapes; inner eye orbits distinctly converging ventrally; genae without carinae; paramandibular prominence on hypostoma developed, extending nearly to clypeus; mandibles with unmodified apex, without isolated emarginations or prominences at inner or outer margins; palpal formula 5–3; psammophore on mandibles and temples indistinct; male antennae unmodified. Pronotal collar convex, slightly lower than level of mesoscutum, with median depression, without transverse carina; mesoscutum moderately and uniformly convex, with indistinct traces of premedian lines and parapsidal and adlateral grooves; scutellum convex, with fine lateral carinae, without posterior teeth; metanotum moderately elongate, flattened, with narrow lateral fringes; mesopleura planoconcave anteriorly and ventrally, and convex laterally; episternal suture and hypersternaulus strongly developed; omaulus, sternaulus, acetabular and precoxal carinae, and precoxal tubercle absent; metapleura dorsally with strongly enlarged oval lobe. Apical tarsal segments unmodified; digging arolium on fore tarsus indistinct. Fore wing with narrow truncate marginal cell, without axillary cell; *cu-a* antefurcal; hind wing without closed cells and jugal lobe, with undivided row of hamuli (Fig. 1, *7*). Propodeum with obtuse, triangularly dilated apically, fine median carina, without distinct spine, with developed lateral carinae. Abdomen without lateral carinae on terga and with convex sterna; male abdominal tergum VII obtuse-angled, without pygidial area.

Biology unknown.

Systematics. The new genus differs from all other species of the tribe Oxybelini in the palpal formula (5–3) and in the absence of closed cells and jugal lobe in the hind wing (except in *Belomicrinus* gen. n., described below). It additionally differs from the genus *Belomicrinus* in the unmodified abdominal terga, absence of distinct scales on the metanotum, and unmodified median carina on the propodeum. The discussed genus is similar to *Belomicroides* (s. lato) in the structure of metanotum; in males, it differs from the latter in the inner eye orbits diverging in ventral part of frons, hypertrophied dorsal part of mesopleura, presence of medial carina on propodeum, and absence of pygidial area.

At present, *Minimicroides* is the only known genus of the tribe Oxybelini, possessing a 5–3 palpal formula. In the tribe Crabronini, at least 6 genera possess the same palpal formula; however, any relations between *Minimicroides* and these, on the whole, typical (even though possessing an elongated abdomen) Crabronini seem to me completely unjustified, being based on this solitary character. The absence of lateral carinae on abdominal terga and presence of developed separated structures on metanotum and propodeum relate *Minimicroides* with the genus *Belomicroides* (s. lato); both the genera probably form a monophyletic branch of Oxybelini. At the same time, all the mentioned distinctions of the new genus, associated, in my opinion, mainly with the small size, indicate a high level of its specialization.

Etymology. The generic name is formed by the words "minimus" (Latin for the smallest) and a part of the generic name *Belomicroides*.

Minimicroides perexiguus Antropov, sp. n.

Material. Holotype ♂: "S.W. AFRICA, Ameib Farm 19 mls. NW Karibib, 31.I–2.II.1972 (Southern African Exp. B. M. 1972-I)" [BMNH]. Paratypes: 2 ♂: "S.W. AFRICA (W30), Ameib Farm 19 mls. NW Karibib, 31.I–2.II.1972. On vegetation around pools. (Southern African Exp. B. M. 1972-I)" [BMNH]. One of paratypes has its head lost.

Description. Male. Frons rounded anteriorly; inner eye orbits distinctly converging ventrally (Fig. 1, *1a*); in lower anterior part of eye, ommatidia at least twice as large as those in upper part; middle of frons ventrally distinctly depressed as far as the level of scape apices; vertex not enlarged, without tubercles behind ocelli and grooves between lateral ocelli and inner eye orbits, distinctly depressed posteriorly (Fig. 1, *1b*); temples moderately developed, somewhat shorter than eyes (Fig. 1, *1c*); median lobe of clypeus flatly convex, without lateral teeth, distinctly narrowing toward pronouncedly concave apex; mandibles unmodified, pointed apically (Fig. 1, *2*).

Pronotal collar convex, with distinct median groove and convex posterior fringe (Fig. 1, *3*); mesoscutum convex, with indistinct premedian lines and parapsidal

and adlateral grooves; scutellum convex, rounded posteriorly, with narrow lateral carinae, without posterior teeth; metanotum with narrow lamelliform fringes divided posteriorly (Fig. 1, *4a*, *4b*); mesopleura convex, depressed anteriorly and ventrally; metapleura with strongly extended and backwards-bent dorsal lobe, covered with dense crooked setae along posterior margin (Fig. 1, *5*). Legs unmodified; fore tarsus without arolium (Fig. 1, *6*); middle tibia dorsally without spines, hind tibia dorsally with 2–3 small separate spines; femora swollen, unmodified.

Propodeum convex, with fine short obtuse-angled projecting median costa posteroventrally and distinct lateral carina adjoining dorsal metapleural carinae (Fig. 1, *4b*, *5*); posterior side with short shallow median depression.

Abdomen without lateral carinae on terga; terga II and III strongly and tergum IV somewhat less transversely depressed at base (Fig. 1, *8a*, *8b*); tergum VII widely triangular, slightly rounded apically, without pygidial area (Fig. 1, *8c*); sterna moderately convex.

Body sculpture mainly fine. Frons, vertex, temples, pronotum, and mesoscutum with very fine and dense punctation; intervals between punctures dull because of microstriation, as long as, or shorter than puncture diameter; punctures on scutellum similar but somewhat sparser; interpuncture intervals shining; metanotum with fine punctation; mesopleura densely punctate anteriorly and ventrally, with semi-dull surface; mesopleura shining posteriorly, with larger and sparser punctures; propodeum very densely, finely, and regularly reticulate, dull. Abdominal terga and sterna shining; terga I and II covered, except at smooth posterior margins, with distinct and dense, almost contiguous punctures (coarser on tergum I and somewhat more delicate on tergum II); terga III and IV mainly smoothly microstrigose; terga V and VI sparsely and finely punctate and transversely microstriate; sternum II obsoletely punctate over most of its surface and smooth at apex; sternum III mainly microstrigose; sterna IV–VI indistinctly finely punctate.

Pubescence silvery, not concealing sculpture, very short and erect on head and thorax, longer and mainly semi-erect on abdomen; sides of ventral part of frons and clypeus with dense appressed silvery hairs concealing sculpture.

Body mostly black. Antennae dark fuscous; mandibles (except for fuscous-red apex), fore tibia and tarsus entirely, middle and hind tibiae basally and apically, middle and hind tarsi (except for fuscous apical segments), all yellowish white; wing plates and tegulae fuscous; apical parts of terga I and II and V–VII slightly discolored, fuscous.

Body length 2.1 mm.

Female unknown.

Etymology. The species name emphasizes the small body size (*perexiguus*, Latin for very small).

Belomicrinus Antropov, gen. n.

Type species *Belomicrus minutissimus* Arnold, 1936.

Diagnosis. Frons flatly convex, with shallow depression caudally to scapes; in both sexes, inner eye orbits distinctly converging ventrally; ommatidia in anteroventral part of eye 2–3 times as large as those in dorsal part; vertex without developed foveae and tubercles posteriorly to lateral ocelli; genae without carinae; median lobe of female clypeus wide, laterally bordered with distinct angles; male clypeus without angles; paramandibular prominence on hypostoma developed, extending nearly to clypeus; mandibles with unmodified apex, with pointed tooth on inner side and without ventral lobe, angle, or setae of psammophore on outer side; palpal formula 6–4; antennae unmodified in both sexes. Pronotal collar convex, slightly lower than the level of mesoscutum, without transverse carina, with short median depression posteriorly. Mesoscutum moderately and uniformly convex, premedian lines and parapsidal and adlateral grooves obsolete; groove between mesoscutum and scutellum deep but fine, without costae; scutellum flatly convex, with very fine lateral carinae, not passing into teeth posteriorly; metanotum short, convex, with separated triangular scales rounded externally and pointed apically, their apices bent downwards; mesopleura anteroventrally flatly concave, posterodorsally convex; episternal suture, omaulus, and precoxal tubercle distinct; hypersternaulus in the form of shallow and short groove; sternaulus, acetabular and precoxal carinae absent; metapleura flat, dorsally without dilated carina. Apical tarsal segments unmodified; in both sexes, arolium on fore tarsus absent. Fore wing with large marginal cell, pointed or somewhat truncate apically, and subdiscoidal cell distinctly narrowed distally; *cu-a* antefurcal; hind wing without closed cells and jugal lobe, with continuous row of hamuli. Propodeum with lateral carinae and deep median depression, restricted

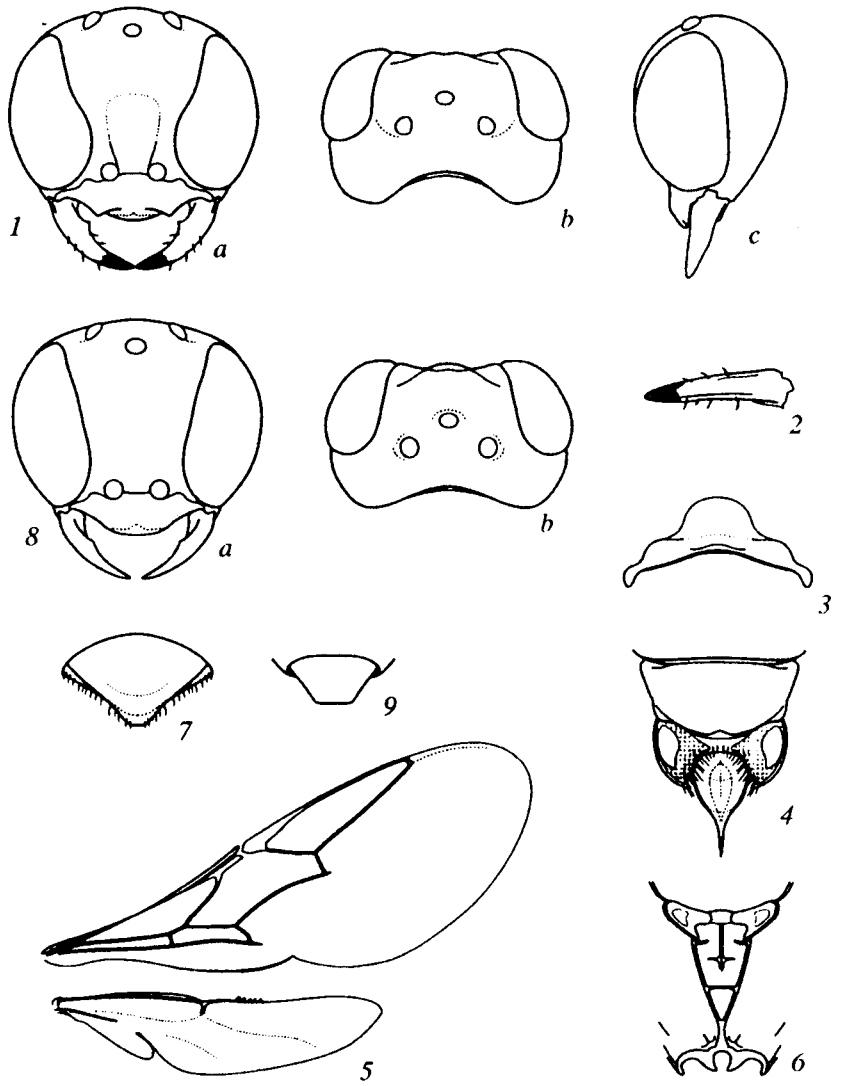

Fig. 2. *Belomicrinus luteosquamatus* gen. et sp. n., (*1–7*) female, (*8*, *9*) male: (*1*, *8*) head: (*a*) front, (*b*) dorsal, and (*c*) lateral view; (*2*) mandible, outer view; (*3*) pronotum, dorsal view; (*4*) scutellum and metanotum, dorsal view; (*5*) wings; (*6*) metanotum and propodeum, posterior view; (*7*) abdominal tergum VI; (*9*) abdominal tergum VII.

laterally by a pair of triangular dorsal branches of median carina. Abdomen with lateral carinae on all terga and flat or slightly depressed sterna; abdominal tergum I with deep distinct groove extending nearly to half of its length; in female, tergum VI with wide triangular pygidial area, restricted by distinct costae; in male, abdominal tergum VII truncate apically, without distinct pygidial area.

Biology unknown.

Systematics. The first species of the new genus, *B. minutissimus* (Arnold, 1936), was described in the nominotypical subgenus of *Belomicrus*; however, fundamental differences in the structure of the head, legs, and, especially, hind wings and propodeum testify to necessity of its separation in a distinct genus. The new genus differs from all species of the tribe Oxybelini in the distinctive structure of posterodorsal part of the propodeum with deep median depression restricted laterally by a pair of dilated triangular dorsal branches of the median carina and also (except for *Minimicroides* gen. n.) in the absence of closed cells and jugal lobe in the hind wing. The new genus differs from the genus *Minimicroides* gen. n. in the obsolete hypersternaulus, distinct omaulus and scales on metanotum, enlarged marginal and narrowed subdiscoidal cells in the fore wing, carinae on abdominal terga, and flat abdominal sterna; it also differs from *Belomicrus* (s.

lato), possessing similar structure of abdomen, in the absence of psammophore on temples and mandibles and absence of arolium on fore tarsus in both sexes.

Belomicrinus gen. n. is similar to *Belomicrus* (s. lato) and *Wojus* in the developed lateral carinae on abdominal terga; apparently, the three mentioned genera form a monophyletic group. At the same time, distinctions in the structure of propodeum testify, in my opinion, to the isolated taxonomic position of the genus *Belomicrinus* gen. n. in this group (evidently, at the apical part of the phylogenetic tree).

Etymology. The generic name *Belomicrinus* is the diminutive form of the word (generic name) *Belomicrus*.

Belomicrinus luteosquamatus Antropov, sp. n.

Material. Holotype ♀: "SOUTH WEST AFRICA, Namib/Naukluft Park, Kuiseb R nr Gobabeb, 23.34 S, 15.03 E, 18.II–20.III.1983 (Nat. Coll. Kuiseb Survey)" [PPRI]. Paratypes: 3 ♀, 14 ♂: "SOUTH WEST AFRICA, Namib/Naukluft Park, Kuiseb R nr Gobabeb, 23.34 S, 15.03 E, 18.II–20.III.1983 (Nat. Coll. Kuiseb Survey)" [PPRI, ZMMU]; 1 ♂: "SOUTH WEST AFRICA, (W22) Kuiseb River Canyon, 22–23.I.1982. Riverside vegetation (Southern African Exp. B.M. 1972-I)" [BMNH].

Description. Female. Head rounded anteriorly (Fig. 2, *1a*); inner eye orbits distinctly converging ventrally; ventral part of frons concave up to apices of scapes; vertex slightly enlarged, without tubercles behind ocelli, with obsolete groove between lateral ocellus and inner eye orbit (Fig. 2, *1b*); temples moderately developed, shorter than eye length (Fig. 2, *1c*); median lobe of clypeus convex, rounded apically, with distinct lateral teeth; mandible unmodified, with pointed apex (Fig. 2, *2*) and short pointed tooth near the middle of inner margin.

Pronotal collar convex, without transverse carina, with median depression and distinct posterior fringe (Fig. 2, *3*); mesoscutum convex, premedian lines and parapsidal grooves obsolete, hardly extending to 1/4 of its length; adlateral grooves short, shallow; scutellum convex, rounded and somewhat depressed posteriorly, with fine lateral carinae; metanotum with widely divided and rather short scales, pointed apically and slightly bent inwards and downwards (Fig. 2, *4*); mesopleura convex, distinctly depressed anteriorly and ventrally, with pointed precoxal teeth posteriorly; metapleura flat, with sharp and straight dorsal carina; legs unmodified; arolium on fore tarsus absent, length of apical setae on tarsal segments not greater than apical width of segments; middle tibia with shorter and sparse spines on dorsal side, hind tibiae with longer and denser spines; hind femur longitudinally depressed ventrally, bearing longitudinal carina before apex dorsally; marginal cell of fore wing strongly narrowed and narrowly truncate apically; axillary cell indistinct (Fig. 2, *5*).

Propodeum convex, with developed lateral carinae, adjoining dorsal carinae of metapleura; median carina on caudal side of propodeum bifurcate below its middle, forming apically pointed flat carinae, bordering smooth triangular-oval depression divided by lower transverse and upper longitudinal costae (Fig. 2, 6).

Abdomen with lateral carinae on all terga; basal parts of terga II and III transversely depressed; apical parts of terga I–V not depressed, pygidial area widely triangular (Fig. 2, *7*); sterna flat.

Body sculpture formed by dense fine punctation with shining interpuncture intervals; punctures and intervals of equal size; metapleura longitudinally rugulose; propodeum regularly and densely finely reticulate between lateral carinae and median depression and with smoothed sculpture laterally beneath lateral carinae; abdominal terga II–V smoothly and finely transversely rugulose; pygidial area with obsolete punctation, mainly laterally.

Pubescence silvery, very short, mainly appressed (except for long erect preapical setae on abdominal sterna), but not concealing the sculpture; sides of ventral part of frons and most of clypeus with very dense appressed hairs.

Body mostly black; mandibles mostly, scape and 2nd antennal segment entirely, flagellum ventrally, humeral calli, spots on wing plates and tegulae, inner halves of scales on metanotum, apical half of fore femur and apices of middle and hind femora, tibiae entirely, and tarsi (except for apical segment), all yellow-white; apical margin of clypeus rufous; flagellum dorsally and apical margins of abdominal terga fuscous; apex of mandible and pygidial area red-fuscous, paler at apex; ventrally bent margins of terga and apical parts of sterna translucent, fuscescent rufous.

Body length 2.7–3.2 mm.

Male. In general, similar to female in sculpture, pubescence, and coloration, except for characters as-

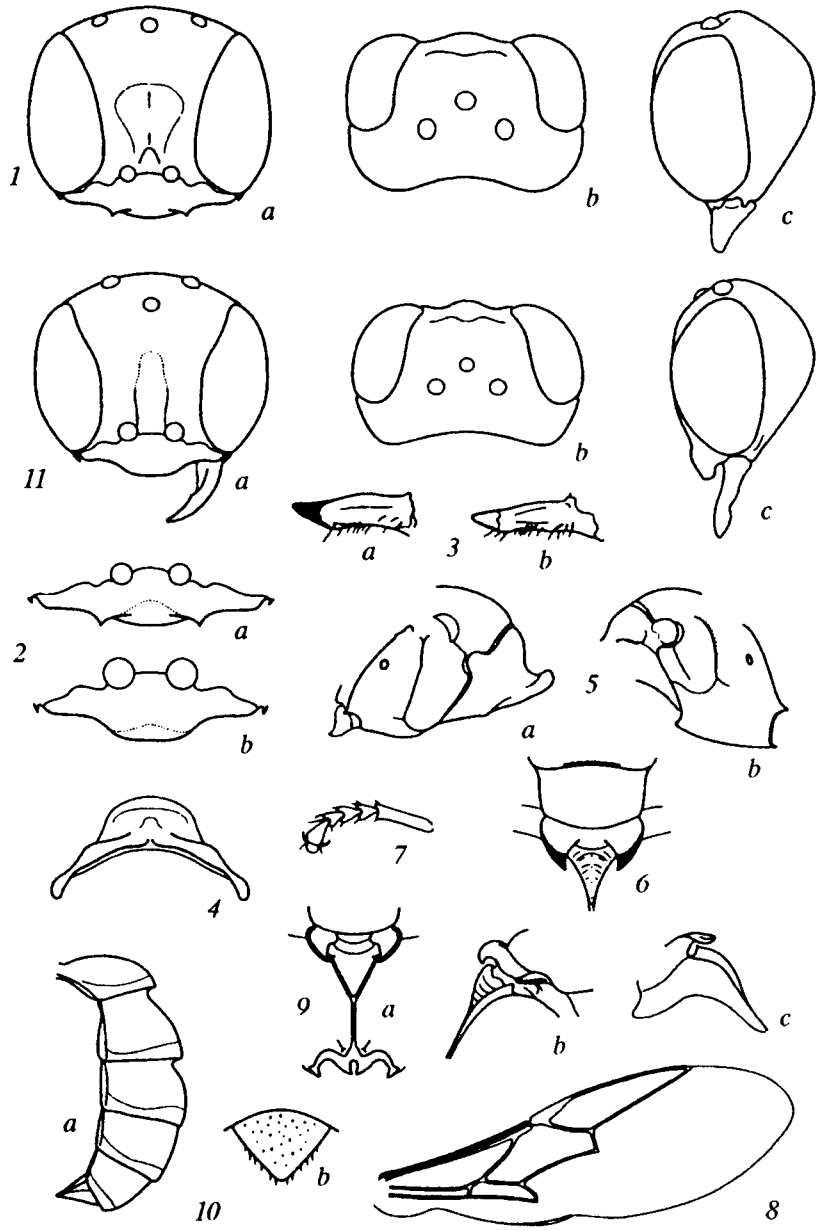

Fig. 3. *Belomicrinus minutissimus* (Arnold, 1936) (*1*, *2a*, *3a*, *4–10*) female, (*2b*, *3b*, *11*) male: (*1*, *11*) head: (*a*) front, (*b*) dorsal, and (*c*) lateral view; (*2*) clypeus, front view: (*a*) female, (*b*) male; (*3*) mandible, outer view: (*a*) female, (*b*) male; (*4*) pronotum, dorsal view; (*5*) anterior part of thorax: (*a*) lateral, (*b*) ventrolateral view; (*6*) scutellum and metanotum, dorsal view; (*7*) fore tarsus, dorsal view; (*8*) fore wing; (*9*) metanotum and propodeum: (*a*) posterior, (*b*) posterolateral, and (*c*) lateral view; (*10*) abdomen: (*a*) lateral view, (*b*) tergum VI, dorsal view.

sociated with sex: head more rounded anteriorly (Fig. 2, *8a*); vertex without fine groove between lateral ocellus and inner eye orbit (Fig. 2, *8b*); median lobe of clypeus with rounded margin; flagellar segments unmodified, mostly longer than wide; abdominal tergum VII truncate apically (Fig. 2, *9*).

Body length 2.2–2.7 mm.

Differential diagnosis. *Belomicrinus luteosquamatus* sp. n. differs from *B. minutissimus* in the triangular-oval and longer depressed area on posterior part of propodeum, yellow scales on metanotum with translucent areas; yellow, with fuscous spots, plates and tegulae; entirely white-yellow 2nd antennal segment and apical antennal segment yellow ventrally; obsolete punctation on female pygidium; and indistinct or absent plate on ventral part of male mandible.

Etymology. The species name refers to the coloration of scales on metanotum (luteus, Latin for yellow, and squama, Latin for scale).

Belomicrinus minutissimus (Arnold, 1936)

Belomicrus (*Belomicrus*) *minutissimus* Arnold, 1936: 31, ♀, ♂, SW Africa.

Material. Holotype ♀: "S.W. Africa. Aus. Jan 1930 (R.E. Turner, Brit. Mus. 1930–117)" [BMNH]. Paratypes: 3 ♀, 4 ♂: "S.W. Africa. Aus. Jan 1930 (R.E. Turner, Brit. Mus. 1930–117)" [BMNH, SAM].

Description. Female. Head rounded anteriorly, slightly transverse; inner eye orbits distinctly converging ventrally (Fig. 3, *1a*); frons shallowly concave ventrally; vertex moderately dilated, convex (Fig. 3, *1b*); temples distinctly enlarged in median part (Fig. 3, *1c*); median lobe of clypeus moderately convex, shining before apex, widely rounded apically, with distinct lateral teeth (Fig. 3, *2a*); mandible slightly dilated subapically beneath (Fig. 3, *3a*), with short pointed tooth near the middle of inner margin.

Pronotal collar convex, without transverse carina, with more or less distinct median groove and distinct posterior fringe (Fig. 3, *4*); mesoscutum convex (Fig. 3, *5*), premedian lines and parapsidal grooves obsolete, extending over less than 1/4 of its length; adlateral grooves short, shallow; scutellum convex, rounded posteriorly, with very fine lateral carinae; metanotum with widely divided and rather narrow, pointed triangular scales (Fig. 3, *6*); mesopleura convex, distinctly depressed anteriorly and ventrally, with pointed precoxal teeth posteriorly; metapleura flat, with sharp and straight dorsal carina. Legs unmodified; arolium on fore tarsus absent (Fig. 3, *7*), middle tibia with sparse short fine spines, hind tibia with rows of denser, robust and long spines dorsally; hind femur weakly depressed longitudinally on ventral side, bearing sharp preapical carina dorsally. Marginal cell of fore wing strongly narrowed and pointed apically; axillary cell indistinct (Fig. 3, *8*).

Propodeum convex, with developed lateral carinae adjoining dorsal carinae of metapleura; median carina on caudal side of propodeum bifurcate above its middle, forming apically pointed flat carinae bordering smooth triangular depression; the latter without dividing carinae (Fig. 3, *9*).

Abdomen with lateral carinae on all terga; basal parts of terga II–IV transversely depressed; apical parts of abdominal terga not depressed (Fig. 3, *10a*); pygidial area widely triangular, somewhat rounded apically (Fig. 3, *10b*); sterna flat.

Body sculpture formed by dense fine punctation with shining interpuncture intervals; intervals equal to, or longer than puncture diameter; on head, interpuncture intervals semi-dull because of microstriation; metapleura longitudinally rugulose; propodeum densely finely reticulate and dull between lateral carinae and median depression smoothly finely reticulate laterally; abdominal tergum I with fine punctation at base of hairs; terga II and III with obsolete sparse punctures and transverse microstrigosity; tergum IV with sparse and larger punctures, microstrigose; tergum V with even larger and denser punctures, microstrigose basally; pygidial area with sparse punctation formed by the largest punctures on semi-dull microstrigose background; abdominal sterna with smoothed microsculpture, mostly shining.

Pubescence very short, not concealing sculpture, on head and thorax appressed, on abdominal terga semierect, on abdominal sterna appressed (except for long erect setae of preapical rows); sides of frons and most of clypeus concealed by dense appressed hairs.

Body mostly black; mandibles (except for fuscous-red apex), scape entirely, 2nd–11th antennal segments ventrally, humeral calli, apical part of fore femur, fore and middle tibiae entirely, hind tibia mostly (except for fuscous median spot on dorsal side), and 1st–4th tarsal segments, all whitish yellow; apical part of clypeus red-rust; 2nd–11th segments of flagellum dorsally and apical segment entirely, all rufous; scales on metanotum semi-translucent and fuscous on the outside at apices and black on the inside; apical margins of abdominal terga semi-translucent, fuscous; pygidial area fuscous, fuscous-red apically; apical parts of sterna discolored, rufous-fuscous.

Body length 3.0–3.3 mm.

Male. In general, similar to female in sculpture, pubescence, and coloration, except for characters associated with sex: head more rounded anteriorly and narrower (Fig. 3, *11*); outer angles of median lobe of clypeus rounded and blunt (Fig. 3, *2b*); flagellar segments unmodified, mostly wider than long; abdominal tergum VII truncate apically.

Body length 2.6–2.9 mm.

Differential diagnosis. This species differs from *B. luteosquamatus* sp. n. in the triangular and shorter depressed area on posterior part of propodeum, entirely black scales on metanotum, wing plates and tegulae; 2nd antennal segment dorsally and entire apical antennal segment, all fuscous; distinct punctation

on female pygidium; and distinct plate on ventral part of male mandible.

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