New Species of Digger Wasps of the Genus Miscopus (Hymenoptera, Sphecidae) from Kazakhstan

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Abstract. Descriptions of 8 new species of the genus Miscopus Jurine are given: M. illiensis from Semirech'e, M. bishkekensis from SE Bishkek and Semirech'e, M. desertorum from Semirech'e, M. ochardarensis from Kyzylkum Desert, Aral Lake region, and Semirech'e, M. ticolar from Semirech'e, M. turanicus from S Turga Depression, M. nigrovittatus from Vicinity of Aktyubinsk, and M. magnus from Kapchagai Region.

Keywords: Hymenoptera; Sphecidae; Miscopus (8 n. spp.); taxonomy.

Wasps of the genus Miscopus Jurine occur almost worldwide. In the Palearctic Region about 120 species are known. Most of them live in arid lands. The fauna of Miscopus of Kazakhstan is rich, but is very poorly studied. Examination of materials I collected revealed about 30 species, including several new species. Below descriptions of 8 new species are presented. Holotypes and part of the paratypes are preserved in the Zoological Institute of the Russian Academy of Sciences, St. Petersburg, and in the collection of the Institute of Zoology of the Kazakh Academy of Sciences, Alma-Ata.

Miscopus illiensis Kazenas, sp. n.

Material. Semirech'e, Ili River valley, 18 km NE of Ayak-Kalkan, 2 VI.1971, 2 ♀♀ (including holotype); 16 VI.1971, 1 ♂; 15 km NE of Ayak-Kalkan, 8 VI.1971, 1 ♂; 16 km S of Ayak-Kalkan, 5 VI.1971, 1 ♂; 18 km NE of Ayak-Kalkan, 2 VI.1971, 1 ♀ (Kazenas).

Description. 9. Median lobes of clypeus with wide semitransparent margin, separated from lateral lobes by almost rectangular emarginations (Fig. 1A, a and b). Interval between antennal pits almost as wide as interval between one of them and eye and almost 1.4 times as wide as diameter of pit. Clypeus and frons with dense, close pubescence, in lower half of face completely covering sculpture. Genae with dense hairs, immediately posterior to eye with more or less densest hairs. Eyes almost evenly converging upward (Fig. 1A, a). Minimal distance between eyes on vertex approximately 1.5 times maximal distance on frons immediately below antennae. Interval between posterior ocelli approximately equal to diameter of ocellus and almost 1.2 times length of interval between ant ocellus and nearest eyes (Fig. 1A, c). Mesoscutum and scutellum with rather dense reticulate-fine sculpture, with tendency to form fine, irregular folds, with densest pubescence, often more or less reduced. Sides of mesopleuron with fine reticulate sculpture, more or less covered by densest pubescence. Dorsal field of intermediate segment with fine, dense transverse folds, with indistinct medial groove (shallow, but wide). Sides of propodeum with dense, fine, almost transverse folds and micropunctation more or less covered by densest decumbent yellow-silver pubescence. Abdomen with extremely fine, reticulate micropunctuation and slight decumbent pubescence, 65-8.4 mm.

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Color. Head and thorax black; abdomen ferruginous, sometimes with irregular black-brown spots; mandibles mostly pale yellow, more or less discolored, yellow in middle, amber-red at apex; margin of clypeus ferruginous, more or less discolored with black-brown anterol margin, apex anteriorly, spot on pedicel (also at base of 1st antennal segment) pale yellow; flagellum brownish black; humeral calli yellow on posterior margin; tegulae black, with ferruginous outer margin; wings in apical part with brownish darkened area, particularly intensive at apex of marginal (radial) cell; femora, rostrum, and coxae black, more or less ferruginous apically; tibiae ferruginous, femora posteriorly less brown, tarsi ferruginous; spines and spars black-brown.

Anterior margin of medial lobe of clypeus acutely protruding (Fig. 1A, d and e). Interval between antennal pits approximately 1.3 times interval between one of them and eye. Interval between posterior ocelli approximately 1.2 times as wide as interval between one of them and eye and almost 2 times as wide as eye (Fig. 1A, e). Sculpturation, pubescence, and color of body as in F. Abdomen in apical part more or less brown, but pygidiun ferruginous. Midfemora and hindfemora more or less ferruginous outwardly; 4.5-6.5 mm.

Differentiation diagnosis. In color of body (particularly in ferruginous abdomen) M. illeis is close to M. deserratum Kaz., M. butiipalulatus Kaz., M. thamarae Kaz., M. zekior Kaz., and M. repetitus Kaz. It differs from M. deserratum in mostly black femora; almost rectangular emarginations on anterior margin of clypeus; more dorsally converging inner margins of eyes; absence of wide, distinct longitudinal depression on forew; and antecor vertex. It differs from M. butiipalulatus in mostly ferruginous tibiae and tarsi, almost straight inner margins of eyes; wider face; rectangular emarginations on anterior margin of clypeus; yellow posterior margin of humeral calli; and less distinct border of apical darkened area of forewing. It differs from M. zekior in shape of emarginations of anterior margin of clypeus; straight inner margins of eyes; absence of yellow spots and stripes on legs; and absence of acute teeth on anterior margin of clypeus of d. It differs from M. repetitus in more dorsally con-
verging inner margin of eyes; less depressed fronts (compared to level of eyes); black cypræus, absence of yellow spots on legs; and less distinctly bordered apical darkened area of forewings. It differs from *M. tharsaderesi* in straight inner margin of eyes; entirely black cypræus; color of legs; and shape of emarginations of anterior margin of cypræus of *M. tharsaderesi*

*Mikrobius beppukadaiensis* Kajenaz, sp. n.

Material. SE Beppukada, 50 km N of Furmanovka, 10.VI.1988, 1 ♀ holotype; 70 km NW of Furmanovka, 22.VI.1975, 1 ♀; 90 km NW of Furmanovka, 10.VI.1975, 1 ♀; Turaigyr Ridge, 50 km SE of Chilak, 22.VI.1973, 1 ♀ (Kajenaz).

Description. ♀. Medial lobe of cypræus evenly convex, anteriorly with smooth margin, laterally with acutely angulate emarginations (Fig. 1B, a and b). Inner margin of eyes slightly emarginate, distinctly converging dorsally in upper part (Fig. 1B, a). Interval between one of antennal pits and eye 1.5-1.6 times interval between pits and approximately 1.2 times as wide as pit. Maximal width of face in middle of fronts almost 1.5 times as wide as minimal width on vertex. Interval between posterior ocelli approximately 1.2 times as wide as interval between one of them and nearest eye (Fig. 1B, c). Frontal line in middle more or less smooth. Front opaque, with dense reticulate microsculpturation. Pubescence in upper part of fronts developed. Mesonotum with densely reticulate microsculpturation and weakly developed pubescence. Upper part of propodeum with longitudinal, narrow depression, and without carina. Sides of propodeum with dense, fine, oblique folds. Abdomens with reticulate- papillate microsculpturation and weakly developed pubescence.

Color. Head and thorax black; humeral beckettes brown; antennae black; mandibles ferruginous-yellow and with black-brown apex; scape black, anteriorly with narrow yellow-ferruginous longitudi- nal stripe; abdomen red, partly ferruginous and partly (particularly apically) brownish; legs black, tarsi and apicera of all segments of legs brown or ferruginous; wings slightly brownish, in apical part with brown darkened area; veins brown and anterior veins brown; tegulae black-brown, with ferruginous outer margin.

Body length 6.9-8.2 mm.

♂. Medial lobe of cypræus anteriorly angulateily protruding (Fig. 1B, d and e). Eyes emarginate on inner margin and strongly convergent upward (Fig. 1B, d). Interval between antennal pits 1.1 times as wide as pit and interval between a pit and nearest eye 1.5 times as wide as pit. Interval between posterior ocelli 1.2 times as wide as interval between one of them and nearest eye (Fig. 1B, f). Medial lobe of cypræus anteriorly with dense, small punctuation. Fronts with smooth longitudinal line in middle, below with dense pubescence and above with more or less sparser pubescence. Upper surface of propodeum anteriorly with convex medial line and posteriorly with groove with fine transverse folds; sides fine folds extended at 45° angle to longitudinal line of body.

Color. Head and thorax black; abdomen ferruginous-brown and at base almost reddish; coxae black and on apex ferruginous, trochanters black-brown; femora black-brown with ferruginous base and apex; hindfemora brown ferruginous iridescent; tibia brown, foretibia anteriorly reddish; tarsi ferruginous-brown; humeral calli posteriorly brownish yellow; scape anteriorly yellow; pedicel and 1st segment of antennae with yellow spot; flagellum brown; tegulae brown and with pale brown margin; veins pale brown and partly brownish; scutella almost brown; wings brownish and with apical brown darkened area.

Body length 5.2-6.5 mm.

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Differential diagnosis. The species belongs to the 

**Miscophus desertorum** Kaz., *M. desertorum* differs from other species with ferroginuous-red abdomen in almost straight and almost parallel. Inner margins of

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eyes and general complex of characters, among which the following are most important: emargination on anterior margin ofclypeus acutely angulate and narrow; face relatively wide; frons with longitudinal depression in middle; humeral calli and tegulae ferruginous; legs ferruginous with only three black.

Mecopsalis taladrensis Kazenas, sp. n.

Material. 8 Kazakhstan, 5-8 km SW of Chardura, 3.VI.1982, 3 ♀♀; including holotype; 30 km SW of Arazik, 5.VII.1990, 1 ♂; 20 km S of Yassy-Kurgan, 14.VII.1990, 1 ♀; 70 km NW of Fumarona, 22 and 24 VI.1975, 2 ♀♀; 3 km NW of Kamyshtybash RR station, 28 VI.1990, 2 ♀♂; vicinity of Dzhusa, 10 VI.1990, 1 ♀; SE Kazakhstan, 65 km W of Baksan, 1VII.1981, 1 ♀; 11 km S of Panfilov, 20-23 IX.1970, 2 ♀♂; 13 ♀♀; 15 km E of Ayatk-Kalkan, 17 VI.1974, 1 ♂; 35 km NW of Kapchagai, 13 V.1982, 1 ♂ (Kazenas).

Description. ♀. Medial process ofclypeus anteriorly acutely protruding (Fig. 1D, a, b). Emargination on anterior margin ofclypeus acutely angulate (Fig. 1D, a, b). Clypeus mostly bare, on upper part with long pubescence at anteriorly and rather large punctation. Inner margins of eyes emarginate, dorsally strongly converging (Fig. 1D, a). Parts of vertex lateral of posterior ocelli rather depressed. Interval between anterior pits approximately 1.5 times interval between one of them and nearest eye and 1.2 times width of pit. Interval between posterior ocelli approximately equal to interval between one of them and nearest eye (Fig. 1D, c). Maximal width of face (on frons) 1.5 times minimal width (on vertex). Frons rather opaque, with finely reticulate microsculpturation, more or lessans (particularly below) covered by pubescence. Mesoscutum with reticulate microsculpturation and with brassy silvery pubescence. Stylars of propodeum segment with distinct oblique, dense, close fields. Abdomen with extremely finely reticulate microsculpturation. Pubescence of body well developed and on thorax more or less covering sculpturation.

Color. Head and thorax black; mandibles ferruginous yellow, more or less discolored, with red-brown spots; clypeus in anterior part yellowish ferruginous, with reddish brown, semitransparent margin. Scape, pedicel, humeral calli, tegulae, legs, and abdomen; ferruginous; antennal flagellum brownish; black; wings with brownish darkened apical parts (from posterior margin of marginal cell), slightly brownish elsewhere; veins reddish brown and subcosta brown; spines of legs dark brown; coxae at base more or less black; 6.6-7.2 mm.

♂. Anterior margin of medial lobe of clypeus obtusely angularly protruding (Fig. 1C, d, e). Clypeus more or less tectateely convex. Frons and clypeus with rather dense, denser silvery pubescence, often more or less rubbed off in upper part of frons and on medial part of clypeus. Inner margins of eyes slightly concave (Fig. 1C, d) and rather converging on vertex. Face relatively wide, maximal width of face (in middle part of face) approximately 1.25 times minimal width (on vertex). Maximal width of head (anteriorly) approximately twice as wide as maximal width of face in middle of frons. Interval between one anterior pit and nearest ocellus 1.3 times diameter of pit and equal to interval between pits. Interval between posterior ocelli slightly greater than between one of them and nearest ocellus (Fig. 1C, f). Thorax with rather dense decumbent pubescence. Propodeum dorsally in posterior half with wide, finely transversely rugose groove.

Color of body almost as in ♀. Scape and pedicel anteriorly yellow. First (sometimes also 2nd) flagellar segments with yellow anterior spot. Humeral calli with yellow posterior margin. Abdominal tergites sometimes partly brownish. Veins of wings sometimes partly (in apical part of wings) more or less discolored.

Body length 4.6-6.2 mm.
Mioscophus tibardavensis Kazenas, sp. n.

Material. S Kazakhstan, 5 1km SW of Chardara, 3 VI.1982, 3♀, including holotype; 39 km SW of Aralsk, 5.V.1990, 1♀; 20 km S of Yassy-Kurgan, 14.VII.1990, 1♀; 75 km NW of Zaranraverska, 22 and 24.VI.1975, 2♀, 3 km NW of Kamyslybash RR station, 28.VI.1990, 2♀; vicinity of Dzhusay, 10.VI.1990, 1♀; SE Kazakhstam, 65 km W of Bakanas, 1.VI.1981, 1♀; 11 km S of Panfilov, 28-30.IX.1970, 2♀; 13♂; 15 km E of Ayak-Kalkan, 17.VI.1971, 1♂; 35 km NW of Kapchagai, 1.V.1982, 1♀ (Kazenas).

Description. ♀. Medial process of clypeus anteriorly arcuately protruding (Fig. 1D, a, b). Emargination on anterior margin of clypeus acutely angulate and narrow; face relatively wide; fonts with longitudinal depression in middle, humeral calli and tegulae ferruginous, legs ferruginous with only comers brown.

Mioscophus tibardavensis Kazenas, sp. n.

Material. S Kazakhstan, 5 1km SW of Chardara, 3 VI.1982, 3♀, including holotype; 39 km SW of Aralsk, 5.V.1990, 1♀; 20 km S of Yassy-Kurgan, 14.VII.1990, 1♀; 75 km NW of Zaranraverska, 22 and 24.VI.1975, 2♀, 3 km NW of Kamyslybash RR station, 28.VI.1990, 2♀; vicinity of Dzhusay, 10.VI.1990, 1♀; SE Kazakhstam, 65 km W of Bakanas, 1.VI.1981, 1♀; 11 km S of Panfilov, 28-30.IX.1970, 2♀; 13♂; 15 km E of Ayak-Kalkan, 17.VI.1971, 1♂; 35 km NW of Kapchagai, 1.V.1982, 1♀ (Kazenas).

Description. ♀. Medial process of clypeus anteriorly arcuately protruding (Fig. 1D, a, b). Emarginations on anterior margin of clypeus acutely angulate (Fig. 1D, a, b). Clypeus mostly bare, on upper part with long decumbent pubescence and anteriorly with rather large punctuation. Inner margins of eyes emarginate, dorsally strongly converging (Fig. 1D, a). Parts of vertex lateral of posterior ocelli rather depressed. Interval between antennal pits approximately 1.5 times interval between one of them and nearest eye and 1.2 times width of pit. Interval between posterior ocelli approximately equal to interval between one of them and nearest eye (Fig. 1D, c). Maximal width of face (on fronts) 1.5 times minimal width (co vertex). Fonts rather opaque, with finely reticulate microsculpturation, more or less (particularly below) covered by pubescence. Mesonotum with reticulate microsculpturation and with pretty silvery pubescence. Sides of propodeum segment with distinct oblique, dense, close folds. Abdomen with extremely finely reticulate microsculpturation. Pubescence of body well developed and on thorax more or less covering sculpture.

Color. Head and thorax black; mandibles ferruginous yellow, more or less discolored, with red-brown apex; clypeus in anterior part yellowish ferruginous, with reddish brown, semitransparent margin. Scape, pedicel, humeral cali, tegulae, legs, and abdomen; ferruginous; anterior flagellum brownish black; wings brownish darkened apical parts (from posterior margin of marginal cell), slightly brownish elsewhere; veins reddish brown and subcostal brown; spines of legs dark brown; coxae at base more or less black; 6.0-7.2 mm.

♂. Anterior margin of medial lobe of clypeus obtusely angularly protruding (Fig. 1C, d, e). Clypeus more or less teatately convex. Fonts and clypeus with rather dense, decumbent silvery pubescence, often more or less rubbed off on upper part of fronts and on medial lobe of clypeus. Inner margins of eyes slightly concave (Fig. 1C, d) and rather converging on vertex. Face relatively wide, maximal width of face (in middle part of front) approximately 1.25 times minimal width (on vertex). Maximal width of head (anteriorly) approximately twice as wide as maximal width of face in middle of fronts. Interval between one antennal pit and nearest ocellus 1.3 times diameter of pit and equal to interval between pits. Interval between posterior ocelli slightly greater than between one of them and nearest ocellus (Fig. 1C, f). Thorax with rather dense decumbent pubescence. Propodeum dorally in posterior half with wide, finely transversely rugulose groove.

Color of body almost as in ♀. Scape and pedicel anteriorly yellow. First (sometimes also 2nd) flagellar segments with yellow anterior spot. Humeral calli with yellow posterior margin. Abdominal tergites sometimes partly brownish. Veins of wings sometimes partly (in apical part of wings) more or less discolored.

Body length 4.6-6.2 mm.
Differential diagnosis. M. chardarensis belongs to the galliens group. The new species differs from all close species with red-ferruginous abdomen (M. salina F. Mor., M. ilicini Kaz., M. desertorum Kaz., M. repanda, etc.), almost entirely red-ferruginous legs, scope, humeral calli, and anterior part of clypeus. In shape of inner margins of eyes the new species is close to M. brychaleus, but differs considerably in color or body.

Micropus trocellar Kazenas, sp. n.

Material. SE Kazakhstan, 11 km S of Panilov, 20.IV.1970, 1 ♀ holotype; 8 km S of Panilov, 12.IX.1970, 2 ♀; 8 km S of Panilov, 5.IX.1970, 1 ♀; 11 km S of Panilov, 19.IX.1970, 1 ♀; 15 km E of Ayak-Kalkan, 7 and 17.VI.1971, 2 ♀s (Kazenas).

Description. ♀. Anterior margin of clypeus arcuate, with acutely angulate emarginations (Fig. 2A, a, and b). Clypeus, frons, and genae with dense, decumbent pubescence. Clypeus with short shiny, low setae in middle. Vertex considerably lower than level of eyes (Fig. 2A, a). Inner margins of eyes slightly concave, dorsally nearly converging (Fig. 2A, a). Width of face in middle of face approxi-

Color. Head and thorax black; abdomen mostly ferruginous, partly slightly brownish; mandibles mostly pale yellow; clypeus near anterior margin pale yellow (at least laterally); margin of medial lobe of clypeus more or less brownish; scope anteriorly pale yellow; posteriorly brown; pedicel brown, anteriorly more or less yellow; antennal flagellum black; humeral calli yellow and partly ferruginous brown; tegulae yellowish ferruginous, with pale yellow outer margin; eye black, apically yellow-
ferruginous; trochanters ferruginous and on apex pale yellow ventrally; fore femora and middle femora ticolored, partly black, partly ferruginous and partly (ventrally) pale yellow; hind femora almost en-
tirely ferruginous and on apex outwardly yellowish; tibiae ferruginous (forelegs partly brownish), with pale yellow stripe on outer surface; wings with brown darkened area on apex, veins yellowish ferruginous and partly brownish; tarsi ferruginous, 1st segment more or less pale yellow; spine black-brown.

Body length 5.5-7.0 mm.

♂. Clypeus with carinate tubercles, on anterior margin with pointed teeth (Fig. 2A, 4 and e) and dense pubescence. Face with dense, yellowish silver pubescence, almost completely covering scutapulation. Inner margins of eyes weakly emarginate (Fig. 2A, d). Interval between antennal pits approximately equal to interval between one pit and closest eye (Fig. 2A, d). Interval between posterior ocelli slightly less than interval between one ocellus and closest eye (Fig. 2A, f). Thorax with well-
developed bristly-silvery pubescence. Metanotum with longitudinal medial depression. Dorsum of propodeum densely pubescent and without distinct fields. Dorsum of propodeum pubescent and without distinct lines. Sides of propodeum with distinct, fine, dense folds. Abdomen with very fine, reticulate microsculpturation and with well-developed pubescence. Abdominal tergites with bands of decumbent hairs near posterior margins.

Color. Mandibles mostly yellow and with red-brown apex; clypeus with lateral yellow spot; scope pale yellow and posteriorly with brown spot; pedicel with yellow spot; head and thorax black; humeral calli pale yellow, partly brown; tegulae brown at base, light brown in middle and with semitransparent margin; veins of wings brown and subcosta brown; apex of forewings with brownish white.
-darkened area and posteriorly less darkened; conus black or brown and with yellow apex; mesothorax brown and ferruginous, with yellow apex; forefemora and midfemora brown and ventrally with pale yellow spot, anteriorly partly ferruginous; hindfemora almost entirely ferruginous; tibia brown or brownish ferrugineous and with pale yellow stripe; tarsi ferruginous or brownish ferrugineous in segment partly yellow; abdomen red-ferruginous and partly brownish.

Body length 4.7-5.7 mm.

Differential diagnosis. *M. tricolor* belongs to the *gallicus* group. In color, sculpture, and pubescence of body it is closest to *M. repedetus* Kaz., but differs in femora partly black or brown on inner surface and more curved inner margins of eyes. It differs well from other species which also have red-ferruginous abdomen, in color of legs with pale yellow spots and stripes and also in presence of pointed, black tooth on anterior margin of clypeus of *M.*, in which it is close to *M. turanicus* Kazenas. However, *M. turanicus* has rather darker color of body, particularly black abdomen and legs without ferruginous color.

*Miscophus turanicus* Kazenas., sp. n.


Description. ♀. Anterior margin of medial lobe of clypeus slightly sinuously curved, with gradual medial emargination mixed with almost straight (Fig. 2B, a, b). Lateral emarginations (Fig. 2B, a, b). Clypeus in upper part arcuate or with tubercle. Frons with decumbent pubescence, sometimes weakly developed in upper part. Inner margins of eyes weakly emarginate and strongly converging upward (Fig. 2B, a). Interval between antennal pits 1.3 as wide as pit and interval between one pit and closest eye approximately 1.7 times width of pit. Face relatively wide (Fig. 2B, a). Interval between posterior ocelli approximately equal to interval between one ocellus and closest eye (Fig. 2B, c). Mesoscutum with densely reticulate microsculpture and with well developed, decumbent pubescence. Propodeum 106
slightly longitudinally depressed in middle and with fine, dense folds. Abdomen with very fine, reticulate-molded microsculpturation. Spine on apex of 1st segment of foretarsi approximately equal to length of 2nd segment.

Celer. Head and thorax black; abdomen mostly black and partly brownish or reddish (particularly on sides and near base); mandibles at base pale yellow, in middle fereurrugosus and with red-brown apex; scape mostly pale yellow anteriorly; pedicel with pale yellow spot anteriorly; flagellum black and partly more or less brown; humeral calli posteriorly pale yellow or fereurrugosus; tegulae brown or light brown, on sides semi-transparent; wings brownish, with brown apical darkened area and veins brown; coxae, trochanters, and femora black; forefemora and midfemora (or only forefemora) with pale yellow spot below; tibiae outwardly with pair yellow stripe, on rest of surface fereurrugosus and partly black-brown; tarsi brownish fereurrugosus; spots on femora sometimes very small or absent. Body length 9.5-8.3 mm.

♂. Clypeus with acute narrow process on anterior margin, in middle distinctly convex and usually with more or less smooth, bare, triangular area in anterior part (Fig. 2b, d). From in upper part more or less pubescent, sometimes partly bare, with reticulate microsculpturation and opaque; in lower part slightly reticulately convex. Clypeus in middle part bare. Face relatively wide, inner margins of eyes slightly concave, converging ventrally (at level of anterior ocelli) and dorally (on vertex) (Fig. 2b, d). From without longitudinal depression. Interval between anterior pits approximately 3.5 times interval between one pit and closest eye. Interval between posterior ocelli approximately equal to interval between one of them and closest eye (Fig. 2b, e). Mesoscutum in middle slightly depressed. Mesoscutum and scutellum with fine, reticulate microsculpturation. Dorsal area of propodeum with fine, dense folds and with indistinct longitudinal depression in middle.

Celer. Head, thorax, and abdomen black; mandibles yellow, more or less discolored, at base brown and on apex red-fereurrugosus; scape anteriorly yellow; pedicel with yellow spot, flagellum black-brown and sometimes with yellow spot at base; legs black, forefemora and midfemora below usually with pale yellow spot; tibiae with pale yellow stripe; tarsi brown and terminally reddish; wings brownish and in apical part with more intensively brown darkened area; veins brown; apical segments of abdomen brownish-fereurrugosus or brown; humeral calci terminally paler (usually pale yellow); tegulae brown or fereurrugosus and with pale margin; abdomen sometimes more or less brownish or fereurrugosus basiventrally; apical depression of tergites more or less brownish.

Body length 9.5-8.3 mm.

Differential diagnosis. *M. nervosus* belongs to the *gallicus* group. It differs from other species of this group in a general complex of characters, among which the following are most important: clypeus of *♀* with acute medial tooth or anterior margin; medial lobe of clypeus of *♂* with slightly sinuately-curved (in middle usually emarginate) or almost straight anterior margin; face of *♂* relati-fly wide, eyes clearly diverging ventrally; abdomen black (sometimes partly brownish or fereurrugosus ventrally and near base); forefemora (sometimes also midfemora) with pale yellow spot below (sometimes without it) and this outwardly usually with pale yellow stripe. In structure of clypeus of *♂* the new species is close to *M. tricolor* †f., but sharply differs in body color.

*Micophanus* nigro-ventri *Kazenas*, sp. n.


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Description. Anterior margin of medial lobe of clypeus with acute anterior margin, laterally separated from lateral lobes by narrow emarginations (Fig. 2C, a, b). Clypeus and frons entirely with dense, decumbent, silvery pubescence. Inner margins of eyes slightly emarginate, weakly converging on vertex. Interval between antennal pits approximately 1.2 times, interval between one pit closest eye and 1.2 times as wide as pit. Clypeus evenly, tuberculately convex in middle. Interval between posterior ocelli slightly greater than interval between one of them and closest eye (Fig. 2C, f). Thorax with dense silvery pubescence with brassy hue on upper surface. Scutellum with fine, dense, longitudinal folds formed of intervals between dense rows of small punctations. Propodeum dorsally with dense, fine, transverse folds with micropunctuation and without medial carina. Propodeum laterally with almost same sculpturation. Abdomen with extremely fine, reticulate microsculpturation and micropunctuation, smooth, almost bare and shiny. Frons without distinct groove or longitudinal line. Mandibles dingy yellow and with red-brown apex. Margin of clypeus brownish and with black margin. Scape anteriorly pale yellow. Pedicel black and with pale yellow anterior apex. Decumbent hairs of upper part of frons, pronotum, mesonotum, scutellum, and dorsal area of propodeum yellowish-silver and grayish. Tegulae black-brown and with semitransparent ferruginous margin. Wings slightly brown yellowish, pale brown veins and brown apical darkened area. Subcostal area brown. Coxae black, apically ferruginous. Trochanters brownish ferruginous and hindtrochanters darker. Femora black, at base and on apex ferruginous. Tibiae brownish ferruginous. Tarsi ferruginous brown. Abdomen black, tergites with brownish and partly discolored margins. Abdomen with 4 bands of silvery hairs on posterior margin of tergites.

Body length 8.5 mm.

Clypeus with obtusely angularly protruding or more or less mesally rounded anterior margin and with acute angulate emarginations (Fig. 2C, d and e). Clypeus tuberculately convex. Face with dense, close pubescence (below silver-white and above silver-yellowish-gray). Inner margins of eyes weakly emarginate, almost straight, and almost parallel (Fig. 2C, d and e). Interval between posterior ocelli 1.2-1.25 times interval between one ocellus and closest eye (Fig. 2C, e). Interval between antennal pits approximately 1.2 times interval between one pit and closest eye. Thorax with dense, decumbent pubescence, in some places almost covering sculpture. Propodeum without folds. Abdomen with 5 bands of silvery hairs near posterior margins of tergites and with very fine, reticulate microsculpturation.

Color. Body black; mandibles dingy yellow, with brown apex; margins of clypeus brownish and with black anterior margin; scape pale yellow and posteriorly brown; pedicel black and with yellow spot, first segment of flagellum with yellow spot, flagellum black-brown; humeral calli with pale yellow posterior margin; tegulae black-brown, with pale brown or ferruginous margin and partly semitransparent margin; veins pale brown and partly yellowish or brownish; subcosta brown; wings with dark apical darkened area; coxae black and on apices yellow-ferruginous; trochanters dark ferruginous; femora brown with ferruginous base and apex; tibiae and tarsi brownish ferruginous; tibiae at outside outwardly more or less yellow; femora sometimes almost entirely ferruginous; abdomen black and with brown or ferruginous apex; abdominal tergites with brownish or ferruginous discoloration on posterior margin; base of abdomen basilaterally more or less ferruginous.

Body length 5.4-5.6 mm.

Differential diagnosis. M. nigrovenosus belongs to the gallicus group. Morphologically it is closest to M. raubits Kaa. (from Turkmenia) and differs from it in densely pubescent face of coria (not smooth nor shiny) and some details of color (particularly ferruginous-brown trochanters and bases of femora), which, however, may vary. The new species differs from many species of the gallicus group in color of
abdomen (black, but on margins of segments usually more or less fumigous-brown), and also in almost straight, very weakly converging upward inner margins of eyes and very wide face. is different from M. invisiormus Kae in color of legs, shape of clypeus and face, and details of color and pubescence of body.

Mycophagus magnus Kaezani, sp. n.

Material. SE Kazakhstan, vicinity of Kapchagy, 23 VIII.1959, 2 M (including holotype), 1 F (Kaezani).

Description. Anterior margin of medial lobe of clypeus acute, laterally with acute angular emarginations (Fig. 2D, a and b). Clypeus anteriorly with sparse pubescence and evenly carved. From in upper part without dense pubescence, terespaque and densely and finely punctate, without groove, but with more or less effaced medial line. Face relatively narrower (Fig. 2D, a). Margins of eyes slightly concave, in lower part almost parallel and very converging upward (Fig. 2D, a). Interval between posterior ocelli 1.25 times interval between ocellus and closest eye (Fig. 2D, c). Interval between anterolateral pits approximately 1.2 times interval between anterior pits and closest eye. Propodeum in upper part with very fine transverse folds and medially slightly elevated longitudinal line. Sides of segment with dense, oblique, fine folds. Abdomen with fine reticulate microsculpturation. Spine on apex of 1st segment of foretarsal as long as 2nd segments and 1.3 length of 3rd segment together. Abdominal tegment posteriorly, with narrow bands of decumbent pilosity.

Color. Body black; mesadibles at base fumigous-yellow, in middle fumigous and on apex brown; scape black and with anterior brownish yellow stripe; flagellum black; humeral calli black or partially brown; segune black and with brown margin; forewings brownish and with dark brown apical darkened areas; veins brown; legs black and spaces of segments brownish; abdomen black and segments haevitentially with more or less fumigous-brown.

Body length 5.9-7.7 mm.

* Margin of medial lobe of clypeus obtusely angularly protruding, laterally with almost rectangular emarginations (Fig. 2D, d and e). Pubescence of face relatively weakly developed. Inner margins of eyes slightly concave and somewhat converging on vertex (Fig. 2D, d). Interval between antenal pits approximately 1.25 times interval between antenal pit and closest eye. Width of head in middle of from 2.2 times maximal width of face. Interval between posterior ocelli approximately 1.1 times interval between ocellus and closest eye (Fig. 2D, f). Decumbent pubescence on body relatively poorly developed and hardly covering sculpture. Dorsal surface of propodeum with dense, fine, transverse folds and sides of segment with dense, fine, oblique folds.

Color of body as in * M. mandibles before red-brown apex fumigous-yellow and at base pale yellow. Scapa and pedicel pale yellow. First and 2nd segments of flagellum with small brownish yellow spot. Humeral calli posteriorly dingy yellow. Legs black, partly fumigous-brown.

Body length 6.5 mm.

Differential Diagnosis. M. magnus belongs to the gallius group. It differs from other species of this group in a generic complex of characters, among which the following characters are more important: front narrow, but with distinct longitudinal line in middle; inner margins of eyes curved, very converging upward, body and legs black; abdomen partly (especially below near the base) brownish olive and tarsi partly brownish veins of forewings brown. It differs from M. invisiormus Kae in curved,
upwardly converging inner margins of eyes, less dense pubescence; and in details of color of legs (generally darker). It differs from M. rutilus Kaz. in shape of face and its sculpluration; absence of longitudinal depression in middle of frons in ♂, and darker color of legs. The new species is close to M. laminatus Guss. in color and sculpluration of body and in structure of elytral processes and shape of face, but differs in less evenly darkened area on forewings (presence of distinct border of the apical darkened area).