

Palaeartic Fly Species from the Genus *Minettia* (Diptera, Lauxaniidae)

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Abstract—Descriptions of *Minettia caucasica* sp. n., *M. fuscescens* sp. n., *M. nigritarsis* sp. n., and *M. filippovi* sp. n. are given together with a key for 51 Palaeartic species of *Minettia*. The following synonyms are established: *M. gemina* Shatalkin, 1992 = *M. tarsata* Sasakawa, Kozanek, 1995, syn. n. and *M. gemmata* Shatalkin, 1992 = *M. kimi* Sasakawa, Kozanek, 1995, syn. n. Two species from the genus *Calliopum* (Sasakawa, Kozanek, 1995): *M. acrostichalis* Sas., Koz., comb. n. (may be conspecific to *M. coracina* Shatalkin, 1992) and *M. dolabriforme* Sas., Koz., comb. n. are attributed to the genus *Minettiella*.

The genus *Minettia* Robineau-Desvoidy, 1830 comprises more than a hundred species distributed mainly in the Holarctic. Fifty-one species, including those listed below, have been found in the Palaeartic. The data on these species are given by me in the form of a summary key. Nominations of chaetae in the key and descriptions are given according to the "Key to Insects from the European Part of the USSR" (1969). The types of the new species are deposited at the Zoological Museum, Moscow State University. Only those articles with descriptions of new species are mentioned which have appeared after publication of "The Catalogue of Palaeartic Dipterans" (Papp, 1984).

The presence of a single intraalar chaeta is a distinguishing character of the *Minettia* species. Of other distinguishing characters, the following can be noted: ocellar chaetae are in most cases parallel (not diverging) and located outside the ocellar triangle; the triangle itself is, as a rule, equilateral; antennae more frequently bear a pinnate arista; wings usually have no spots or stripes; body is lusterless. The intraalar chaeta is also typical of the Palaeartic genus *Peplominettia* Szilady which includes three species with original wing pattern resembling that in representatives of the genus *Peplomyza* Haliday. Species of *Peplominettia* possess a genital apparatus typical of *Minettia*; therefore, its separation as an independent genus seems to be insufficiently substantiated. However, they are not considered here, with readers referred to the recent revision by Papp (1991).

The present paper also does not discuss species of the subgenus *Minettiella* Malloch, characterized by a

shining black frons and a single sternopleural chaeta. In body color these species are more similar to representatives of the genus *Calliopum* Strand. Their genitalia are also highly specialized and have an original structural organization. *Minettiella* is a rather specialized group deserving separation as an independent genus. A key to 4 (2 Palaeartic and 2 Oriental) known *Minettiella* species was given in my previous publication (Shatalkin, 1995). Earlier in the same year, two new species of the genus *Minettia* were described (Sasakawa and Kozanek, 1995), erroneously attributed by the authors to the genus *Calliopum*. They included *M. acrostichalis* Sas. Koz., comb. n. and *M. dolabriforme* Sas. Koz., comb. n. Both species were described from material collected in North Korea. The first of these is probably conspecific to *M. coracina* Shatalkin, 1992. Our second species, *M. elbergi* Shatalkin, 1995, and also *M. japonica* Sasakawa (Sasakawa and Mitsui, 1995) are in all probability conspecific to the previously described *M. dolabriforme*.

On the whole, the Palaeartic species of *Minettia* clearly differ in appearance and structure of genitalia, so that their determination is easy in most cases. However, this is not true for a number of the Mediterranean species, reliably distinguishable only by genital characters. In particular, I could not find any distinct external differences between the *M. plumicheta* Rd. and *M. flavipalpis* Lw. males. In the understanding of these species I follow Papp (1981), who revised the types and gave genital pictures. It was found that in Loew's collection deposited at the Berlin Museum type specimens from Sicily, including representatives

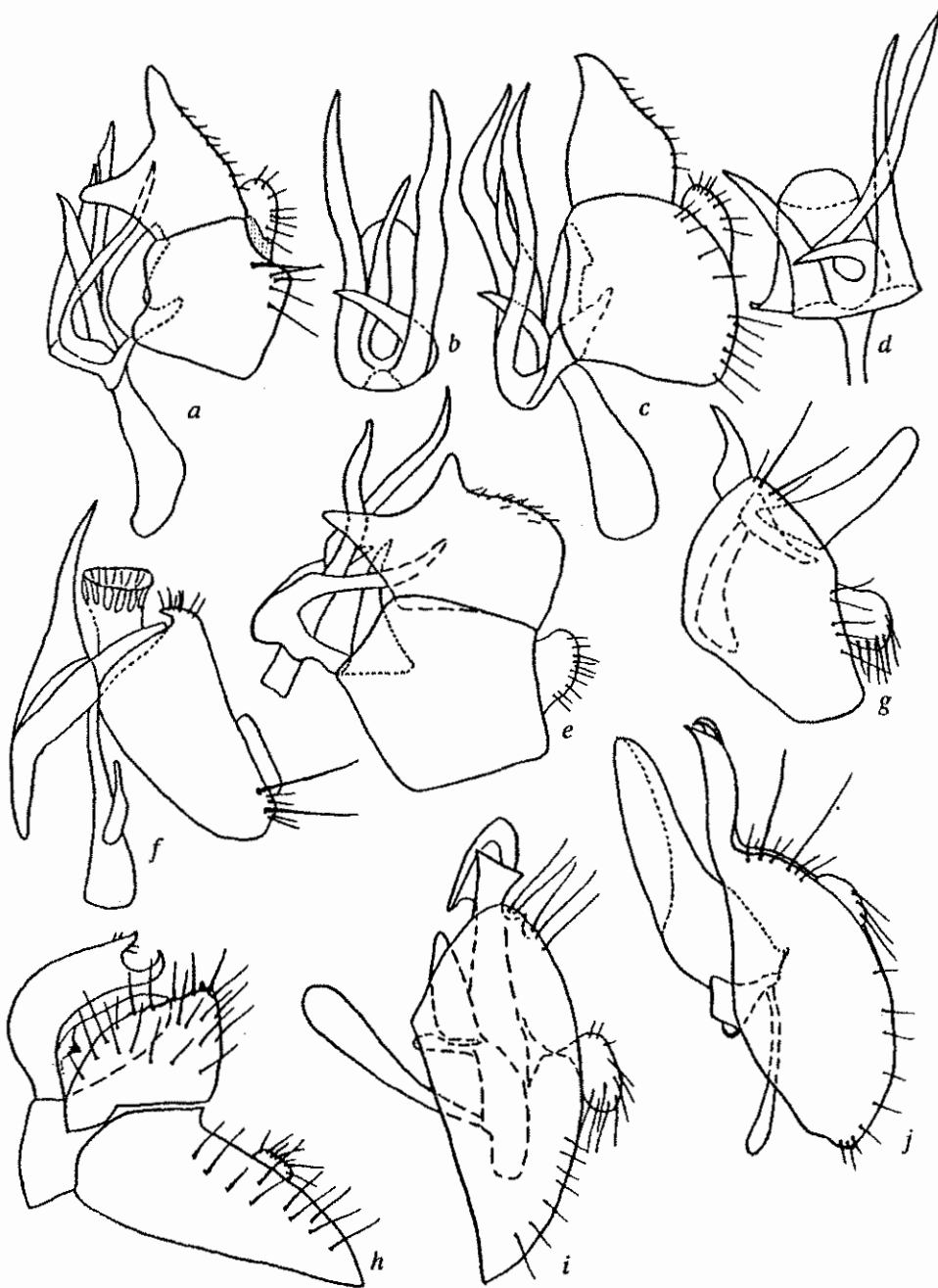


Fig. 1. Structure of genitalia in *Minettia* species: (a) *M. longipennis* F., (b-c) *M. martineki* Ceianu; (d) *M. nigritarsis* Shatalkin, sp. n.; (e) *M. kunashirica* Shatalkin; (f) *M. acuminata* Sasakawa; (g) *M. punctata* Sasakawa; (h) *M. filia* Beck.; (i) *M. helvola* Beck.; (j) *M. fuscescens* Shatalkin, sp. n.

of both this species and *M. plumicheta*, are designated as "*Minettia flavipalpis*." The additional material from Sicily from Oldenberg's collection (Eberswalde, Germany), examined by me, included one more species of similar appearance with a characteristic structure of parameres: lobes straight, rather than bent as in other species. Probably, this species had been described

earlier under presently forgotten names; it is not included into my key. Note that, without reliable species diagnostics according to characters of the external skeleton, I am not really sure that the traditional scheme of female separation based only on examination of types (see couplets 103-105 of my key), accepted here, is adequate.

As for the genital structures themselves, differences in structure of surstyli and lobes of hypandrium are usually significant in distinguishing closely related *Minettia* species. Originally (as, e.g., in representatives of the group *M. longipennis*, Figs. 1a–1e), hypandrium had been connected with two pairs of inner and outer lobes, corresponding to parameres and derivatives of gonopodes. In most species, the latter appendages are absent, and parameres are transformed (probably, as a result of fusion) into a single furcate structure with two (Figs. 2e–2h) or three (Fig. 2d) lobes; in some species the mentioned structure possesses even greater number of lobes. One more structure of unclear origin, designated here as a dorsal outgrowth of aedeagus, provides a number of important diagnostics characters. This sclerite, looking like a groove, envelopes the aedeagus dorsally and laterally. In the simplest case, the upper (caudal) edge of the dorsal sclerite has no appendages, differing only in degree of convexity (Fig. 2b) or concavity (Figs. 2c, 2f). In some species (e.g., in *M. bulgarica* Papp and *M. plumicosus* Fallen), it is elongated along the median line to form a tooth directed backwards (dorsally). In species of other groups, lateral angles of the dorsal sclerite are elongate, forming dorsally oriented teeth (Fig. 2g). These teeth may be very large, as in Fig. 2h.

Based on differences in genitalia, Papp (1981) described two species, *M. graeca* and *M. palaestinensis*. Later these species were synonymized with *M. biseriana* Loew, 1847 (Freidberg and Yarom, 1990). The material examined by me allows distinguishing *M. palaestinensis* as a reliable species.

Minettia caucasica Shatalkin, sp. n.

Material. Holotype ♂, Krasnodar Territory, Western Caucasus, environs of Tuapse (Lazarevskoe), 19.VII.1989 (Shatalkin).

Description. Male. Frons 1.4 times as long as wide; yellow in anterior quarter and dark brown, nearly black with distinct gray pollination around and between *or*, and also around ocelli. Vertex and occiput gray dusted. Face dark gray, parafacials with brownish tint, genae dark gray. Dark brown contrasting spot lying between antennae and eyes. Basal antennal segments yellowish brown, 3rd segment brown, twice as long as wide at base, rounded (not pointed) apically. Arista brown with long hairs; its pubescence as long as 3rd antennal segment. Proboscis and palpi black. Ocellar chaetae widely arranged and located outside

ocellar triangle. Thorax dark gray. Scutellum behind chaetae black. Legs black; fore tibiae in basal third, middle and hind tibiae in basal half, apex of middle femora, and also middle and hind tarsi yellow. Wings yellowish with brownish bordering along anterior margin, not darkened at wing base. *ta* slightly shorter than half of discoidal cell. Last section of M_{1+2} 1.3 times as long as preceding one. Halteres light yellow. Two first abdominal segments yellowish brown, others black, narrowly yellow along posterior margin, somewhat shining. Thoracic chaetotaxy: 1 *h*, 1 *ph*, 2 *npl*, 0 + 3 *dc*, *ac* six-rowed in anterior part and four-rowed behind suture, 1 *ppl*, 1 *mspl*, 2 *stpl*.

Body length 3.2 mm.

Female unknown.

Comparison. The species is closely related to *M. lupulina* F. The latter differs in the lighter coloration of head, more developed black stripe on scutellum, found also on sides of its dorsal surface, yellow hind legs and middle tibiae, and yellowish brown abdomen. In addition, *M. lupulina* possesses four-rowed *ac* and slightly darkened base of wings.

Minettia fuscescens Shatalkin, sp. n.

Material. Holotype ♂, Japan, Honshu, Nagano-ken, Chino-shi, 20–21.VI.1994 (Arita, Gorbunov). Paratypes: 3 ♂, same locality.

Description. Male. Head dark brown with bronze tint. Frons 1.2 times as long as wide, brownish yellow in anterior quarter and with triangular brownish yellow spot around ocellar triangle in posterior part. Parafacials yellowish brown. Dark brown contrasting spot lying between antennae and eyes. Antennae yellowish brown, 3rd segment 1.6 times as long as wide at base, with rounded (not pointed) apex. Arista brown, with short hairs; its pubescence as long as width of dilated basal part or slightly longer. Proboscis and palpi brownish black. Ocellar chaetae widely arranged and located outside ocellar triangle. Thorax rusty brown. Legs dark brown; fore tibiae narrowly yellowish at base, tarsi yellowish. Wings yellowish with yellow veins, not darkened at wing base. *ta* located in the middle of discoidal cell. Last section of M_{1+2} 1.7 times as long as preceding one. Halteres dark brown, stalk yellowish at base. Genitalia as in Fig. 1j. Thoracic chaetotaxy: 1 *h*, 1 *ph*, 2 *npl*, 0 + 3 *dc*, *ac* six-rowed in anterior part and four-rowed behind suture (one pair of

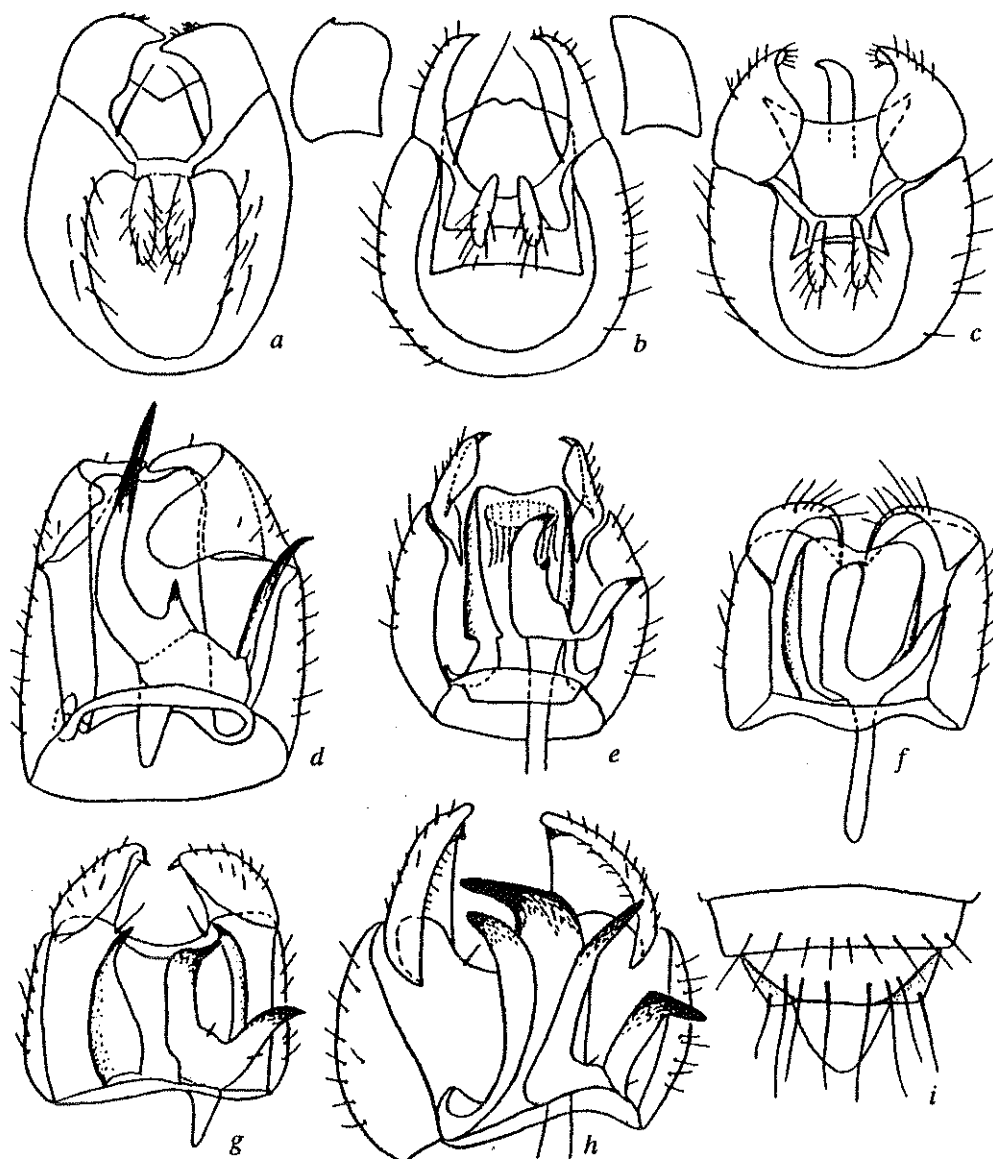


Fig. 2. Structure of genitalia in *Minettia* species and (i) terminal tergites of female abdomen: (a) *M. subvittata* Lw., (b) *M. rivosa* Mg., (c) *M. fasciata* Fll., (d) *M. bulgarica* Papp, (e) *M. filippovi* Shatalkin sp. n., (f) *M. palaestinensis* Papp, (g) *M. plumicheta* Rd., (h) *M. muricata* Beck, (i) *M. muricata* Beck.

long acrostichal chaetae present in addition to prescutellar one), 1 *ppl*, 1 *mspl*, 2 *stpl*.

Body length 3.8 mm.

Female unknown.

Comparison. The new species is similar superficially to *M. helvola* Beck. Both species have the same coloration and an additional pair of long acrostichal chaetae. The arista pubescence is longer in *M. helvola*; also, the halteres in this species are entirely yellow, being bicolored in *M. fuscescens* sp. n. In this respect, the new species is closely related to species from the

group *M. longipennis*. The genitalia in *M. fuscescens* are highly specialized and similar in main characters to those in *M. punctata* Sasakawa, which, however, clearly differs in the yellow body coloration and presence of a pair of marginal black spots on the scutellum.

***Minettia nigratarsis* Shatalkin, sp. n.**

Material. Holotype ♂, Primorskii Territory, Khasansk District, Tsukanovo, 17.VII.1986 (Churkin). Paratypes: 1 ♂, 1 ♀, same locality, 17.VII.1986 (Churkin).

Description. Male. Head black. Frontal triangle and orbits gray pollinated. Frons narrowly reddish brown in anterior part. Parafacials light gray dusted. Weak brown spot present between antennae and eyes. Antennae yellowish brown, 3rd segment 1.7 times as long as wide at base, rounded (not pointed) apically. Arista brown with long hairs; its pubescence as long as width of 3rd antennal segment or longer. Frons 1.2 times as long as wide. Lower part of face with distinct swellings. Proboscis dark brown, palpi black. Ocellar chaetae widely arranged and located outside ocellar triangle. Thorax black; middle and hind tarsi yellow. Hind tibiae with well-developed apical chaeta. Wings yellowish with yellow veins, darkening at base. *ta* somewhat not reaching to ***the middle of discoidal cell. Last section of M_{1+2} 1.4 times as long as preceding one. Halteres dark brown, stalk yellowish at base. Surstyli without ventral lobes, as in *M. martineki* Ceianu, but with different proportion of hypandrium lobes (ca. Figs. 1b and 1d). Thoracic chaetotaxy: 1 *h*, 1 *ph*, 2 *npl*, 0 + 3 *dc*, six-rowed *ac*, 1 *ppl*, 1 *mspl*, 2 *spl*.

Body length 3.4 mm.

Female. Similar to male. Body length 4.0 mm.

Comparison. The species is closely related to *M. longipennis* F., differing in the entirely black fore tarsi, six-rowed acrostichal chaetae, and structure of genitalia. Surstyli in the new species have no ventral lobes. In the last character, *M. nigratarsis* sp. n. is similar to *M. martineki* Ceianu, which, however, possesses eight-rowed *ac*, and also differs in hypandrium structure. In *M. martineki*, outer ventral lobes of hypandrium (gonopodes) as long as parameres or longer (Fig. 1b). On the contrary, the new species has asymmetrical ventral lobes: one of these is twice as long as the other. On the whole, hypandrium in *M. nigratarsis* is more similar to that in *M. longipennis*.

Minettia filippovi Shatalkin, sp. n.

Material. Holotype ♂, Crimea, Alupka, 18.IX.1936 (Filippov).

Description. Male. Head yellow. Frons 1.3 times as long as wide; light yellow in anterior part and brownish yellow in posterior one. Dark brown contrasting spot lying between antennae and eyes. Antennae yellow, 3rd segment twice as long as wide at base, with rounded (not pointed) apex. Arista brown with long hairs; its pubescence longer than width of 3rd antennal segment. Proboscis and palpi yellow. Ocellar chaetae widely arranged and located outside ocellar

triangle. Thorax yellow. Legs yellow. Wings yellowish with yellow veins, not darkened at wing base. *ta* distinct behind the middle of discoidal cell. Last section of M_{1+2} 1.4 times as long as preceding one. Halteres yellowish. Dorsal sclerite of aedeagus (Fig. 2f) without lateral outgrowths directed backwards (dorsally), lobes of paramere without traces of sclerotization. Thoracic chaetotaxy: 1 *h*, 1 *ph*, 2 *npl*, 0 + 3 *dc*, six-rowed *ac*, 1 *ppl*, 1 *mspl*, 2 *spl*.

Body length 3.9 mm.

Female unknown.

Comparison. The new species differs from the closely related *M. biseriata* Lw. (Turkey) and *M. palaestinensis* Papp (Greece, Palestine) in the presence of six (instead of four) rows of acrostichal chaetae. However, differences in the structure of genitalia are the most significant. In *M. filippovi* sp. n. males, the dorsal sclerite has rounded apical lateral margins, which are not elongated to form dorsally oriented outgrowths, as is characteristic of the two other mentioned species. Furthermore, the parameral lobes in the new species are not sclerotized and form no dilation along the line of junction (Fig. 2f).

The species is named for N.N. Filippov, who has done so much to create the Diptera collection at the Zoological Museum, Moscow State University.

Key to Species of the Genus *Minettia*

- 1(16). 1 + 3 *dc*, i.e., presutural dorsocentral chaeta present.
- 2(5). Wings darkened along anterior margin.
- 3(4). Arista with long hairs, its pubescence distinctly longer than half width of 3rd antennal segment. Head and thorax yellow. Wings widely darkened on *tp*. Larger: 4.3–5.3 mm. Western Europe, Caucasus *M. inusta* (Meigen, 1826)
- 4(3). Arista with short hairs, its pubescence shorter than basal width of arista. Thorax dark gray. Frons yellow with contrasting dark gray stripes along line *or*. Both transverse veins not darkened. Smaller: 2.9–3.4 mm. Europe (Austria) *M. styriaca* (Strobl, 1892)
- 5(2). Wings not darkened along anterior margin.
- 6(11). At least mesonotum largely yellow.
- 7(10). Thorax yellow.
- 8(9). Scutellum with a pair of small black or dark brown spots laterally to apical chaetae. Two

- pairs of large acrostichal chaetae present in addition to prescutellar ones. Japan, Kuril Islands *M. ishidai* (Sasakawa, 1985)
- 9(8). Scutellum yellow without black spots; only prescutellar chaetae present. Algeria, Israel *M. quadrisetosa* (Becker, 1907)
- 10(7). Mesopleura and sternopleura gray, mesonotum with wide gray stripe along *ac*. Spain *M. andalusiaca* (Strobl, 1899)
- 11(6). Mesonotum gray.
- 12(15). *ac* four-rowed.
- 13(14). Body black. Mesonotum, excluding lateral margins, and scutellum gray. Antennae dark, yellowish only at arista. Legs black, tarsi yellowish. Halteres black with yellow stalk. Japan, Primorskii and Khabarovsk Territories *M. nigriventris* (Czerny, 1932)
- 14(13). Thorax light gray, abdomen yellow. Antennae entirely yellow. Halteres yellow. Legs yellow. Western Europe, Ukraine, Caucasus *M. flaviventris* (Costa, 1844)
- 15(12). *ac* six-rowed. Thorax gray, scutellum yellowish at apex. Abdomen yellow with brownish fringe along anterior margin of tergites. Legs yellow, fore femora dark gray on upper side. Western Europe, Israel, Crimea, Central Asia (Turkmenistan) *M. tubifer* (Meigen, 1826)
- 16(1). 0 + 3 or 0 + 2 *dc*, i.e., presutural dorsocentral chaetae absent.
- 17(18). Humeral tubercles with 2 chaetae. Frons-face angle nearly rectangular. Israel *M. galil* Freidberg, Yarom, 1990
- 18(17). Humeral tubercles with 1 chaeta. Frons-face angle about 135°.
- 19(20). Body black. Mesonotum, scutellum, and mesonotum yellow. Transpalaeartic species *M. loewi* (Schiner, 1864)
- 20(19). Body coloration different.
- 21(24). Scutellum gray with black marginal fringe.
- 22(23). Black stripe on scutellum wide, continuing on dorsal surface. Hind legs yellow. Abdomen mostly yellow. Transholarctic species *M. lupulina* (Fabricius, 1787)
- 23(22). Black stripe on scutellum narrow, terminating at the line of insertion of chaetae, never continuing on dorsal surface of scutellum. Hind legs black. 3rd and succeeding abdominal segments black. Western Caucasus *M. caucasica* Shatalkin, sp. n.
- 24(21). Scutellum of different color.
- 25(43). Halteres bi-colored, with black or brown knob and yellow stalk.
- 26(27). Body rusty brown with bronze tint (as in *M. helvola*). One pair of large acrostichal chaetae present in addition to prescutellar chaetae. Genitalia as in Fig. 1j. Japan *M. fuscescens* Shatalkin, sp. n.
- 27(26). Body dark gray to black. Only prescutellar chaetae present.
- 28(37). Wings noticeably darkened at base. Lower part of face commonly with distinct swellings on each side.
- 29(30). Hind tibiae without subapical chaeta. Surstyli bilobed, with well-developed ventral lobe (Fig. 1a). Holarctic *M. longipennis* (Fabricius, 1794) (typical form).
- 30(29). Hind tibiae with subapical chaeta.
- 31(32). European species. *ac* eight-rowed. Surstyli without ventral lobe (Fig. 1c); lobes of hypandrium more or less equal (Fig. 1b). Romania, Transcaucasia (Kobuleti) *M. martineki* Ceianu, 1991
- 32(31). Far Eastern forms.
- 33(34). Fore tarsi yellowish. *ac* six-rowed. Surstyli bilobed, with both lobes well developed (Fig. 1a). Primorskii Territory, Kuril Islands (found together with typical form, see couplet 29) *M. longipennis*.
- 34(33). Fore tarsi black.
- 35(36). Hind and middle tarsi yellow as far as apex. Facial prominences distinct. *ac* six-rowed. Surstyli without ventral lobes as in *M. martineki*; but lobes of hypandrium of different structure (cf. Figs. 1b and 1d). Primorskii Territory *M. nigritarsis* Shatalkin, sp. n.
- 36(35). Ultimate segments of middle and hind tarsi darkened. Facial prominences less distinct. *ac* eight-rowed. Surstyli bilobed, with noticeably larger ventral lobe (Fig. 1e). Kuril Islands *M. kunashirica* Shatalkin, 1992

- 37(28). Wings not darkened at base. Lower part of face with hardly visible swellings.
- 39(42). *ac* six-rowed. Anterior part of frons brownish.
- 40(41). Larger: 4 mm. Frons along anterior margin and median stripe extending as far as ocellar triangle forming T-shaped spot yellowish brown. Antennae black, 3rd segment slightly lighter at base, but not brownish yellow. Large surstyli elongated caudally and completely visible in lateral view of genitalia. Europe (Austria)
..... *M. austriaca* Hennig, 1951
(=? *Sapromyza multiseriata* Czerny, 1932)
- 41(40). Smaller: 3.0–3.2 mm. Frons yellowish brown only along anterior margin. Basal antennal segments and base of 3rd segment brownish yellow. Surstyli smaller, drawn into epandrial cavity, and as a result, only partly visible in lateral view (Fig. 1f). Japan, Sakhalin
..... *M. acuminata* Sasakawa, 1985
- 42(39). *ac* four-rowed. Frons entirely black. Genitalia similar to those in two preceding species; surstyli elongated dorso-ventrally with distinct median concavity, and, as a result, looking bilobed. Primorskii Territory *M. eoa* Shatalkin, 1992
- 43(25). Halteres yellow.
- 44(65). Arista with short pubescence or glabrous.
- 45(46). Face yellow with black median spot. Arista bare. Thorax dark gray; abdomen grayish black, posterior margins of tergites brownish yellow; 4th tergite yellow with narrow widely interrupted grayish black crossband along anterior margin and dark brown median spot. North Korea, Primorskii Territory
..... *M. gemmata* Shatalkin, 1992
(*M. kimi* Sasakawa, Kozanek, 1995, syn. n.)
- 46(45). Face without black spot. Arista with distinct hairs.
- 47(54). Body yellow.
- 48(51). Scutellum with pair of lateral black spots between marginal chaetae.
- 49(50). Scutellum with small spots lateral to apical chaetae. Two pairs of large acrostichal chaetae present in addition to prescutellar ones (Kuril forms, see couplet 12) *M. ishidai*
- 50(49). Scutellum with large lateral spots occupying nearly entire area between basal and apical chaetae. No large acrostichal chaetae present in addition to prescutellar ones. Genitalia as in Fig. 1g. Japan, Kuril Islands
..... *M. punctata* Sasakawa, 1895.
- 51(48). Scutellum without black spots.
- 52(53). Larger: 4.0–6.0 mm. Pubescence of arista slightly shorter than half width of 3rd antennal segment. 0 + 2 *dc*; 2 pairs of long *ac* before scutellum. Amur Province, Primorskii and Khabarovsk Territories *M. helva* Czerny, 1932
- 53(52). Smaller: 3.0–3.5 mm. Pubescence of arista as long as width of its dilated part. 0 + 3 *dc*. No large acrostichal chaetae present in addition to prescutellar ones. Genitalia as in Fig. 1h. Central and northern regions of Eastern Europe, Amur Province, Sakhalin, Kuril Islands
..... *M. filia* (Becker, 1895)
(=? *M. dissimilis* Collin, 1966)
- 54(47). Body brown to black.
- 55(62). Thorax dark brown or brown.
- 56(59). One pair of large acrostichal chaetae present in addition to prescutellar chaetae.
- 57(58). Surstyli bilobed: both lobes of equal length, visible in lateral view. Japan
..... *M. divaricata* Sasakawa, 1985
- 58(57). Surstyli only with small tooth instead of second lobe; tooth nearly invisible in lateral view (Fig. 1i). Europe, Amur Province, Khabarovsk and Primorskii Territories
..... *M. helvola* (Becker, 1895)
- 59(56). Only prescutellar chaetae present.
- 60(61). 1st segment of hind tarsi arcuate, dilated along posterior margin. No long chaetae inserted along posterior margin of 3rd abdominal tergite in female. Genitalia atypical, with long tubular aedeagus and reduced parameres. North Korea, Primorskii Territory *M. gemina* Shatalkin, 1992
(*M. tarsata* Sasakawa, Kozanek, 1995, syn. n.)
- 61(60). Tarsi not dilated. In females, 3rd abdominal tergite with long marginal chaetae. Structure of genitalia typical of the majority of species, with furcate paramere (as in Figs. 2f–2h) bearing pair of large apical chaetae on each lobe. North Korea
..... *M. linqifera* Sasakawa, Kozanek, 1995
- 62(55). Thorax black or dark gray.

- 63(64). Arista with very short hairs; its pubescence as long as width of dilated basal part of arista or slightly longer. Thorax dark, nearly black. Primorskii Territory *M. tenebrica* Shatalkin, 1992
- 64(63). Arista with longer hairs. Thorax grayish dusted. Europe, Asia Minor *M. pallida* (Meigen, 1830).
- 65(44). Arista plumose, with pubescence as long as width of 3rd antennal segment or longer.
- 66(73). Thorax entirely or partly gray.
- 67(68). *ac* four-rowed. Abdomen yellow, without brown stripes and spots. In females, 3rd abdominal segment 2.7–2.9 times as narrow as succeeding one, with 2 pairs of long marginal chaetae, the longest among them lying closer to median line and 1.3–1.5 times as long as 4th tergite. Europe *M. longiseta* (Loew, 1847)
- 68(67). *ac* six-rowed. Abdomen with more or less distinct brown spots or crossbands. In females, 3rd abdominal tergite with three or more shorter marginal chaetae on each side.
- 69(70). Palpi yellow, sometimes slightly darkened at apex and lower margin. Mesonotum with pair of transparent yellowish stripes along *dc*. Genitalia (Fig. 2a) as in *M. rivos*a Mg., but with surstyli less elongate and wider (compare with Fig. 2b). Europe, Asia Minor. Palestine *M. subvittata* (Loew, 1847)
- 70(69). Palpi black. Yellowish stripes on mesonotum along *dc* indistinct.
- 71(72). 5th abdominal tergite with pair of brown spots on each side. Surstyli narrow in dorsal view, apically bent in the form of a beak toward median line, with a single chaeta or pair of (approximated) long chaetae at base on each side. Dorsal sclerite gently convex along upper margin, sometimes with small median projection (Fig. 2b). Hairs on two last sternites of ovipositor longer than those on last tergite. Western Europe, Caucasus, Asia Minor, Middle East, North America *M. rivos*a (Meigen, 1826)
- 72(71). 5th abdominal tergite with brownish crossband on each side. Surstyli wide in dorsal view, without long chaetae at base. Dorsal plate concave along upper margin (Fig. 2c). Hairs on last tergite of ovipositor longer than those on last sternites. Western Europe, Caucasus, Asia Minor *M. fasciata* (Fallen, 1826)
- 73(66). Thorax mostly yellow.
- 74(75). Mesonotum yellow with gray longitudinal stripe between *dc*. Scutellum ventrally with pair of large dark brown elongate spots laterad to apical chaetae. Palestine *M. czernyi* Freidberg, Yarom, 1990 (*M. quadrisetosa* Czerny, 1937).
- 75(74). Mesonotum entirely yellow. When present, spots on ventral side of scutellum smaller.
- 76(77). Scutellum ventrally with pair of dark brown elongate spots laterad to apical chaetae. Cyprus *M. cypriota* Papp, 1981
- 77(76). Scutellum without spots.
- 78(91). Palpi partly or entirely black.
- 79(82). Abdomen yellow without any spots.
- 80(81). *ac* six-rowed. Male paramere markedly longer than dorsal sclerite, with small additional outgrowth at base of one of its lobes (Fig. 2d). In female, 2nd abdominal tergite not shortened, 3rd and 4th of approximately the same length; chaetae along posterior margin of 3rd tergite shorter and equal in length. Middle East, Bulgaria, Ukraine *M. bulgarica* Papp, 1981
- 81(80). *ac* four-rowed. Paramere shorter than dorsal sclerite, the corresponding lobe wider, only with small tooth in apical half (Fig. 2e). In females, 2nd abdominal tergite shortened, 3rd markedly shorter than 4th and bearing longer marginal chaetae; median chaetae longer than lateral ones. Western Europe, Ukraine, Crimea, Caucasus, Moscow Province *M. plumicornis* (Fallen, 1820)
- 82(79). Abdomen with spots.
- 83(84). Hind femora with small brown apical spots on both sides. In females, 5th abdominal tergite with trapezoidal projection bearing long chaetae along margin (Fig. 2i). Europe (Greece, Yugoslavia) *M. muricata* (Becker, 1895)
- 84(83). Hind femora without spots. In females, 5th abdominal tergite without trapezoidal projection.
- 85(90). Males.
- 86(89). 5th and 6th abdominal tergites with pair of dark spots each.

- 87(88). Base of surstyli with tree chaetae; apodema of aedeagus short. France
..... *M. suillorum* (Robineau-Desvoidy, 1830)
- 88(87). Base of surstyli with four chaetae; apodema longer. Tunisia ... *M. subtiniventris* Papp, 1981
- 89(86). In males, only 4th abdominal tergite with spots. Italy *M. tiniventris* (Rondani, 1868)
- 90(85). Females. 5th and 6th abdominal tergites with spots *M. suillorum*, *M. tiniventris*.
- 91(78). Palpi yellow.
- 92(93). 5th and 6th abdominal tergites with spots. Italy
..... *M. punctiventris* (Rondani, 1868)
- 93(92). Abdomen without spots.
- 94(95). Dorsal surface of scutellum with 6–10 short chaetae. Spain, Algeria, Tunisia
..... *M. tunisica* Papp, 1981
- 95(94). Scutellum glabrous.
- 96(97). Both transverse veins somewhat darkened. In females, 3rd abdominal tergite less than half as long as succeeding one, with two pairs of shortly separated long marginal chaetae (in this character, the species closely related to *M. tetrachaeta* Lw., having longer chaetae along posterior margin of 3rd tergite). Genitalia with large parameres longer than height of dorsal sclerite. Europe *M. dedecor* (Loew, 1873)
- 97(96). Transverse wing veins not darkened.
- 98(99). *ac* six-rowed. Prescutellar *ac* shorter than anterior dorsocentral chaetae. Lateral margins of dorsal sclerite gently rounded, without backwards directed outgrowths. Genitalia as in Fig. 2f. Crimea *M. filippovi* Shatalkin sp. n.
- 99(98). *ac* four-rowed, sometimes with isolated hairs outside rows. Prescutellar *ac* normally developed. Apical angles of dorsal sclerite elongated to form backwards-directed black outgrowths, often strongly sclerotized.
- 100(106). Females.
- 101(102). 3rd abdominal tergite less than half as long as succeeding one, with two pairs of shortly separated long marginal chaetae. Europe
..... *M. tetrachaeta* (Loew, 1873).
- 102(101). 3rd abdominal tergite as long as succeeding one or slightly shorter.
- 103(104, 105). 3rd abdominal tergite with relatively long chaetae longer than those on other tergites ..
..... *M. flavipalpis* (Loew, 1847)
- 104(103, 105). 3rd and 4th tergites with 12–14 long marginal chaetae each; both rows interrupted in the middle. Turkey
..... *M. biseriata* (Loew, 1847)
- 105(103, 104). 3–5th tergites with 12–14 long marginal chaetae each; chaetae forming rows interrupted in the middle; chaetae on 3rd tergite longer than those on two succeeding ones. Italy...
..... *M. plumicheta* (Rondani, 1868)
- 106(100). Males.
- 107(108). Base of paramere at place of connection of its lobes wide, with free ends of lobes shorter than base height *M. biseriata*.
- 108(107). Base of paramere at place of connection of its lobes slightly raised, with free ends of lobes significantly longer than base height (Figs. 2g, 2h).
- 109(110). Apodema of aedeagus very short (Fig. 2g), lobes of parameres markedly longer. Longest parameral lobe with apical emargination. Greece, Palestine *M. palaestinensis* Papp, 1981
- 110(109). Apodema of aedeagus longer than at least one of parameral lobes. Parameral lobes without distinct apical emargination.
- 111(112). Parameral lobes (Fig. 2h) longer, more or less straight in basal part, bent in apical third; shorter lobe forming nearly rectilinear angle at place of bending. Italy *M. plumicheta*
- 112(111). Parameral lobes shorter and gently bent along entire their length. Italy
..... *M. flavipalpis*

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