

CONTRIBUTION TO THE KNOWLEDGE OF MORMIINI END. (DIPTERA, PSYCHODIDAE) IN CZECHOSLOVAKIA

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Enderlein (1936) wrote on the basis of the wing morphological characters in a key to the world Psychodid subfamilies taxa Psychodinae, Nemopalpinae, Phlebotominae, Horaiellinae and Trichomyiinae. He divided the subfamily Psychodinae into the tribes Psychodini and Mormiini. Tribus Mormiini according to him contained both subtribus „Mormiina“ and „Paramormiina.“ In his first subtribus were the genera *Mormia* Enderlein, 1935, *Lepimormia* Enderlein, 1936, *Notiocharis* Eaton, 1913, *Synmormia* Enderlein, 1936, *Peripsychoda* Enderlein, 1935, *Desmioza* Enderlein 1936, *Setomima* Enderlein, 1936, *Syntomolaba* Enderlein, 1936 and *Dictyocampsia* Enderlein, 1936. This subtribus was established on the basis of both wing and antennal morphological characters, however many of the mentioned genera are not recognized at the present time. In his second subtribus were the genera *Thrysocanthus* Enderlein, 1936, *Chirolepis* Enderlein, 1936, *Didicrum* Enderlein, 1936, *Podolepis* Enderlein, 1936, *Parabrunettia* Brunetti, 1911, *Tonnoira* Enderlein, 1936, *Platyplastinx* Enderlein, 1936, *Paramormia* Enderlein, 1936, *Nemoneura* Tonnoir, 1929 and *Mecysmia* Enderlein, 1936. The subtribus was established on the basis of both the wing and leg morphological characters, however some of mentioned genera are not now recognized. Enderlein (1936) recognized his name *Mormia* as generic one in contrast to Satchell (1955) who recognized subgenus *Mormia* Enderlein, 1935 as a part of the genus *Telmatoscopus* Eaton, 1904. Vaillant (1974) again recognized genus *Mormia* Enderlein, 1935 with subgenera *Mormia* s. str. *Rhadinomormia* Vaillant, 1974, *Paramormia* Krek, 1971a, *Perimormia* Vaillant 1974, *Eomormia* Krek, 1971a and *Hemimormia* Krek, 1971 and placed mentioned genus in the tribus Telmatoscopini. Ježek (1983) indicated Vaillant's omitting of the type-species of several subgenera and genera established by Enderlein (1936) and in the sense of Enderlein resumed in narrower conception tribus Mormiini Enderlein, 1936; he established also tribus Paramormiini Enderlein, 1936. To Vaillant's conception of the sugenus *Rhadinomormia* Vaillant, 1974 of the genus *Mormia* Enderlein, 1935 corresponds in the author's conception the genus of the same name. To the subgenus *Mormia* s. str. the genera *Limomormia* Vaillant, 1982, *Jovamormia* Ježek, 1983, *Taramormia* Ježek,

1983 and *Yomormia* Ježek, 1983, to the subgenus *Paramormia* Krek, 1971a in the author's conception the genera *Katamormia* Ježek, 1983, *Telomormia* Ježek, 1983 and *Lepimormia* Enderlein, 1936. To the subgenus *Perimormia* Vaillant, 1974 corresponds correctly the genus *Hemimormia* Krek, 1971a and to the subgenus *Eomormia* Krek, 1971a genera *Oomormia* Ježek, 1983, *Psychomormia* Ježek, 1983 and *Mormia* Enderlein, 1935. To the subgenus *Hemimormia* Krek, 1971a in Vaillant's conception correspond genera *Saximormia* Ježek 1983 and *Promormia* Ježek, 1983.

Tribus MORMIINI Enderlein, 1936

Mormiina (subtr.) Enderlein, 1936: 96, partim.

Mormiini Enderlein, 1936: 96, partim (nec sensu Ježek, 1983).

Telmatoscopini Vaillant, 1971: 37, partim; Krek, 1971a: 169; b: 27; 1972a: 423; b: 239; Vaillant, 1973a: 346; b: 670; Salamanna, 1974: 60; 1975a: 193; b: 69; c: 78; Ježek, 1977: 232; Wagner, 1977: 24; 1978a: 158; b: 69; 1979: 41; Ježek, 1979: 341; Caspers et Wagner, 1980: 81.

Mormiini: Ježek, 1983: in press.

Differential diagnosis: The representatives of the tribus Mormiini Enderlein, 1936 have gradual reduction of the necks of the antennal segments distally, in contrast to the tribus Paramormiini Enderlein, 1936 where there is no such reduction. The tribus Mormiini Enderlein, 1936 may be diagnosed as follows: R_4 connected with conspicuously prolonged R_{2+3} basally, Sc long, thin and straight, thinner distad. The species of the tribus Paramormiini Enderlein, 1936 may be diagnosed as follows: R_{2+3} connected with R_4 which is at least inconspicuously prolonged basally. Sc short and thick; if it is long, it is not straight but bent or conspicuously extended distad. Both the tribus Mormiini Enderlein, 1936 and Paramormiini Enderlein, 1936 are characterized by the presence of an additional anterior sclerite of the pteropleurite. Mentioned anterior sclerite is at least partially developed. If it is missing, the upper part of the pteropleurite is not entirely confined by the suture. The representatives of the tribus Psychodini Enderlein, 1936 have the upper part of the pteropleurite entirely confined by a suture and an additional anterior sclerite of the pteropleurite is missing.

Bionomy of included species: Only a little known, a key to the 4th instars of 5 palaearctic species was published by Vaillant (1974). Adults occurring on the periphery of ponds, pools of streams, swamps and on the banks of gutters, in Czechoslovakia from lowlands to the mountain beech woods.

Distribution: Only Holarctic and Ethiopian areas. There are, unfortunately, genera *Paratelmatoscopus* Satchell, 1953 (Philippines, Malay, Borneo, Australia) and *Notiocharis* Eaton, 1913 (Seychelles, Philippines, Borneo, Australia) where R_4 is connected with prolonged R_{2+3} basally. Mentioned genera may be included perhaps in the tribus Mormiini Enderlein, 1936 or constitute so far undescribed taxon, characterized by

reduced eyes in frontal area. Analysis of the shape of thoracic sclerites has not been examined so far.

Genus *Promormia* Ježek, 1983

Promormia Ježek, 1983: in press.

Hemimormia [subgenus of the genus *Mormia* auct.] Krek sensu Vaillant, 1974 (nec Krek, 1971a): 142, partim; Krek, 1972b: 240.

Telmatoscopus auct. (nec Eaton, 1904), partim; Tonnoir, 1940: 47; Kloet et Hincks, 1945: 333; Freeman, 1950: 90; Szabó, 1960: 212; Nielsen, 1961: 139; 1964: 156; Tanasijčuk, 1969: 124.

Mormia auct. (nec Enderlein, 1935), partim; Krek, 1972b: 240; Vaillant, 1974: 135.

Mormia [subgenus of the genus *Telmatoscopus* auct.], partim; Tonnoir, 1940: 47; Kloet et Hincks, 1945: 333; Szabó, 1960: 212; Nielsen, 1961: 139; 1964: 156.

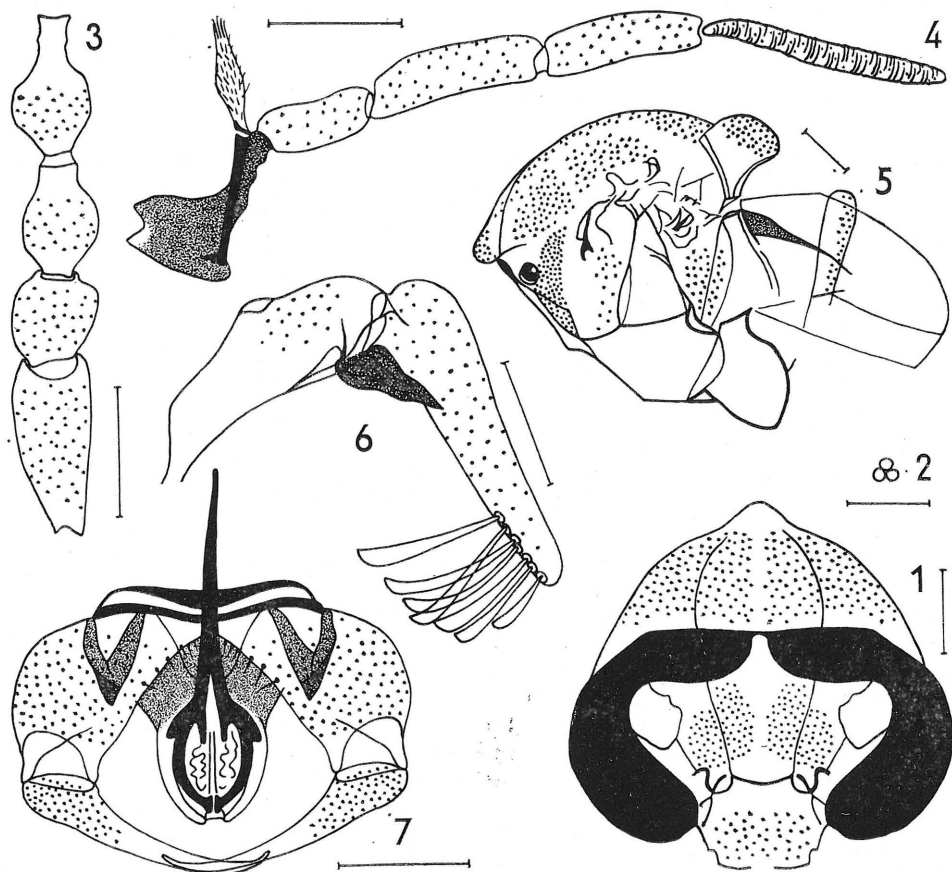
Type-species: *Telmatoscopus eatoni* Tonnoir, 1940 (by orig. designation)

Differential diagnosis: Eyes separated and index of the facet diameter to the minimal width of frons 0.8 in contrast to the genus *Jovamormia* Ježek, 1983 and *Psychomormia* Ježek, 1983 where eyes are connected. Genus *Promormia* Ježek, 1983 has index of the distance of the tangential points of the eye's ends to the minimal width of frons in the range 9.8—10.0 in contrast to above mentioned two genera. Index of the distance of the tangential points of the eye's ends to the facet diameter varies from 12.3 to 12.5, in genera *Jovamormia* Ježek, 1983 and *Psychomormia* Ježek, 1983 from 13.8 to 14.3. Third segment of the maxillary palpus of these two genera is longer than the second one, whilst at genus *Promormia* Ježek, 1983 third segment is shorter than second one. At genera *Jovamormia* Ježek, 1983 and *Psychomormia* Ježek, 1983 index of the length of the first flagellar segment to the length of the second segment is 1.2—1.5 and pleural suture on thorax conspicuously bent, in genus *Promormia* Ježek, 1983 0.8 and pleural suture on thorax only inconspicuously bent; moreover index of the length of cercus to the length of epandrium 1.4—1.6, number of retinaculi on the male cercus 4—7, basal apodeme compressed laterally, sclerotized remainders of 10th segment inside of epandrium of the shape Y and two semicircular parts of the male genitalia developed, whilst two mentioned genera have index of the length of cercus to the length of epandrium 1.9—2.2, number of retinaculi on the male cercus 12—19, basal apodeme compressed dorso-ventrally, sclerotized remainders of 10th segment inside of epandrium broadened proximally, very narrowed distad, semicircular parts of the male genitalia are not developed.

Bionomy of included species: Unknown; adults occurring from lowlands to the mountain areas around streams and swamps.

Distribution: In the Palaearctic part of the Holarctic area is recorded *Promormia eatoni* (Tonnoir, 1940) — west, south and north Europe and *P. silesiensis* sp. n. — Czechoslovakia. In the Ethiopian area *Promormia flagellifer* (Freeman, 1949) — former Belgian Congo.

Discussion: It was quoted by Ježek (1983).



Figs. 1—7: *Promormia eatoni* (Tonn.) ♂; 1: head; 2: facets; 3: basal antennal segments; 4: maxilla and palpus maxillaris; 5: thorax laterally; 6: epandrium and cercus laterally; 7: copulatory organ, coxopodites and harpagones dorsally. Scales 0.1 mm.

***Promormia eatoni* (Tonnoir, 1940)**
(Figs. 1—15)

Telmatoscopus (Mormia) eatoni Tonnoir, 1940: 47; Kloet et Hincks, 1945: 333; Szabó, 1960: 212; Nielsen, 1961: 139; 1964: 156.

Telmatoscopus eatoni; Freeman, 1950: 90; Tanasijčuk, 1969: 124.

Mormia (Hemimormia) eatoni; Vaillant, 1974: 135.

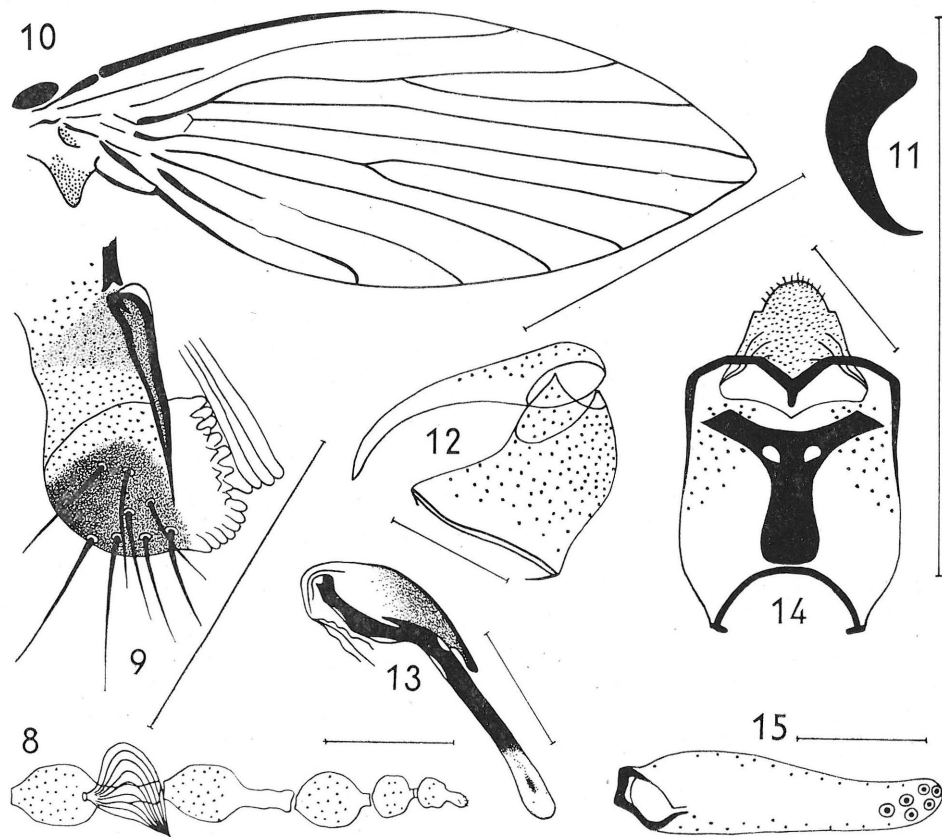
Mormia tenella Krek, 1972b: 240.

Promormia eatoni; Ježek, 1983: in press.

Diagnosis: Rather large species, the wing length 2.0—2.2 mm., the eyes of males separated, sensory filaments of the basal antennal segments

monofoiled and secondary multiply divided, the wings without swollen veins in central area, male hypopygium of characteristic form.

Male. The width of frons close below transversal frontal suture is equal to the diameter of one facet. Index of the facet diameter to the minimal width of frons 0.8, index of the distance of the tangential points in the eye's ends to the minimal width of frons 10.0, to the facet diameter 12.5. Frons bare. Antennae 16segmented, scapus rather long, somewhat club-like widened distad, pedicellus of the same length as width, the length of the first antennal segment to the length of pedicellus 1.8. Ratio of maximal width of the pedicellus to the width of the first and second flagellar segments 2.4:2.1:2.1, index of the length of the first flagellar segment to the second one 0.8, the flagellar segments flask shaped. Antennal segments 5, 6 and 7 without a collar, pedicellus without lateral prominence. Proximal swollen part of the 14th segment only a little smaller than 13rd, the distal necked part of the 14th segment rather short, 15th segment with more rounded swollen proximal part than segment 14 and with very small neck. The base of apical segment 16 almost spheroid, with finger projection distad. Sensory filaments on the antennal segments monofoiled, secondary multiply divided. Ratio of the lengths of the segments of the maxillary palpus 3.3:5.0:4.4:6.6. The apical segment of the maxillary palpus annulate and connected with the foregoing segment apically. Ratio of the maximal length of cibarium to the length of epipharynx 2.3:1. Corniculi missing. The wings without pigmentation, lancet-shaped, veins in the central area of the wing without swelling, the wing membrane bare, costal nodes developed. Sc long, uninterrupted. R_1 bent to Sc, a point of contact of R_{2+3} and R_4 far from basal field, R_{2+3} conspicuously bent to the fore margin of the wing basally, R_2 and R_3 somewhat bent to the hind margin of the wing in contrast to distal part bent to the fore margin of the wing, gradually diverging from R_{2+3} a little bent to the radial fork, R_5 almost straight with the end behind the wing apex. Proximal part of M_{1+2} not widened, M_{1+2} almost straight, as well as both M_1 and M_2 , which are steeply diverging from M_{1+2} , M_3 bent in the direction of medial fork, M_3 and Cu without tangent points on M_4 . Cu S-shaped, considerably strong basally. M_3 and M_4 bent in the direction of the hind margin of the wing distad. The angle of the veins $r-r$ and $r-m$ not straight, $m-m$ missing. Medial angle of the wing 160° . Index of the wing: $AB:AC:AD = 9.9:10.6:11.3$, $BC:CD:BD = 2.5:3.2:5.6$. Index of the base M_{1+2} , A to the maximal width of the wing 2.2. The length of the halteres to their largest breadth 2.8:1. Ratios of the length of coxa, tibia and the first tarsal segment $P_1 = 13.8:15.0:6.3$; $P_2 = 14.0:19.3:8.2$; $P_3 = 14.8:21.0:8.2$. Basal apodeme of the male genitalia straight from dorsal view, tapering at the point proximally, simple at the end, rounded from lateral view and a little widened on the proximal end. True copulatory organ short, not disunited dorso-ventrally at the end, composed from two semicircular parts confined laterally by a sclerotized strip with pair of outer, blunt, laterally strongly sclerotized projections at base and with a pair sharp inner ones. Coxopodites laterally with a pro-



Figs. 8—15: *Promormia eatoni* (Tonn.) ♂; 8: apical antennal segments; 9: terminal lobe of labium; 10: wing; 11: claw of P₁ laterally; 12: coxopodit and harpagon laterally; 13: copulatory organ laterally; 14: epandrium dorsally; 15: cercus dorsally. Scales 0.1 mm., fig. 10 1 mm.

tubercle, on the inner side with a row of characteristic spines dorsally, harpagoes narrow, somewhat longer than coxopodites, sharpened apically from dorsal view. Epandrium with doubled aperture, sclerotized remainders of 10th tergite and sternite inside of epandrium well visible. Index of the length of cercus to the length of epandrium 1.4 from lateral view. Hypandrium narrow, a little widened in the middle. Epiproct inconspicuous, hypoproct large, the length of hypoproct is equal to $1/3$ of the length of cercus from lateral view, with many minute hairs. The tops of cerci simple, almost straight from ventral view, with slightly deviant apical part and 6—7 retinaculi subapically.

Material: 4 ♂♂. Bohemia: Předonín, Račice (Litoměřice distr.). Moravia: Ostrava.

Comments on the material: Figured male was collected nr. Předonín, 25. 6. 1975. All specimens were collected by author.

Occurrence in ČSSR: VI.

Bionomy: Unknown. The occurrence of this species 830 m above sea level in Bosnia recorded by Krek (1972b). In Czechoslovakia it was collected on the banks of ditches and on the periphery of swamps with *Alnus*, *Acer*, *Pinus*, *Salix*, *Sambucus*, *Populus*, *Urtica* and *Cirsium* around.

Distribution: Britain, Hungary, Yugoslavia, new species for the fauna of Czechoslovakia.

Data about type-material and type-locality: Holotypus ♂ — Mullet's Copse, Glanville's Wootton, Dorset, England, 17. 6. 1898, Eaton lgt. Allotypus (♀) and paratypes (2 ♂♂) from the same locality, 13. 6. 1898. All type-specimens are damaged, 2 ♂♂ without abdomen and 2 with broken antennae. Tonnoir's original description based on the characters of all 4 specimens. Type-material is deposited in British Museum (Nat. Hist.), London, but I have not seen it.

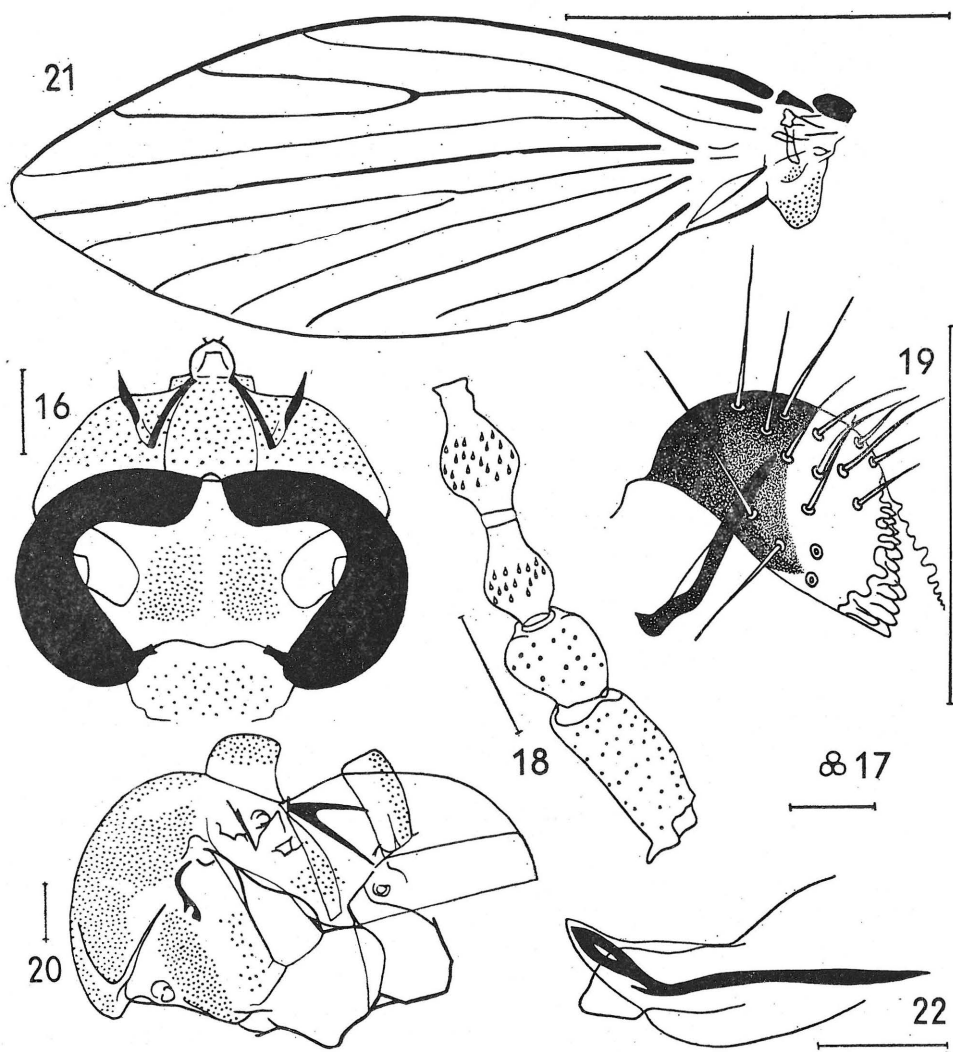
Discussion: This species was described and figured by Tonnoir (1940) in the genus *Telmatoscopus* Eaton, 1904, but the generic conception of this species has been gradually developed. Vaillant (1974) redescribed this species on the basis of the specimen collected by Tonnoir 26. 5. 1920 from the locality of Linkebeck in Belgium and determined as *Telmatoscopus albicornis* (Tonnoir, 1919). Other specimens, which were checked by Vaillant, collected Botosaneanu 26. 6. 1965 on the banks of the river Pivka env. Planina Postojna in Yugoslavia.

***Promormia silesiensis* sp. n.**

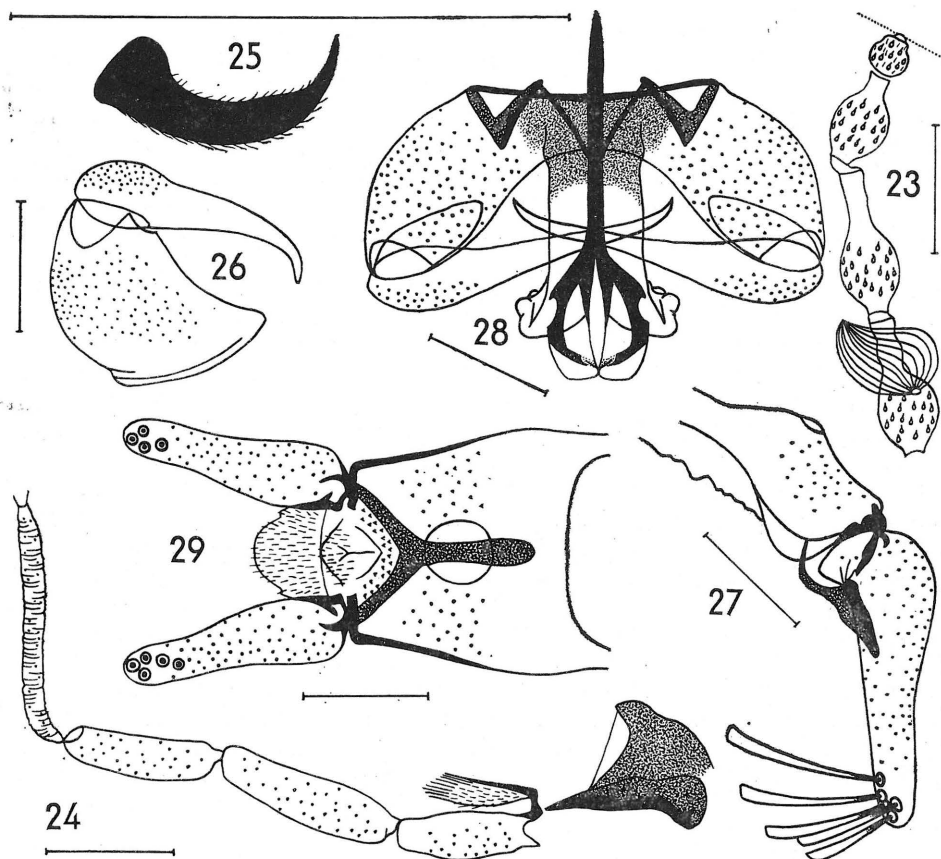
(Figs. 16—29)

Diagnosis: Medium size, length of wing 2.5 mm. Eyes of males not contiguous, numerous sensory filaments connected in the foiled formation, true male copulatory organ cylindrical, dorsoventrally disunited distad, cercopods with 5 retinaculi.

Male. The eyes convergent dorsally, minimal width of frons equals a little more than the diameter of one facet. Index of the facet diameter to the minimal width of frons 0.8, index of the distance of the tangential points of the eye's ends to the minimal width of frons 9.8 and to the facet diameter 12.3. Frons without hairs. Antennae probably 16segmented, haired. Scapus almost cylindrical, rather narrowed proximally, pedicellus almost globular, index of the length of the first antennal segment to the second one 1.8, ratio of the maximal width of pedicellus to the width of the first and second segments 2.6:2.0:2.2, segments of flagellum mug-shaped. Index of the length of the first flagellar segment to the second one 0.8, mentioned segments are symmetrical. Bulbous part of the 14th segment of almost equal size to the foregoing segment, but neck distal part 3times shorter than at segment



Figs. 16—22: *Promormia silesiensis* sp. n. ♂; 16: head; 17: facets; 18: basal antennal segments; 19: terminal lobe of labium; 20: thorax laterally; 21: wing; 22: copulatory organ laterally. Scales 0.1 mm., fig. 21 1 mm.



Figs. 23—29: *Promormia silesiensis* sp. n. ♂; 23: apical antennal segments; 24: maxilla and palpus maxillaris; 25: claw of P₁ laterally; 26: coxopodit and harpagon laterally; 27: epandrium and cercus laterally; 28: copulatory organ, coxopodites and harpagones dorsally; 29: epandrium and cerci dorsally. Scales 0.1 mm.

13. Segment 15 almost globular, inconspicuously narrowed distad. Sensory filaments of the antennal segments monofoiled, divided. Ratio of the lengths of the segments of maxillary palps 4.0:5.3:4.4:6.8, the last segment is annulate and connected with the foregoing one apically. Ratio of maximal length of cibarium to the length of epipharynx 1.7:1. Corniculi missing. The wing rather narrow, lancet-shaped, without pigmentation, the veins swollen as follows: on C basally, on Sc and R₁₊₂ in the point of connection of R₁ and R₂, in the sector of the connection of R₁₊₂ with R₃ and R₄, on M₁₊₂ basally and on M₄. The wing membrane without hairs, Basal costal nodes conspicuous. Sc rather long, straight and uninterrupted. R₁ of the S-shape, bent proximally to Sc,

R₂₊₃ bent to the distal end of Sc, R₂ and R₃ almost straight in central parts, at the wing margin bent to C, steeply diverging from the end of R₂₊₃. R₄ and R₅ straight, R₄ bent to the fore wing margin distally in contrast to R₅ which is bent to the hind margin of it, with the mouth distinctly beside of the wing apex. M₁₊₂ almost straight without widened base as well as at M₁ and M₂, which are bent to the hind wing margin distad and not so steeply diverging from M₁₊₂; M₃ bent in the direction of the medial fork, M₃ and Cu without a point of the connection on M₄. M₄ and Cu S-shaped. Cu without an end in the margin of the wing. The veins r—r, r—m and m—m untraceable. Index of the base M₁₊₂, A to the maximal width of the wing 2.1. The length of the halteres to their largest breadth 2.3:1. Ratios of the length of coxa, tibia and the first tarsal segment: P₁ = 13.9:16.0:6.9; P₂ = 14.5:20.1:8.8; P₃ = 15.4:22.3:8.9. Paired tarsal claws with fine hairs. Basal apodeme of the male genitalia straight from dorsal view, inconspicuously bent from lateral view, on the proximal end not disunited. True copulatory organ cylindrical with very long rather complicated structures on the distal dorso-ventrally divided end. Coxopodites with only an inconspicuous protuberance laterally, harpagones long and narrow, with bent points in the distal parts. Harpagones are longer than coxopodites from dorsal view. Epandrium of characteristic shape. Apertura circular, sclerotized remainders of 10th tergite and sternite inside of epandrium of the shape Y. Hypandrium narrow. Epiproct short, almost semicircular, haired; hypoproct much larger, rather of the same shape, with the pair of lateral notches, haired. The width both of epiproct and hypoproct much exceed the length of the mentioned two parts. Index of the length of cercus to the length of epandrium 1.6 from lateral view. Cerci S-shaped from ventral view, however only inconspicuously, with 4—5 retinaculi subapically, with single top of cercus.

Material: 1 ♂. Moravia: Jablunkov (Městská Lomná).

Comments on the material: Single specimen on the slide, dissected, collected 14. 6. 1975 by author.

Occurrence in ČSSR: VI.

Bionomy: Unknown; single male was collected from the leaves of *Petasites* in a boggy place of the beech wood nr. road.

Distribution: Silesia.

Data about type-material and type-locality: Holotypus ♂ deposited in the Department of Entomology of the National Museum (Nat. Hist.), Praha, Cat .no. 32904. Segments 16 of the antennae missing. Type-locality: Mts. Moravsko-slezské Beskydy.

Discussion: *Promormia silesiensis* sp. n. is apparently closely related to *Telmatoscopus riparius* Satchell, 1955. The first species belongs to the genus *Promormia* Ježek, 1983 because of monofoiled, multiply divided sensory filaments on the basal flagellar segments in contrast to the above quoted species, which Ježek (1983) included in the genus *Hemimormia* Krek, 1971a because of fan sensory filaments of the basal flagellar segments.

Genus *Jovamormia* Ježek, 1983

Jovamormia Ježek, 1983: in press.

Mormia (subgenus of the genus *Mormia* auct.) Krek, 1971a (nec Enderltn, 1935): 170, partim.

Mormia (subgenus of the genus *Mormia* auct.) Krek sensu Vaillant, 1974 (nec Enderlein, 1935): 134, partim.

Mormia (subgenus of the genus *Telmatoscopus* auct.), partim; Tonnoir, 1940: 30; Kloet et Hincks, 1945: 333.

Telmatoscopus auct. (nec Eaton, 1904), partim; Tonnoir, 1940: 30; Kloet et Hincks, 1945: 333; Freeman, 1950: 90; Tanasijčuk, 1969: 124.

Pericoma auct. (nec Walker, 1856 sensu Vaillant, 1971), partim; Eaton, 1893: 128; 1897: 118; Kertész, 1902: 294; Becker, Bezzi, Bischof, Kertész et Stein, 1903: 161.

Type-species: *Pericoma caliginosa* Eaton, 1893 (by orig. designation)

Differential diagnosis: The genus *Jovamormia* Ježek, 1983 with a developed projection of pedicellus, sensory filaments of antennae comb-shaped, circular organs of the antennal segments 5—7 developed, the last segment of the maxillary palpus not annulate and connected with the foregoing segment subapically in contrast to the genus *Psychomormia* Ježek, 1983: a projection of pedicellus missing sensory filaments on the antennae bifoiled, multiply divided, circular organs missing, the last segment of the maxillary palpus annulate and connected with the foregoing segment apically. The genus *Jovamormia* Ježek, 1983 with 16 segmented antennae in contrast to the genus *Psychomormia* Ježek, 1983 in which antennae are 15 segmented. The genus *Jovamormia* Ježek, 1983 with connected eyes, index of the facet diameter to the minimal width of frons unascertainable, as in the genus *Psychomormia* Ježek, 1983, in contrast to the genus *Promormia* Ježek, 1983, where the eyes are separated and index 0.8. The genera *Jovamormia* Ježek, 1983 and *Psychomormia* Ježek, 1983 have index of the distance of the tangential points of the eye's ends to the facet diameter from 13.8 to 14.3; third segment of the maxillary palpus longer than second one. Index of the length of the first flagellar segment to the length of the second one 1.2—1.5, pleural suture on thorax conspicuously bent, index of the length of cercus to the length of epandrium 1.9—2.2, male cercus with 12—19 retinaculi, basal apodeme dorso-ventrally compressed, sclerotized remainders of 10th tergite and sternite inside of epandrium triangular, widened proximally and very much narrowed distad, semicircular parts of the genitalia not developed. On the other hand the genus *Promormia* Ježek, 1983 has index of the distance of the tangential points of the eye's ends to the minimal width of frons 9.8—10.0, index of the distance of the tangential points of the eye's ends to the facet diameter varies within 12.3—12.5, third segment of the maxillary palpus shorter than the second. Index of the length of the first flagellar segment to the length of the second one 0.8. Pleural suture on the thorax inconspicuously bent, index of the length of cercus to the length of epandrium 1.4—1.6, male cercus with 4—7 retinaculi, basal apodeme compressed laterally, sclerotized

remainders of 10th segment inside of epandrium Y-shaped and two semi-circular parts of the genitalia developed.

Bionomy of included sepcies: Little known, adults occur on the banks of streams, outflows of ponds, rivers with weirs and sometimes on rubbish dumps.

Distribution and discussion: Palaearctic part of the Holarctic area — 1 species so far known was listed by Ježek (1983) in his discussion of the taxonomy of this genus.

***Jovamormia caliginosa* (Eaton, 1893)**

(Figs. 30—43)

Pericoma caliginosa Eaton, 1893: 128; 1897: 118; Kertész, 1902: 294; Becker, Bezzi, Bischof, Kertész et Stein, 1903: 161.

Telmatoscopus (Mormia) caliginosus; Tonnoir, 1940: 30; Kloet et Hincks, 1945: 333.

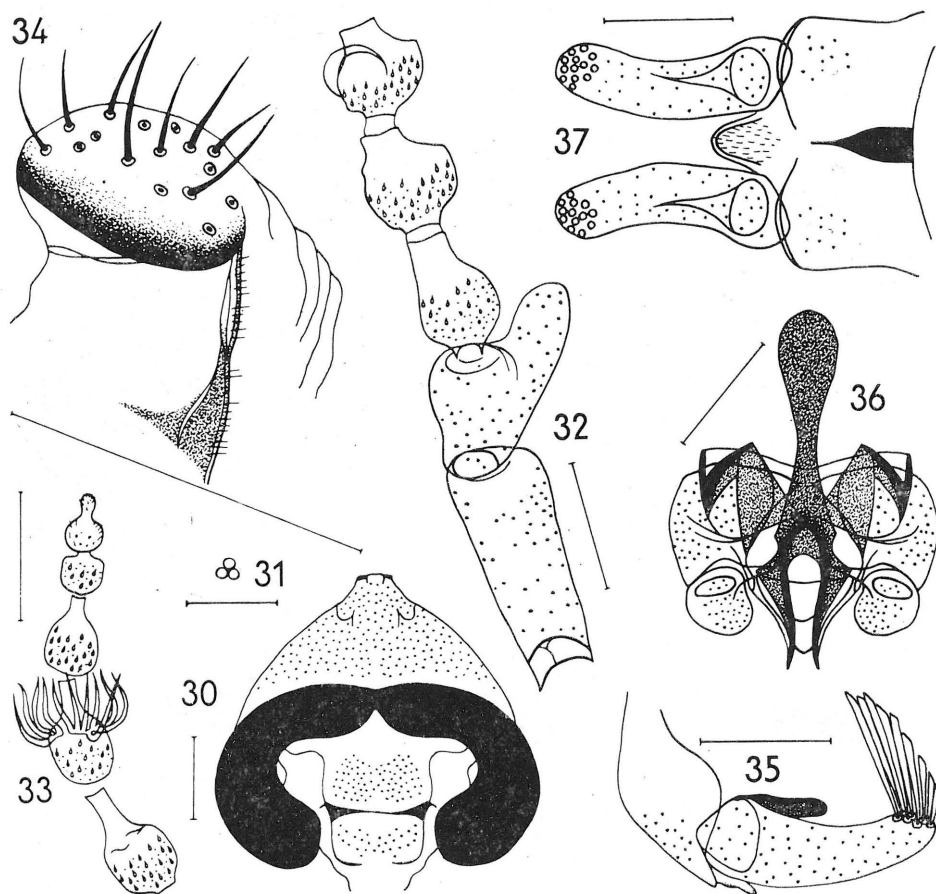
Telmatoscopus caliginosus; Freeman, 1950: 90; Tanasijčuk, 1969: 124.

Mormia (Mormia) caliginosa; Vaillant, 1974: 134.

Jovamormia caliginosa; Ježek, 1983: in press.

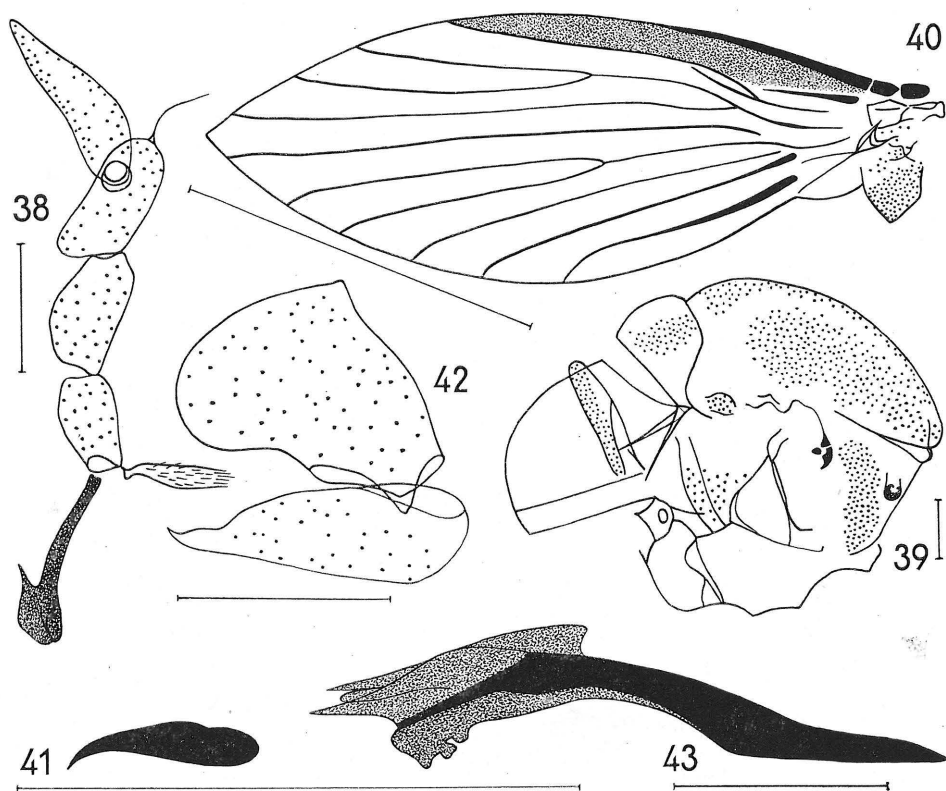
Diagnosis. Small species, the length of the wings 2.0 mm, the medial angle of the wing 154° , characteristic collars on the antennal segments 5, 6 and 7 present, male copulatory organ rather specific, basal apodeme S-shaped from lateral view, cercus with 12—13 retinaculi.

Male. The eyes connected in the frontal area, the length of the mentioned connection exceeds by one third the diameter of one facet. The ratio of the distance of the tangential points of the eye's ends to the facet diameter 4.3:0.3. The frons bare, the antennae 16 segmented, haired. Scapus almost cylindrical, length approximately 4.5 times longer than the width at base; pedicellus with a large, long side projection. Ratio of the length of the first antennal segment to the second 6.7:3.7, ratio of the maximal width of pedicellus to the width of the first and second flagellar segment 4.2:2.3:2.6. The flagellar segments mug-shaped, characteristic collars on the 5—7 antennal segments, index of the length of the first flagellar segment to the second 1.2, the first and second flagellar segments asymmetrical. The last three flagellar segments reduced upwardly in comparison with foregoing one. Segment 15 with only an inconspicuous narrowed part in contrast to the foregoing segment, segment 16 with a finger-shaped projection apically. Sensory filaments of antennae comb-shaped, rather large, placed closely to the base of the necks. Maxillary palpus with ratio of the lengths of the segments 2.8:3.5:4.0:5.4. The last segment of maxillary palpus without annulation and connected with the foregoing segment subapically. Ratio of the maximal length of cibarium to the length of epipharynx 1.7:1. The wings lancet-shaped, narrow, a little brownish clouded in the area which is bordered by C, Sc and R₁, basal costal nodes distinct. No strengthening of the veins in central area of the wing. Sc straight, a little swollen basally. R₁ with characteristic longitudinal strip basally. R₁ strengthened distad as well as jointed part R₂₊₃ and R₄ at wing base. R₂₊₃ bent to the mentioned strip of R₁. R₂ and R₃ inconspi-



Figs. 30—37: *Jovamormia caliginosa* (Eat.) ♂; 30: head; 31: facets; 32: basal antennal segments; 33: apical antennal segments; 34: terminal lobe of labium; 35: epandrium and cercus laterally; 36: copulatory organ, coxopodites and harpagones dorsally; 37: epandrium and cerci dorsally. Scales 0.1 mm.

cuously bent to the hind margin of the wing, strengthened distad. Both R_2 and R_{2+3} continued in the same line, R_3 slowly diverging from R_{2+3} . R_4 inconspicuously S-shaped, a little strengthened distad. Whole R_5 strengthened, almost straight, with the mouth distinctly beside of the wing apex. M_{1+2} straight, strengthened distad and bent to the hind wing margin on its end. M_2 inconspicuously S-shaped, strengthened distad also. M_1 only a little bent from the direction of M_{1+2} in contrast to M_2 which is bent much more. M_3 arched to the medial fork, strengthened distad. Whole M_4 strengthened, inconspicuously S-shaped, the strengthening in



Figs. 38—43: *Jovamormia caliginosa* (Eat.) ♂; 38: maxilla and palpus maxillaris; 39: thorax laterally; 40: wing; 41: claw of P₁ laterally; 42: coxopodit and harpagon laterally; 43: copulatory organ laterally. Scales 0.1 mm., fig. 40 1 mm.

the basal part more distinct. Cu conspicuously S-shaped, distinctly strengthened basally. M₃ and Cu not touching M₄. The veins r—r, r—m and m—m unascertainable. The medial angle of the wing 154°, membrane of the wing bare. Index of the wing AB: AC:AD = 10.3:10.3:9.8, BC:CD:BD = 2.4:3.5:5.7. Index of the base M₁₊₂, A to the maximal width of the wing 2.1. Length of the halteres to their greatest breadth 2.8:1. Ratios of the length of coxa, tibia and the first tarsal segment P₁ = 11.8:12.4:5.3, P₂ = 12.4:17.2:6.9. Paired tarsal claws only a little bent apically. Corniculi, patagia and tegulae missing. Basal apodeme of the genitalia inconspicuously S-shaped from lateral view, proximally widened from dorsal view, with a pair of pointed projections of the male copulatory organ distad; the copulatory organ smooth outside. Coxopodites outside without conspicuous protuberance, harpagones a little longer than coxopodites from lateral view. Epandrium of characteristic

shape. Aperture indistinct, sclerotized remainders of 10th tergite and sternite inside of epandrium distinct. Hypandrium narrow, without protuberances. Epiproct comparatively short, distinctly haired, hypoproct triangle-shaped, approximately twice longer, rounded. Index of the length of cercus to the length of epandrium from lateral view 1.9. Cerci inconspicuously bent both from dorsal and lateral view, with 12–13 retinaculi subapically, the top of cercus is not disunited.

Material: 1 ♂. Moravia: Hodonín — distr. town.

Comments on the material: Single specimen on the slide, dissected, collected 3. 8. 1974 by author.

Occurrence in ČSSR: VIII.

Bionomy: Unknown; single specimen from Moravia was collected on the banks of the outflow of a pond with *Urtica*, *Eupatorium* and *Prunus* around.

Distribution: Britain, West Germany. New species for the fauna of ČSSR.

Data about type-material and type-locality: Vaillant (1974) quoted that „typus and paratypes“ are deposited in British Museum, Nat. Hist. (London) and are labelled as follows: Bindon, Landskip, Axmouth, Devon, England, 9. 5. 1901, however mentioned material is not deposited there. Lectotypus and paralectotypes were not established by Vaillant. By means of the kindness of Dr. Cranston (British Museum, Nat. Hist., London). I was lent Eaton's syntypic series of *Pericoma caliginosa* Eaton, 1893 with 4 „dry“ slides, which were transferred to Canadian balsam. Unfortunately, lectotypus and paralectotypes can not be established because of one specimen of a male damaged (only ½ of the head presented with one maxillary palpus and dissected antenna) labelled Nothe, Weymoulte, 22. 6. 1892, Eaton Coll. B. M. 1929—590 and unfit sexes of three specimens of females (the females of many species of the tribus Mormini End. are unknown) labelled Shepton Moutoy, 4. 7. 1891, Eaton Coll., B. M. 1929—590 (only one wing present); Near Sandfoot Castle Weymoulte, 22. 6. 1892, Eaton Coll., B. M. 1929—590; Bratton, Seyruour, 10. 6. 1892, Eaton Coll., B. M. 1929—590.

Discussion: This species was described briefly in a key diagnosis by Eaton (1893) in the genus *Pericoma* Walker, 1856, however the generic relevance has been gradually changed. The key diagnosis was published also by Tonnoir (1940), Freeman (1950) and Tanasijčuk (1969). Vaillant (1974) quoted a specimen from Heidelberg (West Germany) deposited in British Museum (Nat. Hist.). As the basis for the conception of *Jovamormia caliginosa* (Eaton, 1893) in the present paper I have used Tonnoir's (1940) and Vaillant's (1974) characters.

Genus *Psychomormia* Ježek, 1983

Psychomormia Ježek, 1983: in press.

Eomormia (subgenus of the genus *Mormia* auct.) Krek, 1971a: 170, partim (unavailable name).

Eomormia (subgenus of the genus *Mormia* auct.) Krek sensu Vaillant, 1974: 134, partim (unavailable name); Krek, 1972b: 240; Wagner, 1978a: 160.

- Mormia* auct. (nec Enderlein, 1935), partim; Vaillant, 1974: 135.
Telmatoscopus auct. (nec Eaton, 1904), partim; Kloet et Hincks, 1945: 333; Freeman, 1950: 90; Duckhouse, 1962: 415.
Telmatoscopus [subgenus of the genus *Telmatoscopus* auct.], partim; Kloet et Hincks, 1945: 333.
Pericoma auct. (nec Walker, 1856 sensu Vaillant, 1971), partim; Eaton, 1893: 128; 1897: 118; Kertész, 1902: 296; Becker, Bezzi, Bischof, Kertész et Stein, 1903: 162; Feuerborn, 1922: 20.
Psychoda auct. (nec Latreille, 1796), partim; Kincaid, 1897:

Type-species: *Pericoma incerta* Eaton, 1893 (by orig. designation)

Differential diagnosis: Genus *Psychomormia* Ježek, 1983 without a projection of pedicellus, the last segment of maxillary palpus annulate and connected to the penultimate segment apically in contrast to the genus *Jovamormia* Ježek, 1983 because of developed projection of pedicellus, the last segment of maxillary palpus without annulation and connected to the penultimate segment subapically. The genus *Psychomormia* Ježek, 1983 has the sensory filaments on the antennae bifoiled, multiply divided in contrast to the genus *Jovamormia* Ježek, 1983 where they are comb-shaped. The genus *Psychomormia* Ježek, 1983, has antennae 15 segmented, the genus *Jovamormia* Ježek, 1983 16segmented. Above mentioned two genera have eyes contiguous in contrast to the genus *Promormia* Ježek, 1983, where the eyes are separated and index of the facet diameter to the minimal width of the frons 0.8. The genera *Psychomormia* Ježek, 1983 and *Jovamormia* Ježek, 1983 have index of the distance of the tangential points of the eye's ends to the facet diameter 13.8—14.3. Third segment of maxillary palpus is longer than the second one. Index of the length of the first flagellar segment to the length of the second segment 1.2—1.5, pleural suture on the thorax conspicuously arched, index of the length of cercus to the length of epandrium 1.9—2.2, cercus of the male with 12—19 retinaculi, basal apodeme dorso-ventrally compressed, sclerotized remainders of 10th segment inside of epandrium widened proximally, very narrowed distad, the semicircular parts of the male genitalia missing. The genus *Promormia* Ježek, 1983 may be diagnosed as follows: index of the distance of the tangential points of the eye's ends to the minimal width of frons 9.8—10.0, index of the distance of the tangential points of the eye's ends to the facet diameter 12.3—12.5, third segment of maxillary palpus shorter than second one. Index of the length of the first flagellar segment to the length of the second segment 0.8. Pleural suture on the thorax inconspicuously arched, index of the length of cercus to the length of epandrium 1.4—1.6, cercus of the male with 4—7 retinaculi, basal apodeme compressed laterally, sclerotized remainders of 10th segment inside of epandrium Y-shaped and two semicircular parts of the male genitalia developed.

Bionomy of included species: Unknown.

Distribution: Holarctic area — 3 species. *Psychomormia incerta* (Eaton, 1893) — west Europe, *P. vaillanti* (Wagner, 1978a) — the same and *P. olympia* (Kincaid, 1897) — U.S.A.

Discussion: Quoted by Ježek (1983).

Psychomormia incerta (Eaton, 1893)
(Figs. 44—61)

Pericoma incerta Eaton, 1893: 128; 1897: 118; Kertész, 1902: 296; Becker, Bezzi, Bischof, Kertész et Stein, 1903: 162; Feuerborn, 1922: 20.

Telmatoscopus (Telmatoscopus) incertus; Kloet et Hincks, 1945: 333.

Telmatoscopus incertus; Freeman, 1950: 90; Duckhouse, 1962: 421.

Mormia (Eomormia) incerta; Vaillant, 1974: 135.

Psychomormia incerta; Ježek, 1983: in press.

Diagnosis. Medium size, the length of the wing 2.3 mm, the eyes connected on the frons, the first flagellar segment of the antennae long and strong, composed from two nearly fused segments, antennae 15 segmented, sensory filaments bifoiled, multiply divided, male copulatory organ disunited apically, with many minute spines on the tops, with characteristic structure inside. The aperture of epandrium semicircular, big. Cerci with 19 retinaculi. Subgenital plate of the female of characteristic shape, as well as genital chamber, with a suggest of mosaic structure.

Male. The eyes connected in a line, the length of the line is equal approximately to twice the diameter of one facet. Ratio of the distance of tangential points of the eye's ends to the facet diameter 6.4:0.5. The set of hairs in the axis of the head below the eye's connection missing. Antennae 15 segmented, haired. Scapus rather short, somewhat narrowed proximally, the length of scapus is equal to the distal width. Index of the length of the first antennal segment to the second one 1.6. Ratio of the maximal width of pedicellus to the width of the first and second flagellar segments 2.8:2.3 (2.5):2.2. Pedicellus rather globular, the segments of flagellum mug-shaped. Index of the length of the first flagellar segment to the second one 1.5. The first segment of the flagellum long and strong, composed from two nearly fused segments. The first and second flagellar segments symmetrical. The antennal segment 14 with a reduced neck, the segment 15 reduced, with a haired digital projection. Sensory filaments large, bifoiled, multiply divided. Ratio of the length of the segments of maxillary palpus 3.4:4.4:4.7:8.4. The last segment of maxillary palpus annulate and connected with the penultimate segment apically. Ratio of the maximal length of cibarium to the length of epipharynx 1.6:1. The wings rather narrow, lancet-shaped, without pigmentation, the membrane bare, no strengthening of the veins in central area at the wing. Costal nodes conspicuous, C swelled basally. Sc straight, rather long. R₁ S-shaped, strengthened distad. R₂₊₃ conspicuously arched to C, strengthened in its entire length and in the joint part with the base of R₄. R₂ and R₃ gradually diverging from R₂₊₃, R₂ swollen, R₃ only in the distal part. R₂ inconspicuously S-shaped, R₃ bent to the hind margin of the wing. R₄ rather straight, only in the distal part swollen. R₅ swollen in its entire length, somewhat bent distad, with the mouth beside of the wing apex. M₁₊₂ inconspicuously bent to the fore wing margin, swollen and widened basally. The course both of M₁ and M₁₊₂ in the same direction, M₁ a little bent to the fore wing margin, M₂ S-shaped, both M₁ and M₂

strengthened distad. M₂ gradually diverging from M₁₊₂. M₃ conspicuously bent to the medial fork, strengthened distad. M₄ conspicuously strengthened along the whole length, particularly basally, distinctly bent to the fore wing margin. Cu strengthened, S-shaped. M₃ and Cu without a touch with M₄. The veins r—r, r—m and m—m not visible. Medial angle of the wing 142°. Index of the wing AB:AC:AD=10.7:11.8:11.8 and BC:CD:BD=2.7:3.9:6.3. Index of the base M₁₊₂, A to the maximal width of the wing 2.3. Length of the halteres to their largest breadth 2.8:1. Ratios of the length of coxa, tibia and the first tarsal segment P₁=13.1:15.8:7.3, P₂=16.0:21.9:9.0, P₃=15.8:19.8:9.0. Corniculi, patagia and tegulae missing. Basal apodeme of the male genitalia straight and very widened from the dorsal view proximally, inconspicuously S-shaped from lateral view. Male copulatory organ disunited apically, with many minute spines on the tops, with characteristic structure inside: a pair sclerotized projections bent inward and developed sclerotized bridge. Coxopodites without protuberances externally, harpagones approximately 1.5 times longer than coxopodites from lateral view, pointed apically. Index of maximal length of coxopodites to length of harpagones from dorsal view 1.1. Epandrium of characteristic shape. Aperture rather large, almost semicircular, sclerotized remainders of 10th tergite and sternite inside of epandrium characteristic and distinct. Hypandrium narrow, without protuberances. Epiproct short, distinctly haired, blunt, rounded, hypoproct longer than epiproct, triangular, with narrower top and of a wide connection with epandrium. Index of the length of cercus to the length of epandrium from lateral view 2.2. Cerci rather straight from ventral view, with 19 retinaculi subapically. Cercus is not disunited on the top.

Female: Subgenital plate with two densely haired caudal lobes with widened base. Genital chamber with complicated sclerotized structures, the anterior part with a suggestion of mosaic structure. Index of the length of cercus to the maximal width 5.2.

Material: 5 ♂♂, 2 ♀♀. Bohemia: Louny. Moravia: Otrokovice.

Comments on the material: Figured specimens of the male and female were collected nr. Otrokovice 1. 8. 1974 by author.

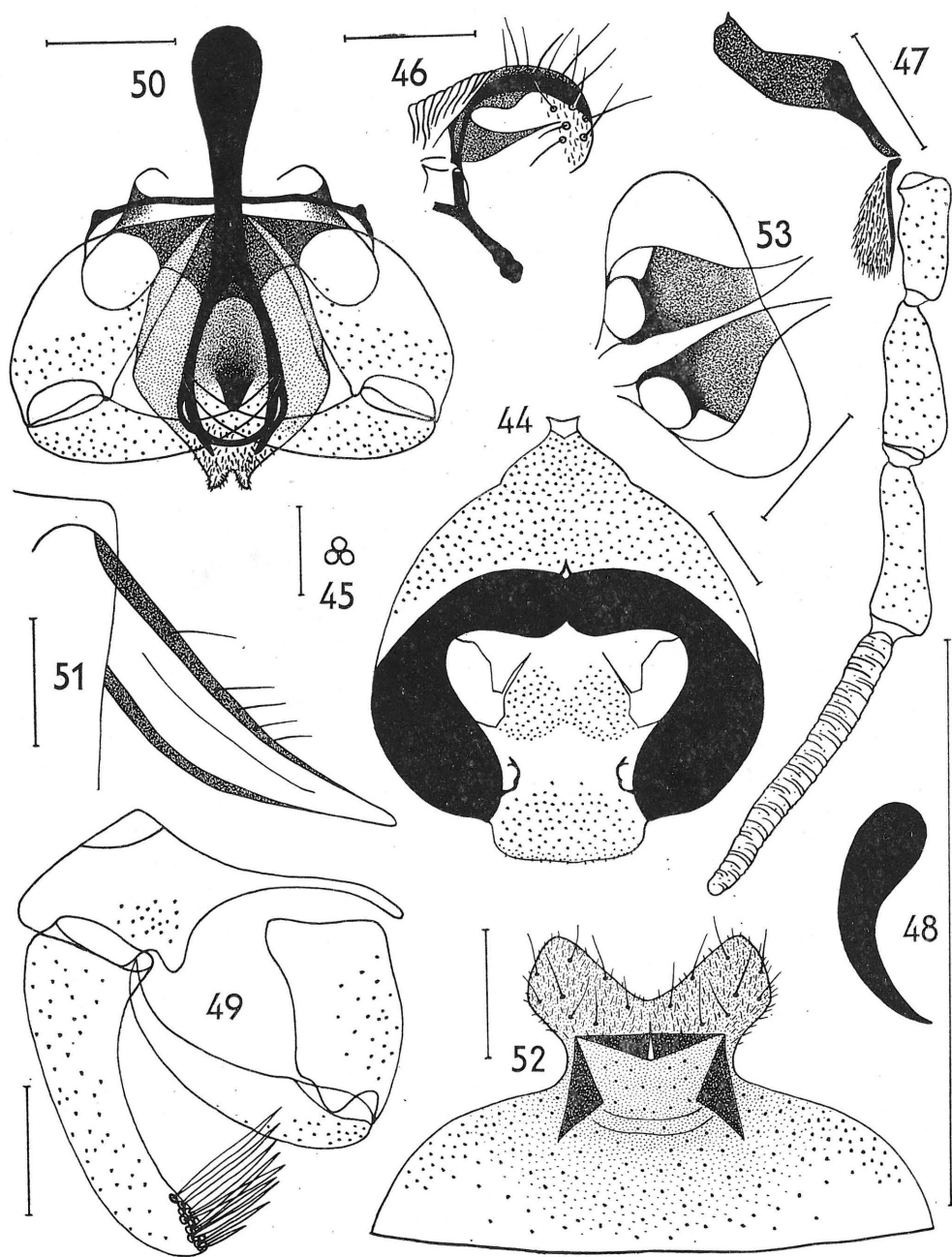
Occurrence in ČSSR: VII—VIII.

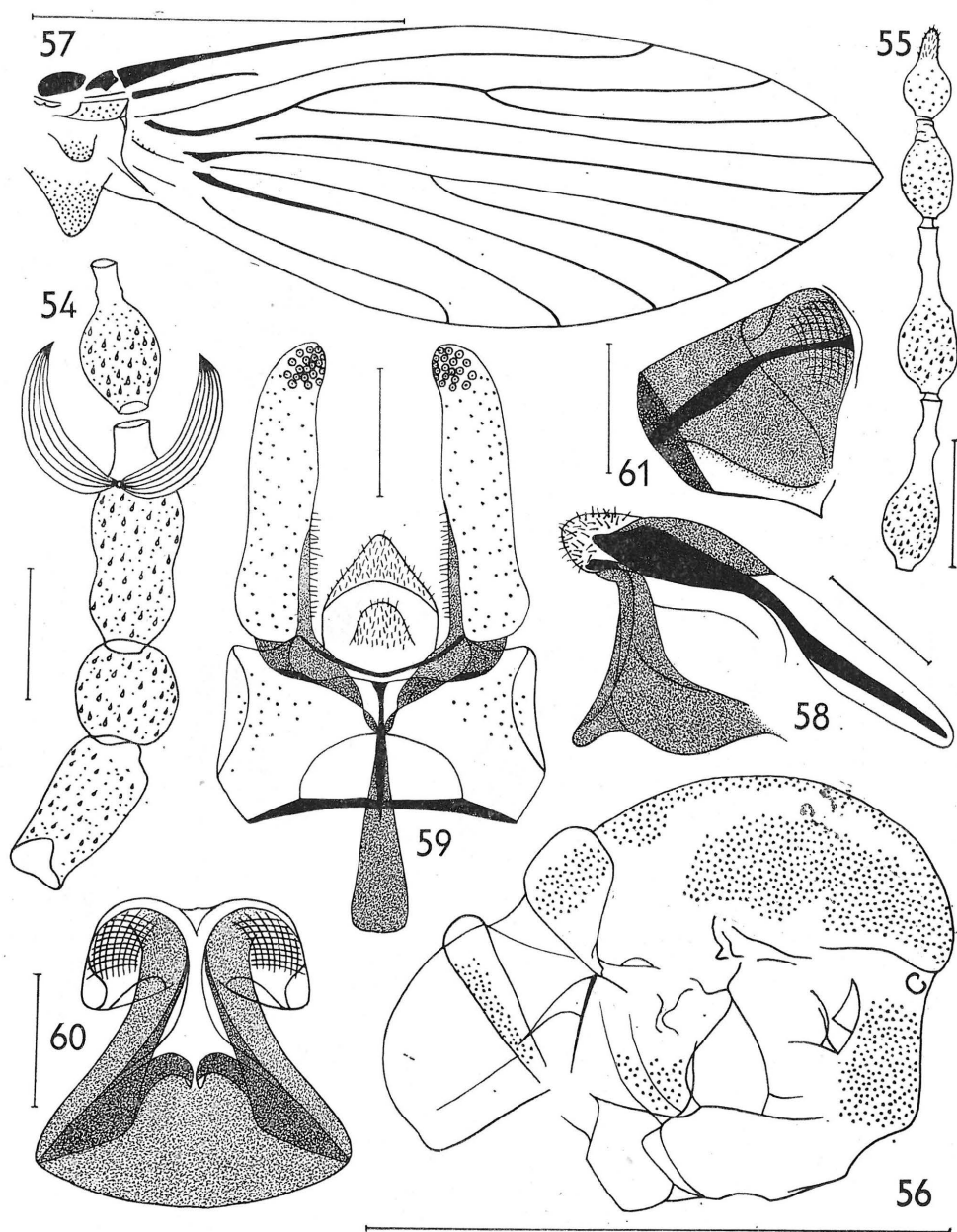
Bionomy: Little known; Feuerborn (1922) studied organs for sexual attraction and Duckhouse (1962) referred to distinct sexual dimorphism. In Bohemia and Moravia material was collected from vegetation near deep place in a stream and on the swamps with *Alnus*, *Salix* and *Urtica*.

Distribution: Belgium, Britain, new species for the fauna of ČSSR.

Data about type-material and type-locality: Through the kindness

Figs. 44—53: *Psychomormia incerta* (Eat.) ♂♀; 44: head; 45: facets; 46: terminal lobe of labium; 47: maxilla and palpus maxillaris; 48: claw of P₁ laterally; 49: hypopygium laterally; 50: copulatory organ, coxopodites and harpagones dorsally; 51: female cercus laterally; 52: female subgenital plate; 53: structures of female genital chamber ventrally. Scales 0.1 mm.





Figs. 54—61: *Psychomormia incerta* (Eat.) ♂♀; 54: basal antennal segments; 55: apical antennal segments; 56: thorax laterally; 57: wing; 58: copulatory organ laterally; 59: epandrium and cerci dorsally; 60: structures of female genital chamber anteriorly; 61: the same laterally. Scales 0.1 mm., figs. 56 and 57 1 mm.

of Dr. Cranston of London (British Museum, Nat. Hist.) I was enabled to examine syntype-material of *Pericoma incerta* Eaton, 1893 on „dry“ slides. The specimens were transferred to Canadian balsam. Lectotype-designation: ♂, Lourer Shepton, 12. 5. 1892, Eaton Coll., B. M. 1929—590. The head dissected, as well as thorax with abdomen, wing and hypopygium, which divided in two parts. Right antenna missing, as well as left maxillary palpus, left antenna is interrupted. One P₁ broke away from thorax, second P₁ missing. One wing is very damaged, the second wing missing. Paralectotype-designation: ♂, Moorhays Farm, Wincanton, 8. 8. 1892, Eaton Coll., B. M. 1929—590 — the head dissected, as well as thorax with abdomen, wing and hypopygium, which divided in two parts. Left antenna is interrupted, 1 wing missing. ♂, Somerset et Doret Bailey between Shepton Maillet and Moorhays, 3. 8. 1892, Eaton Coll., B. M. 1929—590; the head dissected, as well as thorax with abdomen, wing and hypopygium, which is divided in two parts. Only basal antennal segments present. Maxillary palpi missing as well as left wing. ♀ — labelled as the first paralectotypus — the head dissected as well as thorax with abdomen, wing, cerci and subgenital plate. Right maxillary palpus broken away from the head, left P₁, P₂ and P₃ missing as well as 1 wing; ♀ — Bailury near Moortlays Farm, Wincanton, Somers, 3. 8. 1892, Eaton Coll., B. M. 1929—590 — cerci dissected, as well as subgenital plate. Left antenna and left wing missing. Right P₂ without tarsal segments. Both the wing of the male of this species in the remounted Eaton's slide labelled Stony Scote, 3. 8. 1891, Eaton Coll., B. M. 1929—590 and antenna of the male labelled Moorhays, Wincanton, 3. 8. 1892, Eaton Coll., B. M. 1929—590, were excluded from the serie of paratypes.

Discussion: This species was described by Eaton (1893) in the genus *Pericoma* Walker, 1856. Mentioned conception was assumed by Kertész (1902) and Becker, Bezzi, Bischof, Kertész et Stein (1903). This species was later included in the genus *Telmatoscopus* Eaton, 1904 and *Mormia* Enderlein, 1935, however recently excluded from mentioned genera and transferred to the genus *Psychomormia* Ježek, 1983. This species was characterised by Eaton (1893), Freeman (1950) and Tanasijčuk (1969) in the key's diagnosis. The female was described by Duckhouse (1962). Vaillant (1974) redescribed and figured 1 male from Tonnoir's collection (Watermael, Belgium, 7. 5. 1918, Tonnoir lgt.) and determined it as *Pericoma incerta* Eaton, 1893. Vaillant also examined 2 specimens collected in Britain by Eaton (Ashcot, Gastonbury, Somerset, 30. 5. 1918 and Seaton Junction, Shute, Devon, 1. 6. 1901).

Acknowledgement

I am very much indebted to Dr. Peter S. Cranston (British Museum, Nat. Hist., London) for the loan of Eaton's syntypic series for lectotype and paralectotype designation.

Summary

Three genera of tribus Mormiini End. (Diptera, Psychodidae) are recorded from Czechoslovakia with 4 included species of which *Promormia silesiensis* sp. n. is described for the first time. Redescriptions of *Promormia eatoni* (Tonn.), *Jovamormia caliginosa* (Eat.) and *Psychomormia incerta* (Eat.) are given and all important characters are figured. Full synonymies, diagnostic characters, distribution and biology of included species of all taxa are presented as well as data concerning type-material and type-localities. Lectotype and paralectotype designations of *Psychomormia incerta* (Eat.) are given. All 4 recorded species are new for the fauna of Czechoslovakia.

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