

**CONTRIBUTION TO THE TAXONOMY OF SOME GENERA OF
PARAMORMIINE MOTH FLIES (DIPTERA, PSYCHODIDAE) WITH
DESCRIPTION OF A NEW GENUS KARAKOVOUNIMERUS**

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Abstract. Inter-generic relationships of 11 genera of Paramormiine moth flies are demonstrated by a dendrogram on the basis of both plesiomorphous and synapomorphous characters; the validity of taxon *Lepiseodina* End., *Iranotelmatoscopus* Jež., as well as *Karakovounimerus* gen. n., which is described here, are proved. Following redescrptions of species are presented: *Paramormia* (s. str.) *polyascoidea* (Krek) — new to Austria and U.S.S.R. (Abkhazia), *P. (Duckhousiella) ustulata* (Walker) — new to Iran, *Karakovounimerus sarai* (Salamanna) comb. n. — new to Greece and *Lepiseodina tristis* (Meigen). Distinguishing notes, occurrence, distribution and extents of studied taxons are added and all important diagnostic characters are figured. Several new additional combinations of generic and specific names are referred: *Paramormia (Duckhousiella) corniculata* (Vaillant) comb. n. and *P. (D.) furcata* (Kincaid) comb. n. from America, *Lepiseodina latipennis* (Sarà) comb. n. and *L. rothschildi* (Eaton) comb. n. from Europe.

This paper deals with the moth fly taxonomy of the Paramormiine genera *Paramormia* End., gives the description of a new genus *Karakovounimerus*, supports the reinstatement of the genus *Lepiseodina* End. in a sense of Ježek (1986a), as well as redescrbes some of the included Palaearctic species: *Paramormia (P.) polyascoidea* (Krek, 1971), *P. (Duckhousiella) ustulata* (Walker, 1856), *Karakovounimerus sarai* (Salamanna, 1975) comb. n. and *Lepiseodina tristis* (Meigen, 1830). The validity of the mentioned genera is based on a study of analytical procedure of 11 genera in proposing a revised classification. I have followed in this paper the type of analytical method used in papers of Hennig (1957), Brundin (1966) and Griffiths (1972), where all groups regarded as monophyletic are distinguished by the possession of derived (apomorphous) stages of expression of at least one pair of characters (synapomorphy of species of monophyletic groups). Most of the material was collected by the author in Czechoslovakia, Greece, U.S.S.R. and Iran (Exp. Nat. Mus. Praha). All material is deposited in the National Museum (Nat. Hist.) Praha, as well as several specimens from Austria which were added by the generosity of Mr. F. Ressler (Purgstall).

Genus *Paramormia* Enderlein

- Paramormia* Enderlein, 1935: 248; Duckhouse, 1978: 348; Ježek, 1982: 58; Vaillant, 1982a: 293 (restr.); b: 206 (restr.); Ježek, 1983: 258; 1984a: 162; b: 2,7; Wagner, 1984: 6; Ježek, 1986a: 96; Ježek et Halgoš, 1987: 31.
- Paramormia* Rapp, 1946: 175 (lapsus).
- Pericoma* Walker, 1856: 258 (nec *Pericoma* sensu Vaillant, 1971), partim.
- Pericoma* auct. (nec *Pericoma* sensu Vaillant, 1971, partim; Schiner, 1864a: 17; b: 635; Eaton, 1893: 128; 1897: 116; Kertész, 1902: 299; Becker, Bezzi, Bischof, Kertész et Stein, 1903: 164; Feuerborn, 1922: 21; Dyar, 1926: 107.
- Telmatoscopus* auct. (nec Eaton, 1904), partim; Barendrecht, 1934: 80; Enderlein, 1935: 247; Kloet et Hincks, 1945: 333; Freeman, 1950: 88; Sarà, 1951a: 1; c: 204; 1955: 1; Jung, 1956: 197; Satchell, 1956: 106; Sarà, 1958: 3; Vaillant, 1958a: 45; b: 153; Sarà 1959a: 6; b: 7; Vaillant, 1959: 266; Quate, 1960a: 144; b: 15; Szabó, 1960: 211; Vaillant, 1960a: 72; Nielsen, 1961: 37; Sarà, 1961: 2; Tokunaga, 1961: 489; Duckhouse, 1962: 428; Vaillant, 1963a: 211; c: 226; d: 112; Giljarov, 1964: 652; Nielsen, 1964: 152; Botosaneanu et Vaillant, 1965: 79; Nielsen, 1965a: 149; b: 109; Sarà, 1965: 132; Bellier, 1967: 58; Sarà et Salamanna, 1967: 65; Tanasijčuk, 1969: 130; Rozkošný, 1971: 141; Vaillant, 1971: 45; Szabó, 1972—1973: 167; Wagner, 1973: 518; Szabó, 1983: 31.
- Telmatoscopus* auct. (nec Eaton, 1904); Sarà, 1951b: 8; 1955: 10; 1959b: 7; Nielsen, 1965b: 109.
- Telmatoscopus* (subgenus of genus *Telmatoscopus* auct.), partim; Kloet et Hincks, 1945: 333; Jung, 1956: 197; Vaillant, 1958a: 46; 1959: 266; 1960a: 101; Georges, 1961: 105; Vaillant, 1963a: 213; c: 229; d: 112; Nielsen, 1965b: 109; Sarà et Salamanna, 1967: 65.
- Telmatoscopus* (subgenus of genus *Telmatoscopus* auct.); Vaillant, 1958b: 153; 1963a: 213; d: 112; Wagner, 1973: 518.
- Mormia* auct. (nec Enderlein, 1935), partim; Vaillant, 1954: 93.
- Mormia* (subgenus of genus *Telmatoscopus* auct.), partim; Vaillant, 1958a: 46.
- Duckhousiella* auct. (nec subgenus sensu Ježek, 1984a); Krek, 1971b: 172; Vaillant, 1971: 44; 1972: 59; Salamanna, 1975a: 194; b: 78; Elger, 1978: 469, 477; Wagner, 1979a: 41; Krek, 1979: 1805, 1809; 1982: 148; Salamanna et Sarà, 1980: 18; Salamanna, 1983a: 48; b: 718; Krek, 1985: 169; Bellstedt et Wagner, 1988: 61.

Type-species: *Pericoma fratercula* Eaton, 1893 (by orig. des.)

Diagnosis. Eyes connected or separated, sensory filaments of antennae finger-like, arranged in rings (in a simple line or in rows), corniculi, patagia and tegulae missing, wings with or without strengthened parts of veins in central area, basal field of wing developed, Sc long, cerci reduced.

Redescription. Scape approximately twice longer than pedicel, the last flagellar segment with very thin haired finger-like protuberance. Sensory filaments of flagellar segments finger-like, arranged in a simple line or in rows. The last segment of the maxillary palpus annulated and connected with the foregoing segment apically. Corniculi, patagia and tegulae are not developed. Wings without pigmentation, with or without strengthened parts of veins in central area, lancet-shaped, wing-membrane bare. Basal field of wing developed. Basal costal nodes distinct. Sc long, uninterrupted. M₃ and Cu without a connection on M₄. Index of the base of M₁₊₂, A to the maximum width of wing 1.9. Epiproct shorter than hypoproct, wrinkled, hypoproct haired, with rounded top. Cerci almost straight from ventral view, reduced in length, with 10—12 retinaculi. Female subgenital plate with widened base and two lobes distad.

Distinguishing notes. This genus belongs to the subfamily Psychodinae and represents one of 11 genera of the tribe Paramormiini which have apical antennal segments flask-shaped and anterior additional sclerite of the pteropleurite very small. It differs from the mentioned genera in having sensory filaments of flagellum arranged in rings and reduced cerci.

Bionomy. Little known. A key on the larvae of 4th instar and males of Palaearctic species was published by Vaillant (1972) and Salman et Vaillant (1982) included a diagnosis of larva of *Paramormia* (*Phyllotelmatoscopus*) *acuta* (Krek, 1971) in a key. Larvae are ubiquitous, psammobiont and halobiont. Adults are common on the banks of ponds with foul water, on moist pasturelands, streams, pools, gutters, arms of rivers and irrigation drains, moist soil heaps and springs on pasturelands.

Extent of the genus. Holarctic area, 12 species, one species was brought in from Brazil and Argentina. The systematic position of "*Telmatoscopus obtusulus* Quate, 1966" — Rjúkú Islands and "*Telmatoscopus sobrinus* Quate, 1955" — U.S.A. is uncertain. The second mentioned species is probably a representative of an undescribed subgenus of the genus *Paramormia* Enderlein, 1935.

Discussion. Vaillant (1972) described the genus *Duckhousiella* (type-species: *Pericoma ustulata* Walker, 1856), however the name is valid only for one of three subgenera of the genus *Paramormia* Enderlein, 1935 in addition to *Phyllotelmatoscopus* Vaillant, 1982 (a good genus sensu Vaillant, 1982a, b) and *Paramormia* Enderlein, 1935 s. str. — see Ježek (1984a). *Phyllotelmatoscopus* Vaillant, 1982 with type-species *Pericoma decipiens* Eaton, 1893 was described on the basis of connected eyes, numerous finger-like sensory filaments of flagellar segments in two distinct rows, veins in central area of the wing without strengthened parts and f_1 without spines. This subgenus has 4 species in the Palaearctic part of the Holarctic area only (Vaillant, 1972 named this group "*Duckhousiella* der Gruppe *decipiens*"): *Paramormia* (*Phyllotelmatoscopus*) *acuta* (Krek, 1971) — Balkan, Alps occ.; *P. (P.) decipiens* (Eaton, 1893) — Europe occ.; *P. (P.) longipennis* (Krek, 1971) — Balkan, Alps occ. and *P. (P.) pollinensis* (Sarà, 1951) — Europe mer. Krek (1971b) described in the short key diagnosis subgenus *Paramormia* of the genus *Mormia* Enderlein, 1935 (tribus Mormiini Enderlein, 1935), however without establishing type-species and without inclusion of a species. Vaillant (1974) established for the subgenus *Paramormia* Krek as type-species *Mormia palposa* (Tonnoir, 1919). The subgenus *Paramormia* Vaillant, 1974 was elevated because of morphological character to genus. The name *Paramormia* is preoccupied for the genus *Paramormia* Enderlein, 1935 (tribus Paramormiini Enderlein, 1936) with type-species *Pericoma fratercula* Eaton, 1893 and therefore Ježek (1984a) used the name *Levimormia* Enderlein, 1936 for species included by Vaillant (1974) in the subgenus *Paramormia* Krek and raised it to the status of genus. For the rest of the species were established by Ježek (1984a) two new genera *Katamormia* and *Telomormia*.

Subgenus **Paramormia** s. str.

Paramormia s. str.: Ježek, 1982: 58; 1984a: 163; 1986a: 96; Ježek et Halgoš, 1987: 31.

Duckhousiella Vaillant, 1972: 54, partim; Krek, 1979: 1805, 1809; 1985: 169; Bellstedt et Wagner, 1986: 61.

Type-species: *Pericoma fratercula* Eaton, 1893 (by orig. des.)

Diagnosis. Males have eyes separated and sensory filaments of antennae are arranged in a simple line. Central area of wing is without strengthened parts of veins.

Bionomy. Little known. Larvae live in sandy areas, adults occur on the vegetation of banks of ponds, field drainages, outflows of water reservoirs, on moist soil-heaps and field spring areas.

Extent of the subgenus. 4 species in the Palaearctic part of Holarctic area: *P. (P.) fratercula* (Eaton, 1893) — Europe occ.; *P. (P.) itoi* (Tokunaga, 1961) — Japan; *P. (P.) polyascoidea* (Krek, 1971) — Europe centr. and mer.; *P. (P.) watermaelica* (Vaillant, 1972) — Europe occ.

Discussion. Vaillant (1972) named the mentioned group of species "*Duckhousiella* der Gruppe *fratercula*". *Duckhousiella* Vaillant, 1972 is valid only as a name of one subgenus of the genus *Paramormia* Enderlein, 1935 with type-species *Pericoma fratercula* Eaton, 1893 established by original designation, the generic name *Duckhousiella* Vaillant, 1972 is a synonym of *Paramormia* Enderlein, 1935 (gen.).

Paramormia (Paramormia) polyascoidea (Krek)

(Figs. 1—18)

Telmatoscopus polyascoideus Krek, 1971: 90; Szabó, 1983: 33.

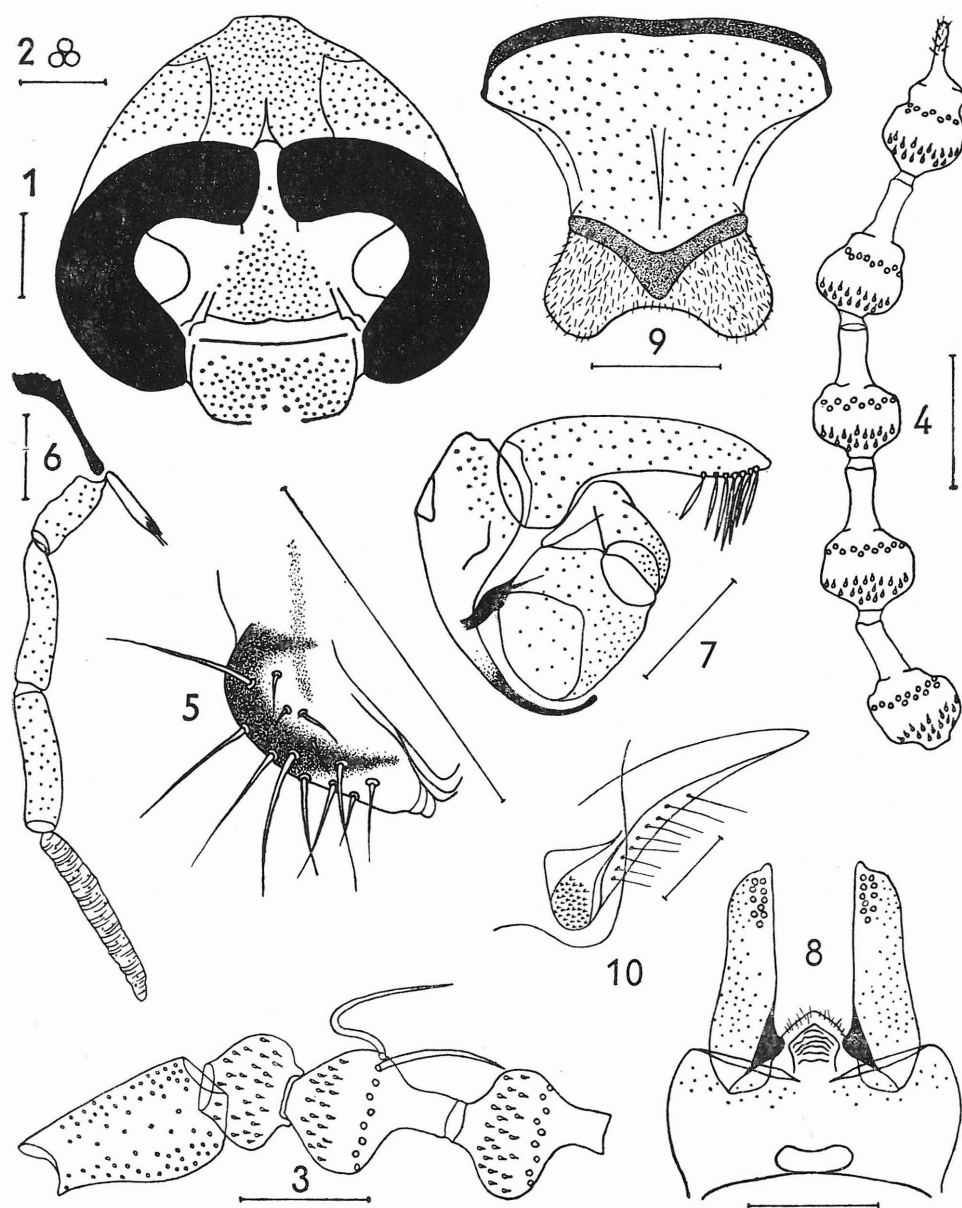
Telmatoscopus poliascoideus; Rozkošný, 1971: 140.

Duckhousiella polyascoidea; Krek, 1971b: 172; Vaillant, 1972: 60; Wagner, 1979a: 41; Krek, 1979: 1805, 1809; 1985: 169; Bellstedt et Wagner, 1986: 61.

Paramormia (Paramormia) polyascoidea; Ježek, 1982: 58; 1984a: 163; 1986a: 96; Ježek et Halgoš, 1987: 31.

Diagnosis. Of middle size, wing-length 2.3—2.5 mm., central wing area practically without strengthened veins, the male copulatory organ with typical sclerotized annulus placed distad to its basal apodeme. Coxopodites with a characteristic subapical seta on the inner side, subgenital plate of female of characteristic shape.

Male. The distance between eyes twice as large as facet-diameter (measured closely below frontal suture). Index of facet-diameter to minimum width of frons 0.8. Index of distance of tangential points of eye's ends to minimum width of frons 9.8, to facet diameter 12.3. Frons with sparse hairs. Antennae 16-segmented, haired. Scapus prolonged, widened distad as a club, approximately twice as long as pedicel, the width of pedicel a little larger than its length, ratio of maximum width of pedicel to the same of first and second flagellar segment 3.2:3.4:3.5. Flagellar segments bottle-shaped, index of length of first flagellar segment to second one 1.1. First and second flagellar segments asymmetrical, last flagellar segment with very thin haired finger-like protuberance. Sensory filaments of antennae rather long, finger-like,



Figs. 1–10: *Paramormia (Paramormia) polyascoidea* (Krek) ♂♀. 1: head; 2: facets; 3: basal antennal segments [sensory filaments of segment 4 omitted]; 4: apical antennal segment; 5: terminal lobe of labium; 6: maxilla and palpus maxillaris; 7: hypopygium laterally; 8: epandrium and cerci dorsally; 9: subgenital plate ventrad (female); 10: cercus laterally (female). Scales 0.1 mm.

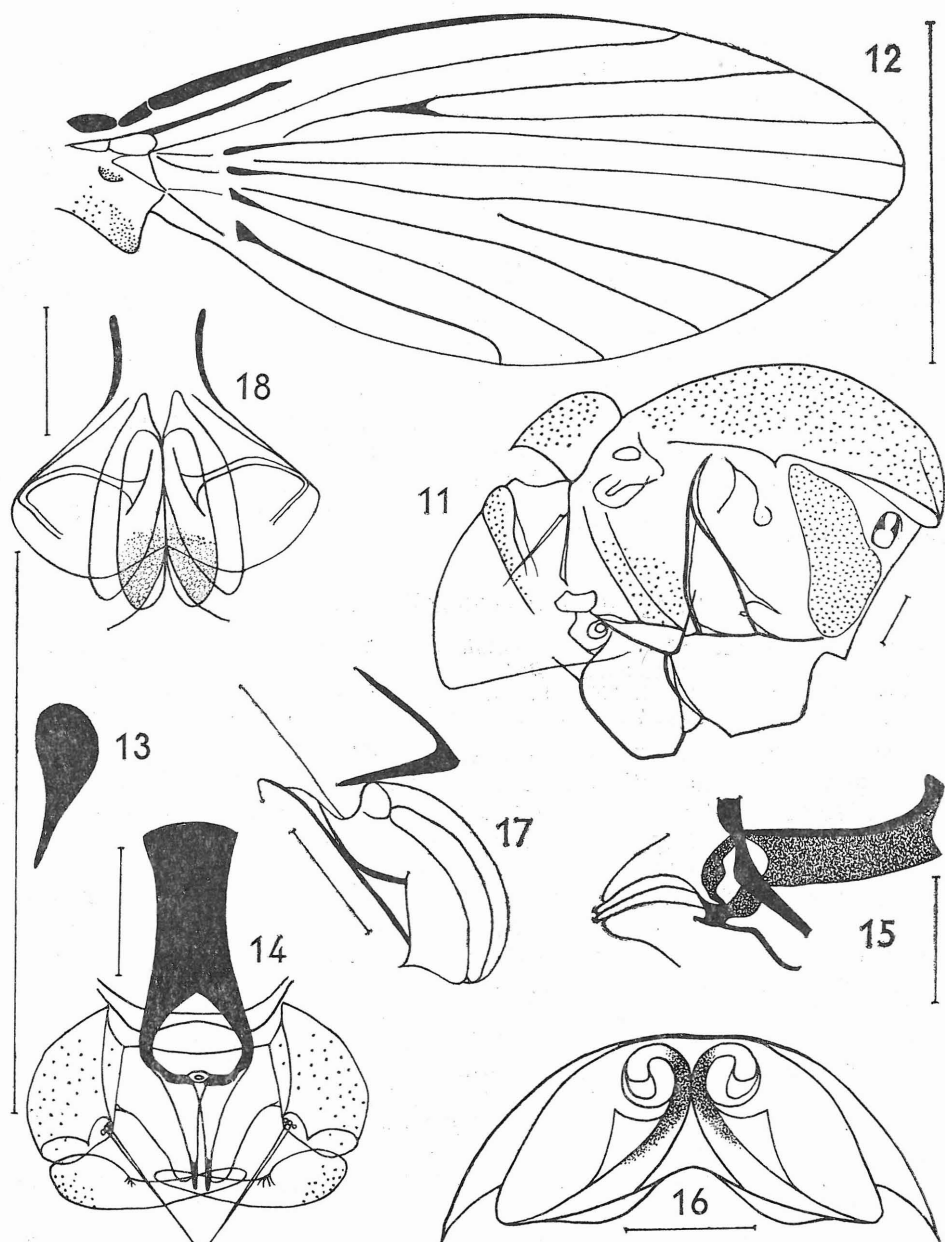
arranged irregularly in one subapical narrow annulus. Ratios of lengths of segments of maxillary palpus 2.7:4.0:3.8:5.2. Last segment of maxillary palpus annulated and its base connected with apex of foregoing segment. Ratio of maximum length of cibarium to length of epipharynx 1:1.4. Corniculi not developed. Wings without pigmentation, lancet-shaped, central area of wing practically without strengthened veins. Wing membrane bare. Costal nodes distinct. Sc long, uninterrupted. Angles of basal part of R_2 and R_{2+3} as well as of the same of R_3 and R_{2+3} are rather large. Connection of R_2 and R_3 distinctly strengthened. M_3 and Cu without a connection on M_4 . Medial wing-angle as well as some indexes of wing are not measurable because of incomplete M_2 in base. Index of base of M_{1+2} , A to maximum width of wing 1.9. Ratio of length of halteres to its maximum width 2.4:1. Ratios of lengths of femora, tibiae and first tarsal segments: $P_1 = 15.6:16.2:7.5$; $P_2 = 16.5:21.7:8.9$; $P_3 = 17.0:23.0:9.3$. Femora with longitudinal line of spines. Paired tarsal claws only a little bent. Basal apodeme of male genitalia straight, widened both proximally and distad. Proximal end of basal apodeme blunt, distal end of that ring-shaped with paired point protuberances. Copulatory organ smooth outside. Coxopodites with characteristic subapical seta on inner side, harpagones conspicuously bent mostly from lateral view, with rather blunt ends. Index of maximum lengths of coxopodites to lengths of harpagones 0.9. Epandrium of characteristic shape. Aperture developed. Hypandrium narrow, with two widened parts. Epiproct shorter than hypoproct, wrinkled, hypoproct haired, with rounded top. Cerci almost straight from ventral view, with 10 retinaculi subapically. Index of length of cercus to length of epandrium from lateral view approximately 1.5. Top of cercus without a bifurcation.

Female. Subgenital plate of characteristic shape with widened base, with two lobes distad. Netted structures of genital chamber are sketched. Cercus a little bent. Index of length of cercus to its maximum width 3.8.

Material: Czechoslovakia: 44 ♂♂, 16 ♀♀. Bohemia: Český Brod, Dolní Počernice, Hlásná Lhota (Jičín distr.), Chudíř, Konopiště (Benešov distr.), Křeslice, Lukavec (Pelhřimov distr.), Mělník — distr. town, Měrunice, Ohaveč, Praha-Divoká Šárka, Praha-Kunratice, Praha-Šeberov — D., Praha-Vinoř, Tchořovice, Uhřetěves, Úhošťany. Moravia: Bedřichov (Šumperk distr.) — M., Do'ní Marklovice, Horákov, Okříšky, Otaslavice, Prostějov — distr. town, Závada (Karviná distr.). Austria: 2 ♂♂; Feichsen — R., Purgstall — R. The first 17. 6. 1974, slide Inv. No. 1784, Cat. No. P5 — 33228, the second 3. 6. 1973, Inv. No. 600, Cat. No. P5 — 33227. U.S.S.R.: 21 ♂♂; Abkhazia, Caucasus, Saken — narzan, 11. 7. 1983, slides Inv. No. 562—582, Cat. No. P5 — 33229—33249.

Comments on the material. D. — Dlabola lgt., M. — Martinovský, R. — Ressler. Figured specimens both of male and female were collected at Český Brod, 19. 8. 1971. The name of the district town is only given where, according to the alphabetic list of settlements of Czechoslovakia, one or more homonyms of the locality exist.

Occurrence in ČSSR V.—VIII., in Austria VI., in U.S.S.R. (Abkhazia) VII.



Figs. 11—18. *Paramormia (Paramormia) polyascoidea* (Krek) ♂. 11: thorax laterally; 12: wing; 13 — claw of P_1 ; 14: copulatory organ, coxopodites and harpagones dorsally; 15: copulatory organ laterally; 16: genital chamber anteriorly [female]; 17: the same laterally; 18: the same ventrad. Scales 0.1 mm., in Fig. 12 — 1 mm.

Bionomy. Larvae are psammobiont, a description of the last instar larvae was published by Vaillant (1972), Mr. Ressler collected adults of this species flying in an area of railway station, author of this paper on the banks of ponds, brooks in forests, drainages on fields, outflows of water reservoirs, moist soil heaps, swamps and near springs of pastures with *Alnus*, *Salix*, *Populus*, *Sambucus*, *Crataegus*, *Aesculus*, *Quercus* and *Betula* around, the undergrowth with *Urtica*, *Geum*, *Phragmites*, *Caltha*, *Equisetum* and *Scirpus*. In Abkhazia all specimens of this species, occurring together with *Parajungiella abchazica* Ježek, 1985, were collected by author at dusk (22 00 hrs) by sweeping vegetation near a forest with swamps. The species was taken at an altitude of approximately 2000 m. in a pasture with growth of *Alnus*, *Juglans* and *Prunus*.

Distribution: Czechoslovakia, D. and F. Germany, Yugoslavia, Poland. New to Austria as well as to U.S.S.R. (Abkhazia).

Data on type-material and type-locality: Holotype is deposited in Krek's collection in Sarajevo and was collected in Bosnia.

Discussion. Rozkošný (1971) registered this species from Slovakia and Vaillant (1972) published detail figures; it was included in the genus *Paramormia* End. by Ježek (1984a).

Subgenus *Duckhousiella* Vaillant

Duckhousiella (subgenus of genus *Paramormia* End.) Vaillant, 1972 sensu Ježek, 1984a: 163; 1986a: 96; Ježek et Halgoš, 1987: 31.

Duckhousiella (gen.) Vaillant, 1972: 54, partim; Wagner, 1979a: 41; Krek, 1982: 148; Salamanna, 1983a: 48; b: 718; Krek, 1985: 169; Bellstedt et Wagner, 1986: 61.

Type-species: *Pericoma ustulata* Walker, 1856 (by orig. des.)

Diagnosis. Males with connected eyes dorsally, sensory filaments of flagellar segment arranged in a broad ring of irregular rows. Central area of wing with strengthened parts of veins.

Bionomy. Larvae were characterised by Vaillant (1972), Rozkošný (1971), quoted older literary data on habitats: sea shores, mineral or clear springs, sensu Vaillant (1971) also thermal springs. Author of this presented paper collected adults on banks of outflows of ponds, brooks, gutters, rivers, drainages and moist meadows.

Extent of the subgenus. Holarctic area, however one species was introduced to America South. Species: *P. (D.) corniculata* (Vaillant, 1973) comb. n. — U.S.A.; *P. (D.) cornuta* (Nielsen, 1964) — Madeira; *P. (D.) furcata* (Kincaid, 1899) comb. n. — U.S.A., introduced to Brazil and Argentine; *P. (D.) ustulata* (Eaton, 1893) — Europe, Asia centr. and Africa sept.

Discussion: Vaillant (1972) named the group of two mentioned Palaearctic species "*Duckhousiella* der Gruppe *ustulata*". The name *Duckhousiella* Vaillant, 1972 is used only for this subgenus of the genus *Paramormia* Enderlein, 1935 and the generic name *Duckhousiella* is a synonym of the generic name *Paramormia*. Names *Paramormia* Krek and *Paramormia* Krek sensu Vaillant were discussed by Ježek (1984a). The extent of subgenus *Duckhousiella* Vaillant, 1972 reported by Ježek (1984a) here

corresponds with a view of Duckhouse (1962) that "*Telmatoscopus furcatus* complex" sensu Quate (1955) is closely related to "*ustulatus*".

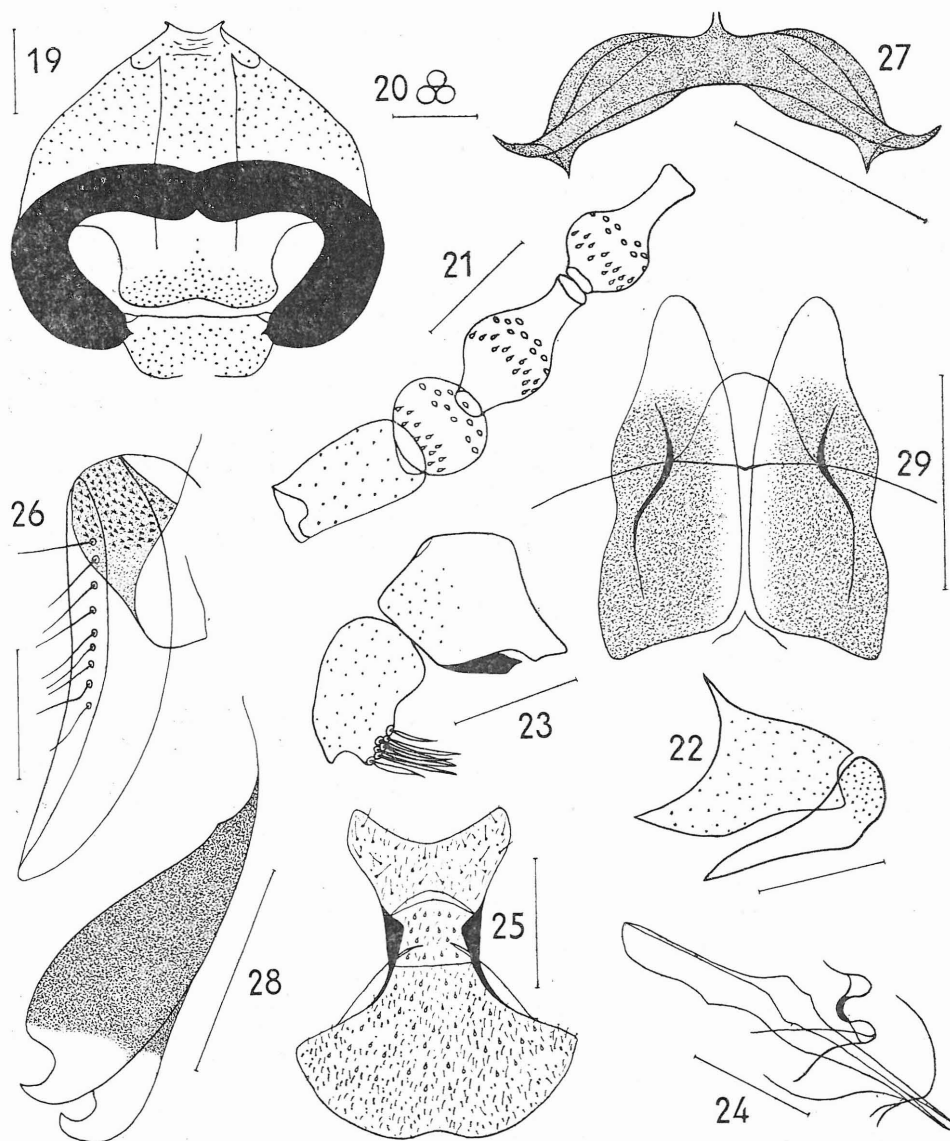
***Paramormia (Duckhousiella) ustulata* (Walker)**

(Figs. 19—37)

- Pericoma ustulata* Walker, 1856: 258; Schiner, 1864a: 17; b: 635; Mik, 1887: 54; Eaton, 1893: 128; 1897: 116; Kertész, 1902: 299; Becker, Bezzi, Bischof, Kertész et Stein, 1903: 164; Feuerborn, 1922: 21.
- Telmatoscopus ustulatus*; Barendrecht, 1934: 80; Freeman, 1950: 88; Sarà, 1951a: 4; c: 204; 1955: 1; Satchell, 1956: 119; Sarà, 1958: 3; 1959a: 6; b: 7; Vaillant, 1959: 274; Szabó, 1960: 211; Sarà, 1961: 5; Nielsen, 1961: 138; Duckhouse, 1962: 428; Nielsen, 1964: 152; Giljarov, 1964: 652; Sarà, 1965: 130; Nielsen, 1965a: 149; Botosaneanu et Vaillant, 1965: 79; Bellier, 1967: 58; Tanasijčuk, 1969: 130; Rozkošný, 1971: 140; Vaillant, 1971: 45; Szabó, 1972—1973: 167; 1983: 35.
- Telmatoscopus (Telmatoscopus) ustulatus*; Kloet et Hincks, 1945: 333; Jung, 1956: 197; Vaillant, 1958a: 46; 1959: 266; 1960a: 101; Georges, 1961: 105; Vaillant, 1963a: 213; c: 229; d: 112; Nielsen, 1965b: 109; Sarà et Salamanna, 1967: 46.
- Duckhousiella ustulata*; Krek, 1971b: 172; Vaillant, 1971: 44; 1972: 59; Salamanna, 1975a: 194; b: 78; Elger, 1978: 469, 477; Wagner, 1979a: 42; b: 447; Krek, 1982: 148; Salamanna, 1983a: 48; b: 718; Bellstedt et Wagner, 1986: 61.
- Paramormia ustulata*; Vaillant, 1982a: 293; b: 206; Wagner, 1984: 6.
- Paramormia (Duckhousiella) ustulata*; Ježek, 1984a: 163; 1986a: 96; Ježek et Halgoš, 1987: 31.
- Mormia limosa* Vaillant, 1954: 93.
- Telmatoscopus (Mormia) limosus*; Vaillant, 1958a: 46.
- Pericoma aldrichana* Dyar, 1926: 107.
- Duckhousiella aldrichana*; Vaillant, 1972: 59.

Diagnosis. Rather small species, wing-length 2.4—3.0 mm., central and apical areas of wing with many strengthened parts of veins. Harpagones approximately of the same length as coxopodites from dorsal view, pointed apically, male copulatory organ with paired long pin-shaped protuberances. Male cerci very short, approximately ovoid from ventral view, female subgenital plate as well as genital chamber of characteristic shape.

Male. Eyes connected dorsally, index of distance of tangential points of eye's ends to facet diameter 7.5. Antennae 16-segmented, haired. Scape cylindrical, pedicel almost globular, length of scape almost twice as long as the same of pedicel. Ratio of maximum width of pedicel to width of first and second flagellar segment 2.8:2.5:2.4. Flagellar segments bottle-shaped, index of length of first flagellar segment to length of second one 1.1, two first flagellar segments symmetrical, last flagellar segment with an apical finger-like haired projection. Sensory filaments of flagellum of a middle size, simple, finger-like, irregularly arranged in broad rings formed by 1—2 rows. Ratios of lengths of segments of maxillary palpus 3.4:4.1:4.3:5.1. Last segment of maxillary palpus annulated, connected basally with apical end of the foregoing segment. Ratio of maximum length of cibarium to length of epipharynx 2.3:1. Corniculi missing. Wings without pigmentation, lancet-shaped, with numerous strengthened parts of veins on area of wing, wing-membrane bare. Basal costal nodes distinct, Sc rather long, uninterrupted. R_{2+3} originating before end of indistinct basal field, angle of basal part of R_2 and distal

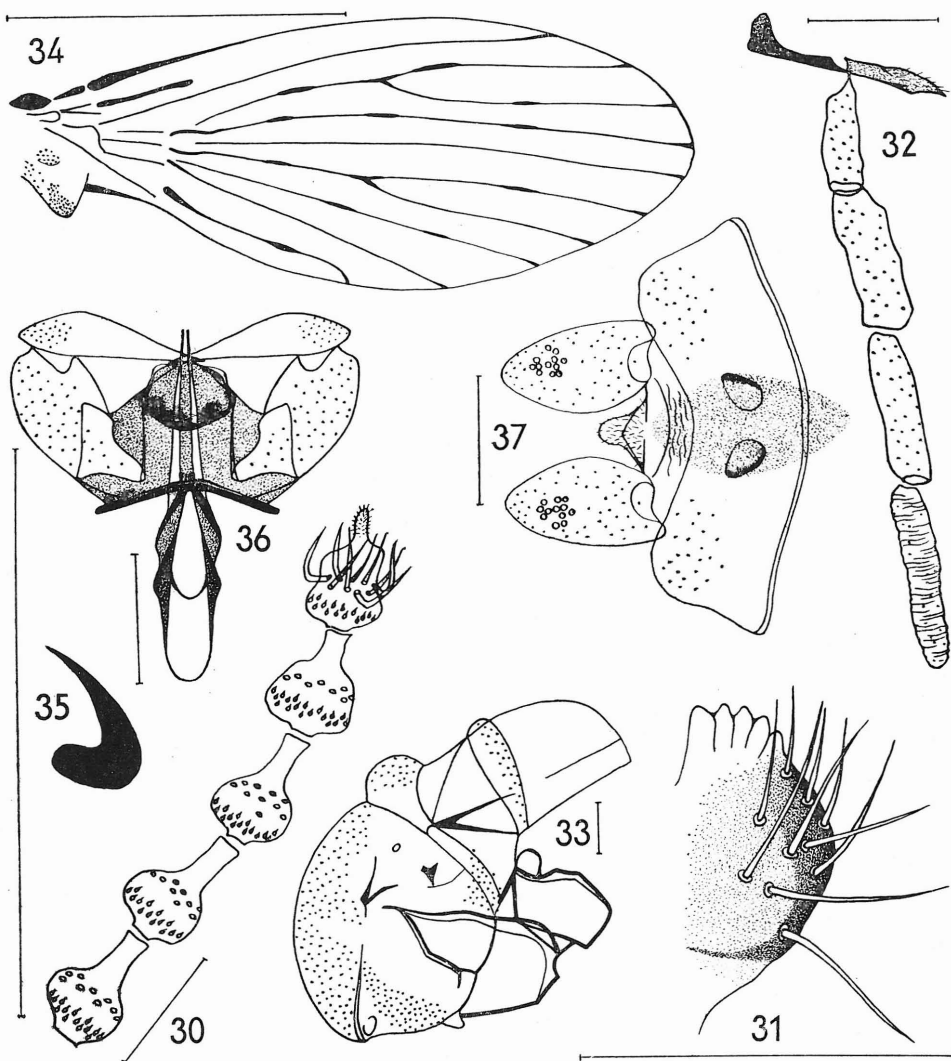


Figs. 19—29: *Paramormia (Duckhousiella) ustulata* [Walker] ♂♀. 19: head; 20: facets; 21: basal antennal segments [sensory filaments omitted]; 22: coxopodit and harpagon laterally; 23: epandrium and cercus laterally; 24: copulatory organ laterally; 25: subgenital plate ventrad [female]; 26: cercus laterally [female]; 27: genital chamber anteriorly [female]; 28: the same laterally; 29: the same ventrad. Scales 0.1 mm.

part of R_{2+3} rather large as well as angle of the same of R_3 and R_{2+3} . Analogous situation is in angles of M_1 , M_{1+2} and M_2 , M_{1+2} . M_3 and Cu without a connection on M_4 . Medial wing-angle 180° . Indexes of wing $AB:AC:AD = 8.5:8.4:9.4$, $BC:CD:BD = 2.7:2.9:5.6$. Index of base of M_{1+2} , A to maximum width of wing 1.9. Ratio of length of halteres to its maximum width 3.3:1. Femora of P_1 with a longitudinal row of spines. Ratios of lengths of femora, tibiae and first tarsal segments: $P_1 = 14.5:16.1:5.0$; $P_2 = 15.0:19.4:8.1$; $P_3 = 16.2:21.8:8.8$. Paired tarsal claws only a little bent. Basal spodeme of male genitalia straight, without a bifurcation on its end, distal stripes laterally mostly with doubled sclerotized collar. Copulatory organ outside smooth, with characteristic long, paired, pin-shaped projections. Coxopodites outside without protuberances, harpagones only a little longer than coxopodites from dorsal view, pointed apically. Epandrium of characteristic shape, with paired openings. Hypandrium narrow, without strengthened parts. Width of epiproct more than three times larger than its length, hypoproct much more longer than epiproct. Cerci ovoid from ventral view, with 12 retinaculi subapically. Index of length of cercus to length of epandrium from lateral view 1.0. Cercus without a bifurcation on the top.

Female. The width of frons almost three times larger than diameter of one facet. Subgenital plate of characteristic shape. Complicated sclerotized forms in area of genital chamber missing, as well as netted structures. Cercus almost straight. Index of length of cercus to its maximum width 4.4.

Material: Czechoslovakia: 314 ♂♂, 110 ♀♀. Bohemia: Bělčice (Strakonice distr.), Blatná (Strakonice distr.), Brve, Čelákovice, Český Brod, Dolní Chabry, Dubeč, Františkovy Lázně, Hamry (Havlíčkův Brod distr.), Chodová Planá, Kuřimany — Maš., Lázně Kynžvart, Louny, Malý Rapotín, Měrunice, Ohaveč, Pěčice (Mladá Boleslav distr.), Praha-Kunratice, Praha-Ruzyně, Račice (Litoměřice distr.), Srbsice (Teplice distr.), Tchořovice, Vrbno (Strakonice distr.) — B. Moravia: Černovír (Olomouc distr.) — M., Dolní Libochová, Dolní Marklovice, Frenštát pod Radhoštěm, Hlohovec (Břeclav distr.), Hodonín — distr. town, Charvátská Nová Ves, Ivaň (Břeclav distr.), Kroměříž, Lužice (Hodonín distr.), Mutěnice (Hodonín distr.), Okříšky, Račice (Vyškov distr.), Střelice (Znojmo distr.), Uherské Hradiště, Záhlinice. Slovakia: Nová Vieska. Iran: 22 ♂♂. Mohammadabad (Kerman province), 3.—5. 5. 1973, slide Inv. No. 1523, Cat. No. P5 — 33250, Loc. No. 187 sensu Hoberlandt (1980); Korsiah (Fars), 29.—30. 5. 1973, Inv. No. 1521—1522, Cat. No. P5 — 33251—33252, Loc. No. 220; Bidruyeh (Lorestan), 12. 4. 1977, Inv. No. 100, Cat. No. P5 — 33253, Loc. No. 285 sensu Hoberlandt (1983); Chashmeh-ye Sargaz (Kerman province), 20.—21. 5. 1977, Inv. No. 328, Cat. No. P5 — 33254, Loc. No. 339; Birjand (Khorasan), 6.—7. 6. 1977, Inv. No. 330—346, Cat. No. P5 — 33255—33271, Loc. No. 360. All Iranian material Exp. Nat. Mus. Praha lgt.



Figs. 30—37: *Paramormia (Duckhousiella) ustulata* (Walker) ♂♀. 30: apical antennal segments; 31: terminal lobe of labium; 32: maxilla and palpus maxillaris; 33: thorax laterally; 34: wing; 35: claw of P₁; 36: copulatory organ, coxopodites and harpagones dorsally; 37: epandrium and cerci dorsally. Scales 0.1 mm., in Fig. 34 — 1 mm.

Comments on the material: B. — Bukva lgt., M. — Martinovský, Maš. — Mašínová. Figured specimen of male is labelled Ohaveč, 24. 5. 1974 and figured female Lázně Kynžvart, 29. 7. 1971.

Occurrence in Czechoslovakia: IV.—X.; in Iran: IV.—VI.

Bionomy: Feuerborn (1926) described the larva and pupa; sensu Barendrecht (1934) this species occurs, in localities without salinity or with different levels of salinity. Jung (1956) registered larvae near salt springs, saltboils and in seaweed-heaps. The life-history is of one year, sensu Vaillant (1971, 1972) larvae are frequent in rivers, sea-shores, thermal springs, in crust of limestone dust, beneath stones, in moss and in moist earth. The species was collected up to 1000 m. a.s.l. in Algeria. Elger (1978) collected larvae in swamps near sea. The chromosomes were studied by Sarà (1951c), organs for sexual attraction by Feuerborn (1922) and sexual dimorphism (numerous sensory filaments on antennal segments and femoral spines of males) by Duckhouse (1962). Habitats sensu author of the presented paper in Czechoslovakia: banks of outflows of ponds, ponds with foul water with *Lemna*, moist pastures, swamps, streams and pools on margins of forests, ditches between fields, arms of rivers, irrigate gutters. The mentioned biotopes were shaded by *Alnus*, *Salix*, *Populus*, *Aesculus*, *Betula*, *Pinus*, *Picea*, *Fraxinus*, *Crataegus*, *Corylus*, *Robinia*, *Acer*, *Cornus*, *Sambucus*, *Evonymus* and *Quercus*. The undergrowth represented by *Caltha*, *Carex*, *Phragmites*, *Typha*, *Scirpus*, *Comarum*, *Iris*, *Filipendula*, *Mentha*, *Lythrum*, *Urtica*, *Agropyrum*, *Zea*, *Geum* and *Rubus*. In Iran adults were collected by author in valleys of small rivers, spring areas up to 2000 m. a.s.l., near brooks with salty clayish banks and irrigated gardens.

Distribution: Afghanistan, Algeria, Azores, Belgium, Canary I., Corsica, Czechoslovakia, Denmark, England, F. and D. Germany, France, Hungary, Israel, Italy, Yugoslavia, Morocco, Nederland, Rumania, Sardinia, Spain, Sweden, Switzerland and U.S.A. New to Iran.

Data about type-material and type-locality: Unknown.

Discussion: In Walker's collection is not included *Pericoma ustulata* (Haliday, MS) Walker sensu Eaton (1897). The name "ustulata" was applied in the sense of old term "sparked" on conformable specimens and it was followed by all authors. As a new species to the fauna of Czechoslovakia it was published by Rozkošný (1971) from Moravia. Vaillant (1958a, 1972) synonymized with "ustulata" the names both of *Mormia limosa* Vaillant, 1954 and *Pericoma aldrichana* Dyar, 1926.

Karakovounimerus gen. n.

Panimerus sensu Salamanna; 1975a (nec Eaton, 1913): 194, partim.

Telmatoscopus sensu Wagner, 1984 (nec Eaton, 1904): 7, partim.

Type-species: *Panimerus sarai* Salamanna, 1975.

Derivatio nominis: *Karakovounimerus* represents a combination both of the name Karakovouni — village in area of Peloponnese in Greece and the name of the existing genus of moth flies — *Panimerus*.

Diagnosis. 15th antennal segment with a long neck, apical segment of flagellum with more or less reduced protuberance, sensory filaments of flagellar segments not numerous and not arranged in rings. Scapus very long, pedicel almost globular. Occiput rather low, corniculi con-

spicuously developed, patagia and tegulae missing. Basal field of wing developed. Male copulatory organ with sabre-shaped protuberance on both sides, furca missing, cerci full developed.

Description. Eyes interrupted by frons, antennae 16-segmented. Scape almost cylindrical, pedicel almost globular, flagellar segments pitcher-shaped, asymmetrical. Necks of the first two flagellar segments short, following segments with long necks, sensory filaments of antennal segments 3—16 paired, forked. Last segment of maxillary palpus annulate, connected basally with apical end of the foregoing segment. Wings lancet-shaped, clear, with several strengthened parts of veins on area of wing; wing membrane bare. In contrast to Sc and Cu all veins have small clouded spots near distal ends. Medial wing angle approximately 172°. Corniculi developed, very long, in contrast to patagia and tegulae which are missing. Male copulatory organ without furca, basal apodeme conspicuously narrowed proximally from dorsal view, paired external sabre-shaped protuberances of male genitalia large, harpagones long. Hypoproct and epiproct approximately of the same size. The top of cercus not disunited.

Distinguishing notes. The new genus belongs to the subfamily Psychodinae and is related to the genera *Panimerus* Eat. and *Psycmera* Jež. It is similar to them in its general shape and appearance of the body as well as in shape of its head with long corniculi. It differs from *Panimerus* Eat. and *Psycmera* Jež. in having pedicel of irregular shape with developed sided protuberance and 15th antennal segment with very long neck.

Bionomy. Unknown. Adults were collected always in areas of salty swamps near sea shore or in a growth of *Arum*.

Extent of the genus: Palaearctic region, one species redescribed below.

Discussion. Salamanna (1975a) discussed problematic classification of the species, *sarai*, described by him, is now placed in the genus *Panimerus* Eat. with a comment of an probable new subgenus. Wagner (1984) included Salamanna's species in the genus *Telmatoscopus* Eat.

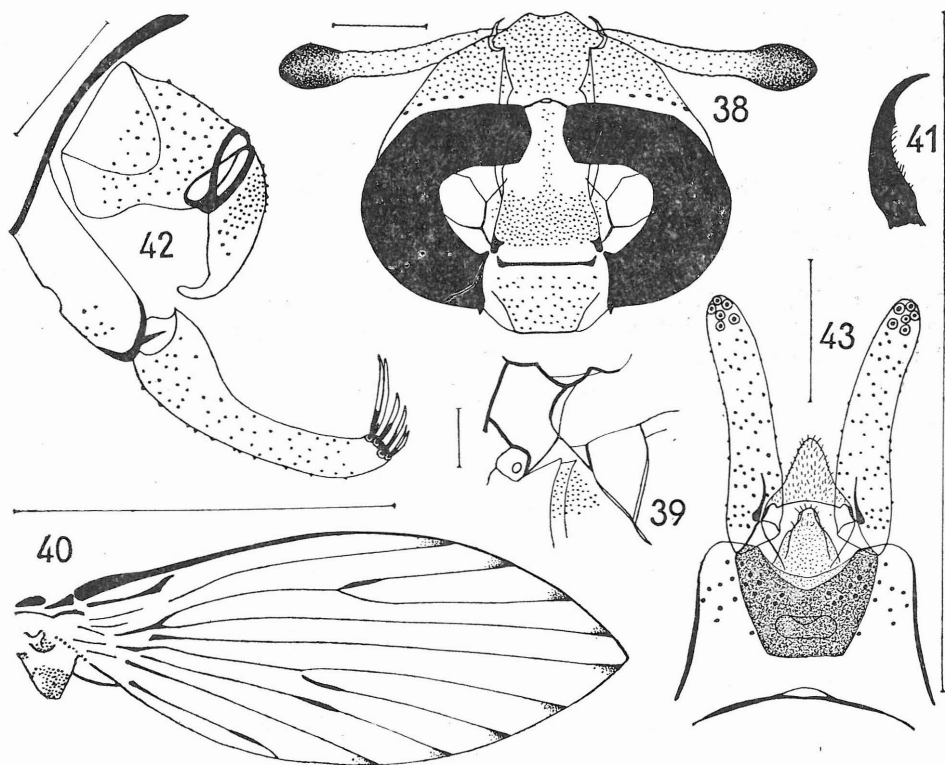
Karakovounimerus sarai (Salamanna) comb. n.

(Figs. 38—50)

Panimerus sarai Salamanna, 1975: 197.

Telmatoscopus sarai; Wagner, 1984: 7.

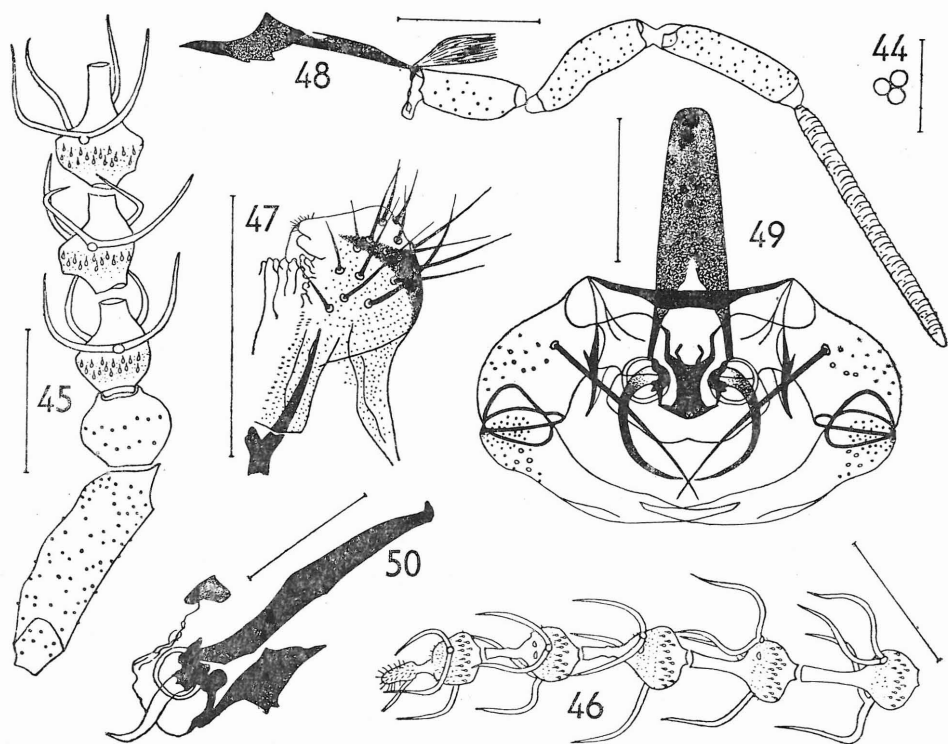
Diagnosis. Necks of the first two flagellar segments short, following segments with long necks; apical flagellar segment with a characteristic digital protuberance widened distad. Paired flagellar forked sensory filaments long, last segment of maxillary palpus annulate. Several parts of wing veins strengthened, small clouded spots near distal ends of all veins R and M. Basal apodeme of male genitalia narrowed proximally from dorsal view. Paired external sabre-shaped protuberances a little larger than the length of coxopodites. Harpagones more than 1.5 times longer than coxopodites from dorsal view. Cerci with 6 retinaculi subapically.



Figs. 38—43: *Karakovounimerus sarai* (Salamanna) gen. n. ♂. 38: head; 39: thoracal sclerites laterally; 40: wing; 41: claw of P_1 ; 42: hypopygium laterally; 43: epandrium and cerci dorsally. Scales 0.1 mm., in Fig. 40 — 1 mm.

Male. Frons a little more than twice as large as facet-diameter (measured closely below frontal suture). Index of facet-diameter to minimum width of frons 0.6. Index of distance of tangential points of eye's ends to minimum width of frons 5.1, to facet-diameter 8.2. Antennae 16-segmented. Scape almost cylindrical, its length approximately 5 times greater than width at base; pedicel almost globular, symmetrical. Index of length of scape to pedicel 3.1. Flagellar segments pitcher-shaped, asymmetrical. Ratio of maximum width of first and second flagellar segments 2.0:2.1, ratio of length of first and second flagellar segments 2.4:2.7. Necks of first two flagellar segments short, following segments with long necks. Last segments of antennae are a little gradually reduced, apical segment with a digital protuberance widened distad as figured. Sensory filaments of antennal segments 3—16 paired, forked, a little gradually reduced towards top of antennae as well. Ratios of lengths of segments of maxillary palpus 2.8:3.4:3.8:7.5. Last segment of maxillary palpus an-

nulate, connected basally with apical end of the foregoing segment. Ratio of maximum length of cibarium to length of epipharynx 1.6:1. Wings lancet shaped, 1.7–1.9 mm. long, clear, with several strengthened parts of veins in area of wing (Sc, base of R_2 and R_{2+3} , base of R_4 , R_5 , M_2 , M_{1+2} , middle part of M_3 , base of M_4 , Cu basally as well as near to its distal end), wing membrane bare. In spite of Sc and Cu all veins have small clouded spots distad in wing membrane. Angle of base of R_2 and R_3 acute, the angle of distal part of R_{2+3} and R_2 the same as the angle of R_{2+3} and R_3 . Angle of base of M_1 and M_2 acute as well, the angle of distal part of M_{1+2} and M_1 larger than the angle of M_{1+2} and M_2 . Connection of M_2 and M_{1+2} rather interrupted. M_3 and Cu without a connection on M_4 . Medial wing angle approximately 172° . Indexes of wing AB:AC:AD = 7.7:8.4:9.3 and BC:CD:BD = 2.3:2.4:4.7. Index of base of M_{1+2} , A to maximum width of wing 2.1. Ratio of length of haltere to its



Figs. 44–50: *Karakovounimerus sarai* (Salamanna) gen. n. ♂. 44: facets; 45: basal antennal segments; 46: apical antennal segments; 47: terminal lobe of labium; 48: maxilla and palpus maxillaris; 49: copulatory organ, coxopodites and harpagones dorsally; 50: copulatory organ laterally. Scales 0.1 mm.

width 2.6:1. Ratios of lengths of femora, tibiae and first tarsal segments: $P_1 = 11.5:13.1$ (measured always with terminal scale):6.1; $P_2 = 12.1:16.5:6.8$; $P_3 = 13.0:18.5:7.1$. Paired tarsal claws of P_1 bent, haired ventrad in basal half. Corniculi developed, very long, in contrast to patagia and tegulae which are missing. Basal apodeme of male genitalia almost straight from lateral view, narrowed proximally from dorsal view; copulatory organ as figured, with two parallel sclerotized stripes on both sides from dorsal view, with smooth surface outside, furca missing. Paired external sabre-shaped protuberances of male genitalia a little larger than the length of coxopodites. Coxopodites with inconspicuous protuberances laterally, harpagones of characteristic shape, more than 1.5 times as long as the length of coxopodites. Epandrium as figured with one ellipse-shaped aperture, sclerotized remainders of 10th tergite and sternite inside of epandrium distinct. Hypandrium narrow, widened in the middle in two strengthened areas. Epiproct approximately triangular with rounded top, large, with a small number of hairs. Hypoproct a little larger, triangular, rounded at its top, completely haired. Cerci curved from dorsal and ventral views, with 6 retinaculi subapically. Index of length of cercus to length of epandrium from lateral view approximately 1.7. The top of cercus not disunited.

Material: 10 ♂♂. Greece, Peloponnese, Karakovouni S. E. of Astros, 23. 7. 1986, slides Inv. No. 2234—2243, Cat. No. P5 — 33272—33281, Exp. Ellas 1986 of ZO ČSOP 01/76 c/o Nat. Mus. Praha lgt.

Comments on the material: Figures are based on Inv. No. 2234, thoracic sclerites and hypopygium (without male copulatory organ) from lateral view on Inv. No. 2235.

Occurrence: in Israel III., Italy IV.—X., Greece VII.

Bionomy: Salamanna (1975a) characterized habitat of this species as swamps near sea shore with *Juncus*; Wagner (1984) quoted an inflorescence of *Arum hygrophilum*; author of this paper collected this species in swamp area of a backwater near sea-shore with *Tamarix*, *Phragmites*, *Juncus*, *Salicornia* and *Bupleurum*.

Distribution: Israel, Italy. New to the fauna of Greece.

Data on type-material and type-locality: Numerous specimens of only syntypic series collected in Italy (Apulia and Basilicata) are deposited in Salamanna's collection (Istituto di Zoologia dell' Università di Genova).

Discussion: Wagner (1984) compared specimens of Italian populations loaned him by Salamanna with one male from Israel. Populations from Greece are very similar to those from Italy and Israel on the basis of literature. The only difference found is in the number of retinaculi, which are 6 in the Grecian specimens (in Israeli 7, up to 10 in Italian). Small differences are also in strengthened parts of veins in central area of wing.

Genus *Lepiseodina* Enderlein

Lepiseodina Enderlein, 1936: 91, 93; Rapp, 1946: 174; Ježek, 1986a: 96; Ježek et Halgoš, 1987: 31.

Psychoda auct. [nec Latreille, 1976] partim; Meigen, 1830: 272; Curtis, 1839: unnumbered pages; Walker, 1848: 32; Zetterstedt, 1855: 4887 = *Peripsychoda* End.; Neuhaus, 1886: 18.

Psychota Gimmerthal, 1846: 15 partim.

Pericoma (subgenus of genus *Psychoda* auct.) partim; Neuhaus, 1886: 18.

Pericoma auct. [nec *Pericoma* Walker, 1856] partim; Schiner, 1864a: 17; b: 632; V. D. Wulp, 1877: 316; Strobl, 1898a: 202; b: 615; Thalhammer, 1899: 16; Strobl, 1901: 15; Kertész, 1902: 294; Becker, Bezzi, Bischof, Kertész et Stein, 1903: 160.

Telmatoscopus (subgenus of genus *Pericoma* auct.) partim; Tonnoir, 1919a: 13; b: 139.

Telmatoscopus auct. [nec Eaton, 1904] partim; Eaton, 1912: 7; Tonnoir, 1922: 170; 1934: 73; Barendrecht, 1934: 79; Freeman, 1950: 86; Sarà, 1953: 11; Jung, 1956: 197, 198, 205; Sarà, 1958: 11; Giljarov, 1964: 652; Sarà et Salamanna, 1967: 65; Tanasijčuk, 1969: 128; Szabó, 1969—1970: 171; Vaillant, 1972: 51; Szabó, 1972—1973: 167; 1975: 73; Elger, 1978: 469; Caspers et Wagner, 1980: 80; Szabó, 1983: 32; Krivoshej-na, Zajcev et Jakovlev, 1986: 103; Withers, 1989:

Telmatoscopus (subgenus of genus *Telmatoscopus* auct.) partim; Tonnoir, 1940: 22, 24, 27; Kloet et Hincks, 1945: 333; Vaillant, 1956—1957: 105; Mirouse et Vaillant, 1960: 9; Georges, 1961: 104; Vaillant, 1961: 138; 1962: 86.

Clogmia auct. [nec Enderlein, 1936] partim; Duckhouse, 1978: 351; Vaillant, 1982: 298; Wagner, 1982: 28; Ježek, 1984a: 168.

Type-species: *Psychoda tristis* Meigen, 1830 (by orig. des.)

Diagnosis. Scapus conspicuously short. Apical segment of flagellum gradually projected in a very long digital protuberance. Sensory filaments developed as single digital units. Corniculi, patagia and tegulae missing. Basal field of wing developed. Unpaired phallomere near gonoporus developed as well as cerci.

Redescription. Eyes not contiguous, frontal suture doubled, antennae 16-segmented, scape very short, pedicel almost globular. Flagellar segments pitcher-shaped. Neck of the first flagellar segment short, following segments with long necks. Apical segment of flagellum gradually projected in a very long digital protuberance. Sensory filaments long, paired, simple. Last segment of maxillary palpus annulated, connected basally with apical end of the foregoing segment. Wings broad, wing-membrane bare. Corniculi, patagia and tegulae missing. Basal apodeme with distal fused sclerotized lateral stripes. Unpaired long pointed phallomere near gonoporus developed. Cerci well developed, the top not disunited.

Distinguishing notes. This genus belongs to the subfamily Psychodinae and is related to the genus *Clogmia* End. It is similar to it in its general shape and appearance of the body as well as in very short scape and apical segment of flagellum gradually projected in a very long digital protuberance. It differs from *Clogmia* End. in having simple paired long sensory filaments of flagellum and unpaired phallomere near gonoporus.

Bionomy. Ssensu Vaillant (1972) and Szabó (1983) larvae are dendrolimnobia, sensu Wagner (1979) xylophagous, collected in rotten wood of *Ulmus*, *Quercus*, *Tilia* and *Salix*, Withers (1989) collected adults in open rot-holes and birch rot-hollows. Author of this paper collected one male near a trickle on the forest margin.

Extent of the genus: Palaearctic area, 3 species: *L. latipennis* (Sarà, 1953) comb. n. — Europe mer.; *L. rothschildi* (Eaton, 1912) comb. n. — Europe occ.; *L. tristis* (Meigen, 1830) — Europe, Africa sept.

Discussion. Names of species of *Telmatoscopus latipennis* Sarà, 1953 [described in Ann. Ist. Mus. Zool. Univ. Napoli, 5(8): 13] and *Telmatoscopus latipennis* Quate, 1960 [described in Pan-Pacif. ent., 36: 144 and quoted by his author in Bull. Connecticut geol. nat. Hist. Surv., Middletown, 92: 15, 17] didn't represent the primary homonyms because of the fact, that the names are derived from words of different origin and sense (penis, penna) — see the article 57 and 58 of the Rule.

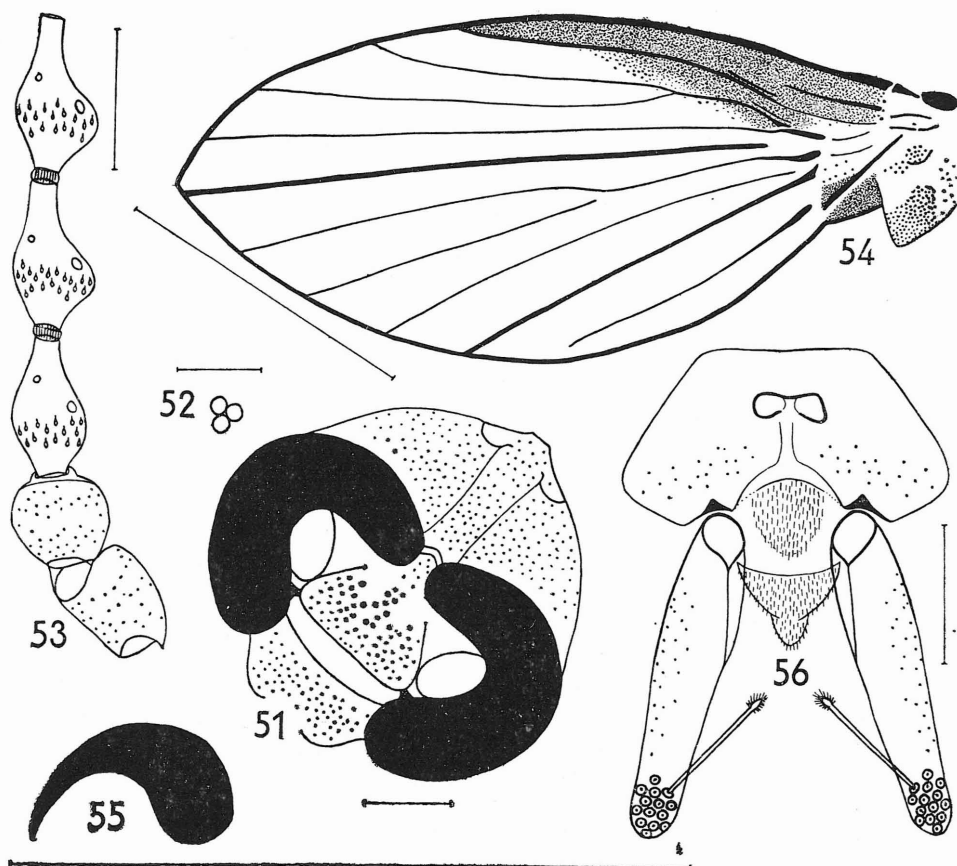
***Lepiseodina tristis* (Meigen)**

(Figs. 51—64)

- Psychoda tristis* Meigen, 1830: 272; Curtis, 1839: unnumbered pages; Walker, 1848: 32; Zetterstedt, 1855: 4887 = *fusca* Macq. sensu Kertész, 1902; Neuhaus, 1886: 18.
Psychota (Pr.-eror.) *tristis*; Gimmerthal, 1846: 16.
Psychoda (*Pericoma*) *tristis*; Neuhaus, 1886: 18.
Pericoma tristis; Schiner, 1864a: 17; b: 634; V. D. Wulp, 1877: 817, 319; Mik, 1887: 53; Strobl, 1898a: 203; b: 615; Thalhammer, 1899: 16; Strobl, 1901: 15; Kertész, 1902: 298; Becker, Bezzi, Bischof, Kertész et Stein, 1903: 163.
Telmatoscopus tristis; Tonnoir, 1922: 170, 173; 1934: 75; Freeman, 1950: 88; Sarà, 1953: 13; Jung, 1956: 198; Tanasijčuk, 1969: 128; Vaillant, 1972: 53 (1810 error.); Elger, 1978: 469 (1810 error.); Wagner, 1979: 46; Szabó, 1983: 32 (1810 error.); Withers, 1989:
Telmatoscopus (*Telmatoscopus*) *tristis*; Tonnoir, 1940: 22, 28; Kloet et Hincks, 1945: 333; Georges, 1961: 105; Vaillant, 1961: 138 (1818 error.); 1962: 86 (1818 error.).
Lepiseodina tristis; Enderlein, 1936: 91, 93; Rapp, 1946: 174; Ježek, 1986a: 96; Ježek et Halgoš, 1987: 31.
Telmatoscopus (*Telmatoscopus*) *xylophilus* Mirouse et Vaillant, 1960: 9.

Diagnosis. Scape very short, pedicel almost globular. Sensory filaments of antennal segments 3—16 long, paired, simple. Last segment of maxillary palpus annulate. Apical segment of flagellum gradually projected in a very long digital protuberance. Area between C and R₁ of wing clouded, some veins strengthened, M₃ and Cu without connection on M₄. Male copulatory organ of characteristic shape, basal apodeme with lateral sclerotized stripes fused distad, unpaired pointed long phallomere near gonoporus developed. Paired phallomeres on both sides missing. Coxopodites short, harpagones narrow, S-shaped, epandrium with two apertures, without sclerotized remainders of 10th tergite and sternite inside, cerci with 14 retinaculi subapically.

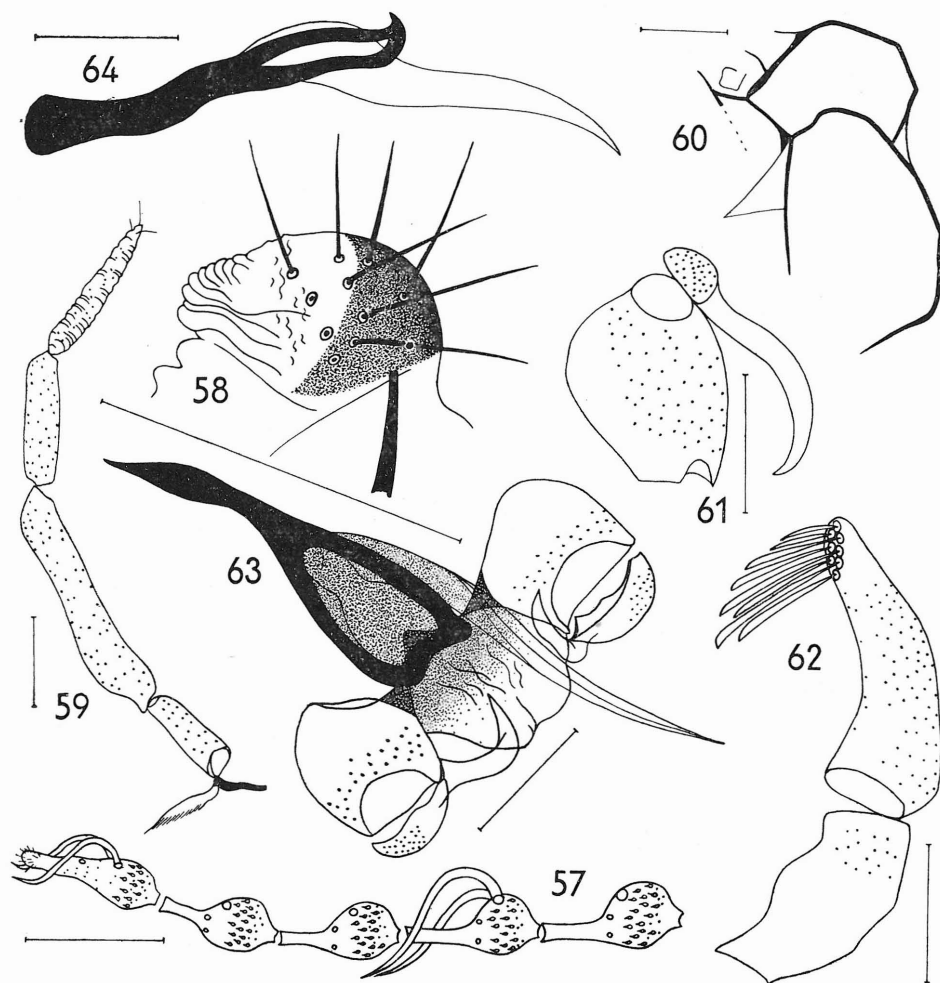
Male. The distance between eyes equals to facet-diameter, frontal suture doubled, index of distance of tangential points of eye's ends to minimum width of frons as well as to facet diameter 8.6. Antennae 16-segmented. Scape very short, its length approximately 1.4 times greater than its maximum width; pedicel almost globular, symmetrical. Index of length of scape to pedicel 1.2. Flagellar segments pitcher-shaped, segment 2—13 asymmetrical. Ratio of maximum width of first and second flagellar segments 1.9:2.2, ratio of length of first and second flagellar segments 3.8:4.1. Neck of the first flagellar segment short, following segments with long necks. Apical segment of flagellum gradually projected in a very long digital protuberance. Sensory filaments of antennal segments 3—16 long, paired, not forked, slightly and gradually reduced in



Figs. 51—56: *Lepiseodina tristis* (Meigen) ♂. 51: head; 52: facets; 53: basal antennal segments (sensory filaments omitted); 54: wing; 55: claw of P_1 ; 56: epandrium and cerci dorsally. Scales 0.1 mm., in Fig. 54 — 1 mm.

length towards top of antennae. Ratios of lengths of segments of maxillary palpus 2.7:6.8:3.7:4.3. Last segment of maxillary palpus annulate, connected basally with apical end of the foregoing segment. Ratio of maximum length of cibarium to length of epipharynx 2.3:1. Wings lanceolate-shaped, broad, 2.8 mm. long, clear (only area between C and R_1 clouded as well as area in basal half of R_{1+2} and small interrupted area in the base of hind margin of wing). Strengthened veins or its parts: base of Sc, R_1 distad, R_{1+2} and R_3 basally, R_4 , base of M_{1+2} , M_4 and base of Cu. Wing membrane bare. Angle of base of R_2 and R_3 acute, angle of distal part of R_{2+3} and R_2 larger than angle of R_{2+3} and R_3 . M_3 and Cu without connection on M_4 . Medial wing angle as well as indexes of wing are not

presented here because of interrupted connection of M_2 and M_{1+2} and because of fact that end of Cu is not in the margin of wing. Index of base of M_{1+2} , A to maximum width of wing 1.8. Ratio of length of haltere to its width 4.0:1. Ratios of lengths of femora, tibiae and first tarsal segments: $P_1 = 15.0:17.4:8.4$; $P_2 = 16.0:22.6:10.0$; $P_3 = 17.0:25.1:10.1$. Paired tarsal claws of P_1 arched, without hairs ventrad. Corniculi, pata-



Figs. 57—64: *Lepiseodina tristis* (Meigen) ♂. 57: apical antennal segments; 58: terminal lobe of labium; 59: maxilla and palpus maxillaris; 60: thoracic sclerites laterally; 61: coxopodit and harpagon laterally; 62: epandrium and cercus laterally; 63: copulatory organ, coxopodites and harpagones dorsally; 64: copulatory organ laterally. Scales 0.1 mm.

gia and tegulae missing. Basal apodeme with distal fused lateral sclerotized stripes both from lateral and ventral view as figured. Furca not developed. Unpaired long pointed phallomere near gonoporus developed, paired phallomeres on both sides of gonoporus missing. Coxopodites very short, harpagones narrow and S-shaped. Epandrium as figured, with two apertures, sclerotized remainders of 10th tergite and sternite inside of epandrium missing. Hypoproct and epiproct as figured, haired. Cerci straight in dorsal view, arched from lateral view, with 14 retinaculi subapically, haired on tops. Index of length of cercus to length of epandrium from lateral view approximately 1.4. The top of cercus not disunited.

Material: Czechoslovakia: 1 ♂. Bohemia: Poněšice, 3. 6. 1981, slide Inv. No. 2252, Cat. No. P5 — 33282. All figures are based on this material, quoted shortly as well by Ježek (1986a).

Occurrence in ČSSR: VI.

Bionomy. Author of this paper collected a male near a trickle on the forest margin with *Quercus*, *Picea*, *Fagus*, the undergrowth with *Urtica* and *Poaceae*. Withers (1989) published occurrence of adults from open rot-holes and birch rot-hollows. Larvae were described by Mirouse et Vaillant (1960) under the name *Telmatoscopus xylophilus* Mir. et Vaill. Larva and pupa were figured and described by Vaillant (1972). Sensu Wagner (1979a) larvae are xylophagous, sensu Vaillant (1972) and Szabó (1983) dendrolimnobia; immature stages were collected in rotten wood of *Ulmus*, *Quercus*, *Tilia* and *Salix*.

Distribution: Algerien, Austria, Belgium, Corsica, Czechoslovakia, England, F. Germany, France, Ireland, Italy, Jugoslavia, Netherlands, Rumania, U.S.S.R. (Latvia).

Data on type-material and type-locality: Unknown.

Discussion: The name of this species was quoted in the past with combinations of several generic names — *Psychoda* Latr., *Psychota* Gimm. (error.), *Telmatoscopus* Eat., *Pericoma* Walk. and *Lepiseodina* End. As new species to Czechoslovakia it was published by Ježek (1986a).

Intergeneric relationships

This chapter presents a review of the classification of selected Recent genera of the Paramormiine (not Trichopsychodine) moth flies, based on the results of author's own analysis of characters. As a positive result of this paper there is now new information on intergeneric relationships of genera *Lepiseodina* Enderlein, 1936, *Iranotelmatoscopus* Ježek, 1988 and *Karakovounimerus* gen. n. in the light of the comparative holomorphological cladistic method. The proposed classification is intended to be a phylogenetic classification consisting of probably monophyletic groups. The black rectangles (Fig. 65) indicate groundplan conditions interpreted as apomorphous with respect to the groundplan of the Psychodinae (see also Ježek, 1983). Where common possession of such apomorphous conditions is interpreted as due to synapomorphy, a continuous black rectangle is shown against the genera concerned. Corresponding plesiomorphous conditions are shown by the white rectangles. Plesiomorphic

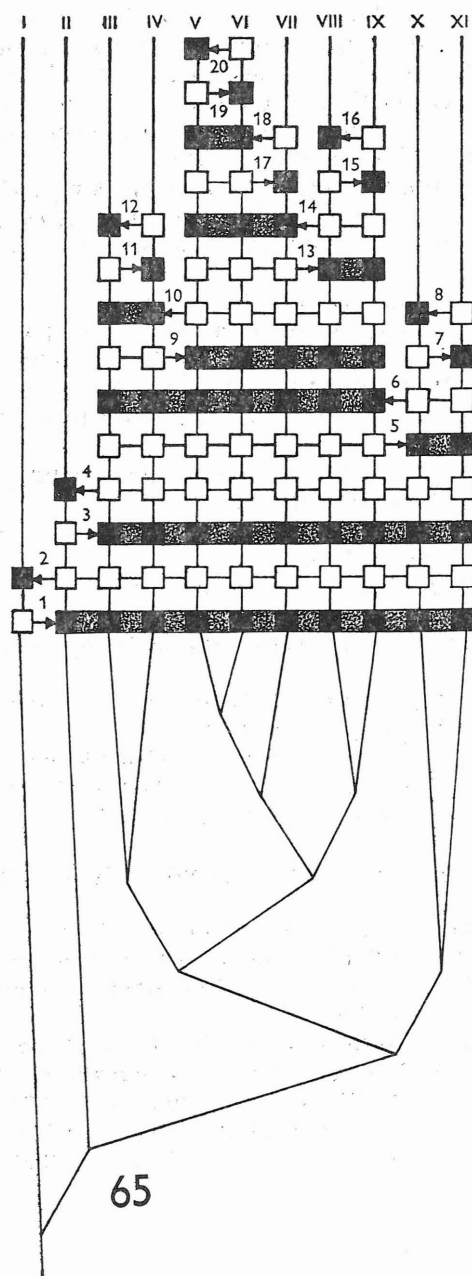


Fig. 65: Intergeneric relationships of some genera of Paramormiine moth flies.

[primitive] level of each character is demonstrated "o", apomorphic level "•". Pointed horizontal stripes connect monophyletic homologous apomorphies (synapomorphies), horizontal arrowheads show the direction of the development of particular characters. Some from the mentioned groups are indifferent to certain character in the sense of Brundin (1966). Characters are indicated by numbers 1—20.

1. Patagia and tegulae developed (o) or missing (•).
2. Basal field of wing developed (o) or missing (•).
3. Sensory filament arranged in rings (o) or developed as single digital units (•).
4. Cerci full developed (o) or reduced (•).
5. Scapus very long (o) or conspicuously short (•).
6. Apical segment of flagellum gradually projected in a very long digital protuberance (o) or with more or less reduced one (•).
7. Sensory filaments of flagellar segments bifurcate (o) or simple, digital (•).
8. Unpaired phallomere near gonoporus developed (o) or missing (•).
9. Furca developed (o) or not (•).
10. Sabre-shaped protuberances on both sides of male genitalia developed (o) or quite missing (•).
11. Basal apodeme of male genitalia pressed dorso-ventrally (o) or laterally (•).
12. Cerci with several decades of retinaculi (o) or its number reduced by 10 (•).
13. Conspicuous long corniculi developed (o) or quite missing (•).
14. Occiput very high (o) or low (•).
15. Sensory filaments of antennae developed (o) or missing (•).
16. Genitalia dorso-ventrally two-parts' (o) or simple (•).
17. Pedicel of irregular shape with projected sided keel protuberance (o) or globular (•).
18. The last but one flagellar segment with long neck (o) or short reduced one (•).
19. The first flagellar segment asymmetrical (o) or symmetrical (•).
20. Conspicuous sclerotized insertion of bristles on the protuberance of pedicel, bristles strong (o) or insertion inconspicuous with only small sclerotization, bristles weak (•).

I — *Peripsychoda* Enderlein, 1935; II — *Paramormia* Enderlein, 1935; III — *Jungiella* Vaillant, 1972; IV — *Parajungiella* Vaillant, 1972; V — *Psycmera* Ježek, 1984; VI — *Panimerus* Eaton, 1913; VII — *Karakovounimerus* gen. n.; VIII — *Iranotelmatoscopus* Ježek, 1988; IX — *Telmatoscopus* Eaton, 1904; X — *Clogmia* Enderlein, 1936; XI — *Lepiseodina* Enderlein, 1936.

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