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**CONTRIBUTION TO THE KNOWLEDGE
OF A NEW SUBTRIBE TRICHOPSYCHODINA
(DIPTERA, PSYCHODIDAE) FROM CZECHOSLOVAKIA**

There are 39 species of 4 genera from the new subtribe *Trichopsychodina* of the tribe *Paramormiini* End. in the world, which may be distinguished from 88 species of the subtribe *Paramormitina* in 7 genera on the base of plesiomorphic and apomorphic characters. A tree of the phylogenetic relationships of all studied genera as well as two mentioned groups was demonstrated by Ježek (1983) and the directions of the development of particular characters were marked; however, the new subtribe *Trichopsychodina* was not established there. The present paper is a review of the world species of the subtribe *Trichopsychodina*, provides illustrations for the identification of Czechoslovak species and redescriptions. General distribution of all included taxons is given.

I should like to express my sincere thanks to Dr. Demoulin (Inst. Royal Sci. Nat. de Belgique, Bruxelles) because of a loan of Tonnoir's type-material for lectotype and paralectotype designation. My thanks are also due to Prof. L.L. Pechuman (New York State College of Agriculture and Life Sciences, Comstock Hall, Ithaca, New York, U.S.A.) who has kindly checked my English in MS of this paper.

Trichopsychodina subtr. n.

Differential diagnosis: The species of the new subtribe *Trichopsychodina* have index of the length of the first antennal segment to pedicel 0.9–1.4, 2–3 arms of sensory filaments, the apical antennal segments with reduced hals, the last segment of maxillary palps is not annulated, Sc short, hypandrium not developed, the additional anterior sclerite of pteropleurite conspicuously developed. The species of the subtribe *Paramormiina* have index of the length of scape to pedicel 1.7–3.9, sensory filaments are simple, finger-like, the apical antennal segments with developed hals, the last segment of maxillary palpus annulated, Sc long, hypandrium developed, the additional anterior sclerite of pteropleurite conspicuously reduced.

Genus *Trichopsychoda* Tonnoir

Trichopsychoda (subgenus of the genus *Psychoda* auct.); Tonnoir, 1922: 60; Enderlein, 1936: 87; Rapp, 1946: 177.

Psychoda auct. (nec Latreille, 1798), partim; Tonnoir, 1919: 15; 1922: 60; Enderlein, 1936: 87.

Trichopsychoda (gen.); Edwards in Tonnoir, 1940: 61; Kloet & Hincks, 1945: 333; Freeman, 1950: 91; Satchell, 1953: 391; Quate, 1959a: 448; b: 447; Szabó, 1960a: 214; Vaillant, 1981a: 111; Quate, 1962b: 38; Sarà & Salamanna, 1988: 150; Tanasijčuk, 1969: 130; Vaillant, 1971: 37; 1974: 126; Wagner, 1979: 45; Ježek, 1982: 58.

Trichopsychoda auct. (nec Tonnoir, 1922), partim; Satchell, 1955: 50; Quate & Quate, 1967: 133.

Type-species: *Psychoda hirtella* Tonnoir, 1919 (by orig. des.)

Differential diagnosis: Genus *Trichopsychoda* Tonnoir, 1922 has pteropleurite with a small additional sclerite proximally, radial fork of the wing incomplete, the wing membrane haired, the top of male cercus bifurcated, retinaculi with a typical brimmed tops. On the other hand, genera *Philosepedon* Eaton, 1904, *Feuerborniella* Vaillant, 1971 and *Threticus* Eaton, 1940 have pteropleurite with rather large additional sclerite proximally; if the additional sclerite is small, pteropleurite is not wholly lined by a suture dorsally. Radial fork of the wing completed, the wing membrane bare. The top of the male cercus can be bifurcated but retinaculi are without brimmed end.

Bionomy: Unknown; larvae are known only in the case of *T. hirtella* (Tonnoir, 1919).

Distribution: 15 species in the world. Australian area: *Trichopsychoda bimodata* Quate & Quate, 1967 — New Guinea; *T. clavata* Quate & Quate, 1967 — New Guinea; *T. montana* Satchell, 1953 — Australia; *T. polex* Quate & Quate, 1967 — New Guinea. Polynesian area: *T. carolinensis* Quate, 1959a — Caroline I.; *T. boninensis* Quate, 1959a — Bonin I. Ethiopian area: *T. africana* Satchell, 1955 — Natal. Indo-malayan area: *T. bukidnonica* Quate, 1965 — Philippines; *T. indiensis* Quate, 1962c — Assam; *T. mindanensis* Quate, 1965 — Philippines; *T. tenompoca* Quate, 1962b — Borneo; *T. tropicalis* Quate, 1962b — Borneo. Holarctic area: *T. arnaudi* Tokunaga, 1961 — Japan; *T. coreanica* Wagner, 1977 — Korea; *T. hirtella* (Tonnoir, 1919) — Europe.

Discussion: TONNOIR (1922) established subgenus *Trichopsychoda* for *Psychoda hirtella* Tonnoir, 1919. EDWARDS in TONNOIR (1940) changed the status of this subgenus to the genus, which was up to the year 1953 monotypic. SATCHELL (1953) published the second species from Australia and in the year 1955 two species from Malaya, one species from South Africa, one from Madeira and one from Central Europe. Of mentioned species only *Trichopsychoda africana* Satchell, 1955 belongs definitely to the genus *Trichopsychoda* Tonnoir, 1922 because of retinaculi with brimmed tops. QUATE (1959b) has narrowed SATCHELL'S diagnosis of the genus *Trichopsychoda* Tonnoir, 1922 and the species without brimmed tops of retinaculi he included in the genus *Philosepedon* Eaton, 1904. This narrowed view of the genus *Trichopsychoda* Tonnoir, 1922 was accepted by VAILLANT (1974). There are 7 species in the world without brimmed tops of retinaculi and these species probably belong to new genera so far undescribed. There are moreover 7 species known only as females and it is very difficult to solve their generic position. From the genus *Psychoda* Latreille, 1796 in the past were excluded 2 species from India and Hawaiian I. and included in the genus *Trichopsychoda* Tonnoir, 1922; however, their generic

position can not be proved without a taxonomical revision and morphological analysis.

Trichopsychoda hirtella (Tonnoir)

(Figs. 1—10, 11—19)

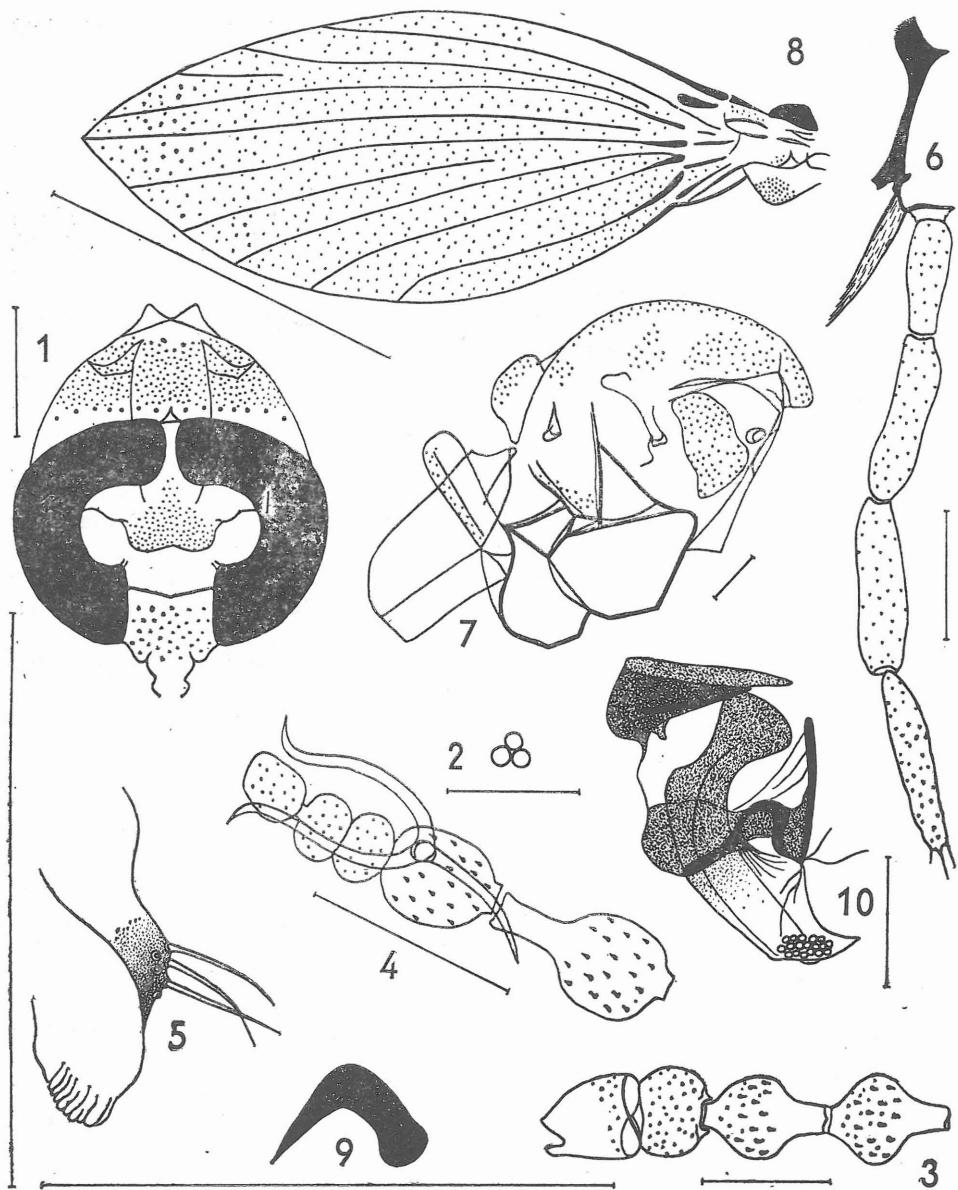
Psychoda hirtella Tonnoir, 1919: 15.

Psychoda (Trichopsychoda) hirtella; Tonnoir, 1922: 60; Enderlein, 1936: 87.

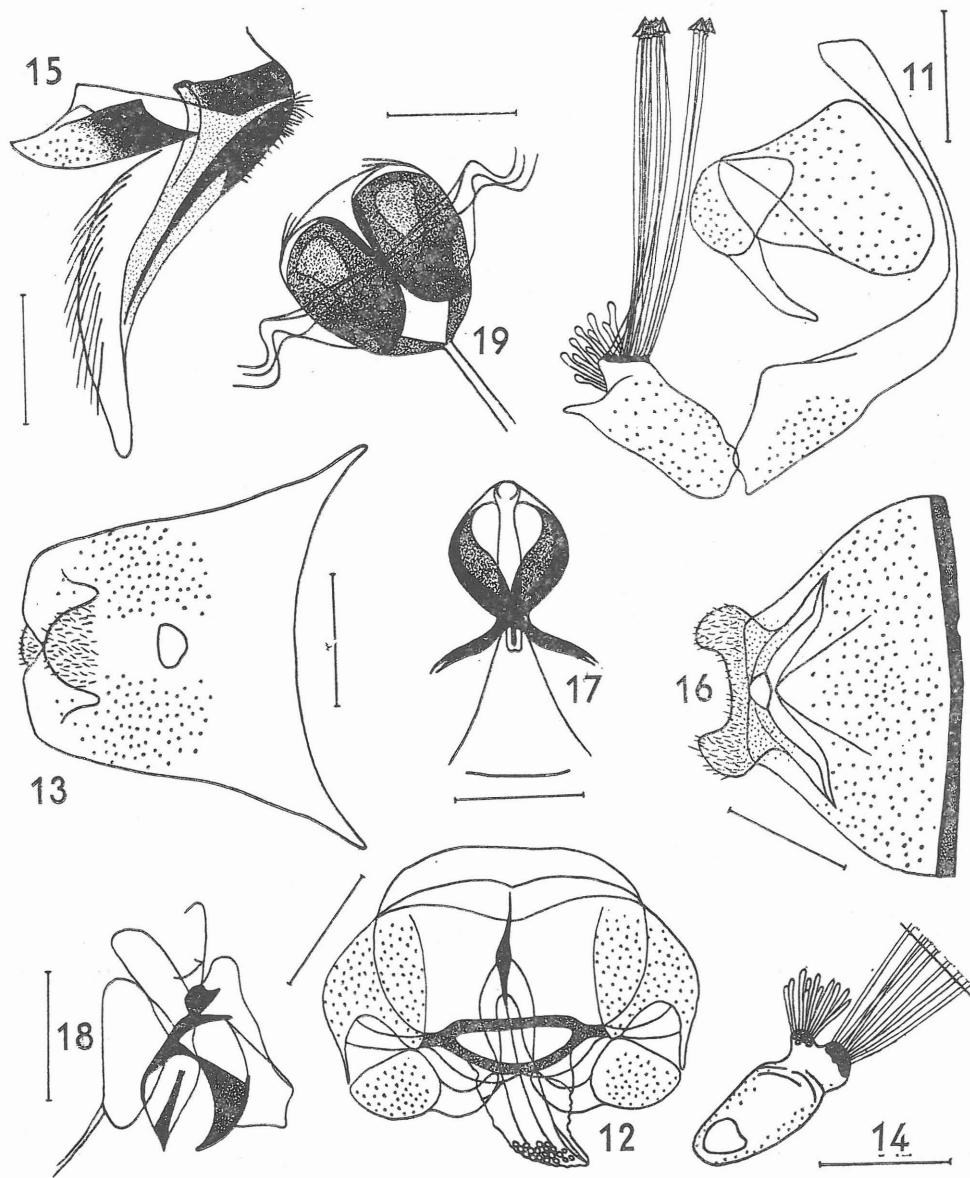
Trichopsychoda hirtella; Edwards in Tonnoir, 1940: 61; Kloet & Hincks, 1945: 333; Freeman, 1950: 91; Satchell, 1955: 50; Quate, 1959b: 447; Szabó, 1960a: 214; Vaillant, 1961a: 111; Sarà & Salamanna, 1968: 150; Tanasijčuk, 1969: 130; Vaillant, 1974: 126; Wagner, 1979: 45; Ježek, 1982: 58.

Diagnosis. Rather small species, the wing length 1.9—2.1 mm., the wing membrane haired, the male cercus with 7—8 characteristic very long apical retinaculi with brimmed tops and with 10—11 short club-shaped subapical rather narrowed retinaculi. The female subgenital plate and genital chamber of the characteristic shape, as figured.

Male. The distance between eyes below the transversal suture of the same length as the diameter of one facet. Index of the facet diameter to the minimal width of frons 2.5; index of the distance of the tangential points of the eye's ends to the minimal width of frons 21.5, to the facet diameter 8.6. Frons almost bare. Antennae 16-segmented, scape short, somewhat widened distad, the length of pedicel a little smaller than its width, index of the length of the first antennal segment to pedicel 1.4. Ratio of the maximal width of pedicel to the width of the first and second flagellar segment 2.4:2.3:2.4. The flagellar segments bottle-shaped. Index of the length of the first flagellar segment to the length of the second one 1.0. Both segments symmetrical. The proximal part of the 13th flagellar segment of the same size as at the foregoing segment, 13th segment without narrowed distal part. Both segment 14 and 15 conspicuously reduced, of the same size. 15th segment with a distal minute neck, 16th segment a little larger than the foregoing one, blunt distad. Sensory filaments of antennae big, with three arms arranged as Y. Ratios of the lengths of the segments of maxillary palpus 3.1:4.5:4.7:5.2. The last segment of maxillary palpus not annulated and connected with the apex of the foregoing segment. Ratio of the maximal length of cibarium to the length of epipharynx 1.5:1. Corniculi not developed. The wings without pigmentation, lancet shaped, the wing membrane haired, the veins of the central area of the wing without swollen parts, costal nodes distinct. Sc rather strong, very short, uninterrupted. R_1 bent to Sc, the origin of R_{2+3} beginning on the level of the half of basal field, the base of R_3 incomplete, R_2 in the straight line of R_{2+3} which is bent to the upper margin of the wing. R_4 bent to the radial fork as well as R_5 , R_5 arched to the hind margin distad, with the tip in the apex of the wing. M_{1+2} with conspicuously widened base, almost straight, M_1 in the same line as M_{1+2} , bent to the upper margin of the wing, M_3 at base incomplete, only a little bent in the same way, as well as M_3 and M_4 . Cu S-shaped, without a connection with M_4 , in contrast to the connection of M_3 with M_4 . The veins r-r, r-m and m-m not visible. The medial wing angle and indexes of the wing unmeasurable. Index of the base of M_{1+2} , A to the maximal width of the wing 2.1. Ratio of the length of halteres to its width 2.5:1. Ratios of the lengths of femora, tibiae and the first tarsal segments: $P_1 = 11.5:11.9:4.6$; $P_2 = 11.5:15.0:6.5$; $P_3 = 13.0:17.3:6.9$. The paired tarsal claws very arched. The basal apodeme of the male genitalia badly visible from dorsal



Figs. 1—10. *Trichopsychoda hirtella* (Ton.); ♂: 1 — head, 2 — facets, 3 — basal antennal segments, 4 — apical antennal segments, 5 — terminal lobe of labium, 6 — maxilla and palpus maxillaris, 7 — thorax laterally, 8 — wing, 9 — claw of P₁, 10 — copulatory organ laterally. Scales 0.1 mm., 1 mm. in fig. 8.



Figs. 11–19. *Trichopsychoda hirtella* (Ton.); ♂: 11 — hypopygium laterally, 12 — copulatory organ, coxopodites and harpagones dorsally, 13 — epandrium, 14 — cercus dorsally; ♀: 15 — cercus laterally, 16 — subgenital plate, 17 — genital chamber anteriorly, 18 — the same laterally, 19 — the same ventrad. Scales 0.1 mm.

view, S-shaped, very wide from lateral view, with widened proximal end. The proper male copulatory organ arched, tooth-shaped, going through characteristic sclerotized annulus, good visible from dorsal view. Male copulatory organ outside not quite smooth. Coxopodites outside without conspicuous protuberances, harpagones a little shorter than coxopodites from dorsal view, with very narrowed distal bare part. Epandrium of the characteristic shape, with a central aperture. Index of the length of cercus to the length of epandrium from lateral view 0.8. Hypandrium rather narrow. Epiproct very short, haired, hypoproct much more larger, narrowed distad, with the rounded top. Cerci with a bifurcated top, rather short, straight, narrowed subapically, with 7—8 characteristic apical very long retinaculi with brimmed ends and with 10—11 short club-shaped subapical rather narrow retinaculi.

Female. The subgenital plate of the characteristic shape. The mesh-like structures in the area of the genital chamber are not developed. Index of the length of cercus to its maximal width 5.2.

Material: 2 ♂♂, 2 ♀♀. Bohemia: Praha-Kunratice. Moravia: Stonava. Using the alphabetic list of settlements of ČSSR, I have given in this paper the district when the locality is a homonym.

Comments on the material: The figured male specimen was collected by author near locality Praha-Kunratice, 28-VIII-1970, the figured female specimen Stonava, 13-VI-1975.

Occurrence in ČSSR: VI—VIII.

Bionomy: Larvae and pupae were described by VAILLANT (1974) who registered the following habitats of larvae: the earth, frequently wet of water, heaps of rotten fruits and plants. The adults are attracted by the light, they are numerous at the end of summer or at the beginning of autumn. Some records of this species are to 800 m. above sea level. The author of this paper collected adults on the banks of streams shaded by *Alnus*, *Sambucus*, *Quercus*, the undergrowth with *Urtica* and *Rubus*.

Distribution: Belgium, Czechoslovakia, England, France, Hungary, Italy, Switzerland and F. R. Germany.

Data on both type-material and type-locality: By the generosity of Dr. Demoulin from Brussels (Inst. Royal Sci. Nat. Belgique) a mounting of dry loaned specimen on a slide with Canada balsam was permitted. The slide is labelled Woluwe St L., 15 Juil. 1918, Tonnoir lgt. and det., Type. There is only single mentioned specimen and thus it must be automatically designated as holotype.

Discussion: The redescription of both sexes was published by VAILLANT (1974), as well as figures. He used material collected by Aubert 1—VIII—1956 near Lutra env. Lausanne (Switzerland). Type-material was not revised in this paper.

Genus *Philosepedon* Eaton

Philosepedon (gen.) Eaton, 1904: 57; 1913: 429; Schmitz, 1917: 31; Spärck, 1920: 120; Enderlein, 1935: 248; 1936: 87; Quate, 1959b: 449; Vaillant, 1961b: 7; 1963a: 86; b: 224; 1964: 63; Sarà & Salamanna, 1967: 64; Vaillant, 1971: 33; Krek, 1971b: 186; c: 27; 1972: 250; Wagner, 1973: 520; Vaillant, 1974: 109; Salamanna, 1974: 63; 1975a: 201; b: 71; Wagner, 1977: 24; 1979: 44; Ježek, 1982: 59.

Psychoda auct. (nec Latreille, 1976) partim; Meigen, 1818: 106; Rossi, 1948: 6; Walker, 1848: 32; Zetterstedt, 1850: 3707; Meigen, 1851: 84; Schiner, 1864a: 17; b: 636; Wulp, 1877: 315; Brauer, 1883: 52; Eaton, 1893: 33; Eaton, 1898: 156; Strobl, 1898: 203; Kertész, 1902: 300; Becker, Bezzi, Bischof, Kertész & Stein, 1903: 164; Tonnoir, 1919: 14; 1922: 61; Abreu, 1930: 112; Barendrecht, 1934: 80; Enderlein, 1936: 87; Kloet & Hincks, 1945: 333; Rapp & Cooper, 1945: 124; Freeman, 1950: 91; Sarà, 1952: 12;

Jung, 1956: 190; Satchell, 1956: 119; Sarà, 1958: 3; Vaillant, 1958: 109; Sarà, 1959: 10; Szabó, 1960a: 213; Vaillant, 1960b: 165; Nielsen, 1961: 146; Smith & Grensted, 1963: 155; Nielsen, 1964: 156; 1965: 106; Sarà, 1965: 132; Szabó, 1965a: 80; b: 620; Tanašičuk, 1969: 130; Meigen in Morge, 1975: 435.

Philosepedon (subgenus of the genus *Psychoda* auct.); Tonnoir, 1919: 14; 1922: 61; Enderlein, 1936: 87; Tonnoir, 1940: 32; Kloet & Hincks, 1945: 333; Rapp, 1946: 176; Sarà, 1952: 12; Jung, 1956: 190; Satchell, 1956: 119; Sarà, 1958: 3; Vaillant, 1958: 109; Szabó, 1960a: 213; Vaillant, 1960b: 165; Nielsen, 1961: 146; Smith & Grensted, 1963: 155; Nielsen, 1964: 156; 1965: 106; Szabó, 1965a: 80; b: 620; Rozkošný, 1971: 141.

Philosepedon auct. (nec Eaton, 1904), partim; Quate, 1959b: 448; 1960: 20; 1962a: 125; b: 41; c: 181; 1963: 114; 1965: 865; Quate & Quate, 1967: 138; Duckhouse, 1973: 10.

Pericomia auct. (nec Walker, 1856), partim; Eaton, 1898: 157.

Type-species: *Psychoda humeralis* Meigen, 1818 (by orig. des.) Differential diagnosis: Genus *Philosepedon* Eaton, 1904 has the antennal segments 13—15 fused. The additional proximal sclerite of the pteropleurite quadrangled, the top of the male cercus bifurcated and each part with one retinaculum. On the other hand, in genera *Feuerborniella* Vaillant, 1971 and *Threticus* Eaton, 1904 the antennal segments 13—15 not fused; the additional proximal sclerite of the pteropleurite triangular and the top of male cercus without bifurcation and with a different number of retinacula.

Bionomy: Sensu VAILLANT (1974) the larvae probably of all species of this genus develop in snail-shells. The first and the last (fourth) larval instars are known for *P. humeralis* (Meigen, 1818) and the American species *P. quatei* Vaillant, 1973, only the first instar for *P. pyrenaicus* Vaillant, 1974. The adults were collected by the author of this paper on moist places near streams, gutters and rivers.

Distribution: 15 species in the world. Australian area: *Philosepedon torosa* Quate & Quate, 1967 — New Guinea. Indo-malayan area: *P. memnonius* Quate, 1965 — Ryukyu I.; *P. parciproma* Quate, 1962b — Borneo; *P. pudica* Quate, 1962b — Borneo. Holarctic area: *P. austriacus* Vaillant, 1974 — Europe centr.; *P. balkanicus* Krek, 1971c — Europe mer.; *P. beaucournui* Vaillant, 1974 — Africa sept.; *P. carpaticus* Vaillant, 1974 — Europe centr.; *P. humeralis* (Meigen, 1818) — Europe; *P. ibericus* Vaillant, 1974 — Europe occ.; *P. kalehnus* Vaillant, 1974 — Europe mer.; *P. provincialis* Vaillant, 1974 — Europe occ.; *P. pyrenaicus* Vaillant, 1974 — Europe occ.; *P. quatei* Vaillant, 1973 — U.S.A.; *P. soljani* Krek, 1971b — Europe mer.

Discussion: EATON (1904) established as type-species of *Philosepedon* Eaton, 1904 „*Ph. humeralis* (Hoffmannsegg, MS.) Meigen“. Quate (1962b) widened the diagnosis because of the haired or scaled, wing-membrane and some new synonyms of the name *Philosepedon* Eaton, 1904 listed: *Lepidopsychoda* Edwards, 1928 with type-species *L. tineiformis* Edwards, 1928 and subgenus *Minioceros* Quate, 1959a with type-species *Telmatoscopus squamulatus* Quate, 1959a. DUCKHOUSE (1973) also used genus *Philosepedon* Eaton, 1904 in the widened sense and divided this genus in subgenera *Philosepedon* s. str., *Eurygarka* Quate, 1959b and *Quatiella* Botosaneanu & Vaillant, 1970 (type-species *Psychoda helicis* Dyar, 1929 and *Philosepedon leonhardti* Vaillant, 1968). The most of species wrongly included by QUATE and DUCKHOUSE in genus *Philosepedon* Eaton, 1904 belong sensu VAILLANT (1974) — who published a key for the determination of the males of 12 palaearctic species and two species of the last instar larvae — to the other genera: *Perithretricus* Vaillant, 1973 (type-species *Psychoda bishoppi* del Rosario, 1936), *Neoquatiella* Vaillant, 1973

(type-species *Telmatoscopus jeanneae* Quate, 1955), *Quatiella* Botosaneanu & Vaillant, 1970 and *Nielseniella* Vaillant, 1972 (type-species *Trichopsychoda maderensis* Satchell, 1955). Both QUATE (1959b) and VAILLANT (1971) characterized a relationships of genera *Philosepedon* Eaton, 1904, *Threticus* Eaton, 1904, and *Psychoda* Latreille, 1796 by a phylogenetical scheme, however, without justification. It was criticized by HENNIG (1972). From genus *Psychoda* Latreille, 1796 s. lat. were in the past included in genus *Philosepedon* Eaton, 1904 by different authors 14 species from India, Madagascar, Philippines, Japan and Korea. It is not possible to prove this arrangement without a solid taxonomical revision and morphological analysis. In genus *Philosepedon* Eaton, 1904 14 other species were described by different authors, of which some belong to so far unknown genera. One extinct species was described only on the basis of a female and one on the basis of a larva — the right systematic position is not clear.

***Philosepedon humeralis* (Meigen)**

[Figs. 20—29, 30—39]

Psychoda humeralis Meigen, 1818: 106; Rossi, 1848: 6; Walker, 1848: 32; Zetterstedt, 1850: 3707; Meigen, 1851: 84; Schiner, 1864a: 17; b: 636; Wulp, 1877: 315; Brauer, 1883: 52; Eaton, 1893: 33; 1898: 156; Strobl, 1898: 203; Kertész, 1902: 300; Becker, Bezzì, Bischof, Kertész & Stein, 1903: 164; Tonnoir, 1922: 61; Abreu, 1930: 112; Barendrecht, 1934: 80; Rapp & Cooper, 1945: 124; Freeman, 1950: 91; Sarà, 1959: 10; 1965: 132; Meigen in Morge, 1975: 485.

Psychoda (Philosepedon) humeralis; Tonnoir, 1919: 14; 1922: 61; Enderlein, 1936: 87; Kloet & Hincks, 1945: 333; Sarà, 1952: 12; Satchell, 1956: 119; Jung, 1958: 190; Vaillant, 1958: 109; Sarà, 1958: 3; Szabó, 1960a: 213; Vaillant, 1960b: 165; Nielsen, 1961: 146; Smith & Grensted, 1963: 155; Nielsen, 1964: 156; 1965: 106; Szabó, 1965a: 80; b: 620.

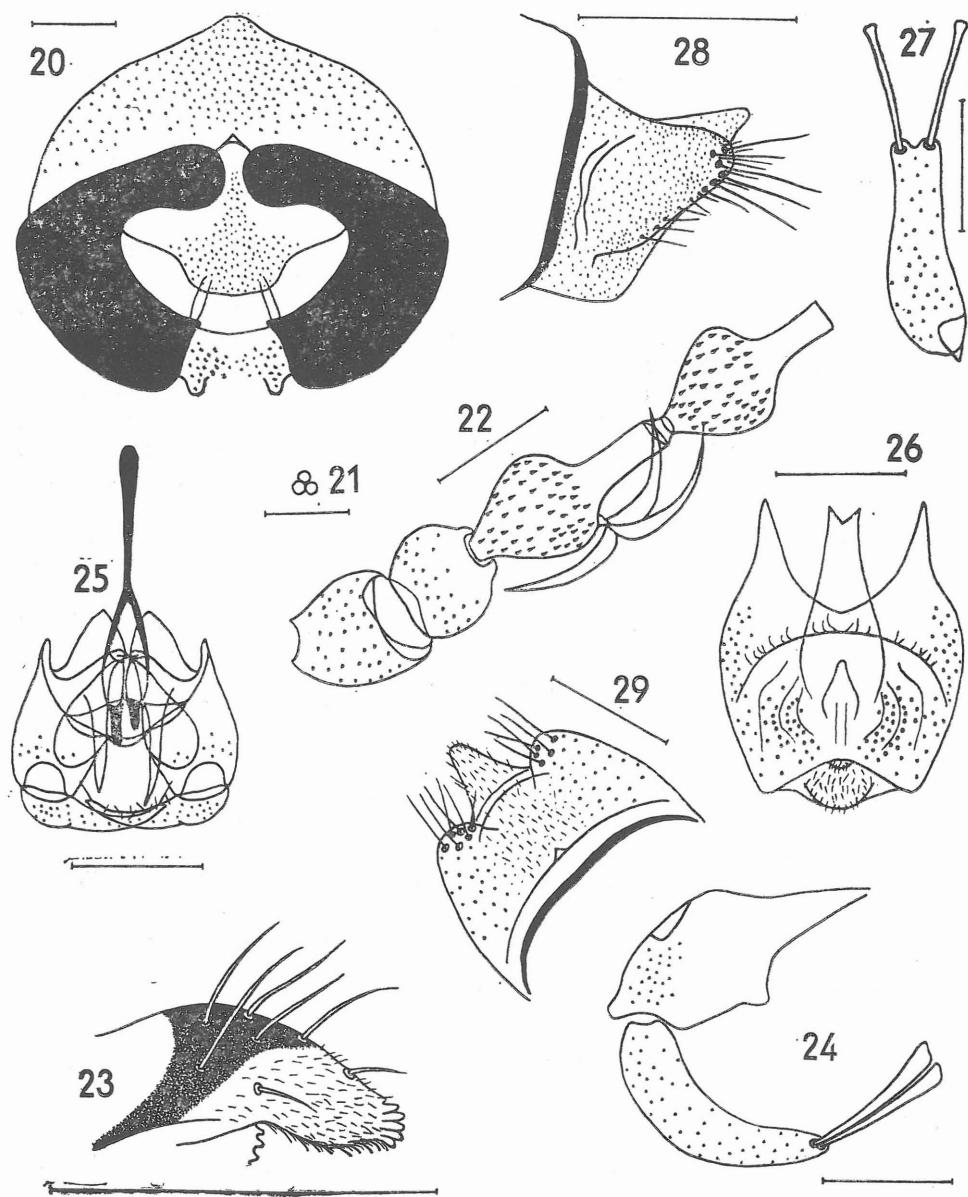
Philosepedon humeralis; Eaton, 1904: 57; 1913: 429; Schmitz, 1917: 31; Spärck, 1920: 120; Quate, 1959b: 449; Vaillant, 1961b: 2; 1963a: 86; 1964: 63; 1971: 33; Krek, 1971b: 186; Wagner, 1973: 520; Vaillant, 1974: 109; Salamanna, 1974: 63; Wagner, 1979: 44; Ježek, 1982: 59.

Pericoma bullata (Haliday, MS) Walker, 1856: 257.

Pericoma bullata var. *mauritanica* Eaton, 1898: 157.

Diagnosis. Rather small species, the wing length 1.9—2.2 mm., the left part of the proper male copulatory organ longer than the right part, cerci with two retinaculi. The female subgenital plate with three caudal lobes, the female cerci characteristically short and rounded.

Male. The distance between eyes approximately twice larger than the facet diameter (measured the maximal width of frons below the transversal suture). 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 10.0, to the facet diameter 12.5. The lower part of frons with irregularly arranged dorsoventral set of hairs. Antennae 16-segmented, haired. Scape cylindrical, its width a little larger then the length of it, pedicel almost globular, antero-posteriorly a little shorter, index of the length of the first antennal segment to pedicel 1.2. Ratio of the maximal width of pedicel to the width of the first and second flagellar segment 3.1:3.0:3.0. The flagellar segments bottle-shaped, index of the length of the first flagellar segment to the second one 1.1. Both mentioned segments symmetrical, the last 4 flagellar segments fused; 13th segment egg-shaped, without conspicuous narrowed part, the last three segments very minute in contrast to the segment 13, 14th segment almost globular, 15th segment with a conspicuous distal protuberance, shifted laterally, 16th



Figs. 20—29. *Philosepedon humeralis* (Meig.); ♂: 20 — head, 21 — facets, 22 — basal antennal segments, 23 — terminal lobe of labium, 24 — epandrium and cercus laterally, 25 — copulatory organ, coxopodites and harpagones dorsally, 26 — epandrium dorsally, 27 — cercus dorsally; ♀: 28 — cercus laterally, 29 — subgenital plate. Scales 0.1 mm.

segment egg-shaped. Sensory filaments of antennae big with three foliate arms. Ratios of the lengths of maxillary palps 3.4:4.9:6.7:6.2. The last segment of maxillary palpus without annulation and connected with the apex of the foregoing segment. Ratio of the maximal length of cibarium to the length of epipharynx 1.8:1. Corniculi not developed. The wings without pigmentation, lancet-shaped, the veins are not swollen in the central area of the wing. The wing membrane bare, the basal costal nodes distinct. Sc rather long, uninterrupted. R_1 bent to C, the origin of R_{2+3} weit for basal field, R_2 and R_3 with rather steep part of the connection with R_{2+3} , R_{2+3} conspicuously bent to the upper margin of the wing, R_2 inconspicuously S-shaped, R_3 straight, a little bent to the upper margin of the wing distad. R_4 conspicuously bent to the radial fork, a little bent to the upper margin of the wing distad. R_5 bent by the same way, with the tip in the apex of the wing. M_{1+2} rather widened at base, almost straight, as well as M_2 and M_1 , M_1 with rather steep part of connection with M_{1+2} , the connection of M_2 and M_{1+2} incomplete. M_1 and M_2 arched distad to the hind margin of the wing, M_3 and Cu without a connection on M_4 . M_4 almost straight, Cu inconspicuously S-shaped. The veins r-r, r-m and m-m missing. The medial wing angle 91°. Indexes of the wing: AB:AC:AD=7.9:11.3:9.8, BC:CD:BD=4.3:5.1:6.7. Index of the base of M_{1+2} , A to the maximal width of the wing 2.0. Ratio of the length of halteres to its width 2.6:1. Ratios of the lengths of femora, tibiae and the first tarsal segment: $P_1=13.0:14.5:7.8$; $P_2=13.0:16.2:7.2$; $P_3=14.3:24.5:9.2$. The paired tarsal claws only a little bent. The basal apodeme of the male genitalia straight, widened and rounded anteriorly, bifurcated caudally. The left internal protuberance of the male copulatory organ longer than the right protuberance from dorsal view, external paired protuberances much longer than the internal protuberances, the external protuberances sabre-shaped from lateral view, the length of the external protuberances equal to the length of coxopodites or reaches over its length. The copulatory organ outside smooth. Coxopodites outside without a protuberance, harpagones shorter than coxopodites from dorsal view, pointed apically, with a subapical seta. Index of the length of coxopodites to the length of harpagones from dorsal view approximately 1.3. Epandrium as well as aperture of the characteristic shape. Index of the length of the cercus to the length of epandrium from lateral view 1.4. Hypandrium narrow. Epiproct shorter than hypoproct, both rounded and haired. Cerci bent, C-shaped from lateral view, each cercus with two retinaculi. The top of the cercus bifurcated.

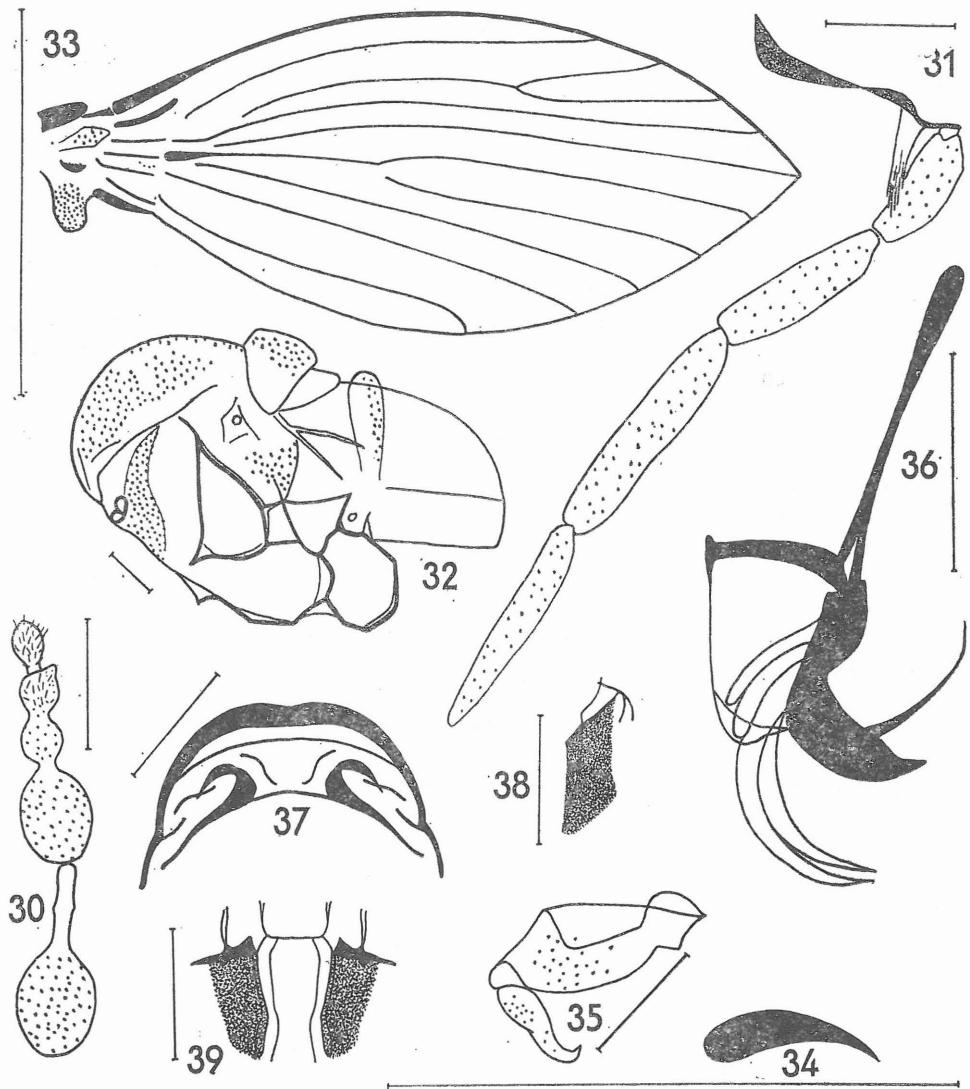
Female. The subgenital plate of the characteristic shape, caudal side lobes with a great quantity of long setae and an unpaired middle triangular lobe with the rounded top. Complicated sclerotized forms in the area of the genital chamber without meshlike structures. Cercus a little bent. Index of the length of the cercus to the maximal width 1.0.

Material: 12 ♂♂, 1 ♀. Bohemia: Hořice v Podkrkonoší, Chudíř, Louny, Praha-Kunratice, Tachov-distr. town.

Comments on the material: The figured specimen of the male was collected by the author from the locality Chudíř, 17-VIII-71 and the figured female specimen from the same locality with the date 18-VII-71.

Occurrence in ČSSR: VI—VIII.

Bionomy: Sensu BEAVER (1972) the larvae were living in dead snails of



Figs. 30—39. *Philosepedon humeralis* (Meig.); ♂: 30 — apical antennal segments, 31 — maxilla and palpus maxillaris, 32 — thorax laterally, 33 — wing, 34 — claw of P_1 , 35 — coxopodite and harpagon laterally, 36 — copulatory organ laterally; ♀: 37 — genital chamber anteriorly, 38 — the same laterally, 39 — the same ventrad. Scales 0.1 mm., 1 mm. in fig. 33.

different species, the life history took 21—45 days, the emergence mostly May to October. 14 adults from one snail on an average, maximally 76 eclosed. The mentioned author disagreed with an observation of SCHMITZ (1917) about the

development in rotted potatoes. JUNG (1956) registered the length of the life-history 8—25 days. NIELSEN (1961) reared this species from snails as *Helix pomatia* L., *Helicella caperata* Mont., *Helicigona arbustorum* (L.), *Cepea hortensis* (Mül.) and *C. nemoralis* (L.). SMITH & GRENSTED (1963) figured the larva from a breeding obtained by oviposition of *P. humeralis* (Meigen, 1818) on the putrefied remainders of *Cepea hortensis* (Mül.) in November and December, the eclosion of adults was realized in March. The larva of the first instar and the last one were briefly described by SPÄRCK (1920). VAILLANT (1974) figured and described larva and pupa on the base of the material collected in glens of Bruyant (Isère, France), 1000 m. above sea level. The figured and described adult comes from the larva collected in France on the locality Col du Lautaret (Hautes-Alpes), 2050 m. above sea level. WAGNER (1977) collected adults in a light trap. The author of this paper collected adults on the banks of streams, in the water-area of inundated forests, near arms of rivers and near gutters shaded mostly by *Alnus*.

Distribution: Austria, Belgium, Czechoslovakia, Denmark, England, France, Hungary, Italy, Netherlands, Spain, Sweden, Switzerland, F. R. Germany, Yugoslavia; Algeria, Canary I., Mauretania, Seychelles I.

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

Discussion: MEIGEN (1851) quoted in the second edition of „Systematische Beschreibung“ wrongly „*Psychoda humeralis* Hoffm., 1818“ (=Hoffmannsegg).

Genus *Feuerborniella* Vaillant

Feuerborniella (gen.) Vaillant, 1971: 37; Krek, 1971b: 172; Vaillant, 1974: 119; Wagner, 1979: 45; Caspers & Wagner, 1980: 78; Ježek, 1982: 59.

Psychoda auct. (nec Latreille, 1796), partim; Tonnoir, 1919: 140; 1922: 70; Feuerborn, 1923: 200; Tonnoir, 1934: 78; 1940: 59; Kloet & Hincks, 1945: 333; Freeman, 1950: 95; Jung, 1956: 189; Szabó, 1960a: 213; Vaillant, 1969a: 106; Nielsen, 1961: 145; Vaillant, 1963b: 224; c: 109; Giljarov, 1964: 657; Vaillant, 1964: 156; Botosaneanu & Vaillant, 1965: 79; Sarà, 1965: 132; Vaillant, 1966: 226; Tanasijčuk, 1969: 130; Rozkošný, 1971: 141.

Psychoda (subgenus of the genus *Psychoda* auct.), partim; Kloet & Hincks, 1945: 333; Rozkošný, 1971: 141.

Threticus auct. (nec *Threticus* Eaton, 1904), partim; Krek, 1971b: 172.

Threticus (subgenus of the genus *Psychoda* auct.), partim; Tonnoir, 1922: 70.

Philosepedon auct. (nec Eaton, 1904), partim; Krek, 1971a: 92.

Type-species: *Psychoda obscura* Tonnoir, 1919 (by monotypy) Differential diagnosis: The genus *Feuerborniella* Vaillant, 1971 has lobes of labium without apical lamellae as well as finger-like protuberances, which are developed as in tribe *Psychodini*, the pteropleurite wholly bordered by a suture dorsally, the arrangement of thoracal setae the same as tribe *Psychodini*, the male cercus with one retinaculum, the male copulatory organ symmetrical. The genus *Feuerborniella* Vaillant, 1971 differs by the mentioned diagnostic characters from the genus *Threticus* Eaton, 1904, where the lobes of labium have apical lamellae, the pteropleurite is incompletely bordered by a suture dorsally; the arrangement of thoracal setae differs from tribe *Psychodini*, the male cercus with three retinacula, the male copulatory organ asymmetrical.

Bionomy: Only a little known. Immature stages of one species only are known (VAILLANT, 1974). Habitats: moist biotopes.

Distribution: 2 species in the world. Indo-malayan area: *Feuerborniella*

nigripennis (Brunetti, 1908) comb. n. The palaearctic part of the Holarctic area: *F. obscura* (Tonnoir, 1919).

Discussion: In contrast to the VAILLANT'S conception in 1974, where he included Brazil species *Psychoda spathipenis* Duckhouse, 1968 and *Psychoda plaumanni* Duckhouse, 1968 in the genus *Feuerborniella* Vaillant, 1971 was included the first mentioned species in the genus *Psycha* Ježek, 1983 and the second one in the genus *Psychomora* Ježek, 1983, both from the tribe *Psychodini* Eaton, 1893. These changes must be supported by the solid morphological analysis as well as by detailed figures of diagnostic characters. Moreover the species *Trichopsychoda malayensis* Satchel, 1955, which was included as well by VAILLANT (1974) in the genus *Feuerborniella* Vaillant, 1971, belongs evidently in a new genus so far undescribed. Provided that we prove in future that the nearctic species *Quatiella interdicta* (Dyar, 1928) sensu Vaillant (1974) with the synonymum *Philosepedon leonhardti* Vaillant, 1968 as type-species of the genus *Quatiella* Botosaneanu & Vaillant, 1970 morphologically belongs to the genus *Feuerborniella* Vaillant, 1971, it happens that the name *Feuerborniella* Vaillant, 1971 must be recognized as a synonymum of the name *Quatiella* Botosaneanu & Vaillant, 1970. The problem of the right generic position of *Qatiella cubana* Botosaneanu & Vaillant, 1970 was therefore not solved.

Feuerborniella obscura (Tonnoir)

(Figs. 40–48, 49–58)

Psychoda obscura Tonnoir, 1919: 140; 1922: 70; 1934: 78; 1940: 59; Freeman, 1950: 95; Jung, 1956: 189; Szabó, 1960a: 213; Vaillant, 1960a: 106; Nielsen, 1961: 145; Vaillant, 1963b: 224; c: 109; 1964: 156; Giljarov, 1964: 657; Botosaneanu & Vaillant, 1965: 79; Sarà, 1965: 132; Vaillant, 1966: 226; Tanasijčuk, 1969: 130.

Psychoda (Psychoda) obscura; Kloet & Hincks, 1945: 333; Rozkošný, 1971: 141.

Feuerborniella obscura; Vaillant, 1971: 33; 1974: 121; Wagner, 1979: 45; Ježek, 1982: 59.

Threticus obscura; Krek, 1971b: 172.

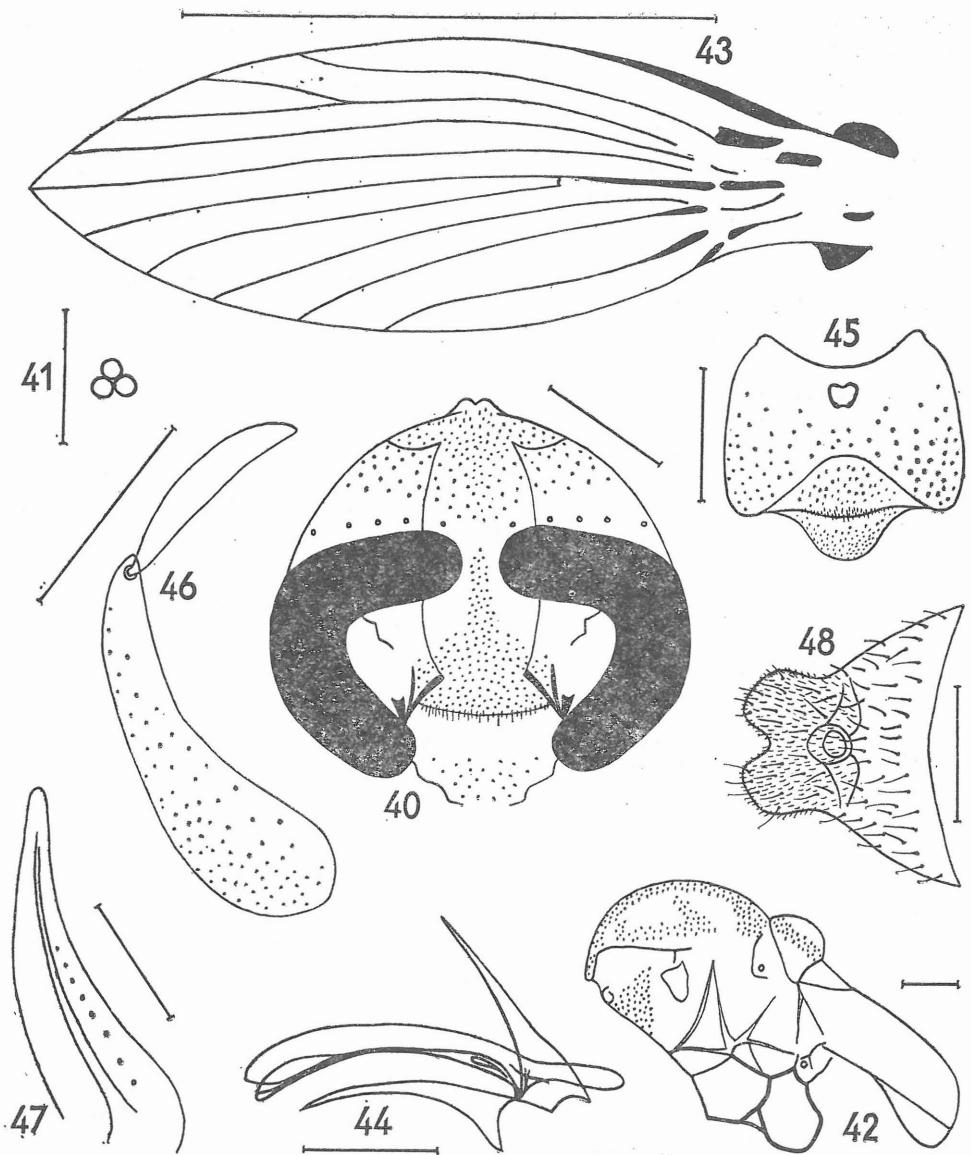
Psychoda (Threticus) obscura; Tonnoir, 1922: 70.

Psychoda eximia Feuerborn, 1923: 200 (larva).

Philosepedon uniretinaculum Krek, 1971a: 92.

Diagnosis. The small species, the wing length 1.5–2.0 mm., without tufts of hairs in the tips of the veins on the wing margin, the lobes of labium without end lamellae as well as finger-like protuberances, the male genitalia with a pair of dorsal phallomeres grown together, the ventral phallomere missing. The external paired protuberances developed. The male cercus with one retinaculum. The female subgenital plate and genital chamber of the characteristic shape.

Male. Index of the facet diameter to the minimal width of frons 0.6. Index of the distance of the tangential points of the eye's ends to the minimal width of frons 5.5, to the facet diameter 9.2. The frons without frontal suture, with long hairs. Antennae 16-segmented, haired. Scape almost cylindrical, a little widened apically, pedicel almost globular. Index of the length of the first antennal segment to the length of pedicel 1.1. Ratio of the maximal width of pedicel to the width of the first and second flagellar segments 2.1:1.9:1.9. The flagellar segments bottle-shaped, index of the length of the first flagellar segment to the second one 1.1, both segments symmetrical. The last three flagellar segments not fused, approximately of the same size, 13th segment without narrowed part, a little smaller than 12th; the segments 14 and 15 inconspicuously pressed bilaterally. The segment 16 a little prolonged. Sensory filaments



Figs. 40—48. *Feuerborniella obscura* (Ton.); ♂: 40 — head, 41 — facets, 42 — thorax laterally, 43 — wing, 44 — copulatory organ laterally, 45 — epandrium dorsally, 46 — cercus dorsally; ♀: 47 — cercus laterally, 48 — subgenital plate. Scales 0.1 mm., 1 mm. in fig. 43.

of antennae conspicuous, with two arms. Ratios of the lengths of the segments of maxillary palpus 2.7:3.4:4.1:4.9. The last segment of the maxillary palpus without annulation, connected with the apex of the foregoing segment. The hairs on clypeus widely spaced. Ratio of the maximal length of cibarium to the length of epipharynx 1:1. The pleural suture in the lower part not straight. The wings without pigmentation, lancet shaped, without dark tufts of hairs in the tips of veins on the wing margins, the wing membrane bare, both basal and distal costal nodes distinct. Sc strong, uninterrupted. R_1 S-shaped, the origin of R_{2+3} in a distance from inconspicuous basal field, the angle of the proximal parts of R_2 and R_3 rather large. R_4 and R_5 conspicuously bent to the radial fork, R_5 with the end in the apex of the wing. M_{1+2} and M_1 arched as well. M_2 connected by a short transversal vein with M_{1+2} . M_2 strongly arched with the end behind the apex of the wing. M_3 and M_4 bent to the medial fork, M_3 and Cu without a connection on M_4 . The veins r—r, r—m and m—m not visible. The medial wing angle 73°. Indexes of the wings: AB:AC:AD=8.5:14.0:10.1, BC:CD:BD=6.3:6.0:6.1. Index of the base of M_{1+2} , A to the maximal width of the wing 2.3. Ratio of the length of halteres to its width 3.2:1. Ratios of the lengths of femora, tibiae and the first tarsal segments: $P_1=9:10:5$; $P_2=10:13:6$; $P_3=10:15:6$. The paired tarsal claws rather bent. Corniculi, patagia and tegulae not developed. The basal apodeme of the male genitalia straight, without a bifurcation on the end. The male copulatory organ with the pair of dorsal phallomeres grown together, the ventral phallomere not developed. The length of the external paired protuberances much more larger than the length of coxopodites. The external protuberances widened at base, pointed apically. Coxopodites of the cylindrical shape, harpagones a little bent and pointed apically. Index of the maximal length of coxopodites to the lengths of harpagones from dorsal view 1.1. Epandrium of the characteristic shape with an elliptical aperture at base, index of the length of cercus to the length of epandrium from lateral view 1.3. Sclerotized remainders of 10th tergite and sternite inside of epandrium indistinct. Hypandrium narrow. Epiproct very short, distinctly spined, hypoproct triangular with rounded tops. The length of hypoproct a little shorter than its width at base. Cerci only inconspicuously bent from ventral view, with one retinaculum apically. The top of cercus without a bifurcation.

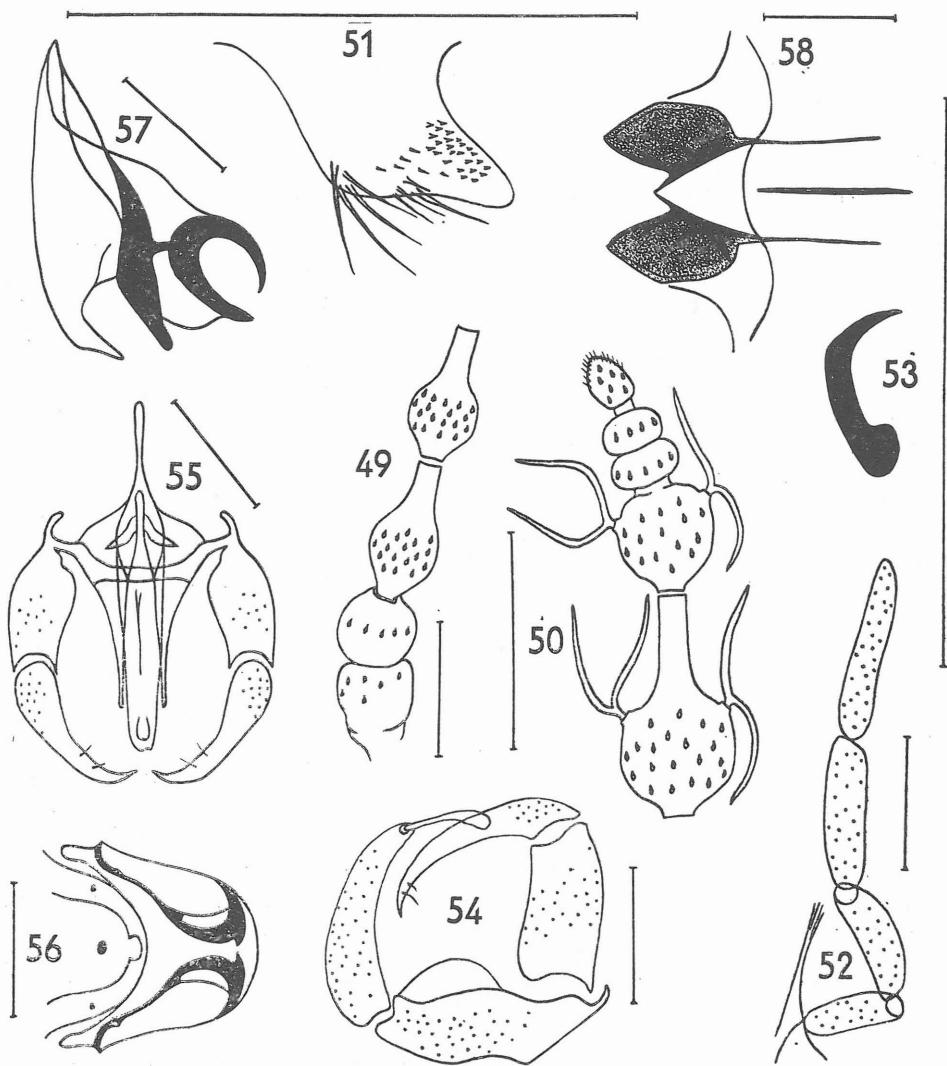
Female. The subgenital plate of the characteristic shape. The complicated sclerotized forms in the area of genital chamber without mesh-like structures. Cercus a little bent. Index of its length to its maximal width 5.4.

Material: 24 ♂♂, 11 ♀♀. Bohemia: Chudíř. Moravia: Hodonín-distr. town, Ostrava, Pohelice (Břeclav distr.).

Comments on the material: All quoted material was collected by author. Figured specimen both of the male and female was collected at the locality Hodonín-distr. town, 3-VIII-74.

Occurrence in ČSSR: VI—VIII.

Bionomy: The larvae sensu JUNG (1956) live near weirs and millraces, on the stones covered by moist moss and leaves as well as in broken alders. The life-history one year. The larva and pupa was described and figured by JUNG (1956). VAILLANT (1974) redescribed and figured mentioned immature stages on the base of the material from the locality Revel, Isère, France. The species was collected 1000 m. above sea level in Alpes (France). The author of this paper collected adults on the banks of ditches, ponds with putrefying water



Figs. 49—58. *Feuerborniella obscura* (Ton.); ♂: 49 — basal antennal segments, 50 — apical antennal segments, 51 — terminal lobe of labium, 52 — maxilla and palpus maxillaris, 53 — claw of P₁, 54 — hypopygium laterally, 55 — copulatory organ, coxopodites and harpagones dorsally; ♀: 56 — genital chamber anteriorly, 57 — the same laterally, 58 — the same ventrad. Scales 0.1 mm.

and in swamps with *Alnus*, *Populus* and *Salix*, the environment with *Robinia*, *Corylus*, *Fraxinus*, *Pinus* and *Sambucus*, the undergrowth with *Urtica*, *Typha* and *Scirpus*.

Distribution: Belgium, Czechoslovakia, Denmark, England, Hungary, Roumania, F. R. Germany and Yugoslavia.

Data on both type-material and type-locality: Data about type-material are missing in the original paper. The type-locality is characterized by the words: „Pas rare aux environs de Bruxelles, en mai, Juin, Juill., août.“. By the generosity of Dr. Demoulin from Brussels (Inst. Royal Sci. Nat. de Belgique) was realized a loan of 9 Tonnoir's specimens of this species with permission to make microscope slides. As lectotype was selected the female from the locality Uccle Av. Defré, 21 Mai 1917, Tonnoir lgt. Long ago Tonnoir mounted from this pinned specimen a minute microscope slide of the subgenital plate and cerci. The specimen was mounted by the author of the present paper on a slide with Canada balsam: the head was dissected as one part, as the second part thorax with abdomen and separately both wings. Antennae and the left P_1 missing. Tonnoir's minute slide was fixed on the same slide by Canada balsam as well. As paralectotypes were designated 3 additional female specimens and arranged in the same way as lectotype. The first paralectotype is from the same locality as the lectotype, the left antenna and left P_1 — P_3 missing. Additional two paralectotypes are labelled Forêt Soignes, 3 Juin 1918, Tonnoir lgt. At the first specimen apical antennal segments missing and presented only left P_1 and P_3 , the other legs missing. The second paralectotype is without antennae, thorax with very damaged abdomen and all legs missing. Some loaned material out of the syntypical serie was not used to the designation of paralectotypes: 2 ♀♀, Linkebeek, 26. 5. 1920, Tonnoir lgt.; 2 ♀♀, Chain, 23. 5. 1920, Mayne lgt.; ♂, Fa-laën, Juin 1921, Tonnoir lgt.

Discussion: TONNOIR (1934) quoted the name *Psychoda nigripennis* Brunetti, 1908 as a synonymum of *Psychoda obscura* Tonnoir, 1919. On the base of the shape of the female subgenital plate, which were figured by QUATE (1962a), is the mentioned species *Psychoda nigripennis* Brunetti, 1908 valid and the shape of the female subgenital plate is quite different from *Feuerborniella obscura* (Tonnoir, 1919). *Psychoda nigripennis* Brunetti, 1908 from the Indomalayan area was recognized by DUCKHOUSE (1973) as a good species. SARĀ (1965) synonymized the name of *Psychoda obscura* Abreu, 1930 with the name of *Psychoda obscura* Tonnoir, 1919; however the type-material of *P. obscura* Abreu, 1930 must be proved. VAILLANT (1974) suggested that the female of „obscura“ from Moravia, which was figured in the year 1966 by him under the name *Psychoda obscura* Tonnoir, 1919, belongs to the other species.

Genus *Threticus* Eaton

- Threticus* Eaton, 1904: 57; Enderlein, 1935: 248; Wagner, 1979: 44; Caspers & Wagner, 1980: 78.
Pericoma auct. (nec Walker, 1856), partim; Walker, 1856: 257; Schiner, 1864a: 17; b: 634.
Psychoda auct. (nec Latreille, 1796), partim; Eaton, 1893: 129; 1894: 23; 1898: 124; Kertész, 1902: 301; Becker, Bezzı, Bischof, Kertész & Stein, 1903: 165; Tonnoir, 1919: 14; Feuerborn, 1922: 23; Tonnoir, 1940: 32; Kloet & Hincks, 1945: 333; Rapp & Cooper, 1945: 124; Freeman, 1950: 91, 95; Jung, 1956: 190; Sarà, 1958: 3; Szabó, 1960b: 427; Vaillant, 1960a: 106; Nielsen, 1961: 146; Vaillant, 1961a: 111; Giljarov, 1964: 657; Nielsen, 1964: 156; Vaillant, 1964: 62; Szabó, 1965a: 80; b: 620.
Threticus (subgenus of the genus *Psychoda* auct.); Tonnoir, 1919: 14; 1922: 65; Enderlein, 1936: 86; Tonnoir, 1940: 32; Kloet & Hincks, 1945: 333; Rapp, 1946: 177; Jung, 1956: 190; Sarà, 1958: 3; Szabó, 1960b: 427; Vaillant, 1960a: 106; Nielsen, 1961: 146; Vaillant, 1961a: 111; Nielsen, 1964: 156; Szabó, 1965a: 80; b: 620.
Threticus auct. (nec Eaton, 1904), partim; Quate, 1959b: 449; 1960: 22; Quate & Quate, 1967: 145; Vaillant, 1972: 98.

Type-species: *Pericoma lucifuga* Walker, 1856 (by subseq. desig.)

Differential diagnosis is quoted at the genus *Feuerborniella* Vaillant, 1971.

Bionomy: Very little known. VAILLANT (1972) collected the larvae in rotten leaves. Habitats: The areas of springs and the banks of rivers. The mentioned author published a generic diagnosis for the last instar larvae.

Distribution: Only Holarctic area: *Threticus appalachicus* Vaillant, 1973 -- U.S.A.; *T. balkaneoalpinus* Krek, 1971b — Europe mer.; *T. incurvus* Krek, 1972 — Europe mer.; *T. negrobovi* Vaillant, 1972 — Caucasus; *T. optabilis* Krek, 1971c — Europe mer.; *T. pyrenaicus* Vaillant, 1972 — Europe occ. The fossil species *T. labeculosus* (Quate, 1963). A revision of the data of the Holarctic area is badly needed.

Discussion: EATON (1904) described the genus *Threticus* without an establishment of the type-species. He included in this genus on the first place „*T. lucifugus*, Haliday“ and moreover he described 2 new species: „*T. compar* and *T. gemina*“. Opinions on the status of this taxon were changed and in the subgenus *Threticus* Eaton, 1904 of the genus *Psychoda* Latreille, 1796 were included by TONNOIR (1922) with the exception of „lucifugus“ two species, which were by the author of the present paper included in the genus *Psychodocha* Ježek, 1983 of the tribe *Psychodini* Eaton, 1893 — „*P. (T.) compar* Eat., *P. (T.) gemina* Eat.“. Also included was one species of the later established genus *Feuerborniella* Vaillant, 1971 — „*P. (T.) obscura* Ton.“. At first ENDERLEIN (1935) established by the subsequent designation *T. lucifugus* Walker, 1856 as type-species of the genus *Threticus* Eaton, 1904. The conception of the genus *Threticus* Eaton, 1904 gradually changed and some differences in opinions expressed in the consequence of a disharmony of the importance of characters. Both QUATE (1959b) and DUCKHOUSE (1966) laid stress on the shape of sensory filaments, while VAILLANT (1971) the number of retinaculi and the asymmetry of the proper male copulatory organ. Both Quate and Duckhouse included in the genus *Threticus* Eaton, species with 1—4 retinaculi, while Vaillant excluded all „*Telmatoscopini* of the group *Threticus*“ with one retinaculum and included them in the genus *Quatiella* Botosaneanu & Vaillant, 1970 and *Nielseniella* Vaillant, 1971. The intergeneric relationships of genera *Threticus* Eaton, 1904, *Philosepedon* Eaton, 1904 and *Psychoda* Latreille, 1796 published by QUATE (1959b) and VAILLANT (1971) are discussed under the genus *Philosepedon* Eaton, 1904 in this paper. VAILLANT (1972) published a key for the males of the palaeoarctic species of the genus *Threticus* Eaton, 1904 and reported two groups of species: „*Threticus* der Gruppe *lucifugus*“ and „*Threticus* der Gruppe *balkaneoalpinus*“. The species of the first group the author named as microvariants, which differ in details of the male genitalia. From the genus *Psychoda* Latreille, 1796 in the past were excluded 10 species from Kenya, Tasmania and New Zealand and included in the genus *Threticus* Eaton, 1904. It is not possible without a solid morphological analysis to prove this generic arrangement. The species described as *Threticus fissiceps* Quate & Quate, 1967 from New Guinea must be recognized as an independent genus because of 6 retinaculi of males etc.; this is in harmony with the opinion of VAILLANT (1972). Moreover, the generic position of *T. tortuosus* Duckhouse, 1971 from Auckland Islands is problematic; it is known only on the basis of a female.

Threticus lucifugus (Walker)

(Figs. 59—70, 71—77)

Pericoma lucifuga Walker, 1856: 257; Schiner, 1864a: 17; b: 634.

Psychoda lucifuga; Eaton, 1893: 129; 1894: 23; 1898: 124; Kertész, 1902: 301; Becker, Bezz, Bischof, Kertész & Stein, 1903: 165; Feuerborn, 1922: 23; Rapp & Cooper, 1945: 124; Freeman, 1950: 91, 95; Giljarov, 1964: 657; Vaillant, 1964: 62; Tanasičuk, 1969: 130.

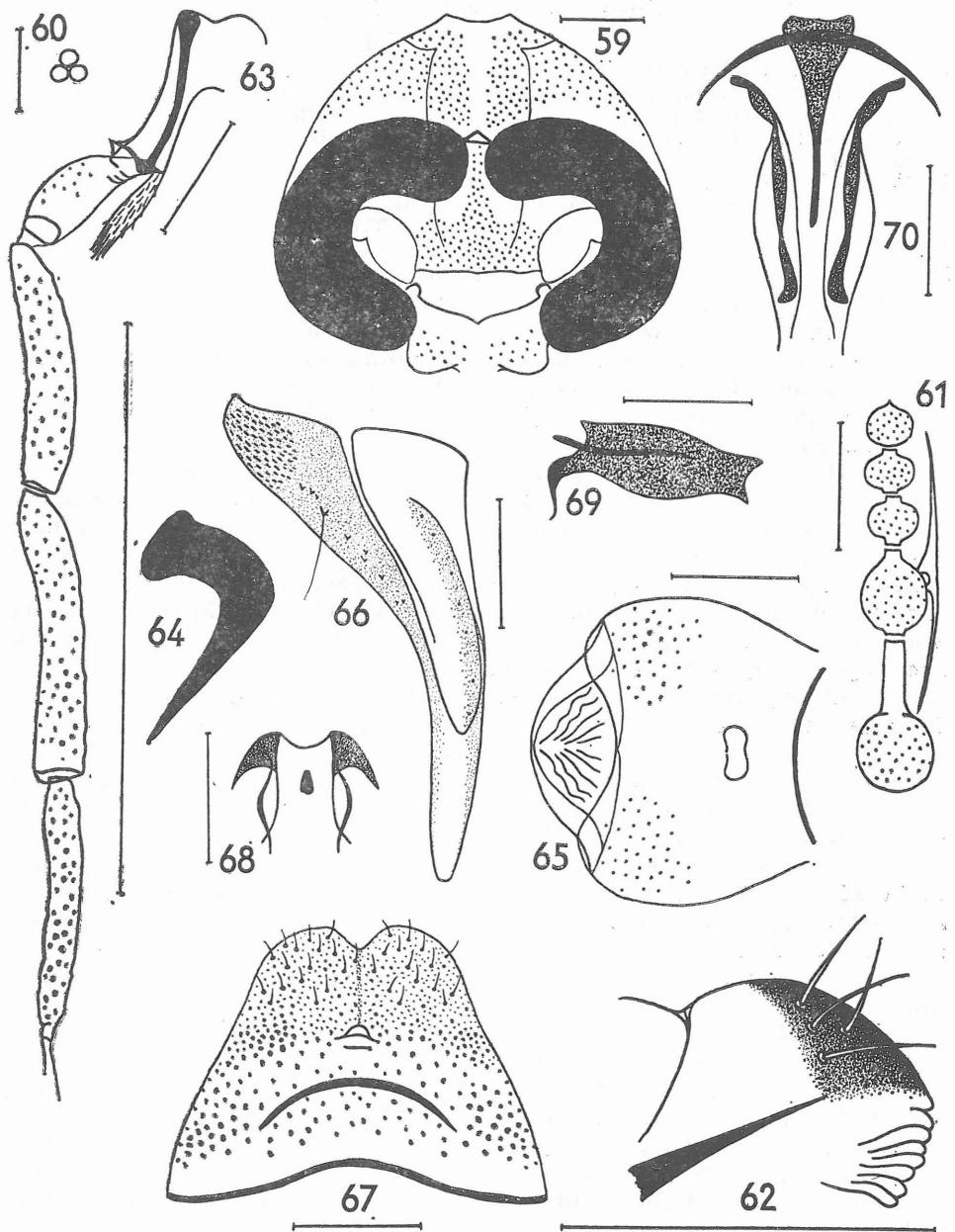
Psychoda (Threticus) lucifuga; Tonnoir, 1919: 14; 1922: 65; 1940: 32; Kloet & Hincks, 1945: 333; Jung, 1956: 190; Sarà, 1958: 3; Szabó, 1960b: 427; Vaillant, 1960a: 108; 1961a: 111; Nielsen, 1961: 146; 1964: 156; Szabó, 1965a: 80; b: 620.

Threticus lucifugus; Eaton, 1904: 57; Vaillant, 1972: 101; Wagner, 1979: 44.

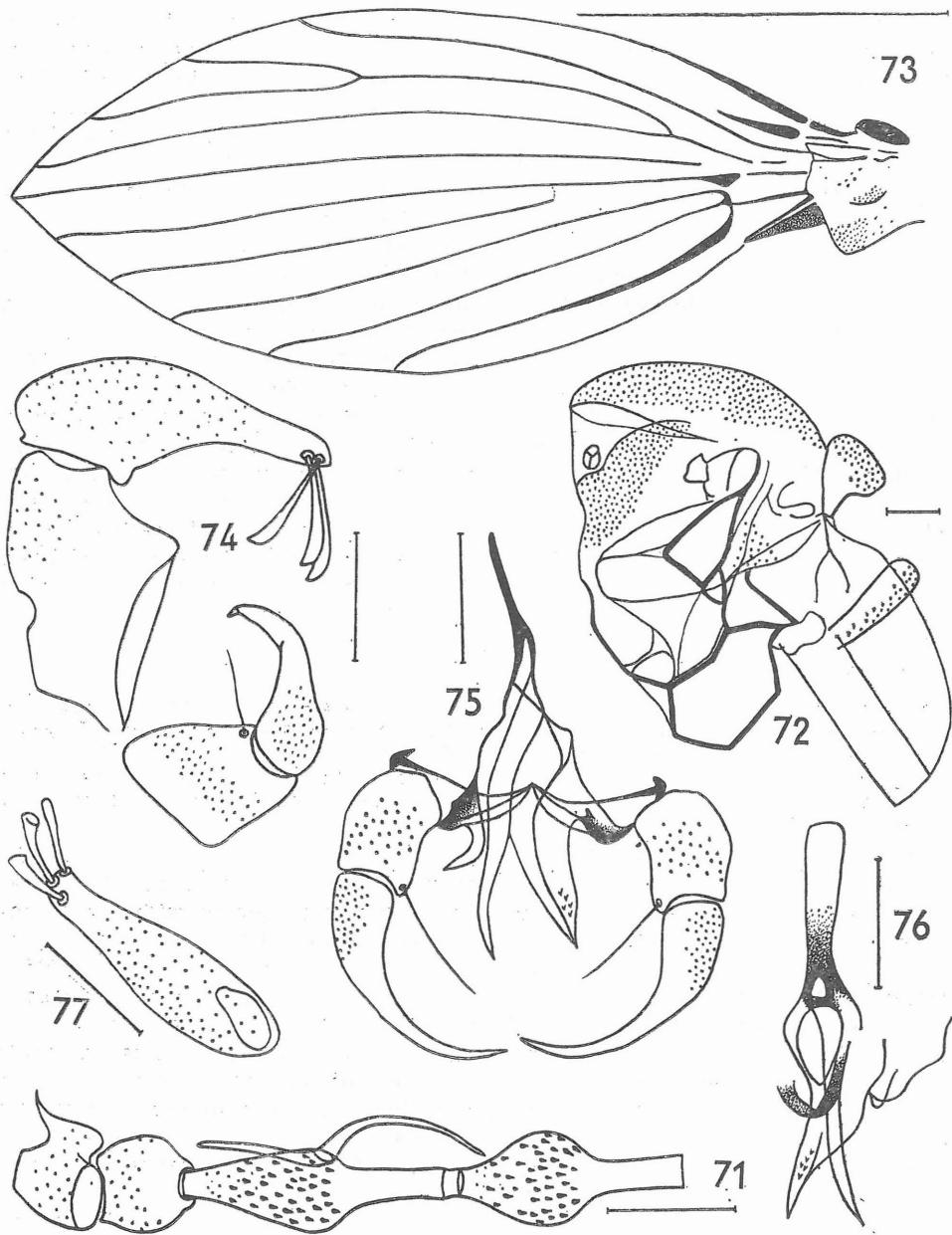
Threticus arvernicus Vaillant, 1972: 101. ? Syn. n.

Diagnosis. A small species, the wing length 2.0—2.6 mm., the sensory filaments of antennae big, with two arms, both arms form the letter S, the male genitalia distinctive, the dorsal phallomeres grown together, with 4—10 minute spines, the ventral phallomere developed, from common paired additional protuberances full developed only single. Harpagones pointed apically from dorsal view and bent inside.

Male. The minimal distance between eyes equals the diameter of one facet, the frontal stripe widened dorsally. Index of the distance of the tangential points of the eye's ends to the minimal width of frons as well as to the facet diameter 9.0. Frons with an irregular row of hairs. Antennae 16-segmented, haired. Scape and pedicel rather short, with the same width and length. Index of the length of the first antennal segment to pedicel 0.9. Ratio of the maximal width of pedicel to the width of the first and second flagellar segment 2.7:2.2:2.6. The flagellar segments very prolonged, bottle-shaped. Index of the length of the first flagellar segment to the second one 1.2, both segments symmetrical. The basal part of segment 13 a little smaller than the basal part of segment 12, with very short stem-like part, the segments 14—16 much more smaller than the segment 13; the segments 14 and 15 with its width larger than its length, with very short neck, the segment 16 almost globular with a distal point. The sensory filaments of antennae big, with two arms, both arms form together the letter S. Ratios of the lengths of the segments of the maxillary palpus 3.0:6.8:8.0:7.2. The last segment of the maxillary palpus without annulation and is connected with the apical part of the foregoing segment. Ratio of the maximal length of cibarium to the length of epipharynx 1.8:1. Corniculi not developed. The pteropleurite bordered dorsally by an incomplete suture. The wings without pigmentation, lancet shaped, without swollen parts of the veins in the central area of the wing, the wing membrane bare, the basal costal nodes distinctly developed. Sc rather short, strengthened proximally. R_1 bent to C, the origin of R_{2+3} far for the inconspicuously bordered basal field, R_{2+3} very arched to the upper margin of the wing, R_2 almost straight, R_3 in the middle bent to R_2 , the angle of the proximal part of R_2 to R_{2+3} is larger than the angle of the same of R_3 to R_{2+3} . R_4 conspicuously bent to the radial fork, $R_1—R_4$ with the distal ends a little bent to the upper margin of the wing. R_5 with the mouth in the apex of the wing, a little bent by the same way. M_{1+2} conspicuously widened at base, straight, very widened proximally, M_1 inconspicuously S-shaped in the middle, in the same line as M_{1+2} . M_2 without a connection with M_{1+2} , bent to the hind margin of the wing as well as M_3 and M_4 , M_3 and Cu with a connection on M_4 . $M_1—M_4$ bent distad to the hind margin of the wing, Cu S-shaped, widened proximally. The veins r—r, r—m and m—m



Figs. 59—70. *Threthicus lucifugus* (Walk.); ♂: 59 — head, 60 — facets, 61 — apical antennal segments, 62 — terminal lobe of labium, 63 — maxilla and palpus maxillaris, 64 — claw of P1, 65 — epandrium dorsally; ♀: 66 — cercus laterally, 67 — subgenital plate, 68 — genital chamber anteriorly, 69 — the same laterally, 70 — the same ventrad. Scales 0.1 mm.



Figs. 71—77. *Threitcus lucifugus* (Walk.); ♂: 71 — basal antennal segments, 72 — thorax laterally, 73 — wing, 74 — hypopygium laterally, 75 — copulatory organ, coxopodites and harpagones dorsally, 76 — copulatory organ laterally, 77 — cercus dorsally. Scales 0.1 mm., 1 mm. in fig. 73.

not visible. Index of the base of M_{1+2} , A to the maximal width of the wing 2.0. Ratio of the length of halteres to its width 3:1. Ratios of the lengths of femora, tibiae and the first tarsal segments: $P_1 = 14.0:17.2:8.1$; $P_2 = 15.0:21.3:8.5$; $P_3 = 15.8:23.6:9.2$. The paired tarsal claws conspicuously bent. The basal apodeme of the male genitalia rather straight, blunt on the end. The phallobasis of the irregular shape with three phallomeres around gonoporus. The ventral phallomere with a decline of the apex from the pair of dorsal phallomeres grown apically together and bent laterally, with 4–10 minute spines, from the common paired additional protuberances full developed only singly, which emphasizes the asymmetry. Coxopodites outside without a conspicuous protuberance, harpagones approximately twice longer than coxopodites, pointed apically from dorsal view. Epandrium of the characteristic shape. The aperture elliptical, antero-posteriorly narrowed in the middle, the sclerotized remainders of 10th tergite and sternite inside of epandrium indistinct. Index of the length of the cercus to the length of epandrium from lateral view 1.4. Hypandrium narrow. Epiproct hardly ascertained, hypoproct rather short, rounded caudally, the width of hypoproct more than three times larger than its length. Cerci almost straight from ventral view, conspicuously widened proximally from lateral view, with three retinaculi subapically. The top of cercus without bifurcation.

Female. The subgenital plate of the characteristic shape with a widened base, with the pair of small rounded caudal lobes with a shallow incision between them. The complicated sclerotized forms in the area of the genital chamber without mesh-like structures. Cercus bent; index of its length to its maximal width 3.9.

Material: 18 ♂♂, 2 ♀♀. Bohemia: Bělá nad Radbuzou, Fláje, Hojsova Stráž, Chřenovice, Klatovy, Lhotka (Český Krumlov distr.), Měděnec, Mrázov, Plasnice, Pořešín, Šluknov, Velká Paseka, Vitanov, Záhradní Moravia: castle Roštějn (Jihlava distr.).

Comments on the material: The figured male specimen was collected by the author of this paper at the locality Šluknov, 6-IX-73, the figured female specimen from Velká Paseka, 22-VIII-73.

Occurrence in ČSSR: VIII—IX.

Bionomy: Sensu JUNG (1956), who described the larva and pupa, the immature stages live in slowly flowing waters, on the moist places with the stones covered by moss, near weirs and mill-races, near waterfalls, in the moist leaves and in the broken alders. The life-history continues one year. SZABÓ (1965b) collected the larvae of this species in a spring area with pH 5.3. The organs for the sexual attraction were studied by FEUERBORN (1922). The author of this paper collected this species on the banks of streams, brooks, ponds and their outlets on the edges of woods, on the swamps of pasture lands mostly with *Alnus*, *Salix*, rarely *Sorbus*, *Picea*, *Pinus* and *Quercus*, in the undergrowth mostly *Phragmites*, *Urtica*, *Rubus*, *Senecio* and *Scirpus*.

Distribution: Belgium, Czechoslovakia, Denmark, England, France, Hungary, Italy, Switzerland and F. R. Germany.

Data on both type-material and type-locality: The number and deposition of the type-material unknown, in the original description type-locality is quoted as follows: „Inhabits shady moist spots in woods. In September, at Holywood and at Blarney. (I.)“.

Discussion: The species was described on the base of Haliday's MS by Walker in the genus *Pericoma* Walker, 1856. The redescription and figures of male were published by VAILLANT (1972). Vaillant figured the specimen which was

collected by Tonnoir 14-V-1918 in the forest near Soignes in Belgium. The inconspicuous difference between *T. lucifugus* (Walker, 1856) and *T. arvernicus* Vaillant, 1972 as follows: *T. arvernicus* Vaillant, 1972 has on the male copulatory organ 1—3 spines, *T. lucifugus* (Walker, 1856) sensu Vaillant 8—10 spines, however really 4—10. I think that the name of *T. arvernicus* Vaillant, 1972 is a synonymum of *T. lucifugus* (Walker, 1856) although I have not collected a specimen with only three spines.

SUMMARY

Differential diagnosis of the new subtribe *Trichopsychodina* as well as of genera *Trichopsychoda* Ton., *Philosepedon* Eat., *Feuerborniella* Vail. and *Threticus* Eat. are given and a review of 39 included species in the world is presented. *Trichopsychoda hirtella* (Ton.), *Philosepedon humeralis* (Meig.), *Feuerborniella obscura* (Ton.) and *Threticus lucifugus* (Walk.) are recorded in Czechoslovakia, redescribed, figured and reference made to known bionomy. Many new morphological characters are used for the first time. This paper reports a distribution of all taxa as well as data about type-material and type-localities. In the case of *Feuerborniella obscura* (Ton.) lectotype and paralectotypes were established and *F. nigripennis* (Brunetti, 1908) comb. n. from Indo-malayan area quoted. The presented paper indicates the need for descriptions of many new genera of the tribe *Paramormiini* End. on the basis of an analysis of old systems with historical value only; some taxonomical problems are discussed.

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JAN JEŽEK

PŘÍSPĚVEK K POZNÁNÍ NOVÉHO SUBTRIBU TRICHOPSYCHODINA
(DIPTERA, PSYCHODIDAE) Z ČSSR

V předložené práci je poprvé vyčleněn nový subtribus *Trichopsychodina* z tribu *Paramormiini* End. na základě studia apomorfických a plesiomorfických znaků. V současné době má nový subtribus *Trichopsychodina* na světě 39 druhů ve 4 rodech a subtribus *Paramormiina* 88 druhů v 7 rodech. V práci jsou uvedeny morfologické rozdíly obou subtribů a diferenciální diagnózy rodů *Trichopsychoda* Ton., *Philosepedon* Eat., *Feuerborniella* Vail. a *Threticus* Eat. s úplným výčtem druhů na světě a jejich rozšířením. Z ČSSR jsou registrovány *Trichopsychoda hirtella* (Ton.), *Philosepedon humeralis* (Meig.), *Feuerborniella obscura* (Ton.) a *Threticus lucifugus* (Walk.). Autor uvádí úplnou synonymii, literaturu, redeskribce, vyobrazení a dosud známou bionomii těchto druhů; řada morfologických znaků je stanovena pro účely determinace poprvé vůbec. Na základě zapůjčeného materiálu Tonnoirovy sbírky z muzea v Bruselu byl stanoven lektotypus a paralektotypy *Feuerborniella obscura* (Ton.). Novou kombinací rodového a druhového jména je *Feuerborniella nigripennis* (Brunetti, 1908) comb. n. z Indo-Malajské oblasti. Na základě rozboru zastaralých systémů čeledi *Psychodidae* je předpovězeno mnoho nových druhů v tribu *Paramormiini* End. a diskutována řada taxonomických problémů.