

**CONTRIBUTION TO THE KNOWLEDGE OF THE SUBGENUS *PSYCHODCHA*
JEŽ. OF THE GENUS *JUNGIELLA* VAILL. (DIPTERA, PSYCHODIDAE)
IN CZECHOSLOVAKIA**

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The fuzzy little water-midges that constitute the subfamily Psychodinae are common elements of the European fauna but owing to their secretive habitats and small size they are seldom conspicuous. In the past these „owl midges“ or „moth flies“ have attracted the attention of only a few European dipterists (e. g. Eaton, 1893; Nielsen, 1964; Sarà et Salamanna, 1967; Szabó, 1960a; Tonnoir, 1919) who mainly concerned themselves with the descriptions of new species and sporadic figures without comparative morphology of the studied species. Rather modern papers with many figures were published by Jung (1956), Krek (1971) and Vaillant (1972). As pointed out by the author below, the study of the Czechoslovak psychodid fauna has been much neglected. The first autor to publish important faunistic data from Slovakia was Szabó (1965a, b). Vaillant (1966) determined and published on some species from a small collection of Psychodidae in the Moravian Museum in Brno. Rozkošný (1971) printed a faunistic paper with new species for the fauna of Czechoslovakia and with a list of species in Czechoslovakia so far registered. Halgoš (1973) published a faunistic paper on the family Psychodidae from West Slovakia. Ježek (1977) reinstated the genus *Tinearia* Schellenberg, 1803 and excluded its name from synonymies in the genus *Psychoda* Latreille, 1796. Species new to the science and necessary changes of the higher taxa of the subfamily Psychodinae were quoted by the same author in the years 1979, 1983. Owing to the very great care necessary in the collection of these pretty little flies they are not usually numerous in collections. In preparing this paper the writer has attempted to give as accurate and complete an account of our present knowledge of the subgenus *Psychocha* Ježek, 1983 of the genus *Jungiella* Vaillant, 1972 from Czechoslovakia. With a view to filling gap in our knowledge of this part of the subfamily Psychodinae the writer has been collecting adults of Psychodidae for the last several years. This paper treats of the psychodid flies taken both in Bohemia and Moravia. This study was initiated with the idea of adding a new species to the 9 previously known (Ježek, 1983) as a result of the field work carried out in Czechoslovakia by the author. However, even at the outset it became apparent that the number of undiscovered species must

be considerably more than expected if one can extrapolate from the rate at which they began turning up in my own field work and in museum material.

Subgenus ***Psychocha*** Ježek, 1983

Psychocha Ježek, 1983: in press.

Jungiella s. str. sensu Vaillant, 1972: 83, partim.

Jungiella s. str. sensu Ježek, 1979: 341, partim.

Type-species: *Telmatoscopus soleatus* var. *acuminatus* Szabó, 1960 (by original designation)

Differential diagnosis: Subgenus *Psychocha* Ježek, 1983 has additional caudal appendages of the proper male genitalia not developed or in the form of imperceptible sclerites, where their articular joints are indistinct. On the other hand the subgenera *Jungiella* s. str. and *Psychogella* Ježek, 1983 have additional caudal appendages of the proper male genitalia conspicuously developed and their articular joints are distinct.

Distribution: 10 species in the palaearctic part of holarctic area from which 9 were quoted by Ježek (1983).

Bionomy of included species: Little known. A key for some species of the larvae was published by Vaillant (1972). The larvae develop in the mud of the banks of ponds, slow-flowing streams and mountain springs. Adults were collected by the author of this paper around swamps of inundated forests, on the banks of streams and forest ponds, on moist tips near ditches flowing into ponds.

Discussion: This subgenus was separated by Ježek (1983) from Vaillant's subgenus *Jungiella* s. str. because of morphological characters quoted above. Vaillant (1972) described and figured *Jungiella* (*Jungiella*) *rozkosnyi* Vaillant, 1972 from Czechoslovakia, however the name is apparently a synonymum of *Jungiella* (*Psychocha*) *acuminata* (Szabó, 1960b) which is very variable in the shape of sclerites of the proper male genitalia. Keys to some species of males — included in this subgenus — were published both by Bellier (1967) and Vaillant (1972).

Jungiella* (*Psychocha*) *acuminata (Szabó, 1960)

(Figs. 1—16)

Telmatoscopus soleatus var. *acuminatus* Szabó, 1960b: 426.

Telmatoscopus acuminatus; Rozkošný, 1971: 139.

Jungiella (*Jungiella*) *acuminata*; Vaillant, 1972: 89.

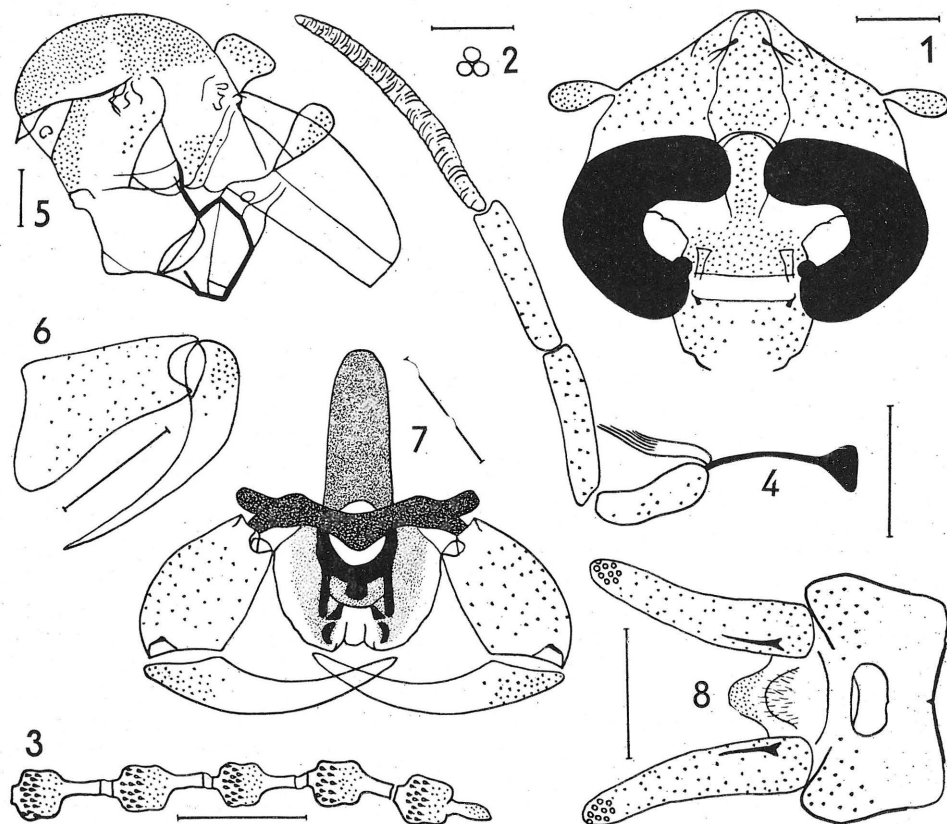
Jungiella (*Psychocha*) *acuminata*; Ježek, 1983: in press.

Telmatoscopus mooni Duckhouse, 1962: 425.

Telmatoscopus riparius Bellier, 1967: 59.

? *Jungiella* (*Jungiella*) *rozkosnyi* Vaillant, 1972: 89.

Diagnosis. Comparatively small species, the length of wing 1.9 — 2.1 mm., without swollen parts on the veins. The male with broad hypandrium as in the problematic species *J. rozkosnyi* Vaillant, 1972. Phallobasis of



Figs. 1—8: *Jungiella (Psychocha) acuminata* [Sz.] ♂; 1: head; 2: facets; 3: apical antennal segments; 4: maxilla and palpus maxillaris; 5: thorax laterally; 6: variability of coxopodite and harpagon laterally; 7: variability of copulatory organ with coxopodites and harpagones dorsally; 8: epandrium and cerci dorsally. Scales 0.1 mm.

J. (P.) acuminata [Szabó, 1960b] in contrast to *J. (P.) laminata* [Szabó, 1960b] is broad.

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 4.6, to the facet-diameter 7.4. Antennae 16-segmented, scapus cylindrical, pedicellus globular. Index of the length of the first antennal segment to pedicellus 1.9, ratio of the maximal breadth of pedicellus to that of the first and second flagellar segment 2.3:1.8:1.8. The flagellar segments flask-shaped, index of the length of the first flagellar segment to the second one 1.3. Both the first and second flagellar segments asymmetrical, the last flagellar segment with a small cone apically. Sensory filaments of antennae rather large, simple,

without ramification. Ratios of the lengths of the segments of maxillary palps 3.2:4.3:4.4:7.5. The last segment of maxillary palp annulate and connected with the foregoing segment apically. Ratio of the maximal length of cibarium to the length of epipharynx approximately 2.5:1. Corniculi with very short stem, conical. Index of the length of corniculi to their maximal breadth 2.4, to their minimal breadth at base 9.5. Wings without pigmentation, lancet-shaped, without swollen parts of veins on the wing, the wing membrane bare, costal nodes distinct. Sc long, without interruption. R₁ bent at base, arched distad towards to C. The connection of R₂₊₃ with distal margin of basal field indistinct, R₂₊₃ basally bent to R₁, R₂ and R₃ straight, diverging at a large angle from R₂₊₃. R₄ inconspicuously bent to the radial fork, R₅ almost straight, with the end a little below the apex of the wing. M₁₊₂ without swollen base, almost straight as with M₁, M₂ S-shaped, the angle between M₁ and M₂ large. M₃ almost straight with distal end a little bent to the hind margin of the wing. M₃ and Cu without a connection on M₄. The veins r-r, r-m and m-m not visible. Medial wing-angle approximately 136°. Index of the wing AB:AC:AD=8.9:9.6:9.2, BC:CD:BD=2.6:3.2:5.3. Index of the base of M₁₊₂, A to the maximal breadth of wing 2.1. Ratio of the length of halteres to their width 2.6:1. Ratios of the lengths of femur, tibia and the first tarsal segment: P₁=11.5:14.0:6.8; P₂=13.0:17.8:8.0; P₃=12.1:20.0:8.0. Basal apodeme of male genitalia straight, without bifurcation proximally, the margins a little convergent. Sclerotized forms near gonoporus of characteristic shape. Phallobasis wide. The male copulatory organ plain outside. Furca developed. Coxopodites outside without a protuberance, harpagones a little more than 1.5 times longer than coxopodites from dorsal view, narrowed to a blunt apex. Index of the maximal length of coxopodites to the length of harpagones 0.7. Epandrium of characteristic form. Aperture conspicuously developed, oval, antero-posteriorly narrowed in the middle. Hypandrium breadth, a little widened in the middle. Epiproct rather elongate, rounded, conspicuously hairy, hypoproct of the same shape. Cerci slightly bent from ventral view, with 9 retinaculi subapically. Index of the length of cercus to the length of epandrium 1.5 from lateral view. Cercus with one tip.

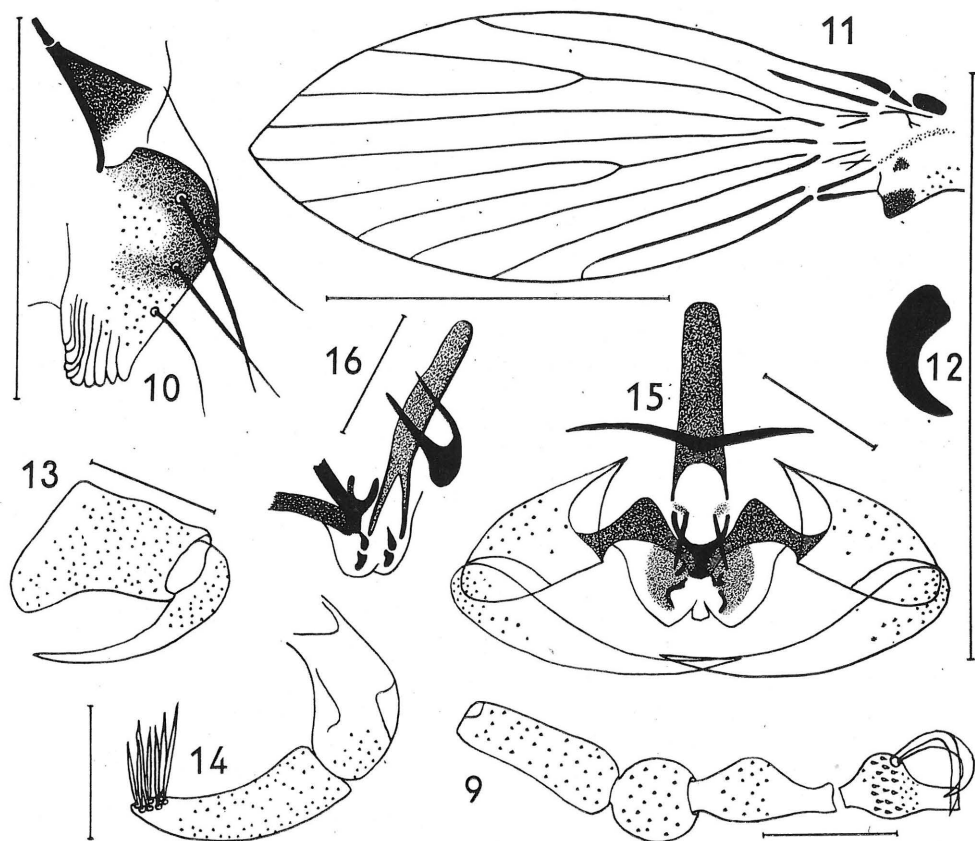
Female unknown.

Material: 20 ♂♂. Bohemia: Chudíř, Konopiště (Benešov distr.), Měrunice, Praha-Kunratice, Račice (Litoměřice distr.). Moravia: Brodek u Prostějova.

Comments on the material: Figured specimen is mounted on a slide labelled Chudíř, 18. VII. 1971. All material was collected by author; deposited in Nat. Mus. Praha. Using the alphabetic list of settlements of CSSR, I have given the district when the locality is a homonym.

Occurrence in Czechoslovakia: IV—VII.

Bionomy: Little known. Vaillant (1972) described and figured the larva and said that the larvae live in the mud of the banks of ponds or slowly trickling streams, adults were collected in the Alps, 1000 m above sea level. The author of this paper collected adults from swamps



Figs. 9–16: *Jungiella (Psychocha) acuminata* [Sz.] ♂; 9: basal antennal segments; 10: terminal lobe of labium; 11: wing; 12: claw of P₁ laterally; 13: variability of coxopodit and harpagon laterally; 14: epandrium and cercus laterally; 15: variability of copulatory organ with coxopodites and harpagones dorsally; 16: copulatory organ laterally. Scales 0.1 mm., fig. 11 1 mm.

of inundated forests, on the banks of ditches, streams and ponds of woods with *Alnus*, *Salix*, *Populus* and *Sambucus* around, undergrowth mostly with *Urtica*.

Distribution: Czechoslovakia, England, France and Hungary.

Data on both type-material and type-locality: Holotype of male was collected 25. VI. 1959 near a spring env. Penzes in Bacony Mts. (Hungarian Carpathians). Szabó (1960b) also established allotype but without description or figure. Type-material is deposited in Budapest [Természettudományi Múzeum Állattára].

Discussion: Very variable species. Recorded by Rozkošný (1971) from Czechoslovakia for the first time. The length of coxopodites is va-

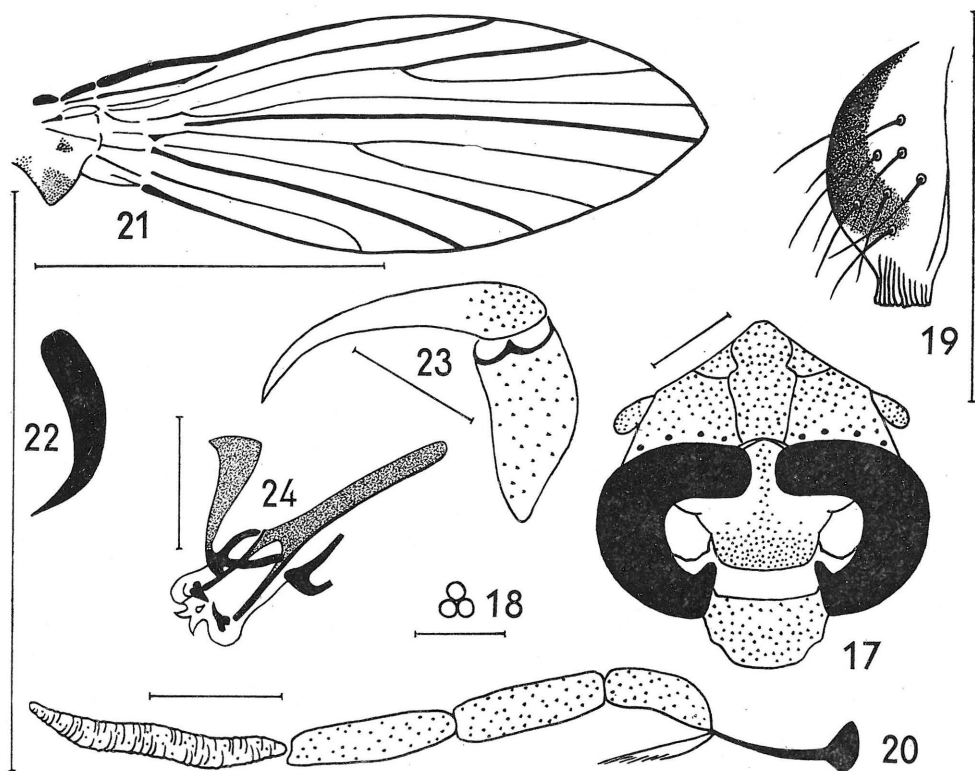
riable with a twist of hypopygium, sternal bridge variable in the thickness, sclerotized stiffens in the area of gonoporus of the different forms in the same specimen, the form of harpagones also variable as well as the form of basal apodeme which are parallel or convergent. On the basis of the study of both original description and figures of *J. rozkosnyi* Vaillant, 1972 I think that diagnostic characters are in the range of variability of *J. acuminata* (Szabó, 1960b) and the name *J. rozkosnyi* Vaillant, 1972 is a synonymum of *J. acuminata* (Szabó, 1960b). The single specimen of *J. rozkosnyi* Vaillant, 1972 is labelled Moravia, Babice, 24. VI. 1970, Rozkošný leg. and is deposited in Vaillant's collection in Grenoble (France).

***Jungiella (Psychocha) aquatica* sp. n.**

(Figs. 17—29)

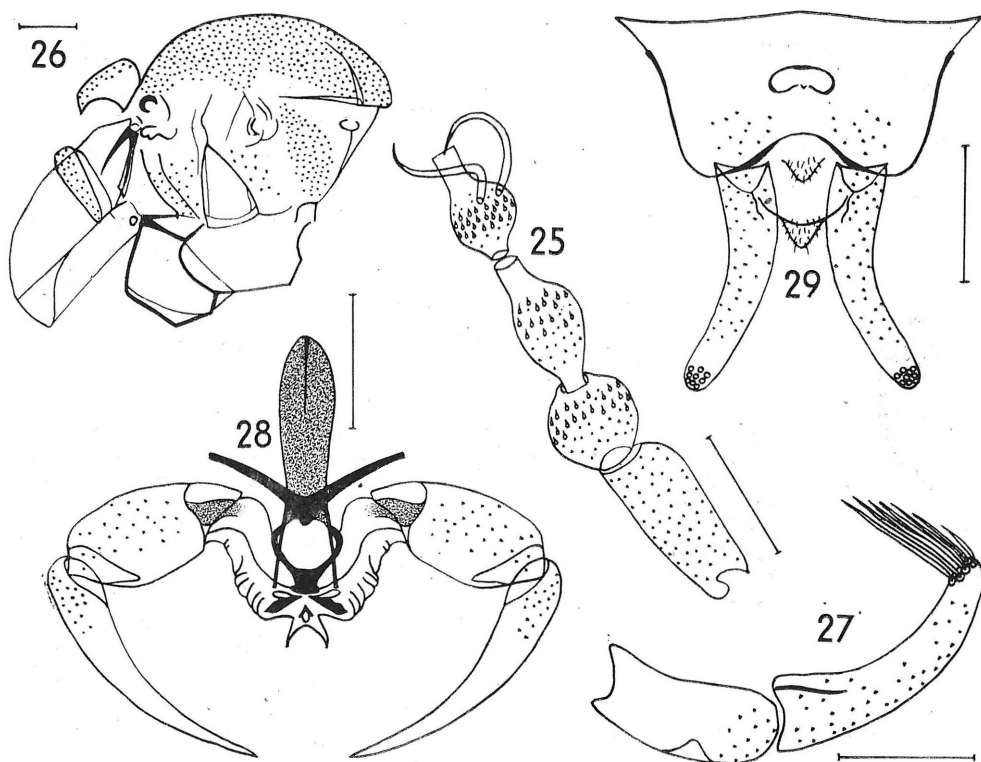
Diagnosis. Small species, the length of wing 2.0 mm., some veins on the central wing area inconspicuously swollen: R₁, R₂, R₅, M₃ and M₄. Corniculi with very short stem. Sclerotized structures around gonoporus characteristic, the surface of male copulatory organ very wrinkled.

Male. Index of the facet diameter to minimal width of frons 0.7. Index of the distance of tangential points of the eye's ends to the minimal wide of frons 4.6, to the facet diameter 6.4. Frons with an irregular stripe of hairs. Scapus cylindrical, pedicellus rather globular, terminal flagellar segments are missing. Index of the length of the first antennal segment to the length of pedicellus 1.8. Ratio of maximal breadth of pedicellus to the same of both the first and second flagellar segment 2.4:1.8:1.8. Index of the length of the first flagellar segment to the second one 1.2. The first and second flagellar segments asymmetrical. Sensory filaments of antennae of finger-shape, comparatively long. Ratios of the lengths of the segments of maxillary palps 3.0:4.1:4.5:6.9. The last segment of maxillary palpus annulate and connected with foregoing one as figured. Ratio of the maximal length of cibarium to the length of epipharynx 2:1. Corniculi conspicuously developed, with short stem. Index of the length of corniculi to its maximal width 2.2, to the minimal width at base 6.5. The wing without pigmentation, narrow, lancet-shaped, the membrane of the wing without hairs; R₁, R₂, R₅, M₃ and M₄ on the central wing area inconspicuously swollen. Costal nodes distinct, Sc long, not interrupted, bent distad and a little strengthened. R₁ arched to Sc, a little strengthened distad, the origin R₂₊₃ for the basal field, R₂₊₃ bent to the upper margin of the wing both R₂ and R₃ almost straight, R₂ a little strengthened, the angle of R₂ and R₃ large. R₄ bent to the radial fork as well as R₅, which is strengthened throughout, the end is below the wing apex. The base of M₁₊₂ conspicuously strengthened, M₁₊₂ as well as M₁ and M₂ straight, the angle of M₁ and M₂ small, M₃ bent to the medial fork, M₃ and Cu without connection on M₄. Veins r-r, r-m and m-m not visible. Medial wing angle approximately 143°. Index of the wing: AB:AC:AD = 8.0:9.0:9.2, BC:CD:BD = 2.4:2.7:4.8. Index of the base of M₁₊₂, A to the maximal width of the wing 2.3. Ratios of the lengths of halteres to its



Figs. 17—24: *Jungiella (Psychocha) aquatica* sp. n. ♂; 17: head; 18: facets; 19: terminal lobe of labium; 20: maxilla and palpus maxillaris; 21: wing; 22: claw of P_1 laterally; 23: coxopodite and harpagon laterally; 24: copulatory organ laterally. Scales 0.1 mm., fig. 21 1 mm.

widths 3.3:1. Ratios of the lengths of femur, tibia and the first tarsal segment: $P_1=10.5:13.0:6.1$; $P_2=12.7:17.5:7.6$; $P_3=12.0:17.5:7.1$. Basal apodeme of the male genitalia straight, without bifurcation proximally, rounded and narrowed proximal end braced by strongly sclerotized ribs. Furca developed. Sternal bridge V-shaped, very much strengthened apically. Sclerotized forms around gonoporus characteristic. The surface of male copulatory organ very wrinkled, with a pair of characteristic protuberances terminally. Coxopodites outside without conspicuous protuberance, harpagones 1.5 times longer than coxopodites from dorsal view and apically pointed. Index of the maximal length of coxopodites to the length of harpagones from dorsal view 0.7. Epandrium of characteristic shape. Aperture developed, hypandrium narrow, conspicuously widened in the middle. Index of the length of cercus to the length of epandrium from lateral view 1.5. Both epiproct and hypoproct of rounded triangular



Figs. 25—29: *Jungiella (Psychocha) aquatica* sp. n. ♂; 25: basal antennal segments; 26: thorax laterally; 27: epandrium and cercus laterally; 28: copulatory organ, coxopodites and harpagones dorsally; 29: epandrium and cerci dorsally. Scales 0.1 mm.

shape, distinctly hairy. Cerci inconspicuously bent from ventral view, with 9 retinaculi subapically. The top of cercus without bifurcation.

Female unknown.

Material: 1 ♂. Bohemia: Chudíř.

Comments on the material: Single specimen from 18. VII. 1971 on a slide, collected by author; deposited in Nat. Mus. Praha.

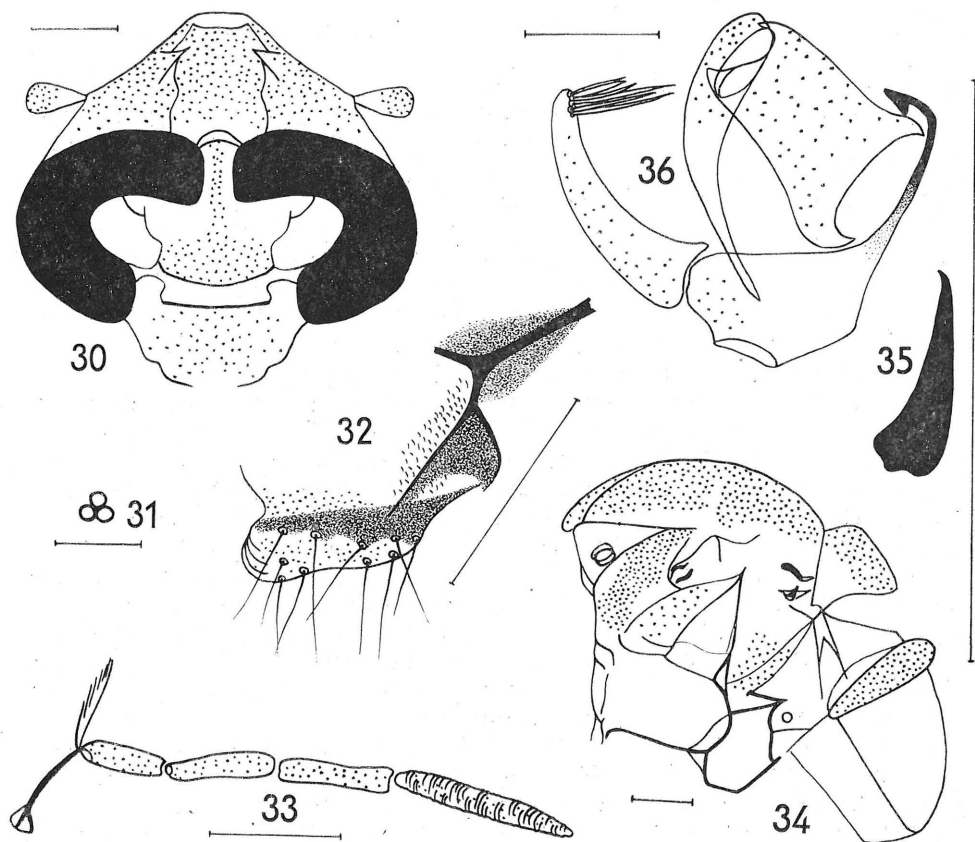
Occurrence in Czechoslovakia: VII.

Bionomy: Unknown. The material was collected on the banks of a stream in an inundated forest with *Alnus*.

Distribution: Czechoslovakia.

Data on both type-material and type-locality: Holotype of male labelled Cat. No. 32916, type-locality Central Bohemia.

Discussion: The shape of male genitalia suggests that this species belongs to the subgenus *Psychocha* Jeřek, 1983 of the genus *Jungiella* Vaillant, 1972.



Figs. 30—36: *Jungiella (Psychocha) laminata* (Sz.) ♂; 30: head; 31: facets; 32: terminal lobe of labium; 33: maxilla and palpus maxillaris; 34: thorax laterally; 35: claw of P₁ laterally; 36: hypopygium laterally. Scales 0.1 mm.

***Jungiella (Psychocha) laminata* (Szabó, 1960)**

[Figs. 30—42]

Telmatoscopus soleatus var *laminatus* Szabó, 1960b: 425.

Jungiella [*Jungiella*] *laminata*; Vaillant, 1972: 90.

Jungiella (Psychocha) laminata; Ježek, 1983: in press.

Diagnosis. Rather small species, closely related to *J. acuminata* (Szabó, 1960b) from which it is differentiated by narrowed phallobasis, widened basal apodeme proximally, male copulatory organ wide in the middle, wrinkled. Basal apodeme of *J. acuminata* (Szabó, 1960b) narrowed proximally, male copulatory organ wide at base, smooth. Wing-length of *J. laminata* (Szabó, 1960b) 2.0—2.2 mm., the veins on the central area of wing without swelling.

Male. The distance between eyes equals less than double the dia-

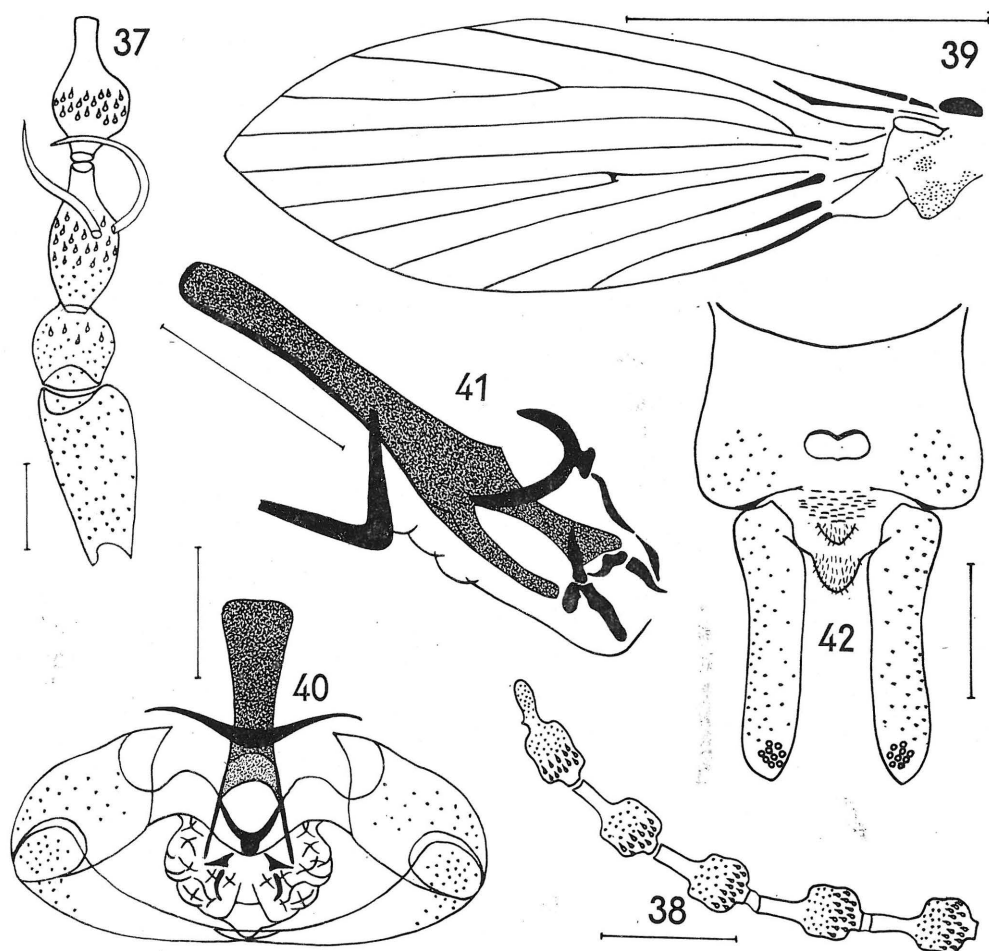
meter of one facet. Index of the distance of the tangential points of the eye's ends to the minimal width of frons 4.6, to the facet diameter 7.4. Antennae 16 segmented, scapus almost cylindrical, a little widened distad, pedicellus almost globular. Index of the length of the first antennal segment to pedicellus 2.0. Ratio of the maximal width of pedicellus to the width of the first and second flagellar segment 2.2:1.9:2.0. The flagellar segments flask-shaped, the first segment symmetrical, in contrast to others, the last with small apical cone. The length of the first flagellar segment is the same as at the second one. Paired sensory filaments of antennae rather big, finger-like. Ratios of the lengths of segments of maxillary palps 2.3:2.9:3.0:4.9. The last segment of maxillary palpus annulate and connected with foregoing one as figured. Ratio of the maximal length of cibarium to the length of epipharynx 1.9:1. Corniculi conical, with very short stem. Index of the length of corniculi to its maximal width 1.9, to the minimal width at base 8.5. The wings without pigmentation, lancet-shaped, without swelling of the veins of central wing-area, the wing-membrane bare, costal nodes distinct. Sc long, uninterrupted, a little curved distad. R₁ bent to Sc. R₂₊₃ bent to Sc, both R₂ and R₃ almost straight, the angle of R₂ and R₃ large. R₄ conspicuously bent basally to the radial fork, R₅ rather straight with the mouth behind apex of the wing. M₁₊₂ without swollen base, almost straight as well as M₁ and M₂. A very short cross-vein at the connection of M₁ and M₂ sometimes developed, M₃ inconspicuously arched to the medial fork, M₃ and Cu without connection to M₄. The veins r-r, r-m and m-m not visible. Medial wing angle about 140°. Index of the wing: AB:AC:AD=8.6:9.7:9.7, BC:CD:BD=2.7:3.0:5.3. Index of the base of M₁₊₂, A to the maximal width of the wing 2.2. Ratio of the length of halteres to breadth 2.9:1. Ratio of the lengths of femur, tibia and the first tarsal segment: P₁=12.5:15:7; P₂=14.0:19.5:8.5; P₃=14.0:21.5:8.9. Basal apodeme of male genitalia straight, widened proximally. Phallobasis narrow in comparison with *J. acuminata* (Szabó, 1960b), the surface of male copulatory organ wrinkled, distinctly around gonoporus, copulatory organ conspicuously widened in the middle. Coxopodites outside without conspicuous protuberance, harpagones much longer than coxopodites, pointed apically from dorsal view. Index of the maximal length of coxopodites to the length of harpagones from dorsal view 0.8. Aperture of epandrium oval, antero-posteriorly narrowed. Index of the length of cercus to the length of epandrium from lateral view 1.4. Hypandrium narrow, a little widened in the middle. Epiproct moderately elongate, rounded, distinctly hairy, hypoproct of the same shape. Cerci rather straight from dorsal view, with 10 retinaculi subapically. The top of cercus simple, not disunited.

Female: Unknown.

Material: 30 ♂♂. Bohemia: Družec, Malé Kyšice.

Comments on the material: Figured specimen mounted on a slide and labelled Družec, 4. VII. 1974. All material collected by author; deposited in Nat. Mus. Praha.

Occurrence in Czechoslovakia: VII.



Figs. 37–42: *Jungiella (Psychocha) laminata* (Sz.) ♂; 37: basal antennal segments; 38: apical antennal segments; 39: wing; 40: copulatory organ, coxopodites and harpagones dorsally; 41: copulatory organ laterally; 42: epandrium and cerci dorsally. Scales 0.1 mm., fig. 39 1 mm.

Bionomy: Unknown. Szabó (1960b) collected adults near a mountain spring. The author of the present paper found adults on a moist soil heap and banks of streams with *Alnus*, *Acer*, *Sambucus* and *Quercus*, undergrowth mostly with *Urtica*.

Distribution: Hungary. New species for the fauna of Czechoslovakia.

Data on both type-material and type-locality: From 16 males and 17 females Szabó (1960b) established holotype of male and allotype, which was not described and figured by him, without differential diagno-

sis. Mentioned material labelled Hungary, Mecsek Mts., Hidegkut, 24. VI. 1959. Type-material deposited in Budapest (Természettudományi Múzeum Állattára).

Discussion: Vaillant (1972) included this species in subgenus *Jungiella* s. str. of genus *Jungiella* Vaillant, 1972, however Ježek (1983) placed this species in subgenus *Psychocha* Ježek, 1983.

***Jungiella (Psychocha) procera* Krek, 1971**
(Figs. 43—56)

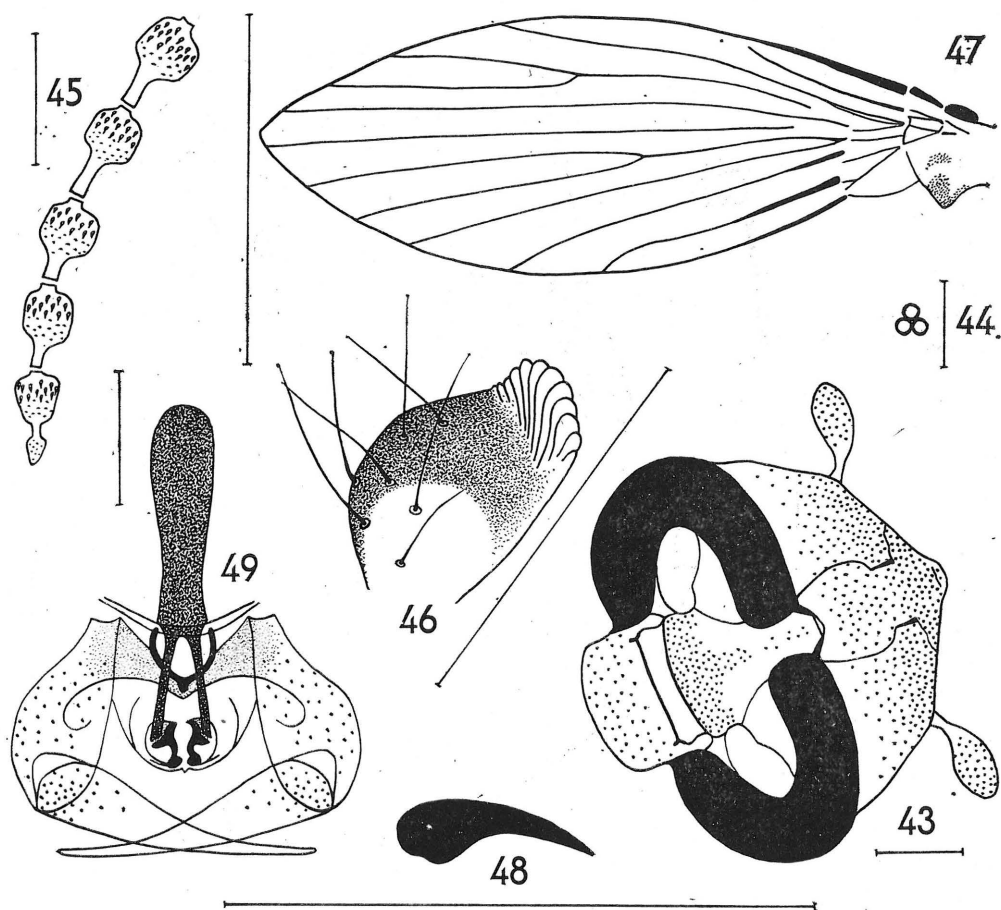
Jungiella procera Krek, 1971: 176.

Jungiella (Jungiella) procera; Vaillant, 1972: 90.

Jungiella (Psychocha) procera; Ježek, 1983: in press.

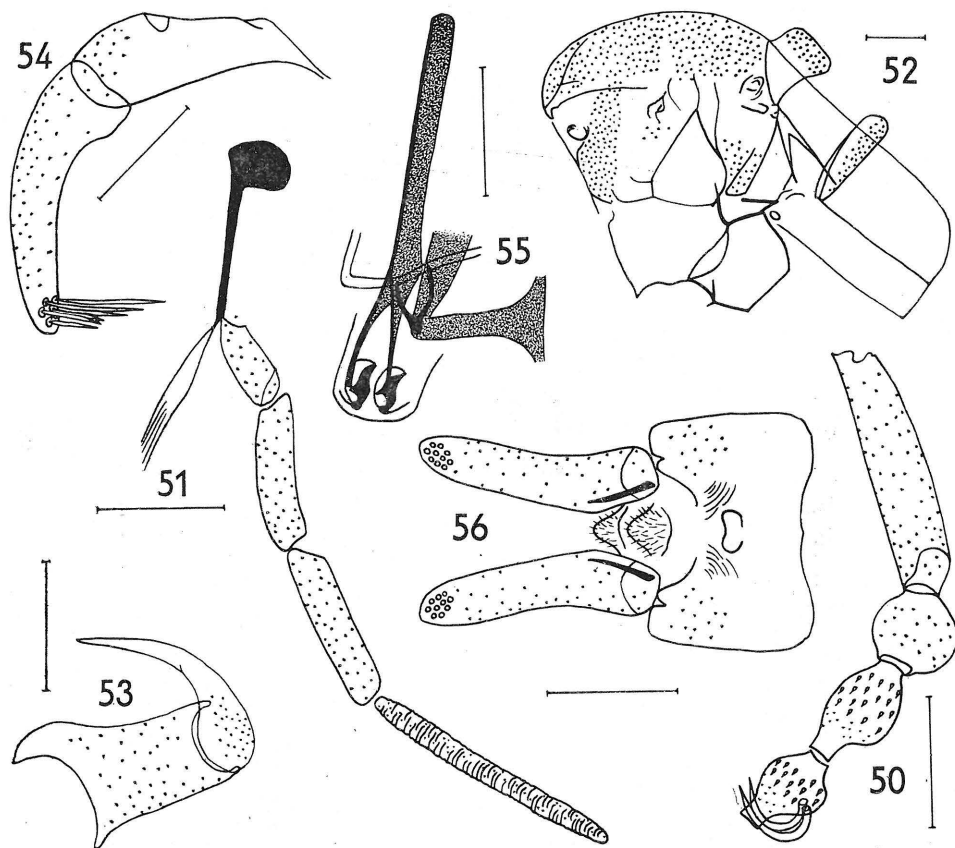
Diagnosis. Rather small species, easily distinguished from the closely related species, in the main according to characteristic sclerotized forms around gonoporus; these forms on the inner side with conspicuous sclerotization, reniform. The length of wing 2.1 mm.

Male. The distance between eyes equals twice the facet-diameter. Index of the distance of the tangential points of the eye's ends to the minimal width of frons 4.5, to the facet-diameter 9.0. Antennae 16 segmented, scapus cylindrical, pedicellus almost globular. Index of the length of the first antennal segment to pedicellus 3.0; the maximal width of pedicellus to the width of the first and second flagellar segment 2.3:1.9:1.8. Index of the length of the first flagellar segment to the second one 1.2. The flagellar segments flask-shaped, the first and second flagellar segments asymmetrical, the last flagellar segment with a conical apex. Sensory filaments of antennae paired, rather large, finger-like. Ratios of the lengths of the segments of maxillary palps 2.7:4.2:4.6:7.3. The last segment of maxillary palp annulate. Ratio of the maximal length of cibarium to the length of epipharynx 2.1:1. Corniculi conical with rather long stem, the length of corniculi to its maximal width 2.4, to its minimal width at base 6.5. The wings without pigmentation, lancet-shaped, the veins in the central area of the wing without swelling, the membrane of the wing without hairs, costal nodes distinct. Sc sizable long, uninterrupted. R₁ in the middle bent to Sc, the origin of R₂₊₃ indistinct, directed approximately to half of the basal field, R₂₊₃ bent to Sc, R₂ and R₃ almost straight, R₃ steeply diverging from radial fork. R₄ in the middle inconspicuously bent to the radial fork, R₅ straight, with the end below apex of the wing. M₁₊₂ without extended base, almost straight distad as well as M₁ and M₂, the angle of M₁ and M₂ in the place of the fork rather small. M₃ almost straight, M₄ inconspicuously bent to the medial fork, M₃ and Cu without a connection to M₄. The veins r-r, r-m and m-m not visible. Medial wing angle 122°. Index of the wing: AB:AC:AD=8.3:9.7:9.3, BC:CD:BD=2.8:3.2:5.2. Index of the base M₁₊₂, A to the maximal width of the wing 2.2. Ratio of the length of halteres to breadth 2.8:1, upper half of the knob distinctly hyaline. Ratios of the length of femur, tibia and the first tarsal segment: P₁=12.5:14.5:7.0; P₂=13.1:21.0:8.5. The paired tarsal



Figs. 43—49: *Jungiella (Psychocha) procera* Krek ♂; 43: head; 44: facets; 45: apical antennal segments; 46: terminal lobe of labium; 47: wing; 48: claw of P₁ laterally; 49: copulatory organ, coxopodites and harpagones dorsally. Scales 0.1 mm., fig. 47 1 mm.

claws inconspicuously bent. Basal apodeme of male genitalia straight, a little widened proximally and distad. Furca developed. Sternal bridge narrow. The male copulatory organ inside with a pair of sclerotized stripes, the inner sclerotized forms reniform with slight sclerotization outside, copulatory organ outside smooth. Coxopodites strengthened medially, harpagones a little less than 1.5 times longer than coxopodites, pointed apically from dorsal view. Index of the maximal length of coxopodites to the length of harpagones from dorsal view 0.8. Epandrium of the same shape as in the other species of the genus *Jungiella* Vaill. Aperture approximately ovate, antero-posteriorly narrowed. Index of the length of cercus to the length of epandrium from lateral



Figs. 50—56: *Jungiella (Psychocha) procera* Krek ♂; 50: basal antennal segments; 51: maxilla and palpus maxillaris; 52: thorax laterally; 53: coxopodit and harpagon laterally; 54: epandrium and cercus laterally; 55: copulatory organ laterally; 56: epandrium and cercus dorsally. Scales 0.1 mm.

view 1.3. Hypandrium narrow, without protuberances. Epiproct triangular, with rounded tips, distinctly hairy as well as hypoproct, hypoproct of the same shape. Cerci inconspicuously bent from ventral view, with 10 retinaculi subapically. The top of cercus simple, without bifurcation.

Female unknown.

Material: 1 ♂. Moravia: Tichá (Nový Jičín distr.).

Comments on the material: Single male on a slide labelled 15. VI. 1975, Ježek lgt.; deposited in Nat. Mus. Praha.

Occurrence in Czechoslovakia: VI.

Bionomy: Unknown. Author of this paper collected the male mentioned on the bank of a stream with *Tilia*, *Ulmus*, *Fraxinus* and *Acer* around.

the undergrowth with *Asarum*. Krek (1971) collected this species 620 m above sea level in Jugoslavia.

Distribution: Czechoslovakia, Jugoslavia.

Data on both type-material and type-locality: Krek (1971) established from material of 4 males holotypus and 3 paratypes. Type-locality: Jugoslavia, Bosna, Tjentišće. Type-material deposited in Krek's collection (Jugoslavia, Sarajevo).

Discussion: The shape of male copulatory organ suggests that this species certainly belongs in the subgenus *Psychocha* Ježek, 1983 of the genus *Jungiella* Vaillant, 1972. The species was recorded from Bohemian Karst by Ježek (1982).

***Jungiella (Psychocha) ripicola* (Bellier, 1967)**
(Figs. 57—70)

Telmatoscopus ripicolus Bellier, 1967: 59.

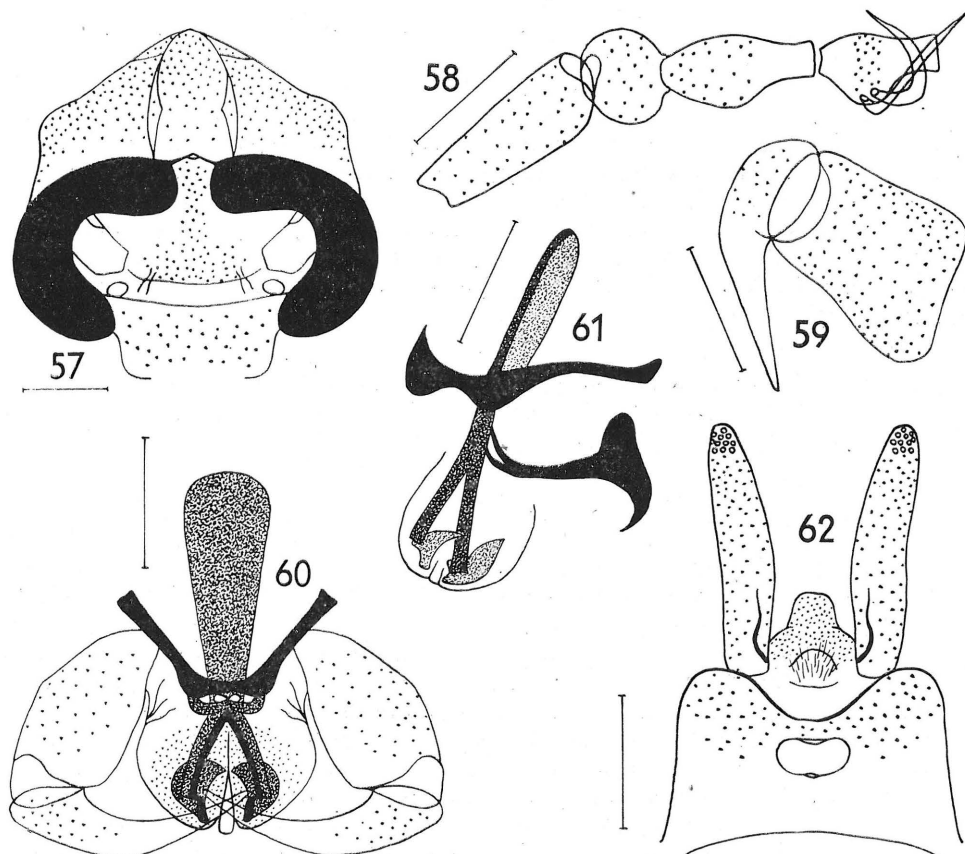
Jungiella ripicola; Krek, 1971: 177.

Jungiella (Jungiella) ripicola; Vaillant, 1972: 90.

Jungiella (Psychocha) ripicola; Ježek, 1983: in press.

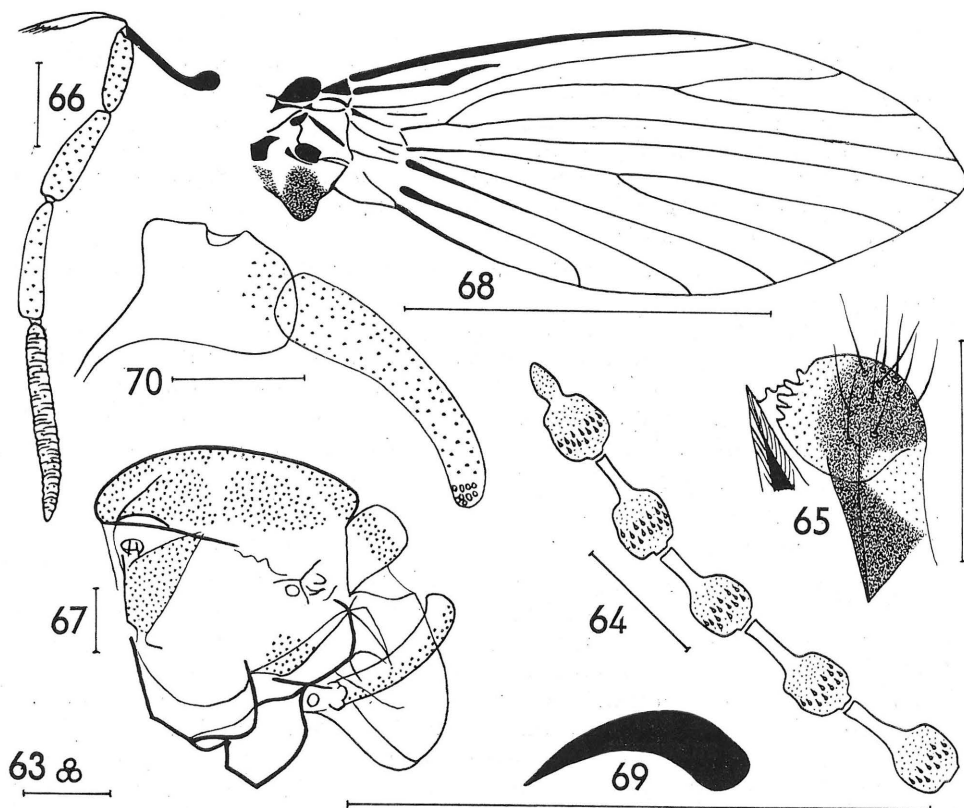
Diagnosis. Rather small species, the wing length 2.0—2.2 mm., the male copulatory organ with characteristic paired parts, sickle-shaped, turned down, jointed near gonoporus.

Male. Index of the facet diameter to the minimal width of frons 0.4. Index of the distance of the tangential points of the eye's ends to the minimal width of frons 4.6, to the facet diameter 10.3. Frons haired. Antennae 16 segmented. Scapus rather long, cylindrical, pedicellus globular. Index of the length of the first antennal segment to pedicellus 2.4. Ratio of the maximal breadth of pedicellus to the breadth of the first and second flagellar segment 2.6:2.0:1.9. The flagellar segments flask-shaped, the first segment very long, index of the length of the first flagellar segment to the second one 1.3. Both the first and second flagellar segments asymmetrical. The last flagellar segment with a small conus on the top. Sensory filaments of antennae finger-like, arched. Ratios of the lengths of the segments of maxillary palpus 2.1:2.8:3.1:5.2. The last segment of maxillary palpus annulate and connected with the foregoing segment as figured. Ratio of the maximal length of cibarium to the length of epipharynx 4.5:2. Corniculi small, hemispherical. Index of the lengths of corniculi to both its maximal and minimal breadth at base 0.3. The wings without pigmentation, lancet shaped, the veins of the distal part of wing not swollen, the membrane bare. Costal nodes conspicuously distinct, Sc rather long, not interrupted, very widened distad. R₁ arched to Sc, the origin of R₂₊₃ at a distance before inconspicuous basal field, R₂₊₃ conspicuously bent to the upper wing margin, the angle of R₂ and R₃ large. R₄ and R₅ inconspicuously bent to radial fork, R₅ with the end a little behind apex of the wing. M₁₊₂ without widened base, not so bent as R₂₊₃, the angle of M₁ and M₂ rather large, M₃ inconspicuously bent to the medial fork, M₃ and Cu without connection on M₄. The veins r-r, r-m and m-m not visible. Medial wing angle very variable, approxima-



Figs. 57—62: *Jungiella (Psychocha) ripicola* (Bell.) ♂; 57: head; 58: basal antennal segments; 59: coxopodit and harpagon laterally; 60: copulatory organ, coxopodites and harpagones dorsally; 61: copulatory organ laterally; 62: epandrium and cercus dorsally. Scales 0.1 mm.

tely 163° . Index of the wing: $AB:AC:AD=8:9.1:10.2$, $BC:CD:BD=2.7:3.2:5.8$. 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 maximal width 4:1. Ratios of the lengths of femur, tibia and the first tarsal segment: $P_1=12.5:15.5:7.5$; $P_2=14.5:20.5:9$; $P_3=14:22:9$. The paired tarsal claws only a little bent. The basal apodeme of male genitalia straight, widened distad. The male copulatory organ smooth outside, with a pair of sclerotized stripes inside, with characteristic paired parts, sickle-shaped, turned down, joined near gonoporus, inner side of which is without conspicuous sclerotization. Furca developed. Coxopodites outside without conspicuous protuberance, harpagones only a little longer than coxopodites from dorsal



Figs. 63—70: *Jungiella (Psychocha) ripicola* (Bell.) ♂; 63: facets; 64: apical antennal segments; 65: terminal lobe of labium; 66: maxilla and palpus maxillaris; 67: thorax laterally; 68: wing; 69: claw of P_1 laterally; 70: epandrium and cercus laterally. Scales 0.1 mm., fig. 68 1 mm.

view, pointed apically. Epandrium of characteristic shape. Aperture elliptical, narrowed antero-posteriorly in the middle. Index of the length of cercus to the length of epandrium from lateral view 1.6. Hypandrium narrow, with two huge protuberances. Epiproct short, rounded, distinctly hairy, hypoproct much longer than the length of epiproct, hypoproct narrowed apically. Cerci a little arched from ventral view, approximately with 11 retinaculi subapically. The top of cercus not disunited.

Female unknown.

Material: 21 ♂♂. Bohemia: Dolní Bezděkov (Kladno distr.), Družec, Chudíř, Srby (Kladno distr.). Moravia: Stonava.

Comments on the material: Figured specimen on a slide, labelled Chudíř, 25. VII. 1971, Ježek lgt. All material collected by author; deposited in Nat. Mus. Praha.

Occurrence in Czechoslovakia: VI—VII.

Bionomy: Bellier (1967) collected larvae in the mud of banks of slowly flowing waters and reared to eclosion. Krek (1971) collected adults in Bosna 850 m above sea level. Author of the present paper collected adults on the banks of the streams of inundated forests, outflows of ponds, ditches and moist tips, with *Alnus*, *Sambucus*, *Populus*, *Quercus*, *Picea*, *Pinus* and *Carpinus* around, the undergrowth mostly with *Calamagrostis*, *Urtica* and *Rubus*.

Distribution: France, Yugoslavia. New species for the fauna of Czechoslovakia.

Data on both type-material and type-locality: Vaillant established holotype of male reared 31. V. 1966. Type-locality: Moirans (France, Isère). Deposited in the collection of Vaillant (France, Grenoble).

Discussion: The shape of male copulatory organ suggests that this species must be included in the subgenus *Psychocha* Ježek, 1983 of the genus *Jungiella* Vaillant, 1972.

Summary

Five species of the subgenus *Psychocha* Ježek, 1983 from the genus *Jungiella* Vaillant, 1972 are recorded from Czechoslovakia of which male of *J. (P.) aquatica* sp. n. is described for the first time. *J. (P.) acuminata* (Szabó, 1960), *J. (P.) laminata* (Szabó, 1960), *J. (P.) procera* Krek, 1971 and *J. (P.) ripicola* (Bellier, 1967) are redescribed and many important diagnostic characters are figured. Synonymy, differential diagnosis and distribution of the subgenus *Psychocha* Ježek, 1983 are given as well as occurrence in Czechoslovakia of all species studied, bionomy and data on both type-material and type-locality. Some taxonomic problems are discussed.

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