

**DESCRIPTIONS OF NEW SPECIES OF THE FAMILY ENCYRTIDAE
FROM CZECHOSLOVAKIA (HYM., CHALCIDOIDEA) I.¹⁾**

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Široce rozvinutým základním výzkumem Chalcidoid v posledních letech, zejména na evropském kontinentu, kompletisují se taxonomické znalosti o těchto důležitých parasitech a podstatně se mění i naše názory o rozšíření jednotlivých druhů. Pracovníci v chalcidologii dosahují stále nových poznatků především průzkumem nejrozličnějších přirozených i kulturních biotopů (zejména takových, jimž dosud nebyla věnována pozornost) a použitím dokonalejších, často velmi intenzivních metod sběru studijního materiálu i chovem širokého komplexu hostitelských druhů. Tím současně prohlubují se i znalosti o ekologii a biologii těchto parazitů.

Pro praxi mají především význam souborná zpracování opatřená určovacími klíči a registrací všech dosud známých bionomických poznatků. Aby takovéto práce mohly podati všestranný a vyčerpávající obraz současných znalostí, je nutno nejprve ohraničiti veškeré dosud neznámé taxony, případně dokonale objasniti ty systematické jednotky, které až dosud byly nedostatečně charakterisovány dřívějšími autory.

Proto v člancích pod tímto nadpisem budeme zveřejňovati především popisy nových taxonů v čel. Encyrtidae. Jelikož jde vesměs o výsledky 23-letého chalcidologického výzkumu našeho území, je již řada objevů staršího data. Avšak teprve široký srovnávací materiál umožnil přesné rozlišení řady obtížných druhů; významná pomoc zahraničních specialistů, spočívající především ve srovnání s typovým materiálem, vyjasnila pak řadu sporných otázek natolik, že bylo možno přikročiti k publikaci popisů nových taxonů.

We publish herein the descriptions of a number of new taxons of the fam. Encyrtidae which were discovered on the territory of Czechoslovakia in the past 23 years.

I wish to express my heartiest thanks to the following gentlemen: To Dr. M. W. R. de V. Graham (Oxford), in the first place, to whom I am particularly grateful for comparing many of the species presented below with the type material of Walker, Dalman and Thomson, and for conveying to me his views on some questions concerning their generic classification and specific identity; to Dr. G. J. Kerrich (London), for similar assistance; to Dr. B. D. Burks (Washington), for providing the American material

¹⁾ 17th preliminary paper for the monographic investigation of the Czechoslovak Encyrtidae.

necessary for comparison with some European species; to Dr. J. Erdős (Tompá), for making available the specimens of a number of species newly delimited by him or reported from Hungary; and to Dr. V. A. Trjapitzin (Leningrad), and to Dr. Ch. Ferrière (Geneva), for their kind information relating to nomenclature.

Echthroplexiella Mercet

The Czechoslovak representatives of this genus were treated by the author chiefly in a monograph in the year 1953, and in a revision included in a publication of 1957. In the first of the papers mentioned was also the description of an up to that time unknown male, which the writer assigned to *E. aeneiventris* Merc., as it exhibited a body coloration similar to that of the female of this species, together with which it was captured on the same locality; however, the legs of this specimen were for the most part yellowish white and the entire flagellum was conspicuously snow-white.

In 1960 we succeeded in rearing from the material of an as yet indeterminable species of scale-insect of *Eriococcus*, collected on *Agropyrum* sp. in the vicinity of Štúrovo, a series of *Echthroplexiella aeneiventris* Merc. including 4 ♀♀ and 1 ♂, all macropterous forms. The thus reared male, which is beyond doubt conspecific with the female specimens, exhibits a number of characters of a structure quite different from that of the male erroneously referred to this species and described in 1953.

A detailed comparison of the characters of both male specimens leads us to the conclusion that the male exhibiting the white flagellum belongs to a hitherto unknown species of the genus *Echthroplexiella* Merc. Its characteristic is given in the cited publication of 1953 on p. 62. For this reason we denominate it below and append the relating synonymy.

Echthroplexiella niveicornis, n. sp.

Echthroplexiella aeneiventris; Hoffer ♂ (nec ♀), Acta Ent. Mus. Nat. Pragae, 28: 62, 1953.

The male associated by me erroneously with *aeneiventris* in 1953 and described there proved to belong to a new species which I name *niveicornis*. The brachypterous male taken at Štúrovo (l. c., p. 63) becomes thus the holotype.

Echthroplexiella aeneiventris Merc.

Male (hitherto unknown). Forma macroptera.

Size: 0.91 mm.

In general habit similar to female, only thorax somewhat broader and abdomen strongly shortened.

Eyes smaller than in female, their length to cheeks being 2:1. Fronto-vertex to width of eyes (seen from above) as 4:4.5; ocelli arranged in slightly obtuse-angled triangle. Vertex dark brown, frons, mainly facial area, lighter in colour; eyes and ocelli dark. Insertion of antennae below level of ventral orbits; scape shorter than in female; pedicel as long as

following three and a half segments together; first funicle segment very small, following ones gradually increasing in size, so that last is twice as long and broad as first segment, and as wide as pedicel at end; club equal in length to three preceding segments together, distally expanding, its apical half being obliquely truncate; coloration of scape dark, radicle, pedicel and entire flagellum greyish brown.

Pronotum having whitish yellow border at posterior margin; entire mesoscutum, scutellum, metanotum and propodeum black-brown, tegulae at base lighter. Scutellum somewhat wider than in female. Characteristic part of venation exhibiting distinctly longer postmarginal vein, fully as long as stigmal; dark spot on anterior wings of same extent but of plainly weaker intensity than in female, with exception of intensive dark band bordering lower side of marginal vein, with which it is approximately equal in length and in width. Coloration of legs as in female, only almost entire mid tibiae yellowish white and femora but slightly darkened.

Abdomen hardly as broad as thorax, its length to that of thorax being as 11:15.

Locality in Czechoslovakia: S. Slovakia: Štúrovo (reared from scale-insect *Eriococcus* sp.), VIII. 1960, 1 ♂ (Allotype) together with three macropterous ♀♀; lgt. Hoffer.

Syrphophagus Ashmead

Of the several representatives of this genus occurring on our territory, the most abundant are *S. aeruginosus* Dalm. and *S. herbicus* Dalm.; the latter species was referred to this genus only in 1961 by Graham. Both of the above species are unusually variable in their characters, and within the genus they are the fundamental types of two natural species groups. In the case of several described species of the group *aeruginosus* it is not yet possible to decide with certainty whether they are valid taxa, or only extreme or biological varieties of a single species. Some early species described by Walker were already synonymized by Graham in 1961.

The species described below exhibits a number of peculiarities which clearly show that it is specifically distinct from *S. herbicus*, together with which it belongs to the same species group. In morphological and colorational respects it is very constant, and exhibits a striking specialization from the point of view of its oecology.

Dr. Graham, who studied the species, was of the opinion that a hitherto unknown taxon of the genus *Syrphophagus* is concerned.

As far as the biology of the representatives of this genus is known, they are parasites of Diptera of the family Syrphidae.

***Syrphophagus rugulosus*, n. sp.**

Female.

Size: 1.22—1.32 mm.

Entire head and thorax pitch black-brown, except for scapulae and basal part of tegulae, which are yellowish brown. Abdomen with azure lustre on entire dorsal surface. Eyes black; ocelli dark red. Antennae

unicoloured, black-brown. Wings moderately brownish; venation light brown. All three pairs of legs lemon yellow, only last tarsal segments of mid and hind pairs slightly brownish and basal half of hind femora moderately darkened.

Sculpture in this species very typical, coarsely granular, so that surface of head and dorsum of thorax are dull. Frontovortex to width of eyes as 10:8.5; eyes to length of cheeks as 13:9. Ocelli arranged in slightly obtuse-angled triangle; posterior pair separated from inner orbits by space equal to their diameter, from occipital margin again by distance one-half greater. Face bluntly excavated. Antennae as compared with body robust; scape flattened and slightly expanded along entire length, a little shorter than pedicel and three following segments together; pedicel piriform, as long as one-third of scape; funicle segments subquadrangular; segment 1 as wide as pedicel, nearly of same length, and a good half longer than broad; segment 2 distinctly broader, just a trifle longer than broad; remaining segments moderately expanding, the length of last two being equal to their width; club relatively rather short, flattened, as long as two and one-half preceding segments together, subrectangular in shape, little broader than last funicle segment, twice as long as wide, distinctly segmented; entire funicle covered with black, rather stout hairs, the length of which is equal to width of segments.

Pronotum short. Mesoscutum arched; scapulae and tegulae of such size that mesoscutum in front appears distinctly broader than in posterior part. Scutellum strongly arcuate, short, posteriorly broadly rounded, its sides parallel; axillae comparatively small. Propodeum very short with right-angled, not sharply defined corners. Wings large; marginal vein fully twice as long as broad; stigmal a little longer; postmarginal almost equal in length to stigmal, vanishing. Legs slender; mid tibial spur thin, pointed, equal in length to metatarsus, which is four times as long as wide.

Abdomen oval in shape, somewhat broader than thorax, its end being broadly rounded. First tergite covering entire basal third, pygostyli shifted as far as middle of abdomen. Ovipositor entirely hidden.

Male: Unknown.

Biology: Unknown.

Geographical distribution: Czechoslovakia.

Locality in Czechoslovakia: S. Bohemia: Borkovické rašeliny (peatbogs) 20. V. 1946, 3 ♀♀ (Holotype and 2 Paratypes). Lgt. Hoffer.

Note: This species is already at a glance easily distinguishable from the otherwise considerably variable *S. herbidas* Dalm. by its coloration and striking coarse sculpture, as well as by its robust antennae. The lemon coloration of all three pairs of legs, typical of this species, is in sharp contrast with the dark coloration of the remaining parts of the body.

Up to the present time it has been ascertained in our country only in the region of peatbogs near Borkovice, on which habitat it appears to be closely dependent.

Prionomitus Mayr

Up to the present, the genus *Prionomitus* contained two European species, *P. mitratus* Dalm. and *P. tiliaris* Dalm., commonly represented also in our territory. We delimit below two further species which are to a considerable degree distinct from those so far known. Placing a species in this genus was possible only on the basis of the female sex; the male has not yet been identified.

Species of *Prionomitus* are very effective parasites of *Psyllidae*, and from the economic point of view they are of considerable importance.

Taxonomic or biological reports on the species of this genus have been published by the following authors: Mayr (author of the genus, 1875), Thomson (1875), Mercet (1921), Lål (1934), Hellén (1949) Bonnemaison et Missonnier (1956), and Ferrière (1961); biological data from the world literature have been recorded by Thompson (1944), Jensen (1957), and Fulmek (1958).

Prionomitus grahami, n. sp.

F e m a l e.

Size: 1.37—1.45 mm.

Head, mesoscutum, scutellum metallic dark blue, with a faint greenish tint. Cheeks in median part bright blue, border along cervix, entire cervix, and occiput dark bronzy. Ocelli ruby-coloured. Face intensively violet. Pronotum black with golden-reddish band along posterior margin; tegulae black; pleurae dark bronzy, with a weak greenish tint, propodeum of a similar coloration. Abdomen bluish green with dark bronzy reflexes, which in some specimens predominate on the greater part of the dorsal surface; ovipositor black-brown. Radicle black; scape yellowish brown, having a rather broad dark band in median part of dorsal side; pedicel in basal two-thirds of dorsal side dark, remainder yellowish brown; funicle segments yellowish brown, dorsally slightly darkened; club light brown with a somewhat darker tip. Wings hyaline; venation brown. Mid and fore legs light yellow, only the claws a trifle darker; hind legs with a wide black band on the femora and tibiae, occupying most of the total surface, last tarsal segment brownish.

Head somewhat broader than thorax, transverse. Frontovortex having a fine and very dense but distinct sculpture, producing the impression of a granular sculpture; the scattered rather deep pin-punctures not very distinct. Width of frons to eyes as seen from above as 7:5.5. Ocelli arranged in equilateral or right-angled triangle; posterior pair nearer to inner orbits than to occipital margin of head. Eyes rather large, short, little arched, of an almost round shape, reaching to the very posterior margin of the head (temples lacking); length of eyes to length of cheeks as 5:3. Facial area slightly impressed, finely longitudinally grooved; scrobes deep, converging at an acute angle; insertion of antennae distinctly below level of ventral orbits; antennal sockets separated from oral margin by hardly half their greater diameter, from each other and from lower eye margins by double that distance. Mandibles undulate, as in other species of this

genus. Scape thin, cylindrical, faintly arcuate, as long as pedicel and four following segments together. Pedicel also thin, not quite equal to one-third the length of scape, two and one-half times longer than broad at the end; first funicle segment distinctly narrower than scape, a little longer than broad; remaining funicle segments also slightly elongate, gradually becoming moderately wider and longer; club broader than end

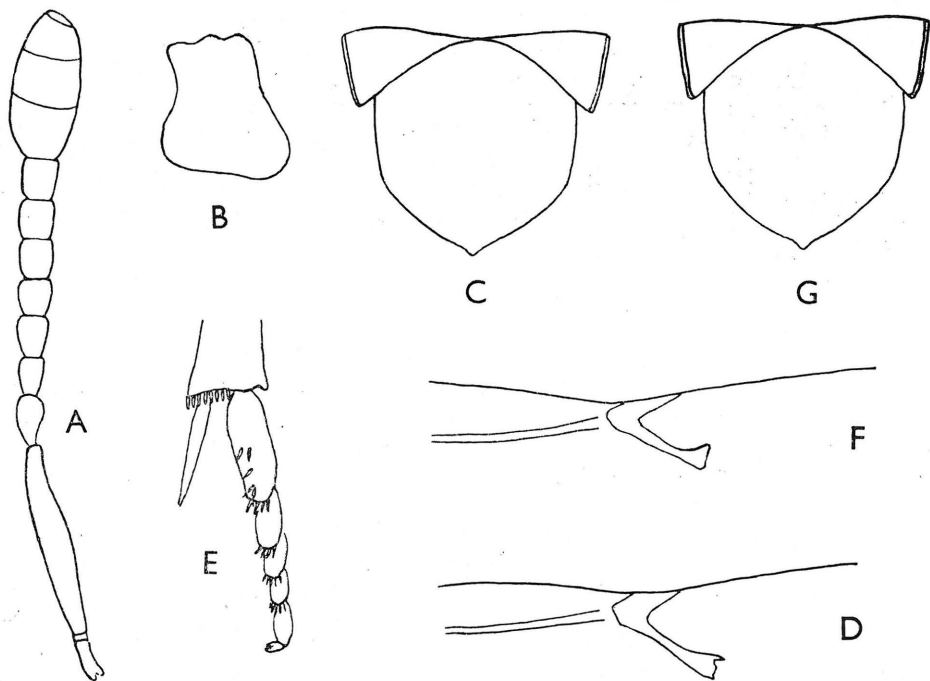


Fig. 1. *Prionomitus grahami*, n. sp. A. Antenna. B. Mandible. C. Scutellum. D. Venation. E. End of mid tibia and tarsus. *Prionomitus vicinus*, n. sp. F. Venation. G. Scutellum.

of funicle, oval, distinctly triarticulate, equal in length to three preceding segments together. Pubescence of entire antenna very fine, light and short.

Pronotum short, distinct, its posterior margin being almost straight. Mesoscutum and scutellum convex, the sculpture coarse, as in fronto-vertex, with indistinct piliferous punctures, pubescence white and scarce. Scutellum just a trifle longer than mesoscutum (17.5:16), sharply terminated, its sides in upper half nearly parallel; axillae of normal shape, their tips touching. Propodeum short, the corners right-angled. Wings large, of medium width, venation reaching to half their length; pubescence of disk fine, of medium length, and not very thick; marginal ciliation short; lineula narrow, but developed down entire breadth of wing. Marginal vein rather stout, subquadrate; stigmal straight, twice as long, towards the end but slightly broadening; postmarginal approximately as long as marginal; cellula costalis well perceptible, spindle-shaped. Posterior wings

elongate, with a very long marginal vein; cellula costalis narrow, but visible. Mid pair of legs having tibial spur straight, not stout, pointed, equal in length to first tarsal segment.

Abdomen heart-shaped, broader and plainly shorter than thorax. First abdominal tergite very short, following three tergites transverse, well developed. Pygostyli shifted to apical third of total abdominal length. Ovipositor distinctly protruded, its length equal to $\frac{1}{6}$ — $\frac{1}{5}$ of abdomen.

Male: Unknown.

Biology: Unknown.

Geographical distribution: Czechoslovakia.

Localities in Czechoslovakia: S. Slovakia: Štúrovo-Heľ Farok (steppe vegetation), 1. VII. 1947 3 ♀♀, 6. VII. 1947 1 ♀, 7. VII. 1947 2 ♀♀, 18. VII. 1947 1 ♀ (Holotype), 16. IX. 1947 7 ♀♀, and 18. IX. 1947 5 ♀♀ (Paratypes); all lgt. Hoffer.

Systematic position: This species, very close to the one following, substantially differs from the hitherto known species of this genus above all in having a quite peculiar sculpture, in the convexity of the thorax and particularly of the scutellum, and in coloration.

Dedication: Named in honour of Dr. M. W. R. de V. Graham (Oxford), the distinguished English chalcidologist, who himself studied the species, and kindly gave me his opinion.

***Prionomitus vicinus*, n. sp.**

Female.

Size: 1.38—1.47 mm.

In body structure, sculpture and coloration this species closely resembles the preceding one, from which it is distinguished only in the following characters:

Frontovertex somewhat broader than eyes, bright blue, even if the predominating colour on the thorax is green; sculpture less deep, so that the surface is more lustrous. In the antennae the distinctions are practically only in coloration: almost entire scape black, only both ends a little lighter, pedicel for the most part dark, and entire flagellum dark brown. Scutellum as compared with mesoscutum almost imperceptibly longer than in foregoing species, its posterior region more lustrous. Marginal vein rather thin; postmarginal plainly longer than marginal, but shorter than stigmal. Especially hind tarsal claws with large basal lobe! Exserted portion of ovipositor on the average equal to a good third of total length of abdomen.

Male: Unknown.

Biology: Unknown.

Geographical distribution: Czechoslovakia.

Localities in Czechoslovakia: S. Bohemia: Hlasivo (xerothermous vegetation on heath) 25. VIII. 1945, 3 ♀♀ (Holotype and 2 Paratypes); Ratibořské Hory (vegetation on abandoned dumps) 16. VII. 1945, 1 ♀; Čekanice near Tábor (xerothermous vegetation) 27. VIII. 1945, 1 ♀. W. Moravia: Javořice (submontane terrain 750 m above sea level) 7. VIII. 1944, 1 ♀. All lgt. A. Hoffer.

Note: As can be seen from the distribution of the two species, in colder regions the above described species takes the place of *P. grahami*, n. sp., to which it is closely related. All the specimens captured hitherto have come from the South Bohemian Granite Plateau.

Metaprionomitus Mercet

The species of this genus, exhibiting a considerable similarity to those of *Psyllaephagus* Ashm., have been treated by Mercet (1921); there is still no clear limit-line separating the two genera from each other and from some species up till now referred to *Ooencyrtus* Ashm.

The two species from our territory which are described below are not identical with any of the hitherto known species of this generic group. Their biology, as is also the case in the other species of the genus, is not known.

Metaprionomitus abbreviatus, n. sp.

Female.

Size: 1.22—1.66 mm.

Frontovertex, mesoscutum, pleurae and entire scutellum uniformly metallic green (in some specimens green-blue) with faint bronzy reflexes; face intensively reddish violet, cheeks blue-black, mandibles brown; pronotum black; tegulae in basal third brown, remainder metallic green; greenish coloration of propodeum and abdomen more or less shaded by dark bronzy lustre, in some cases they are even blackish; ovipositor black. Entire scape black with greenish lustre, pedicel of the same coloration, only somewhat brownish at very distal margin; funicle brown; club distinctly darker. Femora of all legs black, with the exception of area round knees the yellowish brown coloration of which is strikingly contrasting; tibiae of all pairs light brown, with a well developed dark spot placed dorsally below light-coloured knee part; spurs and tarsi light brown, only last segment black. Wings hyaline; venation brown.

Head as seen from above strongly transverse, about as broad as thorax; frontovertex finely granular, the rather coarse pin-punctures being very faintly visible; width of frons to that of eyes as 5:4, ocelli arranged in obtuse-angled triangle (ocellar angle being approximately 120°). Eyes broadly elliptic, not very convex, and not diverging from oval relief of head; their greater diameter to cheeks being as 11:7. Cheeks almost smooth, lustrous; facial impression triangular, deep, with a fine but dense sculpture; scrobes sharp, converging at an acute angle, middle part distinctly elevated. Insertion of antennae below level of ventral orbits; antennae separated from oral margin by a distance equal to length of antennal sockets, the distance between these sockets being equal to their distance from lower eye margins. Mandibles terminated by one sharp small tooth and a broad, evenly cut off tubercle. Maxillary palpi 4-jointed, labial palpi 3-jointed. Antennae very short; scape cylindrical, slightly thicker in distal part than in basal part, as long as pedicel and following three funicle segments together; pedicel about equal in length to one-third of scape, distinctly longer than broad at the end; first funicle segment

a little thinner than pedicel, one-third shorter than the latter, and one-half longer than broad; following segments gradually broadening, of almost equal length, the last two barely longer than wide; club as long as three preceding segments together, moderately wider than funicle, stoutest before the middle, distally pointed, indistinctly segmented; entire antenna covered with very fine, short, thick, and appressed hairs.

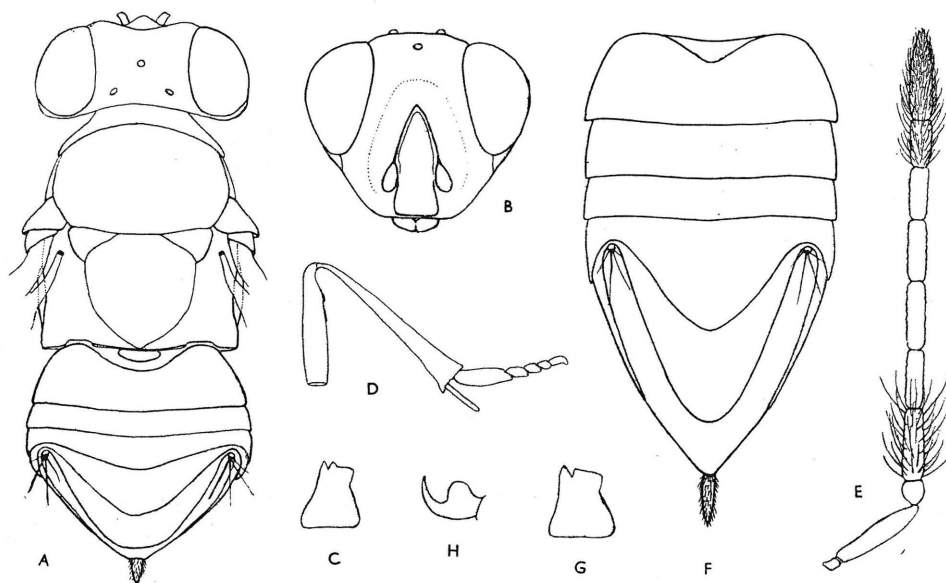


Fig. 2. *Metaprionomitus abbreviatus*, n. sp. A. General view. B. Head in frontal view. C. Mandible. D. Mid leg. E. Antenna of male. *Metaprionomitus taborita*, n. sp. F. Abdomen. G. Mandible. *Prionomitus vicinus*, n. sp. H. Hind tarsal claw.

Pronotum very short. Mesoscutum slightly arched, as long as scutellum. Sculpture of mesoscutum and scutellum identical with that on frontovertex. Scutellum distinctly convex (as compared to *M. procerus* Merc.), rather broadly terminated; axillae far apart. Propodeum short, posticolateral corners right-angled. Anterior wings large, hyaline pubescence very short and very thick; marginal ciliation very short; lineae calvae narrow, complete; venation ending before middle of total length of wing; submarginal vein almost straight; cellula costalis not narrow; marginal punctiform; stigmal straight, twice as long as postmarginal, in distal part somewhat triangularly expanded. Posterior wings short, with short marginal ciliation, cellula costalis not developed. Legs as in other species of the genus. Mid tibial spur rod-shaped, distinctly shorter than first tarsal segment which is about three times as long as wide.

Abdomen of pentagonal shape, broader and a little shorter than thorax, its pointed end being formed by two straight lines. First segment not very long. Pygostyli shifted far forward. Ovipositor stout, slightly protruded.

Male.

Size: 1.06 mm.

Differs from female in these characters: Width of frons to eyes (as seen from above) as 2:1. Ocelli arranged in triangle somewhat more obtuse-angled. Antennae long, inserted at level of ventral orbits. Scape approximately as long as first funicle segment, distinctly broadened, yellow; pedicel very short, as long as it is broad, black-brown; funicle segments cylindrical, strongly elongate, brown, last segment a little shorter than first; club equal in width to preceding segment and one and a half times as long, of the same coloration. Entire flagellum covered with yellowish brown obliquely projecting hairs, which do not attain length of individual segments.

Thorax clearly narrowed and more arched than in female, with axillae touching, otherwise similar in shape, and identical in sculpture and coloration. Wings narrower; stigmal vein exhibiting lesser deviation from anterior margin; postmarginal only a little shorter than stigmal. Legs slenderer, their coloration by far not so contrasting as in female; fore and mid legs lighter than hind pair, all tarsi of fore and hind pairs dark brown, of mid legs light except for the last, which is blackish.

Abdomen very short, narrower than thorax, having shape of acute-angled triangle.

Biology: Unknown.

Geographical distribution: Czechoslovakia.

Localities in Czechoslovakia: N. Bohemia: Račiněves (sand mound with xerothermous psammophile vegetation) 25. VII. 1943, 1 ♂ (Allotype!) and 93 ♀♀ (Holotype and 92 Paratypes); C. Bohemia: Lysá n. L. (psammophile vegetation) 22. VIII. 1950, 1 ♀; S. Moravia: Pavlovské kopce — Děvín (steppe on limestone) 5. VIII. 1957, 4 ♀♀. N. Slovakia: Belanské Tatry (Holubyho dolina, 1850 m above sea level) 3. IX. 1956, 1 ♀. All lgt. Hoffer.

Systematic position: This species appears to be closest to *M. intermedius* Merc., from which it is distinguished by the following characters in the female: coloration, especially of head, face, scape, pedicel, partly also of legs, the slightly convex eyes, the longer funicle segments and much shorter club, the shape of scutellum and slender mid tibial spur. In the male, owing to the conciseness of Mercet's diagnosis, it is possible to state at least these differences: by comparison with *M. intermedius* Merc., *M. abbreviatus* exhibits a substantially shorter club, and the flagellar hairing is of the same coloration as the corresponding antennal segments. From *M. procerus* Merc. it differs distinctly in the shape of the scape, scutellum and abdomen, and in other characters.

***Metaprionomitus taborita*, n. sp.**

Female.

Size: 2.05—2.30 mm.

Frontoververtex, pronotum, mesoscutum, and scutellum metallic green or bluish green, in most cases with total bronzy golden lustre; cheeks and face dark blue, scrobes reddish violet, or entire face having violet tinge, and scrobes of redder shade; mandibles black-brown. Tegulae either com-

pletely black or at base brownish. Pleurae metallic green, with dorsal part fiery red or reddish violet. Propodeum brown, with very weak greenish reflex. Abdomen metallic green, with rather intensive dark bronzy lustre. Ovipositor black. Entire antennae pitch black. Coloration of legs identical with that of foregoing species. Wings hyaline, venation brown.

Head as seen from above strongly transverse, somewhat broader than thorax. Frontovortex finely granular, fine punctation perceptible only above facial area; width of frons to width of eyes as 4:3. Ocelli arranged

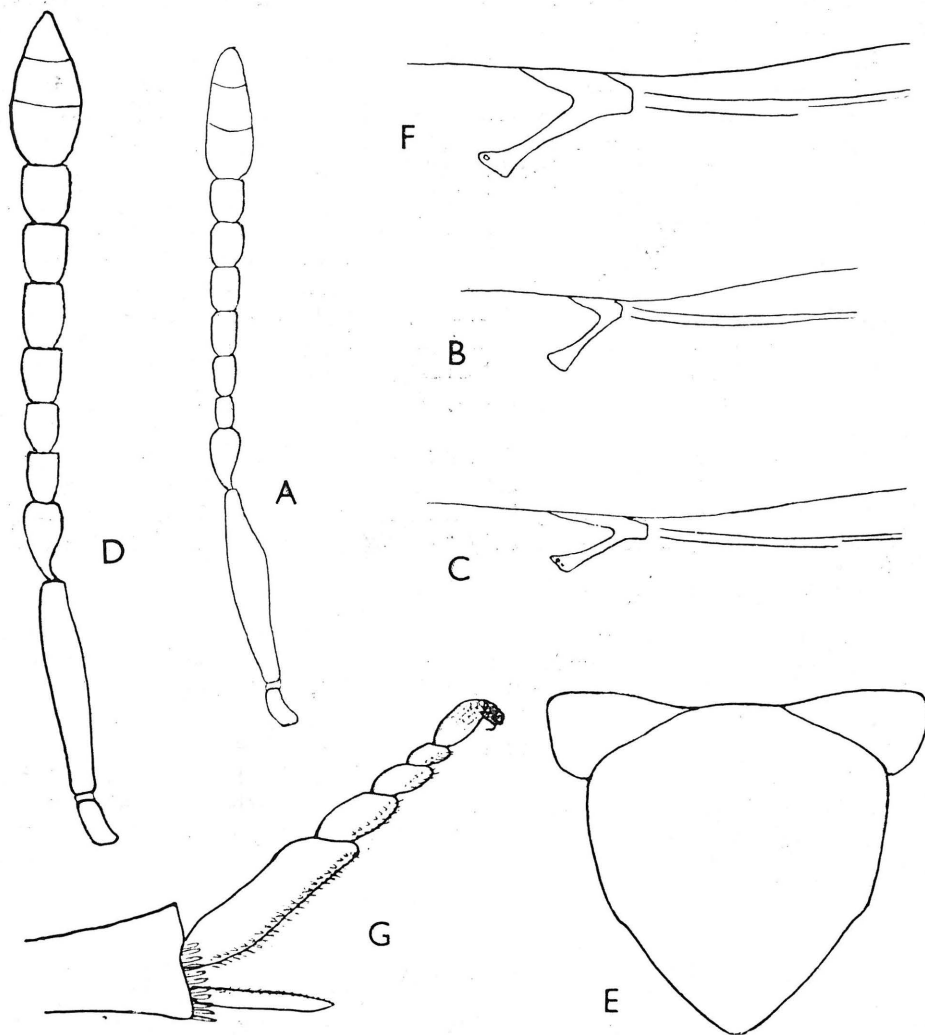


Fig. 3. *Metaprionomitus abbreviatus*, n. sp. A. Antenna of female. B. Venation of female. C. Venation of male. *Metaprionomitus taborita*, n. sp. D. Antenna of female. E. Scutellum. F. Venation. G. End of mid tibia and tarsus.

in obtuse-angled triangle (ocellar angle being about 130°). Eyes having shape of still broader ellipse than in *M. abbreviatus*, also slightly convex; their greater diameter to cheeks as 11:8. Cheeks smooth, lustrous; facial impression, scrobes and median elevation, as well as trophi, similar to those of preceding species, but antennae inserted nearer to oral margin. Scape cylindrical, relatively thin, distally only a trifle wider than basally, equal in length to pedicel and successive three funicle segments together; pedicel approximately as long as one-third of scape; first funicle segment a little thinner than pedicel, a good half longer than broad; comparative lengths of these two segments as 3:4; all following segments about equal in length, but progressively becoming wider towards end of antenna, without exception somewhat longer than broad; club as long as three preceding segments together, its structure similar to that in *M. abbreviatus*; pubescence of antenna fine, dense, rather short, silvery white.

Thorax having shape similar to that in foregoing species, but scutellum is comparatively larger (its length to length of mesoscutum as 4:3), and its termination is distinctly pointed. Entire thorax similarly as fronto-vertex uniformly finely granular, having no other sculpture, with rather short white pubescence. Metanotum very short, with rather distinctly defined posticolateral corners covered with sparse, light-coloured pubescence. Structure of wings and venation resembling those of preceding species, only stigmal vein somewhat thinner and postmarginal hardly perceptibly longer. Legs shaped similarly as in *M. abbreviatus*, only tarsal segments slightly longer.

Abdomen at most as broad as thorax, considerably elongate; its length to that of thorax as 5:3.7. First segment relatively short, following two almost equal in length. Pygostyli shifted to half the length of abdomen. Ovipositor distinctly exerted, nearly as long as first abdominal segment.

Male: Unknown.

Biology: Unknown.

Geographical distribution: Czechoslovakia.

Localities in Czechoslovakia: S. Bohemia: Tábor (left bank of river Lužnice towards Sezimovo Ústí, littoral vegetation), 28. VIII. 1961, 8 ♀♀ (Holotype and 7 Paratypes). Lgt. Hoffer.

Systematic position: A species of considerable individuality, exhibited above all in the relative length of the abdomen, the shaping of its basal segments, the large pointed scutellum, the elongate funicle segments and other characters, in which it thoroughly differs from all the species so far known.

Ooencyrtus Ashmead

The genus *Ooencyrtus* was erected by Ashmead in 1900 on the basis of the type species *Encyrtus clisiocampae* Ashm. At present it comprises a larger number of species, some of which differ very substantially from the type of this genus. The discovery of further forms new to science has even more increased the non-homogeneity of this broadly comprehended generic taxon, but on the other hand the relationship between certain

species has become more evident so that there are beginning to crystallize natural species groups, if not directly separate genera, having in common with the type of *Ooencyrtus* only the general habitus and biology it appears to be likely that various phylogenetic branches are concerned, which owing to the convergence of some characters resulting from the same biology (as far as is known always parasites of eggs of insects!) give the impression of seeming affinity. It is in the first place the structure of the male antennae which serves to separate species of *Ooencyrtus* into natural groups of species; with it correspond a number of more or less striking characters in the other sex, such as the shape of the head and mandibles, the position of the antennal insertion, the length of the marginal vein, the shape of the stigmal vein, and mainly the shape and convexity of the scutellum, in some cases of the entire thorax; the sculpture and in part the coloration as well are of assistance in the effort to classify the natural species groups.

The separation of some species into Howard's genus *Schedius*, as was done by Mercet in 1921, has not brought a clarification of the correct relationships in species of this genus, for the type species of *Ooencyrtus* and *Schedius* appear to be very close; the differential characters of both these genera exhibit considerable variability, and in the generic classification they are hardly usable.

I had the opportunity of studying extensive material of *Ooencyrtus kuwanae* How., which is the type of *Schedius* How. (specimens from Yatsumatsu, introduced into Japan). The species is evidently congeneric with the other species of *Ooencyrtus* Ashm.; some species, however, which were referred to *Schedius* How. by subsequent authors, in all probability belong to the subgenus *Ooencyrtellus* n. sbg. We may say so with certainty of *tardus* Ratzb., of which we have in our collection two specimens coming from Czechoslovakia.

The complex question of the classification of species which according to current views of the systematics of this group may be considered members of *Ooencyrtus* is solved in this paper in such a manner that the natural groups of species are regarded as subgenera of *Ooencyrtus*; it may be assumed, however, that on the basis of a study of broader material it will later be necessary to declare at least some of these subgenera distinct genera.

From the territory of Czechoslovakia we know so far only two species which may be considered as true representatives of *Ooencyrtus* (in the following text "*Ooencyrtus* s. str."); they are *O. telenomicida* Vass. (syn.: *flavofasciatus* Merc.), and *iris*, n. sp. The first species is unusually abundant in our country; as a parasite of Hemiptera of the genus *Eurygaster* as well as of other genera it occurs in all kinds of habitats and seems to be one of the most abundant species of the family. As regards coloration, it shows extraordinary variability ranging from entirely black specimens to bronzy lustrous individuals, or even to bluish green ones. The other species, *O. iris* n. sp., exhibits a rainbow-coloured mesoscutum and a lustrous green apex of the scutellum; it belongs to the affinity of *O. proximus* Merc.

Our specimens of *azureus* Merc. agree on the whole with Mercet's description except for the coloration of the scutellum which is not dark violet but metallic bronzy; the length of the club in our specimens is somewhat greater than that given by Mercet (equal to the combined lengths of the preceding four segments); in the remaining essential characters, however, it agrees throughout with *azureus*. We are therefore of the opinion that our specimens are identical with this species and that the stated distinctions do not depart from within the range of its variability. The marginal vein of this species is exceptionally short, and the mandibles exhibit three clear teeth; the discovery of the hitherto unknown male has clearly proved our original view that the species in question is a member of *Coccidencyrtus*, for the funicle is covered with long hairs which are distinctly verticillate.

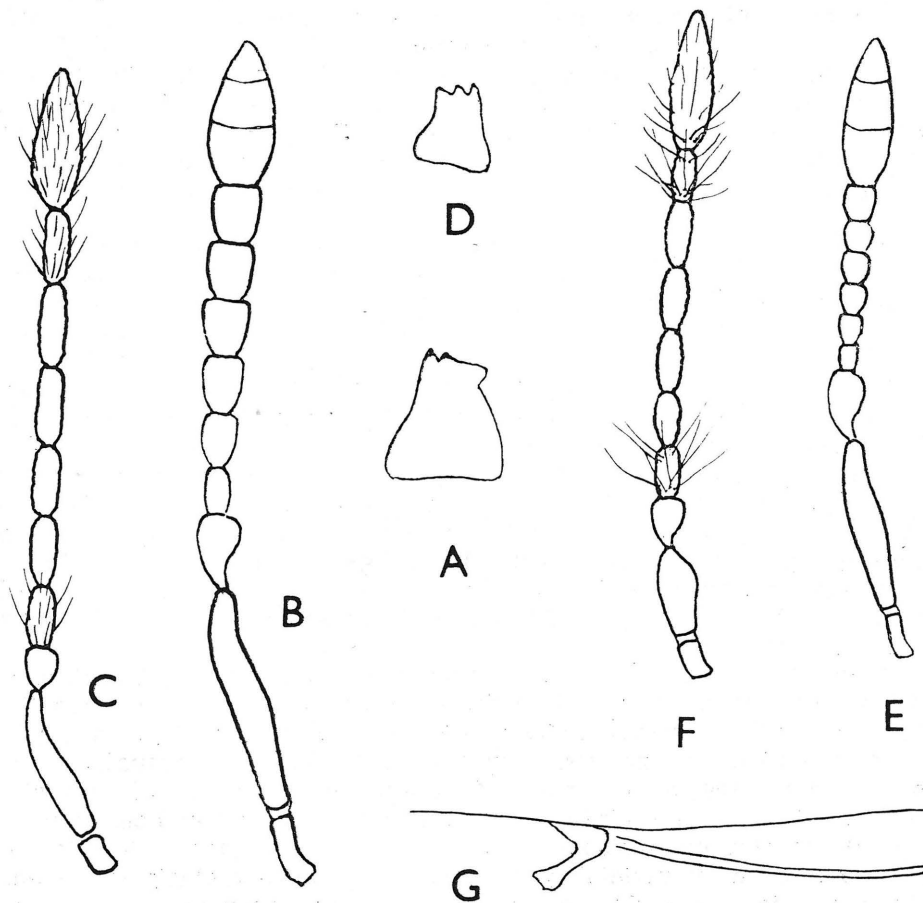


Fig. 4. *Ooencyrtus* (*Ooencyrtus*) *telenomicida* Vass. A. Mandible. B. Antenna of female. C. Antenna of male. *Coccidencyrtus* *azureus* Merc. D. Mandible. E. Antenna of female. F. Antenna of male. G. Venation.

After the material available, we divide the genus *Ooencyrtus* into four distinct subgenera the representatives of which have a practically similar habitus and appear to be in all cases parasites of the eggs of insects. The justification for this procedure is shown in the respective subgeneric diagnoses, supported by original figurations of the systematically important characters.

Key to the subgenera of *Ooencyrtus* Ashm.

- 1 Ovipositor prominently protruded; cheeks flat; outline of head from in front triangular; funicle segments and club parallel with well visible rhinaria, club not broader than preceding segment; scutellum not broad, strongly arcuate; marginal vein at least twice as long as wide; stigmal short, triangular; male antennae having funicle segments strongly elongate, cylindrical, with thick, uniform, in distal part curved hairs, which is about as long as width of segments; mandibles with two outer teeth of normal shape and a stout inner tooth diverging from axis of mandible; metallic green forms *Tatranus*, n. sbg.
- Ovipositor concealed, or only its tip protruded; cheeks convex; outline of head from in front subcircular; funicle segments towards end of antenna more increasing in width; club broader than funicle; scutellum flat or moderately arched; marginal vein very slightly elongate or quadrate; stigmal normally developed 2
- 2 Club at end moderately truncate; male antennae having wide segments, first funicle segment much longer than following ones, at base broader than at apex, whole of flagellum covered with very short, fine, and thick hairs; mandibles having two teeth and short truncature *Ooencyrtoides*, n. sbg.
- Club pointed at end. Antennae of ♂ arranged differently 3
- 3 Head seen from above subsemilenticular in shape; cheeks short, very strongly convex; frons broader than eyes; marginal vein punctiform; postmarginal well developed; funicle segments of ♀ having row of rhinaria in distal thirds; male antenna having funicle segments flat, covered with rather short, not very dense hairing; first funicle segment somewhat shorter than following, at base narrower than at end; all funicle segments having small black mark at distal edge, on apical segments less distinct; reticulate sculpture very minute, fine, making the surface waxy lustrous; mandibles with one tooth and broad, straight truncature *Ooencyrtellus*, n. sbg.
- Head seen from above oval in shape; cheeks of normal length and convexity; frons not very wide; marginal vein moderately elongate; postmarginal short; male antennae having funicle segments cylindrical, with long and rather sparse hairs; sculpture normally reticulate, lustrous; mandibles with one outer tooth and truncature, or with one more not very well defined median tooth . . . *Ooencyrtus*, s. str.

***Ooencyrtellus*, n. sbg.**

Head hardly broader than thorax, seen from above semilenticular in shape, strongly anteriorly convergent, with straight anterior margin; seen from in front subcircular. Frons relatively wide. Eyes large, not prominent, clothed with short hairs, inner orbits subparallel. Ocelli forming a slightly obtuse-angled triangle, the posterior pair being in close vicinity to inner orbits and somewhat farther from the occipital margin. Cheeks short, considerably convex, so that lower margin of face is very broadly rounded. Insertion of antennae below level of ventral orbits, near to oral margin; antennal sockets large, rather far apart; scrobes of normal depth and

length. Mandibles having a single outer tooth and a very broad, straight truncature. Antenna of female having scape moderately to rather distinctly broadened, pedicel slender, funicle segments progressively increasing in width, and club well broader than preceding segment, at the end moderately pointed (not oblique); segments of funicle and club exhibiting a numerous row of rhinaria in each apical third. Male antenna with broadened scape which is excavated in the shape of a dish, pedicel linearly expanding (not bulging!), funicle segments flattened, subquadrate, each of them bearing at apical edge a conspicuous black angular mark which is larger in the basal segments than in the distal ones; first funicle segment not longer and wider than following, at base narrower than at end; club at base as broad as preceding segment, anteriorly tapering to a point; entire flagellum with typical, sparse, not long, curved hairs.

Thorax either considerably arched (*O. salicinus* Erd.) or having greater part of dorsum elevated and straight (remaining species), with sporadic stiff, curved, and rather long hairs. Pronotum short. Mesoscutum broad. Mesopleurae extraordinarily large. Scutellum relatively very much shaped as broad triangle with bluntly pointed end, but slightly convex; axillae small, not contiguous. Propodeum short with blunt corners. Anterior wings large, broad, with narrow cellula costalis. Marginal vein very short, thick, quadrate (never elongate); stigmal straight, towards the end distinctly broadening; postmarginal at base thick, gradually getting thinner, comparatively long but not quite attaining length of stigmal (of type similar to that of *Aphycoides* Merc.). Legs rather stout with mid tibial spur shorter than metatarsus.

Abdomen triangular in shape, not long; first tergite short. Pygostyli shifted far above. Ovipositor shortly but distinctly protruded.

Sculpture on head and entire dorsum of thorax and abdomen uniform, as compared with that of representatives of other subgenera of *Ooencyrtus* very finely, flatly, and thickly reticulate, thus giving the impression of a waxen lustre of the surface; the very fine pin punctures are far apart. Body coloration not very intensively metallic or non-metallic.

Type-species: *Aphycoides salicinus* Erdös.

Biology: Developing in eggs of Lepidoptera and Hemiptera.

Besides the type species, the subgenus comprises *O. (O.) fulvipes*, n. sp., and another species, so far known in the male sex only.

***Ooencyrtus (Ooencyrtellus) salicinus* Erd., Comb. nov.**

Aphycoides salicinus Erdös, Acta Zool. Acad. Sci. Hung., 3 (1—2): 32, 1957.

This species has been sufficiently described by Erdös from 1 ♂ and 1 ♀ from Hungary. The series of our specimens, all of which have been reared from *Lasiocampa trifolii*, exhibit a great degree of variability in the coloration of the body and the antennae. The author states in his diagnosis: "♀ obscure metallica, fere nigra", and farther on, "♂ colore

... corporis ... ♀ valde similis"; in our specimens the head and thorax are either metallic olive green, or bluish green with an often reddish margin of the pronotum, sometimes with a more or less dark bronzy lustre. Also the lighter coloration of the last funicle segments in some specimens is not distinct. The propodeum in our series having corners with long white pubescence; the mid tibial spur of the ♀ but slightly shorter than the metatarsus; the postmarginal vein rather long, but still somewhat shorter than the stigmal; the funicle segments of the male

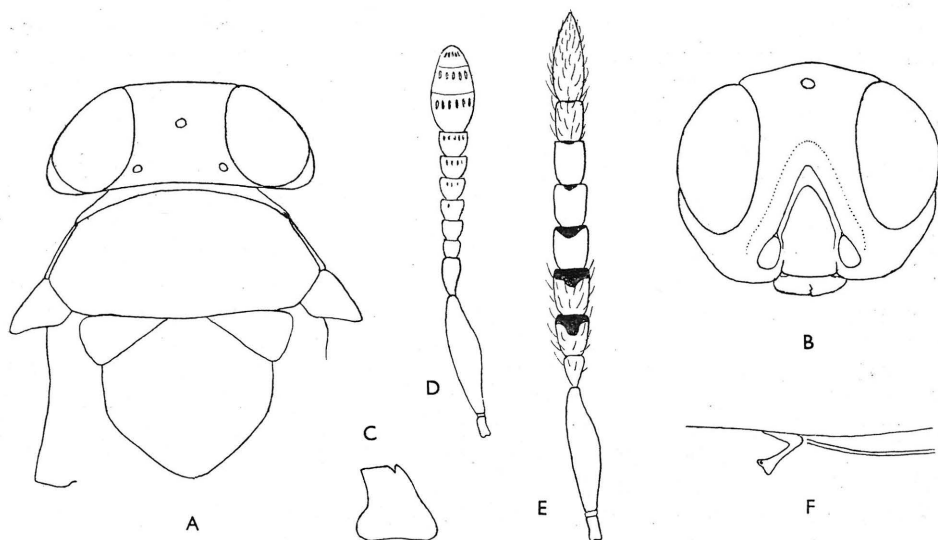


Fig. 5. *Ooencyrtus (Ooencyrtellus) salicinus* Erd. A. Head and thorax in dorsal view. B. Head in frontal view. C. Mandible. D. Antenna of female. E. Antenna of male. F. Venation.

moderately elongate. In spite of these distinctions I consider our specimens conspecific with the typical specimens of Erdős.

The above series (5 ♂♂ and 9 ♀♀), reared from *Lasiocampa trifolii* by Dr. Bohumil Starý, comes from the vicinity of Bzenec (Moravia merid.), from the region of drifted sands (the so-called "Moravian Sahara"); all the individuals hatched during June 1942.

***Ooencyrtus (Ooencyrtellus) fulvipes*, n. sp.**

F e m a l e .

Size: 0.92—0.94 mm.

Frontovertex metallic green with slight greenish tinge. Pronotum, mesoscutum, scutellum and propodeum coppery red, strongly lustrous, only middle portion of mesoscutum exhibiting a broad, metallic greenish, indistinctly defined band, which extends over the greater part of this tergite; tegulae and pleurae tinted with violet. Abdomen having yellow

band at base, remainder coppery; exerted portion of ovipositor yellow. Face violet; scape dark, at the end moderately lighter; pedicel of same coloration; flagellum light yellowish brown. Eyes blackish brown; ocelli dark ruby-coloured. Wings hyaline; venation light. All three pairs of legs lemon yellow, only fore tarsi somewhat reddish and claws of all legs darker.

Head hardly as broad as thorax, semilenticular in shape, as seen from in front it is almost circular and somewhat shorter than wide. Frontovertex relative to breadth of eyes as 8:7; sculpture finely coriaceous, lustrous. Ocelli comparatively large, arranged in equilateral triangle, the space separating posterior pair from inner orbits equal to half the ocellar diameter, the distance from posterior margin of head again being equal to their diameter. Eyes rather large, not prominent, clothed with short hairs, their greater diameter relative to cheeks as 5:2. Cheeks arched, finely grooved. Face broad, scrobes short, median elevated area transversely grooved; lower part of face very broadly rounded. Antennal sockets situated below level of ventral orbits and near to oral margin. Scape moderately expanded, somewhat longer than pedicel and three following segments combined; pedicel equal in length to one-third of scape, two and one-third times longer than broad; first funicle segment more slender than pedicel, slightly elongate, following four segments somewhat longer and progressively broadening, so that last segment is about as long as broad; club one-half thicker than end of funicle, as long as preceding four segments together, pointed at the end; appressed flagellar hairs rather short (the hairs being equal to about one-third the length of the individual segments).

Thorax considerably elevated above abdominal surface, but its dorsal portion is horizontal, sublevel. Length of mesoscutum to that of scutellum as 6:7; scutellum relatively large, strongly arched, shaped as in *O. salicinus* Erd., at the end more intensively lustrous; axillae far part. Propodeum short; corners having blunt ends provided with several rather long white hairs. Mesopleurae extraordinarily large. Wings broad; venation as in *O. salicinus* Erd., postmarginal vein but almost imperceptibly shorter than stigmal. Mid tibial spur distinctly shorter than metatarsus.

Abdomen triangular in shape, much shorter than thorax, first segment short. Pygostyli shifted as far as the end of basal third of total length. Only short tip of ovipositor projecting.

Male.

Size: 0.74—0.84 mm.

Frontovertex relative to width of eyes as 10:7. Insertion of antennae situated somewhat higher than in female. Structure of antennae very much resembling that of preceding species, funicle segments slightly elongate, only apical black spots being very narrow, bordering distal edge of all funicle segments. Abdomen very short, barely equal to one-half the length of thorax.

In the other characters agreeing with the female.

Biology: Parasite of eggs of Hemiptera.

Geographical distribution: Czechoslovakia, Germany.

Locality in Czechoslovakia: S. Bohemia: Česká Velenice (xerotherm) 11. VI. 1946, 1 ♀ (Holotype). Lgt. Hoffer.

Further material: 2 ♂♂ and 1 ♀ of the same species have been bred by Prof. Dr. Tischler from Hemiptera of the genus *Eurygaster*. The specimens kindly sent to me by Prof. Dr. Sachtleben (Berlin) bear labels upon which is written: 274 a (26. V. 1950) (Allotype); 274 b (21. V. 1950, ♂) and 274 d (1. VI. 1950, ♀) (Paratypes).

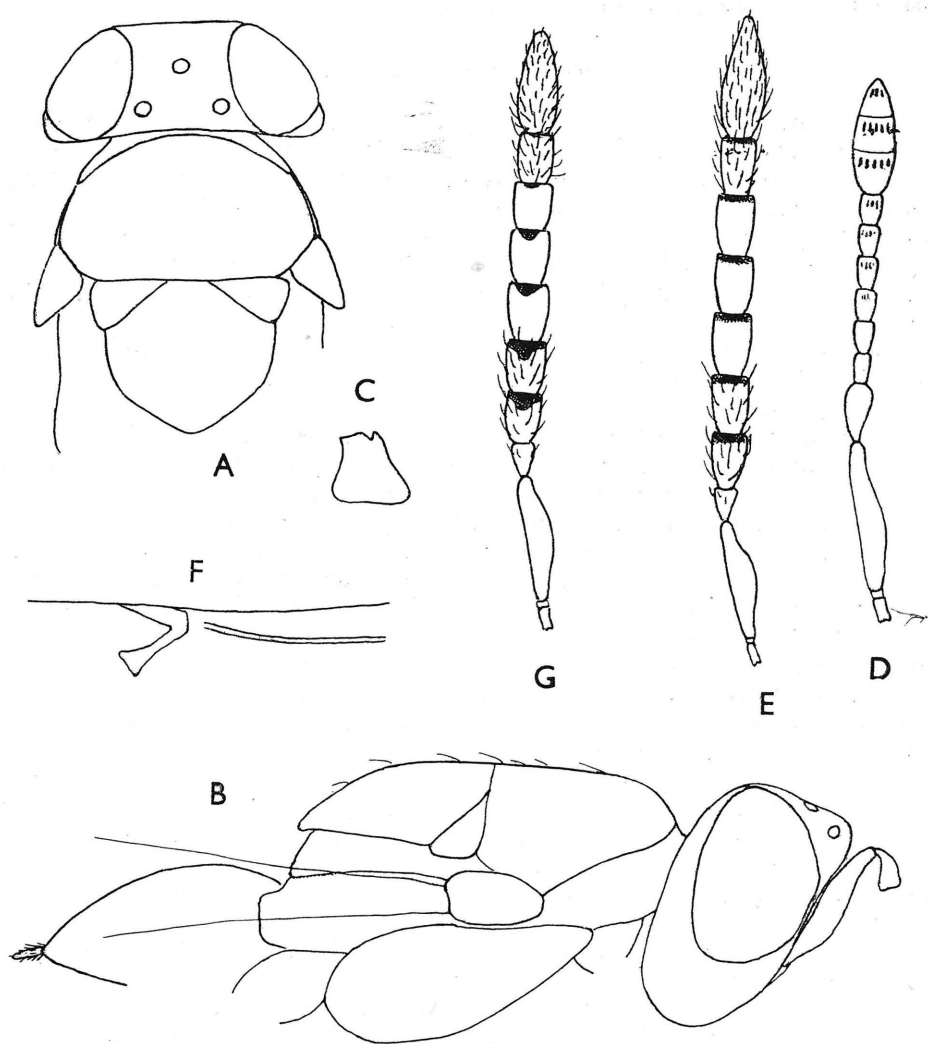


Fig. 6. *Ooencyrtus* (*Obencyrtellus*) *fulvipes*, n. sp. A. Head and thorax in dorsal view. B. Lateral view. C. Mandible. D. Antenna of female. E. Antenna of male. F. Venation. *Ooencyrtus* (*Ooencyrtellus*), sp. G. Antenna of male.

Ooencyrtus (Ooencyrtellus) sp.

In size and body structure very similar to preceding species from which it differs mainly in the coloration of the body which is entirely black (only the scutellum having a faint bronzy reflex), and of the legs which are black with the exception of the knees, the ends of the tibiae, and the tarsi, all of which are light. The structure of the male antenna is shown in our figure.

This species, of which only the male is known, belongs with certainty to this subgenus. The 4 specimens available have been reared from *Hemiptera* by Prof. Dr. Tischler and bear labels with the following texts: 469 (16. V. 1950); 371 (+) (24. V. 1950); 406 (+) (24. V. 1950), and 340 (27. V. 1950).

Ooencyrtoides, n. sbg.

Head broader than thorax, seen from above suboval in shape with anterior margin faintly concave; outline from in front subcircular, but the lower margin is not so strongly rounded as in *Ooencyrtellus*. Frontovertex broad. Eyes of medium size, clothed with short hairs, their inner orbits subparallel. Ocelli arranged in slightly obtuse-angled triangle, posterior pair near to inner orbits as well as to occipital margin of head. Cheeks of medium length, convex. Insertion of antennae immediately below level of ventral orbits; antennal sockets rather large, not very far apart; scrobes not long. Mandibles with two distinct teeth in upper part of apex; lower part of apex is filled in by a short truncature meeting the lower edge of the mandible at a right angle. Antennae of female having scape cylindrical, pedicel elongately piriform, funicle segments quadrate to elongate, towards the end of antenna increasing in breadth, and club somewhat broader than end of funicle, subcylindrical, shortly truncate at the end. Male antennae exhibiting scape shorter and broader than in female, pedicel bulging, as long as wide, funicle segments moderately flattened, subquadrate, except for first segment which is conspicuously longer than following, dish-shaped, at base broader than at end, and a spindle-shaped club; entire flagellum clothed with very fine, unusually short and thick hairs (see fig. 7!).

Thorax normally arched. Pronotum short, concave. Mesoscutum of medium length. Scutellum triangular, but slightly arcuate, with axillae separated. Propodeum short, posticolateral corners bluntly pointed. Wings of normal length and breadth, with rather broad cellula costalis and very narrow linea calva. Submarginal becoming wider towards the end; marginal quadrate; stigmal straight, thin, longer than marginal and postmarginal combined, somewhat widened at the end, in the male with beak-shaped projection. Mid tibial spur somewhat shorter than metatarsus.

Abdomen heart-shaped or ovoid. Pygostyli shifted far above. Ovipositor concealed, or only its tip projecting.

Frontovertex and dorsum of thorax with regular lustrous reticulate sculpture and scattered setiferous punctures; sculpture of scutellum either identical with that of mesoscutum, or different (in this case the flat punctures are coarser and arranged in concentric wrinkles which make the surface duller). Coloration metallic, legs predominantly yellow.

Type-species: *Ooencyrtus (Ooencyrtoides) albopilosus*, n. sp.

Biology: Unknown.

In addition to the type of the subgenus, we assign to this subgenus also *O. (O.) smaragdinus*, n. sp.

***Ooencyrtus (Ooencyrtoides) albopilosus*, n. sp.**

Female.

Size: 0.78—1.02 mm.

Frontovertex, pronotum, mesoscutum, and scutellum olive green, generally with golden tint; coloration of frontovertex and pronotum darker than that of remaining parts of dorsum of mesonotum. Cheeks and face violet. Eyes and ocelli tinted with pink. Tegulae yellow, their apical part brown. Pleurae golden, having a fiery lustre on dorsal part. Propodeum brown. Abdomen bronzy with greenish tinge, especially on first tergite. Scape blackish brown, lighter towards the end; pedicel

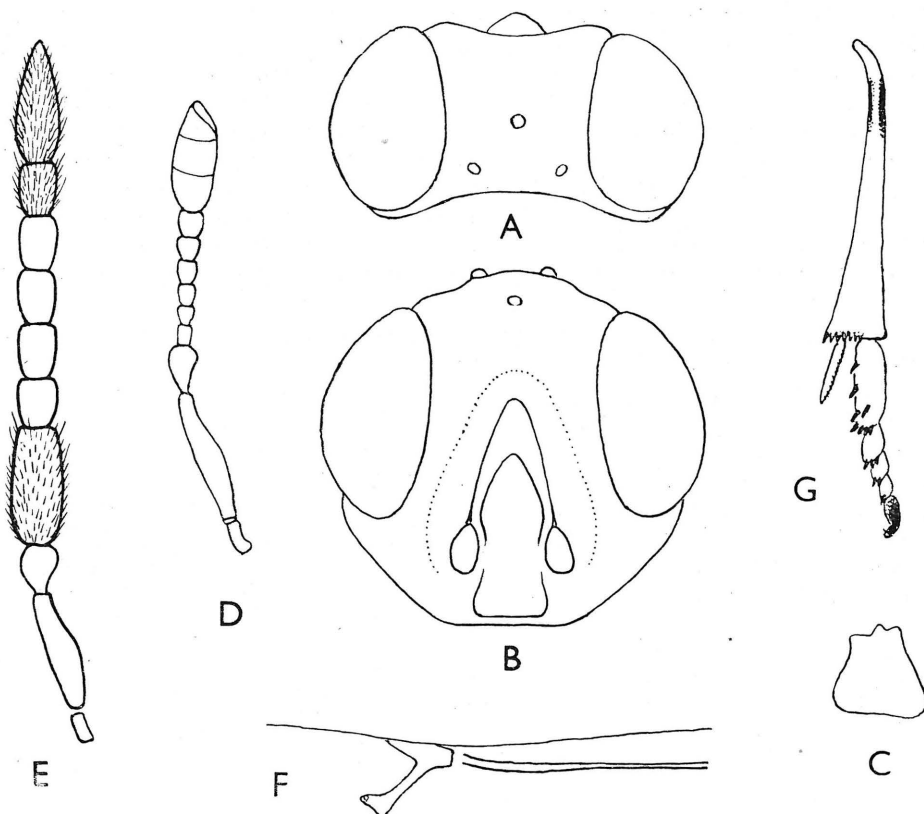


Fig. 7. *Ooencyrtus (Ooencyrtoides) albopilosus*, n. sp. A. Head in dorsal view. B. Head in frontal view. C. Mandible. D. Antenna of female. E. Antenna of male. F. Venation. G. Tibia and tarsus of mid leg.

black on dorsal side of basal two-thirds, remainder yellow; segments of flagellum light brown. Wings hyaline, venation light brown, in some specimens darker. Femora of all legs black, at distal end yellowish brown; tibiae having in basal part a dorsal dark spot which is smallest in the first pair, and in the last pair occupies an area equal to half the total length; tarsi somewhat more brownish, last one blackish.

Head clearly broader than thorax, as seen from above with anterior margin very slightly arched. Frontovortex broad, its width to that of eyes being as 10:7, with reticulate, not very lustrous sculpture, sparsely white pubescent. Ocelli arranged in slightly obtuse-angled triangle, posterior pair rather distant from inner orbits and from occipital margin, the space separating them being equal to double the ocellar diameter. Eyes broadly oval, clothed with short hairs, their greater diameter relative to cheeks being as 14:9. Sculpture of cheeks longitudinally grooved; entire area having white ciliation. Facial impression wide, scrobes deep, converging at a not very acute angle. Antennal sockets situated so that their lower edge touches level of ventral orbits, rather far apart (distance between them one and one-half times as long as distance from orbits), and still more distant from oral margin. Lower part of face bearing very thick and long white pubescence. Scape in median portion very moderately expanded, nearly as long as pedicel and following five segments together; pedicel equal to about one-third of scape, twice as long as broad at the end; first funicle segment substantially thinner, slightly longer than broad; following segments quadrate, gradually increasing in size; club distinctly wider than funicle, longer than preceding three segments together, truncate at the end, distinctly segmented; antennal pubescence very short.

Mesoscutum well arched, its sculpture resembling that of frontovortex, the white pubescence being uniformly distributed on entire surface. Tegulae comparatively large. Scutellum triangular, also arched, almost imperceptibly shorter than its width at base of axillae, rounded at the end, equal in length to mesoscutum, its sculpture having a finely reticulate structure which is arranged in subconcentric wrinkles, pubescence same as on mesoscutum; axillae separated by a considerable space. Propodeum very short, posticolateral corners obtuse-angled. Fore wings with thick, not very long pubescence of disc, marginal ciliation of normal length; lineae calvae distinct, running across entire breadth of wing; cellula costalis well developed. Submarginal vein towards the end becoming uniformly but only moderately wider; marginal thickened, as long as broad; stigmal straight, slightly broadening towards the end; postmarginal short, towards the end becoming lost. Hind wings with very narrow cellula costalis; marginal ciliation of lower margin being of normal length. Legs rather stout; mid tibial spur a little shorter than first tarsal segment.

Abdomen heart-shaped, broader and somewhat shorter than thorax, finely transversely rugose, strongly lustrous. First tergite occupying about one-third of total length; following tergites very small. Pygostyli

shifted to half the abdominal length. Tip of ovipositor visible only in some specimens.

Male.

Size: 0.70—0.83 mm.

In general habit, sculpture, and coloration agreeing with female. Frontoververtex broader (relative to width of eyes as 11:5); ocelli arranged in more obtuse-angled triangle. Radicle yellow, scape yellowish brown, in median part darkened, three and one-half times as long as broad; pedicel somewhat wider than scape, its length equal to its breadth, darker than following segments; first funicle segment rectangular, as broad and as long as scape, two and one-half times as long as wide; following segment the shortest, its length nearly equal to its width, segments 3—6 moderately elongate; all funicle segments as broad as club, which is spindle-shaped, and as long as preceding two segments together; whole of flagellum brown, its hairs very short.

Mesoscutum narrower than in female, somewhat more arcuate. Stigmal vein having beak-shaped projection at the end directed towards margin of wing; postmarginal somewhat longer than in female. Mid pair of legs darker, mid tibial spur distinctly shorter than metatarsus.

Abdomen at base somewhat narrower than thorax, and much shorter, triangular.

Biology: Unknown.

Geographical distribution: Czechoslovakia.

Localities in Czechoslovakia: N. E. Bohemia: Horní Lipka (submontane terrain at altitude of about 700 m. above sea level) 31. VIII. 1951, 1 ♀. C. Bohemia: Lysá n. L. (psammophile vegetation and heather) 13. VI. 1950, 4 ♀♀; 22. VIII. 1950, 1 ♂; Nehvizdy (heath) 31. VII. 1951, 1 ♀. S. Bohemia: Tábor (xerotherm) 7. VIII. 1952, 8 ♀♀ (Holotype, 7 Paratypes); 31. VIII. 1958, 2 ♀♀; Ratibořské Hory (vegetation on abandoned dumps) 12. VII. 1945, 1 ♀; Borkovické rašeliny (peatbog) 3. VIII. 1954, 4 ♀♀ (Paratypes); 4. VIII. 1954, 3 ♀♀; 6. VIII. 1954, 1 ♂; 14. VIII. 1954, 1 ♂, 2 ♀♀ (Allotype, Paratypes); Ponědražka (peatbog) 20. VII. 1943, 2 ♀♀; 22. VII. 1945, 1 ♂, 1 ♀; Veselí n. Luž. (heath on sand) 20. VII. 1943, 5 ♀♀; 11. VII. 1945, 5 ♀♀; reservation "Šatlavy" near Velký Tisý (reeds) 21. VII. 1955, 1 ♀; Ražice (sands) 15. VII. 1945, 1 ♀. W. Moravia: Velké Dářko (peatbog) 31. VII. 1944, 5 ♂♂, 1 ♀. N. Slovakia: Belánské Tatry (Košiary, 1900—2000 m. above sea level) 5. IX. 1956, 1 ♀; 6. IX. 1956, 1 ♀. All lgt. Hoffer.

Note: This species, in contradistinction to the one following, has a scutellum the reticulate sculpture of which is arranged in subconcentric wrinkles, funicle segments in the female substantially shorter, the body and particularly the lower part of the face being conspicuously white pubescent.

Ooencyrtus (Ooencyrtoides) smaragdinus, n. sp.

Female.

Size: 1.22—1.54 mm.

Frontoververtex, greater part of cheeks, pronotum, mesoscutum, pleurae, scutellum, as well as entire abdomen emerald green with golden reflexes, especially in ocellar region and on abdomen, in some specimens also on mesoscutum and scutellum; dorsal portion of pleurae with fiery red lustre. Face violet, except for narrow border round oral margin, which

is greenish. Eyes and ocelli reddish brown. Tegulae yellowish white with blackish end. Propodeum brown with greenish tint. Antennae light brown, with the exception of scape and pedicel, which are black with greenish lustre, at apical end yellowish brown; club in some specimens almost imperceptibly darker than funicle segments, which are faintly darkened at base, except for first segment, the whole of which is darker in coloration. Wings hyaline, venation brown. Legs of all three pairs completely light yellow, with the exception of mid and hind coxae, which are dark; tarsi slightly reddish, last segment somewhat darker. Projecting tip of ovipositor dark.

Head as seen from above almost straight in front, broader than thorax. Frontovortex a little wider than eyes (6:5), ocelli arranged in triangle having ocellar angle equal to 110° ; posterior pair separated from inner orbits by a space equal to their diameter, from occipital margin again by a distance somewhat greater. Sculpture of frontovortex densely shallowly reticulate, strongly lustrous, with very fine, hardly perceptible punctures arranged in three rows along inner orbits. Eyes bare, suboval, their greater diameter to cheeks being as 16:11. Cheeks well developed, with longitudinal grooves. Facial impression not very deep, with finely grooved transverse sculpture; area between ventral orbits and oral margin, and whole lower part of face with conspicuous white hairs; scrobes well defined, smooth, converging at an acute angle; antennal sockets almost reaching level of ventral orbits, comparatively large, quite near to each other (the distance between them smaller than from inner orbits, and only slightly greater than distance from oral margin). Mandibles having outer teeth sharper than in *albopilosus*. Scape thin, cylindrical, nearly as long as pedicel and three and a half following segments together; pedicel equal to one-third the length of scape, twice as long as broad; first funicle segment distinctly narrower than preceding ones, a little longer than wide; following funicle segments clearly elongate, and but slightly increasing in width, the last three being twice as long as broad; club moderately exceeding last funicle segment in width, sublamellar in shape, as long as three and a half preceding segments together, divided into three segments of equal length; pubescence of antenna very short and fine, barely visible.

Pronotum short but distinct, its posterior margin being but very slightly arcuate; sculpture fine and dense, its reticulate structure being arranged in longitudinal, subparallel wrinkles, lustrous, of the same type as on mesoscutum and axillae. Mesoscutum and scutellum rather flat; light-coloured, sparse and rather long pubescence of mesoscutum not developed on scutellum, which is more coarsely wrinkled, in such manner that the wrinkles are arranged concentrically round top of scutellum; tips of axillae not touching; shape of scutellum subtriangular, with bluntly pointed end. Propodeum very short with obtuse-angled corners exhibiting several rather long, white hairs. Anterior wings large, rather broad, with very short and thick pubescence; marginal ciliation short; linea calva narrow; cellula costalis spindle-shaped. Submarginal vein in distal third slightly broadened and faintly curved; marginal punctiform; stigmal thin,

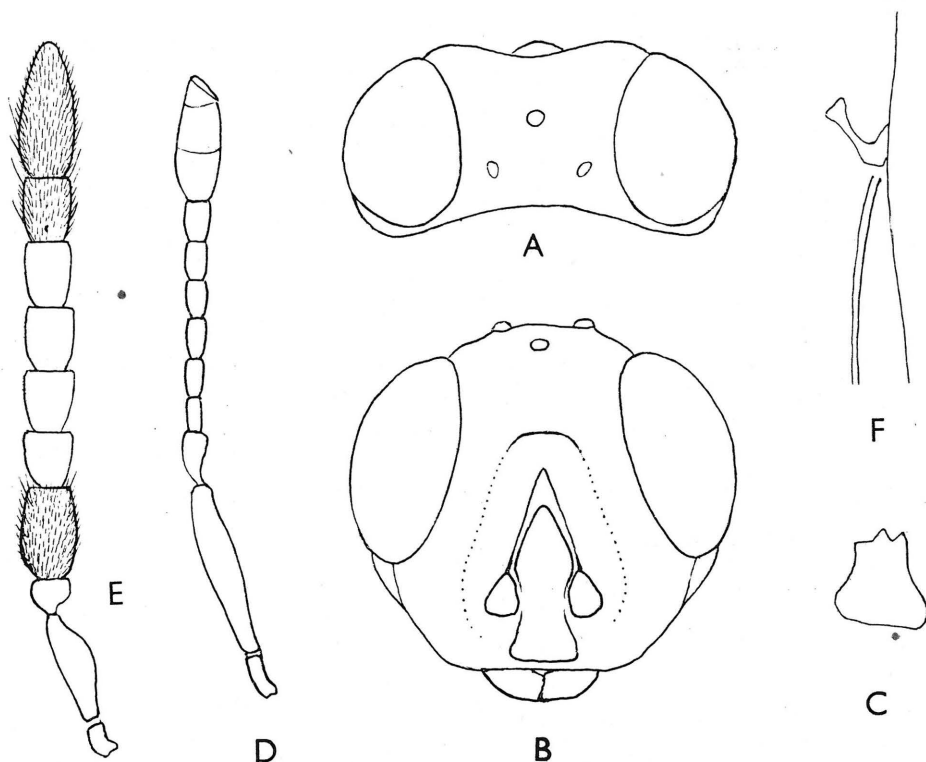


Fig. 8. *Ooencyrtus* [*Ooencyrtoides*] *smaragdinus*, n. sp. A. Head in dorsal view. B. Head in frontal view. C. Mandible. D. Antenna of female. E. Antenna of male. F. Venation.

straight; postmarginal short, about equal to half the length of stigmal. Posterior wings having short cellula costalis. Legs rather stout; mid tibial spur somewhat shorter than metatarsus; all tarsal segments of mid legs bordered at end by row of stout spines; also end of tibia bordered by nine stout spines, equal in length.

Abdomen ovoid in shape, broader in fresh specimens, equal in length to or slightly longer than thorax, with basal segment very short and four following segments well developed and almost equal in length; pygostyli shifted to end of apical third of abdomen. Finely reticulate sculpture arranged in longitudinally subparallel wrinkles, strongly lustrous. Ovipositor but very slightly protruded.

Male.

Size: 1.09—1.47 mm.

Similar to female, somewhat slenderer and more arcuate. Coloration of body from light green specimens to bluish green ones.

Frontovertex broader, its width to eyes being as 13:8; length of eyes to cheeks as 6:5. Ocelli arranged in strongly obtuse-angled triangle, posterior pair separated from inner orbits and from occipital margin by

a distance equal to their diameter. Antennae quite different from those of female. Scape only twice as long as broad, yellow with dorsal black spot; radicle slightly shorter than half the scape; pedicel very shortly piriform, rather broad than long, dorsally blackened; first funicle segment the longest, almost as long as scape, wider than preceding segments, distally somewhat narrower than basally; following funicle segments almost equal in length, but progressively decreasing in width, as long as two-thirds of first segment; club spindle-shaped, as broad as funicle, shorter than two preceding segments together; entire flagellum light brown (therefore darker than greater part of scape and pedicel), very shortly pubescent.

Stigmal vein somewhat shorter, towards the end distinctly becoming triangularly expanded. Legs slenderer than in female.

Abdomen heart-shaped, shorter than thorax.

Biology: Unknown.

Geographical distribution: Czechoslovakia, USSR: Ukraine.

Locality in Czechoslovakia: E. Slovakia: „Baba“ near Somotor (steppe on limestone) 10. VII. 1951, 1 ♀ (Holotype); lgt. Hoffer.

Further material: USSR (Ukraine): Odessa VI. 1957, 52 ♂♂, 21 ♀♀ (Allotype and Paratypes). Lgt. Hoffer and Dlabola.

Tatranus, n. sbg.

Head broader than thorax, as seen from above suboval in shape with anterior margin strongly concave, from in front subtriangular with lower margin sharply truncate. Frontoververtex distinctly wider than eye as seen from above. Eyes short, haired; inner orbits diverging. Ocelli arranged in well obtuse-angled triangle, posterior pair approximately as distant from occipital margin of head as from inner orbits. Cheeks long, straight. Insertion of antennae far below level of ventral orbits and near to oral margin; antennal sockets comparatively small; scrobes rather long, passing into broad facial cavity. Mandibles having two outer teeth of normal shape and position, and large, wide and pointed inner tooth deviating from mandibular axis at a right angle. Antennae of female showing long, cylindrical scape, elongate piriform pedicel, and funicle all the segments of which are elongate, nearly equal in length, parallel, but very moderately increasing in width towards the end of antenna, and cylindrical club which is equal in width to funicle, and the two basal segments of which are substantially longer than the apical segment; entire flagellum with conspicuously developed rhinaria. Male antennae with scape short and moderately broadened, pedicel bulging and as long as broad; funicle segments cylindrical, towards the end of antenna becoming slightly thinner, thickly covered with hairs about as long as width of segments, and not very obliquely outstanding, moderately curved [see fig.]; club spindle-shaped, its width and structure of hairs similar to those of preceding segment.

Thorax uniformly and relatively rather strongly arched; scutellum considerably arched and elevated above propodeal surface, more narrowly triangular as compared with representatives of the other subgenera, posteriorly subrounded or bluntly pointed; tips of axillae lightly touching. Propodeum having right-angled posticolateral corners. Wings well developed, not broad; submarginal vein in distal portion moderately widening; marginal thick, distinctly elongate (at least twice as broad as long); stigmal short, triangular; postmarginal short, thick at the base, gradually vanishing. Mid tibial spur somewhat shorter than metatarsus.

Abdomen triangular, not broader than thorax. Pygostyli shifted to half its length. Ovipositor always distinctly to prominently protruded.

Sculpture of frontovertex and thoracic dorsum uniform, shallowly reticulate, lustrous. Pubescence light, regular. Coloration metallic green to blue-green; legs yellowish brown with darker portions.

Type species: *Ooencyrtus (Tatranus) terebrator*, n. sp.

Biology: Unknown.

To this subgenus belongs, besides the type species, also *O. (T.) brevicauda*, n. sp., the diagnosis of which is given farther on.

***Ooencyrtus (Tatranus) terebrator*, n. sp.**

Female.

Size: 1.57—1.82 mm. (not counting ovipositor: 1.41—1.47 mm.).

Frontovertex, cheeks, face (except for scrobes), mesoscutum, scutellum and entire abdomen metallic bluish green or green; scrobes golden; pronotum darker green, with margin very narrowly reddish; tegulae, pleurae and propodeum dark bronzy; on dorsum of abdomen weaker bronzy reflexes in some specimens. Eyes almost black; ocelli cinnabar. Scape and pedicel black, with faint greenish tint, flagellum black-brown. Mandibles brown. Femora of all three pairs black, lighter at the end, tibiae in basal part (except light band at knees) blackish, towards the end becoming brownish, those of mid pair relatively much lighter than in hind pair; tarsi of fore and mid legs reddish brown, of hind pair darker, blackening towards the end. Membrane of fore wings brownish; venation brown, marginal and postmarginal veins somewhat darker than the others. Exserted part of ovipositor nearly black.

Head broader than thorax; anterior margin considerably inflexed; outline of head as seen from in front triangular, at oral margin broadly truncate. Frontovertex broad, very finely reticulate, the scattered pinpunctures prominent, width of frontovertex to that of eyes as 3:2; ocelli arranged in obtuse-angled triangle (ocellar angle about 100°), posterior pair separated from inner orbits by a space very slightly greater than is their greater diameter, and from occipital margin by the same distance. Eyes almost circular in outline, clothed with very short hairs, comparatively small; their greater diameter to length of cheeks as 13:9. Cheeks not arched, converging to oral margin in a straight line (similarly as in *O. brevicauda*, n. sp.), together with face finely grooved, only elevated part smooth and more strongly lustrous. Scrobes long, length-

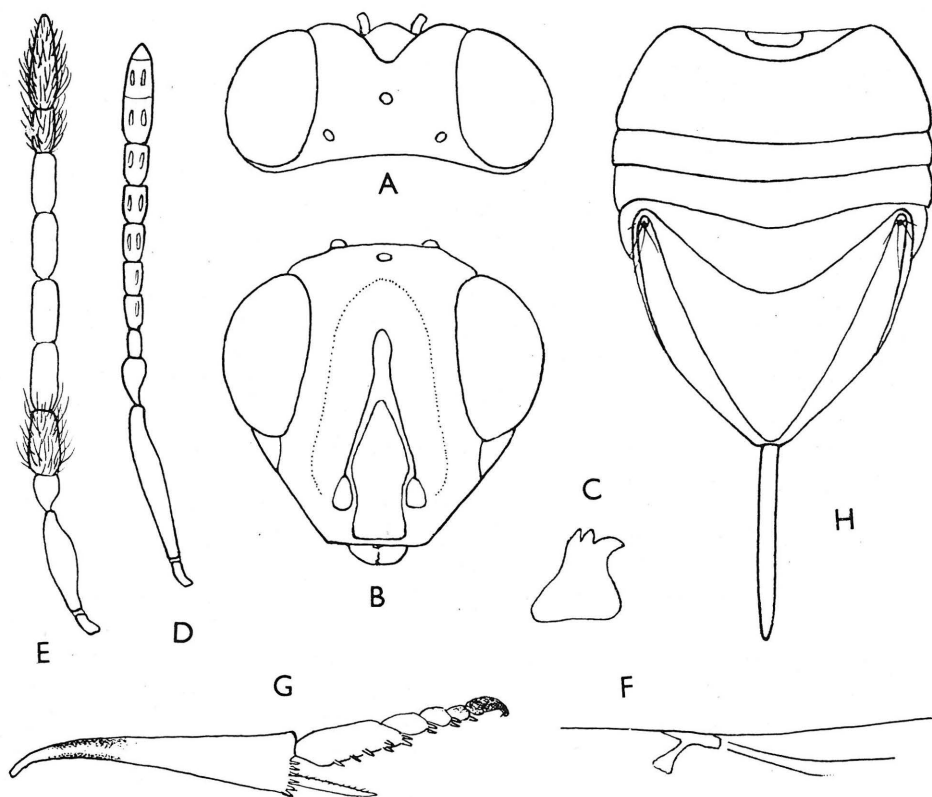


Fig. 9. *Ooencyrtus (Tatranus) terebrator*, n. sp. A. Head in dorsal view. B. Head in frontal view. C. Mandible. D. Antenna of female. E. Antenna of male. F. Venation. G. Mid tibia and tarsus. H. Abdomen.

ened by excavation of upper part of face. Pubescence of lower portion of face very fine, sparse, and short. Insertion of antennae as in following species shifted very low, but the distance between antennal sockets is distinctly shorter than their shortest distance from orbits. Mandibles of peculiar structure described in subgeneric diagnosis. Scape cylindrical, as long as pedicel and three following segments together; pedicel equal to one-third the length of scape, twice as long as broad; all funicle segments clearly longer than wide, towards the end moderately broadening, of the same structure as in *O. brevicauda*; also shape of club, length and density of pubescence, and existence of rhinaria analogous to those of this species.

Pronotum very short; mesoscutum with sculpture as on head, but the scattered fine punctures are barely perceptible. Length of mesoscutum to that of scutellum as 15:16. Scutellum strongly arcuate, at base of axillae being a little narrower than in median line long, subtriangular, in contrast to *O. breviscauda* oval at end, its sides less convergent; tips

of axillae lightly touching; sculpture identical with that on meso-scutum. Dorsum of whole thorax sparsely covered with fine, rather long brownish hairs. Propodeum very short, with blunt corners. Structure of wings as in *O. brevicauda*, n. sp., with a somewhat broader linea calva; submarginal vein in distal third thickened; marginal stout, fully two and one-half times longer than broad; stigmal rather short, approximately as long as broad, basal three funicle segments almost equal in length and legs having spur but slightly shorter than metatarsus; spines on ventral side of tarsi as shown in figure.

Abdomen as broad and about as long as thorax, rather oval than triangular in shape. First tergite relatively short. Pygostyli shifted as far as end of basal fourth of abdomen. Ovipositor very stout (as in *Cerchysius subplanus* Dalm.), haired; exerted portion equal to two-thirds the length of abdomen.

Male.

Size: 1.15—1.16 mm.

Distinguished from female mainly in the following characters: Fronto-vertex wider, its breadth relative to breadth of eyes as 13:6. Ocelli placed in more obtuse-angled triangle (ocellar angle being about 120°). Scape as long as pedicel and first funicle segment together; pedicel as long as broad, basal three funicle segments almost equal in length and somewhat shorter than scape; following segments moderately decreasing in length, the last one being the shortest, only one-third longer than broad; club of the same shape, equal in length to one and one-half preceding segments together, somewhat shorter than scape; entire flagellum covered with regularly spaced obliquely outstanding hairs, the length of which hardly attains half the length of the segments.

Thorax narrower and more arcuate; scutellum slightly pointed. In venation and structure of legs without substantial differences.

Abdomen heart-shaped, equal in width, but substantially shorter in relation to thorax.

Biology: Unknown.

Geographical distribution: Czechoslovakia.

Localities in Czechoslovakia: N. Bohemia: Jeřetín near Libochovice (xerotherm on chalk) 23. VII. 1943, 1 ♀; Brníkov (xerotherm on chalk) 18. VIII. 1943, 1 ♀. S. Bohemia: Sedlecké hory (pastures, 650 m. above sea level) 26. VIII. 1945 1 ♀. S. Moravia: Ježov (xerotherm) 21. VIII. 1942, 2 ♀♀; Skalka-Labuty (xerotherm) 25. VIII. 1942, 2 ♀♀; Bořetice (forest steppe) 25. VII. 1941, 1 ♀. E. Moravia: Strání (pastures, 600 m. above sea level), 10 ♀♀; Sůchov (xerotherm, 600 m. above sea level) 15. VIII. 1941, 6 ♂♂, 75 ♀♀ (Holotype, Allotype and 79 Paratypes). N. Slovakia: High Tatra Mts. (mountain terrain in the Belánské Tatry — limestone, 700—1900 m. above sea level) 31. VIII. 1956, 4 ♀♀; 2. IX. 1956, 2 ♀♀; 5. IX. 1956, 3 ♀♀; 7. IX. 1957, 1 ♀; 10. IX. 1957, 4 ♀♀; 11. IX. 1957, 1 ♀; 12. IX. 1957, 1 ♀. All lgt. Hoffer.

Note: As is evident from the distribution of this species on our territory, it occurs largely in submontane and montane regions; in the lowlands captures were only sporadic.

Ooencyrtus (Tatranus) brevicauda, n. sp.

Female.

Size: 0.97–1.28 mm.

Frontovertex, pronotum, mesoscutum, tegulae, and scutellum olive green to bluish green, of a darker shade than in *O. albopilosus*, n. sp. Very narrow band at posterior border of pronotum, as well as pleurae and propodeum having a bronzy tinge. Abdomen with metallic green basal tergite, and with intensive and widely expanding bronzy reflexes on remaining portion. Exserted part of ovipositor blackish brown. Eyes greyish brown. Ocelli red-brown. Cheeks metallic green; face also metallic green with golden scrobes. Mandibles brown. Radicle dark brown, scape black, almost imperceptibly lighter at the end; pedicel black-brown, its end lighter; entire flagellum uniformly dark brown. Wings having membrane distinctly brownish on whole area; submarginal, marginal, and postmarginal veins dark brown, stigmal of lighter colour. Femora of all legs dark with greenish metallic lustre, at knees light; fore tibiae brown, mid tibiae similarly coloured, but lighter at knees, hind tibiae black with moderately brownish end; tarsi brown, metatarsus of mid pair lighter, tibial spur yellowish white; last tarsal segment of all pairs darker than preceding ones.

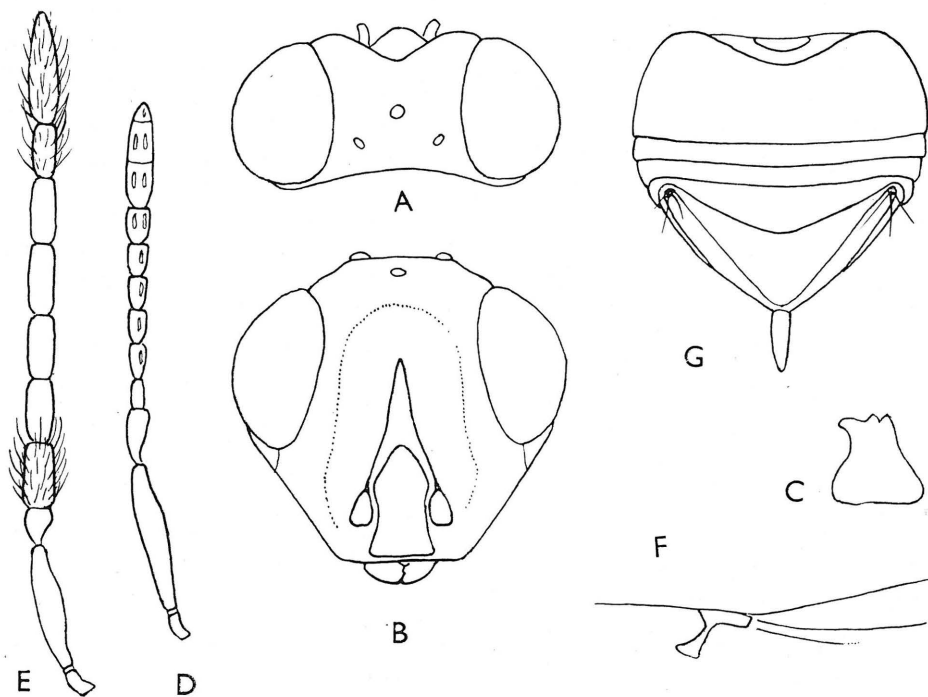


Fig. 10. *Ooencyrtus (Tatranus) brevicauda*, n. sp. A. Head in dorsal view. B. Head in frontal view. C. Mandible. D. Antenna of female. E. Antenna of male. F. Venation. G. Abdomen.

Head somewhat broader than thorax, with anterior margin concave when viewed from above, triangular, at oral margin broadly truncate. Frontoververtex broad, its width to width of eyes as 11:7, its sculpture being shallowly but rather densely reticulate, lustrous, with distinct scattered pin-punctures in frontal region. Ocelli arranged in slightly obtuse-angled triangle (ocellar angle about 100°); posterior pair separated from inner orbits by a space a little greater than is their diameter and approximately equally distant from occipital margin of head. Eyes broadly oval, clothed with very short hairs; their greater diameter to cheeks as 13:10. Face elongate; scrobes long, approaching each other in wide facial cavity at a very acute angle; pubescence of lower part of face sparse and very fine. Insertion of antennae far below level of ventral orbits and comparatively near to oral margin; antennal sockets separated from each other by a space equal to double their diameter, and slightly smaller than is their distance from ventral orbits. Scape cylindrical, somewhat longer than pedicel and three following segments together; pedicel equal to one-third the length of scape, fully twice as long as broad at the end; first funicle segment distinctly elongate, shorter and more slender than pedicel, its length exceeding its width by two-thirds; following funicle segments approximately equal in length, progressively moderately increasing in breadth, the last one being but slightly longer than wide; club oval in shape, as wide as last funicle segment, and as long as three preceding segments together, indistinctly segmented; entire funicle having unusually short pubescence, the rhinaria scattered on funicle as well as on club.

Pronotum very narrow. Mesoscutum arcuate, its sculpture similar to that on frontoververtex, the scattered pin-punctures fine, but visible; length of mesoscutum to that of scutellum as 13:15. Scutellum well arched, at base of axillae being a trifle broader than in median line long, triangular, narrowly rounded at the end; tips of axillae barely touching. Sculpture on greater part of surface identical with that on mesoscutum, at the end shallower and more lustrous. Posterior margin of pronotum, entire surface of mesoscutum, and entire scutellum covered with sparse, very fine yellowish hairs. Propodeum very short, with not very well defined right-angled corners. Fore wings large, with rather dense and short pubescence; marginal ciliation not very long; lineae calvae complete, in upper part very narrow; cellula costalis weakly developed. Venation ending before half the length of wing; submarginal vein normal, marginal rather thick, elongate, twice to two and one-half times as long as broad, stigmal very slightly longer than marginal, its moderately beak-shaped end running out towards margin of wing; postmarginal shorter than stigmal, broad at base, gradually becoming lost. Legs in proportion to body relatively large; spur of mid tibiae acutely pointed at the end, somewhat shorter than metatarsus, which is fully three times as long as broad.

Abdomen triangular, in broadest part about as wide as thorax, generally but slightly shorter. First tergite reaching almost to one-third, pygostyli shifted as far as above half the total abdominal length. Exserted portion of stout ovipositor equal to a good fifth of its length.

Male.

Size: 0.96—1.06 mm.

Head broader and shorter than in female. Width of frontovertex to width of eyes as 11:6.5. Ocelli larger in size, arranged in strongly obtuse-angled triangle; posterior pair very close to occipital margin. Insertion of antennae immediately below level of ventral orbits and far from oral margin. Radicle grey, scape black, pedicel blackish brown, flagellum uniformly brown; scape cylindrical, four and one-half times as long as wide, and equal in length to pedicel and first funicle segment together, pedicel as long as broad, funicle segments strongly elongate, first segment as broad as pedicel, its length equal to two-thirds of scape, two and one-half times longer than wide, following four segments a little shorter and of equal breadth, the last one being somewhat shorter; club of the same width as funicle, somewhat shorter than preceding two segments together, cylindrical, pointed at the end; whole of flagellum having not very long hairs (length of hairs not attaining half the length of segments).

Mesoscutum and especially scutellum more arcuate than in female. Postmarginal distinctly shorter than stigmal vein, which is triangularly broadened. Legs somewhat darker than in the other sex.

Abdomen shortly triangular, not narrower than thorax.

Biology: Unknown.

Geographical distribution: Czechoslovakia.

Localities in Czechoslovakia: N. Bohemia: Košnice-Vojnice (xerothermous pasture) 17. VII. 1943, 3 ♀♀ (Paratypes); Hazmburk (steppe on basalt) 8. VI. 1943, 4 ♀♀; 16. VII. 1943, 3 ♀♀; Račiněves (psammophile vegetation) 21. VII. 1943, 7 ♀♀; Mšené lázně (peatbog) 23. VII. 1943, 6 ♀♀; Doksany (steppé on chalk) 15. VII. 1943, 1 ♀. C. Bohemia: Nehvizdy (heath) 31. VII. 1951, 1 ♀; Suchdol near Praha (xerotherm) 20. VII. 1961, 23 ♀♀. S. Bohemia: Měšice near Tábor (xerotherm) 17. VII. 1945, 5 ♀♀; Ratibořské Hory (xerothermous vegetation on abandoned dumps) 16. VII. 1946, 1 ♀; Borkovické rašeliny (peatbog) 5. VIII. 1944, 3 ♀♀; 20. V. 1946, 1 ♂; České Velenice (xerotherm) 11. VI. 1946, 1 ♀. C. Moravia: Hády near Brno (steppe on limestone) 14. VII. 1941, 2 ♂♂, 55 ♀♀ (Allotype, Holotype, 55 Paratypes). E. Moravia: Osvětimany (xerotherm) 23. VIII. 1942, 3 ♀♀; Sůchov (pastures, 600 m. above sea level) 15. VIII. 1941, 1 ♀. All lgt. Hoffer.

Note: In the female sex the two species can be distinguished at a glance by the difference in the length of the ovipositor; the differences in the male sex, however, are on the whole miniature, and owing to the natural variability they are hardly usable in determination. Practically in *O. terebrator* the scape and pedicel are light at the end, while in *O. brevicauda* they are wholly dark; also the club in this species is comparatively shorter than in *O. brevicauda*.

***Allocerchysius*, nom. nov.**

Tricnemus; Erdős (nec Mercet), Acta Zool. Acad. Sci. Hung., 1: 218, 1955.

Cerchysiopsis; Hoffer (nec Girault 1922), Acta Ent. Mus. Nat. Pragae, 33: 6, 1959.

Type-species: *Cerchysiopsis confusus* Hffr.

Dr. Ch. Ferrière (Geneva) and Dr. V. A. Trjapitzin (Leningrad) kindly called my attention to the preoccupation of the denomination *Cerchysiopsis*. This name was first used by Girault in the year 1922.

For this reason I designate a new name and annex the relating synonymy, as given above.

Note: The genus was delimited in 1959 on the basis of the taxonomic evaluation of its genotype *Cerchysiopsis confusus* Hffr.; to the same genus was referred also *birói* Erd., originally described in *Tricladia* Merc.

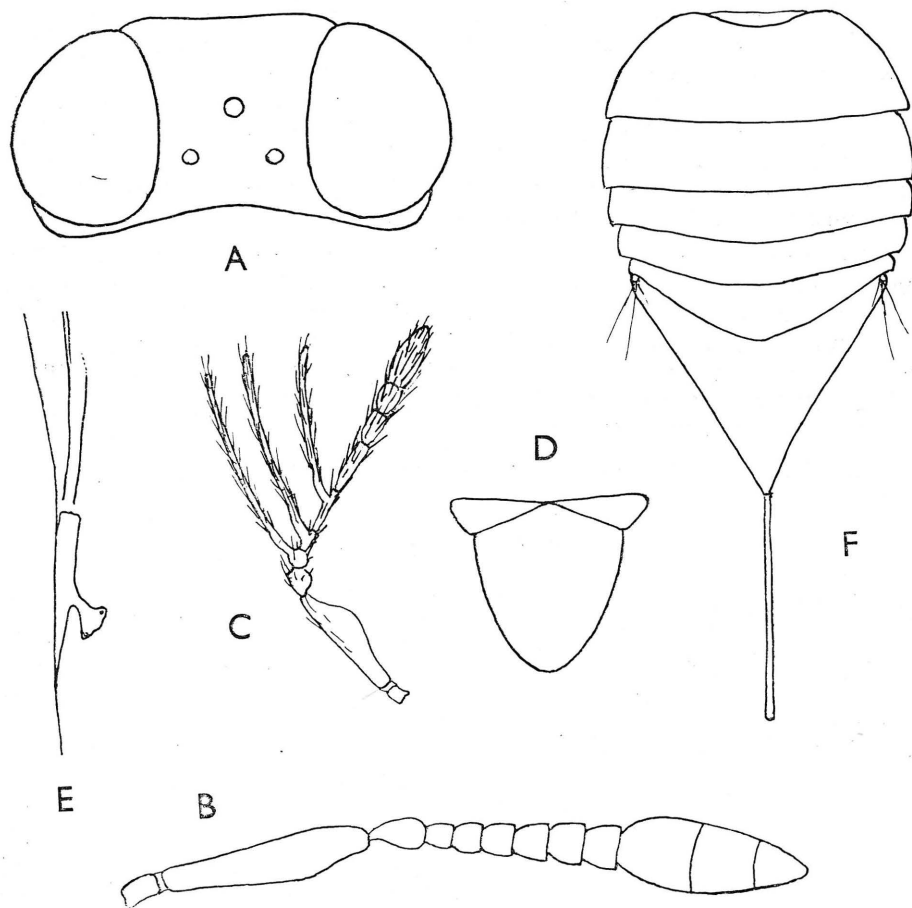


Fig. 11. *Allocerchysius confusus* Hffr. A. Head in dorsal view. B. Antenna of female. C. Antenna of male. D. Scutellum. E. Venation. F. Abdomen.

Along with the establishment of a distinct generic status for the species group *confusus* — *birói*, the author also gives a partial comparison of *Tricladia* Merc. and the newly delimited genus "*Cerchysiopsis* Hffr."

Subsequently also one specimen (♀) of the type species of *Tricladia* Merc. (*T. humilis* Merc.) was found in material from our territory. A detailed comparison of the type species of the two genera confirmed the

absolutely different characters of these generic taxons, as is partly shown in our figures. The scutellum of *Tricladia* is flat, broad, while in *Allocerchysius* it is strongly arcuate. The club in *Allocerchysius* is powerful, cone-shaped, and distinctly segmented, whereas in *Tricladia* it is of the same structure as in *Copidosoma* (flat to dish-shaped, solid). The male of *Tricladia* has not yet been ascertained in our territory; thus, if the hitherto known males from this country having three lateral funicle branches belong to the females of *Paracerchysius* n., then the distinctions between the two genera become evident when our figure of the male antenna of *Allocerchysius* sp. is compared with that of the male antenna of *Tricladia* has not yet been ascertained in our territory; thus, if the lengths of the individual flagellar segments and their branches, in the general thickness of the antenna, and in the main in the structure of the hairs, which is quite distinct in both genera.

The original denomination *Tricladia* of 1918 was changed to *Tricnemus* in 1921 by the author himself, who supposed the original name to be homonymous with *Tricladus* Enderlein 1906, and thus to fall in synonymy. According to the latest code of zoological nomenclature of 1962, in which are analysed in great detail cases of homonymy in zoology, there appears to be no doubt that the name *Tricladus* End. does not preoccupy the subsequent denomination *Tricladia* Merc.

Thus the synonymy of this genus is as follows:

***Tricladia* Merc.**

Tricladia Mercet, Bol. Soc. Esp. Hist. Nat., **18**: 430, 1918.

Tricnemus Mercet, Faun. Ibér. Him. Fam. Encirtidos, p. 535, 1921. **Syn. nov.**

The only female from Czechoslovakia originates from a steppe habitat on a limestone substratum in the area "Stránská skála" near Brno (S. Moravia); the specimen was taken 12. VII. 1941 (lgt. Hoffer). It is the first capture in Central Europe.

***Homalotylus* Mayr**

This genus, which is also of economic importance (parasites of Coccinellids), has been rather well worked on a world scale; from the point of view of taxonomic classification, however, it presents considerable difficulties which are due partly to the often delicate nature of its morphological characters, partly to biological, populational, and geographic variability. As the most abundant species in our territory may be regarded *H. flaminus* Dalm. and *H. eytelweini* Ratzb., which in the world literature have often been confused or incorrectly considered to be a single species. The specific character of both these species on the basis of micrometrical measurements of individual characters in larger series, as well as their correct interpretation, will be shown in a revision of the tribe *Homalotylini*, which is being prepared.

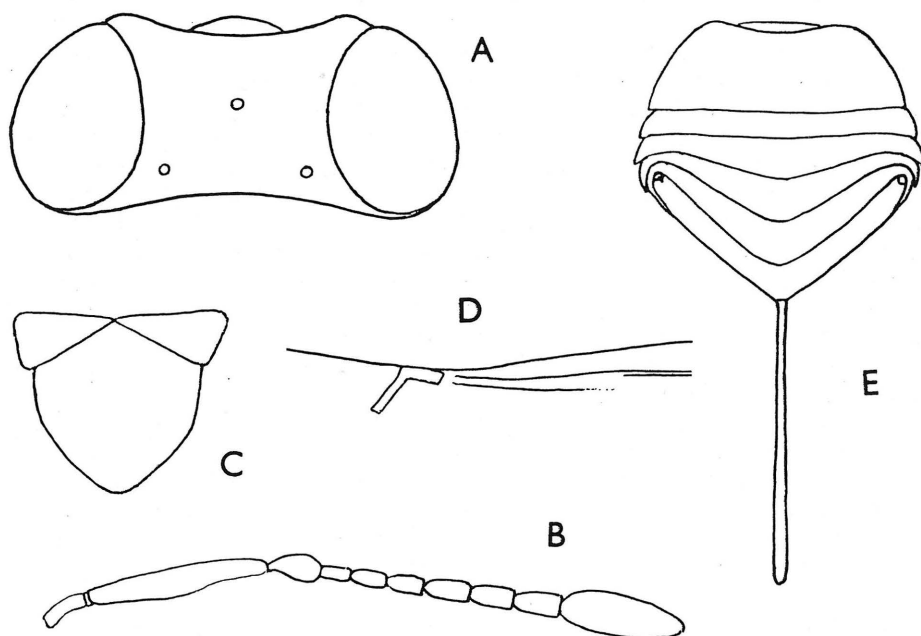


Fig. 12. *Tricladia humilis* Merc. A. Head in dorsal view. B. Antenna of female. C. Scutellum. D. Venation. E. Abdomen.

In addition to the two species mentioned above, there have been ascertained in the territory of Czechoslovakia also *H. hispanicus* Merc., *H. ephippium* Rusch., and three other species new to science the descriptions of which are published below. Of these, *H. platynaspidis*, n. sp., belonging unquestionably to the most abundant species of the warmer regions of Central Europe, has not yet been distinguished owing to its considerable similarity to *H. ephippium* Rusch.

H. ephippium was placed by Ruschka in Foerster's genus *Echthroplexis*, erected in 1856; it is with certainty congeneric with *Encyrtus flaminus* Dalm., for which Mayr erected the genus *Homalotylus* in 1875. Thus the name *Echthroplexis* clearly has priority over *Homalotylus*. However, the general recognition of the name *Homalotylus*, much used in scientific and applied literature, as well as the fact that it was employed in forming a higher taxonomic category, clearly stands in favour of its being declared a nomen conservandum by the International Commission of Zoological Nomenclature. For these reasons we use herein the name *Homalotylus* even in connexion with the species *ephippium* Ruschka.

Below we present the descriptions of the new species of this genus, viz. *H. hybridus*, *singularis*, and *platynaspidis*, n. spp.; in the case of *H. platynaspidis* we give a comparison with *H. ephippium* Rusch.

Homalotylus hybridus, n. sp.

F e m a l e.

Size (not including ovipositor): 1.34 mm.

Body black with very faint greenish tint on head, pronotum, meso-scutum, propodeum and pleurae; metanotum and propodeum black, with metallic bluish violet lustre; scutellum black, dull; abdomen black, with partial bluish green lustre. Middle part of vertex with almost imperceptible bronzy tint. Eyes and ocelli light pink-violet. Mandibles yellowish brown. Scape, pedicel, and first two basal segments nearly black, the following ones very gradually becoming lighter, so that segment 5 is almost light brown at the end; segment 6 and club yellowish white. Tegulae white except for narrower apical part, which is brown-black. Wings with darker indefinite spot of small extent at very base of wing, and with wide median dark band of normal intensity running across entire breadth of disk, of the same shape as e. g. in *H. flaminus* Dalm.; posterior third of this band is but slightly lighter in colour; distal part of wing not darker as compared with the other hyaline portions; submarginal vein brown, its middle part subhyaline, remaining veins of darker shade. Fore coxae, femora and tibiae dark brown, the part at distal end of femora lighter, tarsi uniformly light brown; mid and hind femora and tibiae black-brown, mid tarsi yellowish white except for last segment, which is brown-black, tibial spur faintly brownish; hind tarsi yellowish white, with last segment black and last but one brownish. Abdomen black; first tergite with faint bluish green lustre; ovipositor blackish brown, in basal part lighter than in distal.

Head moderately and uniformly arched, not very thick, in frontal view somewhat longer than broad. Eyes twice as long as their median width, occupying approximately two-thirds of total length of head; width of vertex at level of anterior ocellus relative to width of eye when viewed from above as 11:18.5; inner orbits anteriorly not very strongly but distinctly diverging. Frontovertex having scattered coarse punctures. Ocelli forming slightly acute-angled triangle; posterior pair separated from anterior ocellus by a distance somewhat greater than that separating them from occipital margin of head, the space between them and inner orbits again being equal to half their diameter. Facial area broad. Scape barely longer than three-fifths the width of head, thin, cylindrical, moderately curved, distally slightly increasing in width; pedicel somewhat shorter than one-third of scape, and about one-half longer than following segment; funicle segments 1—5 subequal, distinctly longer than broad; segment 6 nearly as long as broad; club equal in length to three preceding segments together, distally tapering to a point.

Thorax agreeing in structure with *H. flaminus* Dalm., only meso-scutum is a little longer and together with pronotum more narrower. Wings relatively not very long and rather narrow; pubescence of disk of normal type; linea calva very narrow, but distinct. Venation reaching beyond half the length of wing; submarginal vein in distal part doubly thick and slightly broken; postmarginal fully as long as stigmal, the latter meeting the former at a very acute angle (very slightly deviating from anterior margin of wing). Very short and stout mid metatarsus is in con-

trast with very long, slender and sharp mid tibial spur, which exceeds it very substantially; on the other hand, the hind tarsi are very slender.

Abdomen about equal to two-thirds the length of thorax, its length being equal to its width. First segment occupying more than half the total abdominal length. Pygostyli shifted as far as end of basal third of abdomen. Ovipositor prominently protruded; exerted portion is only a little shorter than one-third the length of abdomen.

Male: Unknown.

Biology: Unknown.

Geographical distribution: Czechoslovakia.

Locality in Czechoslovakia: S. Slovakia: Kováčovské kopce (steppe vegetation on trachyte substratum), 3. VII. 1947, 1 ♀ (Holotype). Lgt. Hoffer.

The systematic position is determined chiefly by the structure of the venation and antennae, by the more elongate and more parallel habit, and besides that, by the structure of the mid tibial spur. Peculiar characters are the somewhat greater width of the frontovertex and mainly of the mid tarsi, and the coloration of the hind tarsi, in which characters it differs from the other species exhibiting the complex of characters given above. The existence of a comparatively rather prominently protruded ovipositor in this species is of considerable interest, since it is the first case in the species group *H. flaminus* sensu Timberlake.

***Homalotylus singularis*, n. sp.**

Male.

Size: 1.28 mm.

Ground coloration of body pitch black-brown with almost imperceptible and indefinite metallic lustre, on dorsal side nearly black, lateral areas of pronotum and mesoscutum, the pleurae and sternum yellowish brown; head concolorous with thoracic dorsum. Eyes tinged with pink, ocelli ruby-coloured. Antennae black-brown, except for funicle segments 5—6 and club, which are yellowish white. Tegulae in basal half whitish. Tip of scutellum bordered by very narrow yellowish brown band. All coxae blackish, femora light brown, with the exception of those of hind pair, which are somewhat darker and concolorous with tibiae of all three pairs; fore and hind tarsi of same dark coloration as tibiae, while mid tarsi are yellowish white, except for last darker segment; mid tibial spur somewhat darker than metatarsus. Wings with waxen lustre of membrane and with smoky median band, not very intensive but distinct, running across entire breadth of wing. Submarginal vein hyaline in basal part, the apical expanded portion and the other veins in the area of the smoky band being very light brown. Pubescence in smoky area dark, in hyaline areas colourless.

Head very slightly longer than broad in frontal view, of medium thickness. Eyes rather large and wide, taking up almost two-thirds of length of head; their length to width as 3:2. Vertex at level of anterior ocellus relative to width of eye as 6:9.8; inner orbits strongly divergent. Ocelli in equilateral triangle; distance of posterior pair from occipital

margin of head almost equal to their distance from anterior ocellus; space between them and inner orbits hardly equal to one-third the ocellar diameter. Radicle a trifle shorter than one-fourth the length of scape; scape as long as two-thirds the width of head, in basal part moderately curved, laterally somewhat flattened and slightly broadened, with a very distinct notch on inferior side near above the middle; pedicel somewhat shorter

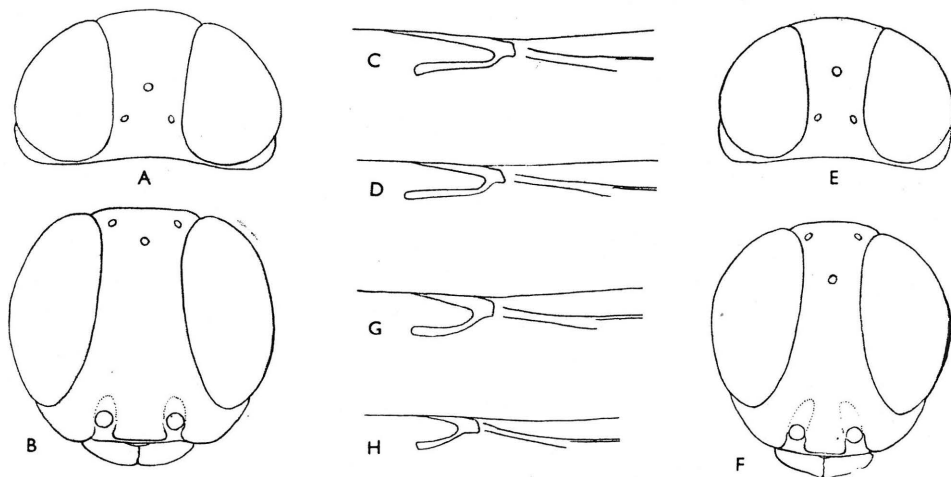


Fig. 13. *Homalotylus platynaspidis*, n. sp. A. Head in dorsal view. B. Head in frontal view. C. Venation. *Homalotylus hybridus*, n. sp. D. Venation. *Homalotylus ephippium* Rusch. E. Head in dorsal view. F. Head in frontal view. G. Venation. *Homalotylus singularis*, n. sp. H. Venation.

than one-third of scape, twice as long as broad at end, and very slightly shorter than two following segments together; first funicle segment equal in width to pedicel, a trifle longer than broad; remaining segments subequal, almost imperceptibly broader than long, moderately increasing in size towards apex; club about as long as three preceding segments together, along entire length tapering to a point.

Thorax of normal shape, its anterior part more arched than is usual. Scutellum flat with rounded sides. Propodeum very short. Sculpture of body corresponding to that common in other species of this genus, but it is not so prominent, thus giving the surface a kind of silken lustre. Pubescence rather poor, fine, and not prominent; on abdomen darker than on other parts of body; propodeal corners thickly covered with rather short white hairs. Wings of medium length and width; pubescence of disk as in the other species, basal area of wing nearly bare; lineula narrow, distinct, running across entire breadth of wing. Venation slightly exceeding half the length of wing; submarginal vein but very faintly curved, in distal part considerably broadened; postmarginal as wide as and one-third shorter than stigmal, which is straight, relatively thin, towards the end but slightly broadening; postmarginal and stigmal veins meeting at

an angle which is less acute than in *H. hispanicus* Merc. Legs in proportion to body having rather stout femora and tibiae; mid tibial spur distinctly longer than metatarsus.

Abdomen approximately as long as broad, triangular, with pygostyli shifted beyond apical half of abdomen.

Female: Unknown.

Biology: Unknown.

Geographical distribution: Czechoslovakia.

Locality in Czechoslovakia: S. Bohemia: Tábor (border of mixed forest between Zárybnická Lhota and Stříbrné Hutě) 28. VII. 1958, 1 ♂ (Holotype). Lgt. Hoffer.

Systematic position: In its quite specific body structure and coloration this species has no relationship to any of the so far known Old World species. It somewhat resembles two American species, mainly *H. albitarsis* Gah.; in coloration and antennal structure it is closer again to *H. punctifrons* Timb. The fact that we know as yet only the male sex of this so uncommon species in our fauna excludes the possibility of placing it in a species group erected for this genus by Timberlake (one of his chief criteria being the length of the ovipositor).

With *H. albitarsis* Gah. it agrees in the shape of the head, the shape and length of antennal segments (except for the first funicle segment), the structure of the venation and the similar coloration of legs (except for hind tarsi!). It differs from this species, however, in having the ocelli arranged in a more acute-angled triangle, in the clearly shorter first funicle segment, and chiefly in the coloration of the body. In *H. albitarsis* Gah. the head, pronotum, axillae and scutellum are almost amber brown, the head being somewhat paler (after Graham's redescription), the first abdominal tergite more yellowish, and—most important—the hind tarsi white; the mid tibial spur is yellowish. The stated differences in the coloration are so essential that they exclude, in view of the considerable constancy of these characters in the genus *Homalotylus*, the identity of the two species.

H. punctifrons Timb. agrees with our species in the coloration of the antennae, but it exhibits a different arrangement of the ocelli, a relatively considerably shorter and thicker stigmal vein, a lighter coloration of the head and scutellum, as well as some minor distinctions in the coloration of the legs (e. g. the orange-yellow mid tarsi). The female of *H. punctifrons* belongs to the species having a prominently protruded ovipositor.

***Homalotylus platynaspidis*, n. sp.**

Female.

Size: 1.36—1.82 mm., average size (26 specimens measured): 1.59 mm.

Ground coloration of body pitch black-brown with faint greenish tinge on pronotum and mesoscutum, coppery tinge on frontovertex; face in lower part slightly greenish, only the scrobes being yellowish brown. Mandibles brown. Eyes greyish brown, sometimes with faintly violet lustre; ocelli of the same colour or red. Scape, pedicel, and funicle segments 1—5

black; segment 6 and club yellowish brown, in some specimens reddish, sometimes yellowish white. Scapulae brown; tegulae in basal part white, in distal black-brown to black. Axillae pitch black; remainder of scutellum brick brown in a varying range, either only in apical portion (remainder dark), or the brown coloration extends also over a lesser or greater part of middle or basal region of scutellum. Metanotum and propodeum dark. Wings brown with two hyaline areas; one hyaline area extending across entire breadth of wing in distal half of first third (base of wing dark), the other hyaline area, subcircular in shape, joining the outer side of large median dark spot and bordered on the remaining sides by not very intensive brownish border of apical third of wing; median spot intensive, lower third lighter in colour. Venation dark brown, in hyaline area of wing light. Hairs in coloured areas of wing dark brown, in other parts hyaline. Fore femora brown, tibiae black, spur and tarsi brown; mid femora brown, only narrow basal band yellowish and knee whitish, tibiae brown, with lighter narrow border at the end; spur and tarsal segments (except for last blackish one) yellowish; hind femora and tibiae black, spur brown, tarsi white, the last one somewhat darker. Abdomen blackish brown.

Head broader than thorax, of medium thickness, its length in frontal view being about equal to its width. Frontovertex at level of anterior ocellus relative to width of eyes (seen from above) as 4:5; ocelli arranged in almost equilateral triangle, posterior pair being very close to inner orbits and somewhat nearer to occipital margin of head than is the distance between them. Eyes large, without distinct hairs, their inner orbits nearly parallel; length of eyes to length of cheeks as 77:20. Insertion of antennae immediately below level of ventral orbits; antennal sockets farther apart than is their distance from eyes. Scrobes very short, as long as broad. Mandibles three-toothed, the outer tooth being broadest and not very sharp, inner teeth smaller and sharper. Sculpture of frontovertex inclusive of facial area finely coriaceous with scattered distinct pin-punctures, which become lost in clypeal area. Scape along entire length moderately flattened, as long as pedicel and three and one-half basal funicle segments together; pedicel equal in length to one-third of scape, two and one-half times as long as broad; funicle segments quadrate, the basal three being a trifle elongate, remaining three segments as long as wide; club as long as three preceding segments together, at the base as thick as funicle, towards the end tapering to a point. Entire flagellum covered with dense, short and appressed pubescence.

Thorax with well-developed pronotum, which is equal to two-thirds the length of mesoscutum. Mesoscutum very short, half the length of scutellum, together with pronotum finely coriaceous with indistinct punctation; parapsidal grooves very weakly and not very perceptibly defined. Width of scutellum at base of axillae relative to its length as 22:21; remaining part of scutellum triangular, posteriorly moderately rounded, with microscopic very fine granulation. Pronotum and mesoscutum poorly and finely white pubescent, the very sparse pubescence of scutellum being black. Metanotum finely grooved. Propodeum long, equal to almost half the length of mesoscutum, in median area strongly lustrous, its nearly right-

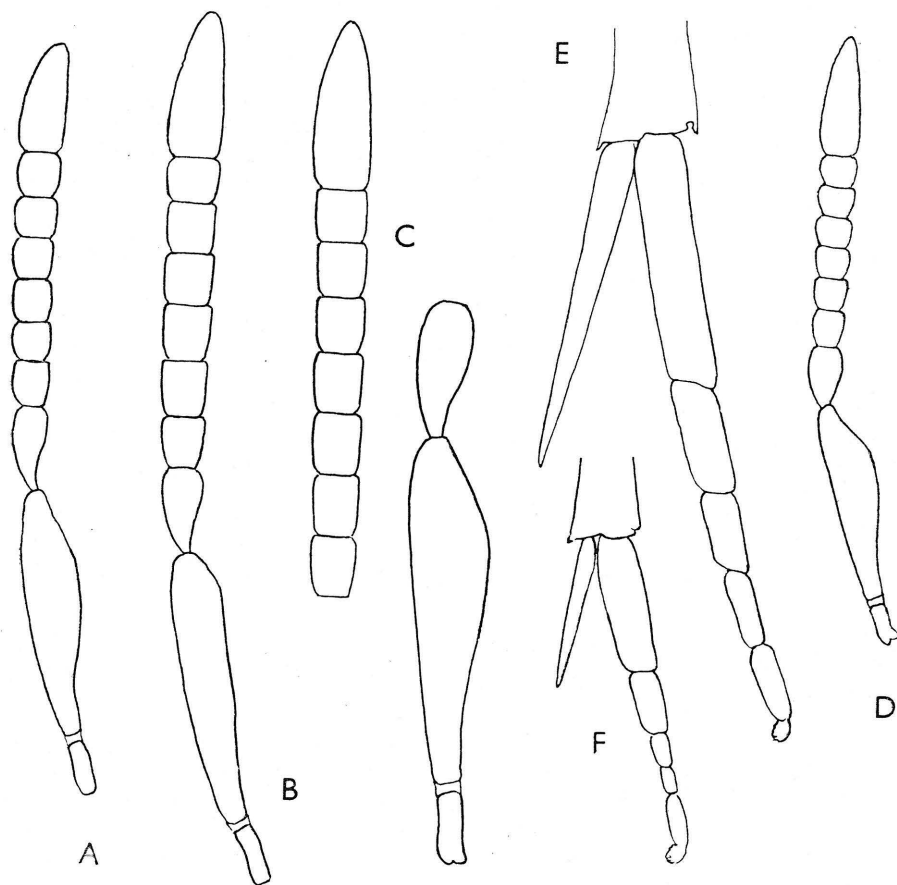


Fig. 14. Antennae of some Czechoslovak species of *Homalotylus*: A. *H. ephippium* Rusch. B. *H. platynaspidis*, n. sp. C. *H. hybridus*, n. sp. D. *H. singularis*, n. sp. End of mid tibia and tarsus of *Homalotylus* spp.: E. *H. hybridus*, n. sp. F. *H. singularis*, n. sp.

angled corners being conspicuously white pubescent. Wings well developed but somewhat variable in length, the pubescence of disc being finer than in *H. eytelweini* Ratzb., linea calva very narrow, ribbon-like, developed only in upper two-thirds of wing; marginal ciliation hardly perceptible; cellula costalis well developed. Venation reaching far beyond half the length of anterior margin of wing; submarginal vein in distal third broadened and curved; marginal thick, barely longer than broad; stigmal very long, comparatively thin, but very slightly diverging from anterior margin of wing; postmarginal very long, rather longer than stigmal, becoming lost. Marginal ciliation of posterior wing developed, but rather short. Legs slender, long. Mid tibiae bordered at end by stout spines (9 in number); spur somewhat longer than metatarsus, straight, sharp; metatarsus having two rows of stout and short spines (about 20 in number)

on ventral side, other segments provided with similar but smaller and thinner spines.

Abdomen short, heart-shaped, somewhat longer than half the length of thorax and a trifle narrower. First abdominal tergite reaching to half the total length, with very fine, shiny, net-like sculpture. Pygostyli shifted to end of apical third of abdomen. Tip of ovipositor slightly protruded.

Male.

Size: 1.36—1.46; average size (taken from 4 specimens): 1.41 mm.

Very similar to female, only frontovertex at level of anterior ocellus broader (about as broad as width of eye seen from above, or but slightly narrower), funicle segments 2—3 as long as wide, segment 6 usually being blackish to wholly black, wings normally developed.

Biology: Reared from the Coccinellid *Platynaspis luteorubra* Goeze.

Geographical distribution: Czechoslovakia.

Localities in Czechoslovakia: C. Bohemia: Ruzyně near Praha, IX. 1952 (ex *Platynaspis luteorubra* Goeze; Bouček educ.), 4 ♂♂, 2 ♀♀; Noutonice-Kováry, 6. VI. 1953, 1 ♂, Bouček lgt. S. Moravia: Dolní Bojanovice (psammophile vegetation) 20. VII. 1941, 1 ♀, lgt. Hoffer. S. Slovakia: Kováčovské kopce (andesite — steppe) 2 ♀♀, lgt. Hoffer; Štúrovo (Heľ Farok, steppe on loess) 5. VII. 1947, 3 ♀♀, lgt. Hoffer; Štúrovo-Ebed (small steppe valleys at the Danube) 1. VII. 1947, 2 ♂♂, 9 ♀♀ (Holotype, Allotype and Paratypes); 7. VII. 1947, 7 ♀♀, lgt. Hoffer. E. Slovakia: Piliš near Slovenské Nové Mesto (andesite — steppe) 3. VII. 1950, 1 ♀, lgt. Hoffer; Somotor (psammophile vegetation) 16. VIII. 1950, 1 ♀, lgt. Hoffer.

Systematic position: In habit and coloration this species is very similar to *H. ephippium* Rusch., with which, in all likelihood, it has been confused by various authors. Owing to the great resemblance of both sexes, the at a glance striking distinction in the length of the ovipositor was not taken into consideration. *H. platynaspidis*, n. sp. is a comparatively abundant species, particularly in warmer regions, whereas *H. ephippium* Rusch. appears to be very rare in our region. The conspecificity of our specimens of *H. ephippium* Rusch. with the type specimens was kindly verified on the basis of comparison by Ing. Svatoslav Novický (Vienna).

The two related species differ chiefly in the following characters:

H. platynaspidis, n. sp.

Female.

Head in frontal view as long as broad.

Frons at level of anterior ocellus as wide as two-thirds the width of eye (viewed from above).

Ocelli arranged in equilateral triangle.

Sculpture of frontovertex very fine with scattered punctures.

Insertion of antennae reaching level of ventral orbits.

H. ephippium Ruschka

Female.

Head in frontal view longer than broad.

Frons narrower than two-thirds of eye at level of anterior ocellus.

Ocelli in clearly acute-angled triangle.

Sculpture of frontovertex coarser without scattered punctures.

Insertion of antennae distinctly below level of ventral orbits.

Distance between antennal sockets equal to length of cheeks.

Scrobes very short, about as long as broad.

Scape slightly and uniformly broadened.

Mesoscutum with indistinct scattered pin-punctures.

Marginal darker border of distal part of wing very weak; distal hyaline area subcircular in shape.

Stigmal vein long, very slightly deviating from anterior margin of wing.

Postmarginal vein distinctly longer than stigmal.

Spur of mid tibiae longer than metatarsus.

Only very short tip of ovipositor protruded.

Male.

Wings normally developed.

Cheeks longer than distance between antennal sockets.

Scrobes longer, oval, fully twice as long as broad.

Scape in distal part distinctly broadened.

Scattered pin-punctures on mesoscutum distinct.

Marginal darker border of distal part of wing more intensive and broader; hyaline distal area narrower, transversely elliptic.

Stigmal vein shorter, more deviating from anterior margin of wing.

Postmarginal vein as long as stigmal.

Spur of mid tibiae as long as metatarsus.

Ovipositor prominently protruded.

Male.

Wings shortened.

Eucoccidophagus, nov. gen.

Ixodiphagus; Erdős (nec Howard), Ann. Hist. Nat. Hung., 7: 193, 1956.

Ixodiphagus; Hoffer (part.) (nec Howard), Acta Ent. Mus. Nat. Pragae, 33: 15, 1959.

In the year 1959 the writer published a new species from Czechoslovakia which he placed in *Ixodiphagus* How. (*I. semiluniger*), very close to *I. birói* Erd.; to the same genus he referred also *Encyrtus breviventris* Kurdj., a species of uncertain systematic position, which various authors assign to various genera [most often to *Adelencyrtus* Ashm.²⁾] because of a number of essential characters which it has in common with the two preceding species.

In the same publication the writer stated (p. 16 and further on in the key on p. 19) the distinctions between the species group *I. texanus* How. and the group of coccidophagous species from Central and East Europe. Not knowing from his own autopsy the type species of *Ixodiphagus* How., he provisionally retained the species *birói* Erd., *semiluniger* Hffr., and *breviventris* Kurdj. in this genus in spite of the existence of a number of important differences stated in the publication.

Through the kindness of Dr. B. D. Burks (Washington) the writer was later able to study *I. texanus* How. as well as a representative of *Adelencyrtus* Ashm., which confirmed his original supposition that the group species "*I.*" *birói* Erd. is not congeneric with the type of *Ixodiphagus* How. on the one hand, nor with any of the representatives of the genera of the fam. *Encyrtidae* having 4-toothed mandibles on the other. Therefore we

²⁾ *Adelencyrtus* Ashm. has a quite distinct type of wing venation; the antennae of the male again are formed as in *Habrolepis* Westw.

establish herein a new generic status with the type species *Ixodiphagus birói* Erd. having the name *Eucoccidophagus* n.

The characteristic of the new genus is sufficiently evident from the description of the species group "I." *birói* Erd. and from the relating figures published in 1959. The chief characters are as follows: Mandibles 4-toothed; maxillary palpi 3-jointed, labial palpi 2-jointed; funicle segments quadrate, club ovoid, in the ♀ triarticulate, in the ♂ biarticulate; submarginal with a trace of a regressive vein; marginal short, thick; stigmal very long, curved, having a beak-shaped broadening at the end; postmarginal well developed, long; mid metatarsi short, tibial spur shorter or of the same length; sculpture finely coriaceous; coloration non-metallic.

Type-species: *Ixodiphagus birói* Erd.; in addition to this species we assign herein also *semiluniger* Hffr. and *breviventris* Kurdj.

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