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# MONOGRAFIE ČESKOSLOVENSKÝCH DRUHŮ RODU ECHTHROPLEXIELLA MERCET

## První předběžná práce k monografickému zpracování čs. Encyrtidů (Hym., Chalcidoidea)

# MONOGRAPH OF THE CZECHOSLOVAK SPECIES OF THE GENUS ECHTHROPLEXIELLA MERCET

## First preliminary paper for the monographic investigation of the Czechoslovak Encyrtidae (Hym. Chalcidoidea)

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Tímto zahajuji serii publikací, které jsou předběžným zpracováním menších úseků fauny čs. *Encyrtidů*. V těchto dílčích pracích zachyceny budou především pro vědu nové rody a druhy vždy v rámci monografického zpracování menšího nebo většího systematického celku, které je nutno zveřejniti nejprve v mezinárodním jazyce, aby mohlo být pak přikročeno k širšímu soustavnému zpracování celé čeledi v jazyce českém, které bude zahrnuto do sbírky monografií „F a u n a Č S R", plánované Československou Akademií věd.

Materiál k těmto publikacím, jenž jest téměř výhradně v mé sbírce, jest dosud nejrozsáhlejším materiálem středoevropských *Encyrtidů* a byl nashromážděn během 15 let velmi intensivním průzkumem našeho území. Dává nám již dostatečný obraz o složení fauny této čeledi *Chalcidoid* naší vlasti, o rozšíření jednotlivých druhů u nás a částečně i o jejich biologii. Vedle sběru materiálu ve volné přírodě moderními sběracími methodami (při čemž bylo použito i řady aparátů nových, vlastní nebo zlepšené konstrukce, ke komplexnímu zachycení biocenos) zakládány byly i velmi početné chovy hostitelských druhů za účelem získání těchto důležitých parasitů a studia jejich biologie. Těmito methodami nashromážděno bylo více

*) S podporou Čs. národní rady badatelské.

než 200.000 exemplářů této čeledi, z nichž bohužel jen malý zlomek (poměrně velmi kusý výběr) slouží za podklad k těmto publikacím. Naprostý nedostatek pomocných sil, především preparátorských, znemožňuje mi bohužel zhodnotiti materiál v celé jeho šíři, neboť až dosud byl jsem při jeho získávání, třídění a zpracování, i při obstarávání veškeré literatury a pořizování dokumentace, odkázán pouze sám na sebe. Taktéž ani jinak rozsáhlé hymenopterologické sbírky museální, ani soukromé sbírky našich hymenopterologů, nemohly mi podstatně přispěti k zpracování této skupiny, neboť materiál nejdrobnějších parasitických čeledí není v nich téměř zastoupen. Tak jako v celé řadě cizích států (kromě Španělska, Italie, Rakouska a Maďarska) byly i u nás tyto skupiny opomíjeny a dosud jsme neměli specialistu, který by se jejich studiem zabýval. Jediným pomocníkem při obstarávání některé nedostupné mi literatury, jakož i autorem mnohých cenných rad, byl mi věhlasný vídeňský chalcidolog pan Ing. Svatoslav Novicky, jemuž vděčím v mnohém směru za jeho opravdu obětavou a všestrannou pomoc i spolupráci.

Přes tyto mimořádné obtíže podjal jsem se úkolu zpracovati postupně celou tuto hospodářsky velmi důležitou a při tom u nás nedokonale známou čeleď, neboť potřeba základního výzkumu čs. druhů *Encyrtidů*, převážně parasitujících na *červcích*, nejúpornějších to škůdcích kulturních rostlin, jest již sama o sobě pobídkou více než dostatečnou. Dokonalým poznáním těchto důležitých parasitů bude podstatně rozšířen obzor v bionomii našich *červců* a teprve na základě těchto poznatků budou vytvořeny správné předpoklady k použití nových biologických method ochrany, v cizině s úpěchem prováděných.

Podrobné zpracování fauny *Encyrtidů* ČSR bude míti i mimořádný význam pro sousední evropské země, neboť území našeho státu svou polohou a členitostí sdružuje nejrůznější geografické prvky, jejichž příslušníci u nás velmi často dosahují hranice areálu svého rozšíření; proto bez dokonalého průzkumu naší vlasti není myslitelný jasný obraz o rozšíření těchto druhů v Evropě. Také oekologii *Encyrtidů* byla dosud věnována pozornost minimální; budeme proto vedle geografického podchycení výskytu u jednotlivých druhů vždy krátce charakterisovati i biotop, na němž parasit žije, který, jak zkušenost ukazuje, zejména svými mikroklimatickými poměry ovlivňuje jeho existenci neméně, než sama přítomnost jeho hostitele.

V tomto prvním příspěvku monograficky zpracovávám čs. druhy z rodu *Echthroplexiella* Mercet. Dodnes bylo zjištěno na našem území 5 druhů, z nichž tři jsou pro vědu nové; u dvou druhů Mercetových popisuji dosud neznámé samce. Připojuji též klíč evropských druhů tohoto rodu.

Jest mi povinností nad jiné milou poděkovati zde Čs. národní radě badatelské za finanční pomoc, kterou již po dva roky podpořila mou práci na chalcidologickém výzkumu naší vlasti.

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The genus *Echthroplexiella* Mercet falls within the closest affinity of the genera *Baeocharis* Mayr and *Metanotalia* Mercet and forms with the genus *Pezobius* Förster a characteristic evolutionary group (tribus *Echthroplexielini* m.) attaching itself to the generic group from

the affinity of the genus *Aphycus* MAYR (tribus *Aphycini* m.). This tribus comprises slender, parallel forms with three-toothed mandibles, in which the two sexes are still very slightly differentiated (the most primitive genus is just the genus *Echthroplexiella* where the differentiation is slightest), with a large, transversally oval head (in contrast to the *Aphycini* where it is distinctly hemispherical, broadly lying to the pronotum), with mostly brachypterous species, with the pronotum not suppressed at the cost of the mesoscutum (also in the macropterous forms!) and transversally parallel; propodeum as a rule strongly developed, margins of the abdominal segments (except the last) not shifted forwards laterally with the exception of the genus *Pezobius* FÖRST., which is evolutionarily the most differentiated genus of this group); wings when developed usually with smoky spots or bands, ovipositor often strongly developed; coloration predominantly non-metallic or only with an indication of a metallic lustre. In the tribus *Aphycini* m. the pronotum is already strongly reduced, though some primitive genera (*Timberlakia* MERC. and *Stemmatosteres* TIMB.) show still some characters of the *Echthroplexiellini*. The genus *Timberlakia* MERC. stands on the limit between the two tribus, and I believe that its inclusion among the *Echthroplexiellini* would be very justified. Though the genus *Mira* SCHELLB. has a number of characters in common with the *Echthroplexiellini*, yet its strong differentiation indicates rather its independent character.

On the whole our tribus *Echthroplexiellini* corresponds to MERCET's 4th group (Fauna Ibérica, 1921, p. 57), which the author calls the group of the genus *Mira*. I do not, however, consider this designation suitable (also if we place this genus here), as just the genus *Mira* is least typical for this group.

The genus *Echthroplexiella* was established by MERCET in 1921, who designated as type of the genus his species *submetallica*. He describes from Spain four species which are morphologically relatively considerably different, just like our new species from Czechoslovakia; only the species *E. flava* MERC. and *similis* HFFR. are phyllogenetically closer to each other. Thus the determination of the different species is relatively easy. Most of them are brachypterous, and winged forms are relatively rare. Macropterous males have not yet been found, except for the species *E. similis* HFFR. where both sexes are known only in the winged form.

The literature contains very few records of this genus; this indicates the very sporadic occurrence of the species belonging to it, and these species are predominantly exponents of the warmest and driest localities; the species *E. moravica* HFFR. forms an exception, as it penetrates to an altitude of 1000 m. above sea-level, but it is nevertheless bound to relatively dry localities exposed to the south. The species *E. flava* MERCET is in our country typically psammophile; also the species *similis* HFFR. prefers sandy localities.

Five species of this genus have so far been ascertained in Czechoslovakia, three of which are new to science. In the species *aeneiventris* MERC. and *flava* MERC. I describe the males not known before, and in the latter species also a new winged female form. According to our present knowledge

the genus *Echthroplexiella* is distributed only in Europe and Western Siberia; by the description of new species from Czechoslovakia the number of species known has risen to 8.

Owing to their relatively rare occurrence the biology of these *Encyrtidae* is not yet known. But we can assume almost with certainty that they are parasites of scale-insects, just like the genera standing taxonomically nearest to them.

## Genus **Echthroplexiella** Mercet

*Echthroplexiella* Mercet, Fauna Ibér., Him. Encírt., p. 183. 1921.
*Echthroplexiella* Mercet, Bol. Soc. Esp. Hist. Nat., XXII, p. 476. 1922.
*Echthroplexiella* Nikolskaja, Chalcidy fauny SSSR, p. 261. 1952.

### Females.

Head large, transversally oval, convex, forehead varying in width, but not broader than the transversal diameter of the eyes; ocelli in a moderately obtuse to acute-angular triangle, very far from the posterior margin of the head. Eyes large, arched; temples always developed. Posterior margin of the head angularly indicated. Cheeks well developed. Mandibles distinctly three-toothed. Antennae of moderate length, scape thin and long, cylindrical or somewhat compressed and broadened; pedicel normally developed; funicle composed of 6 segments, successively increasing in size; their length does not exceed their width, especially in the last two segments; club either undivided or divided into three segments, always obliquely truncate.

Pronotum well developed, transversally parallel, posterior margin not deeply emarginated; mesoscutum relatively short, transverse, with distinct parapsidal furrows or without them; scutellum with axillae strong, forming an equilateral triangle, flat; the tips of the axillae touch; propodeum considerably broad. Wings only rarely normally developed; in this case the marginal vein, stigmal vein and postmarginal vein are well developed and their length is about equal; disc of the wings either smoky (one or two dark, broad bands) or hyaline; but most species are brachypterous, and macropterous specimens occur only exceptionally. Legs normally developed, middle tarsi often broadened, spur always a little shorter than the metatarsus.

Abdomen elongated, generally oval, only the lateral margins of the last segments shifted forwards. Ovipositor well developed, often very long.

### Males.

Both sexes of the species of this genus are very similar in shape and coloration. The typically male characters are: Forehead, though in different species of different width, yet always more or less broader than in the female; eyes relatively smaller, antennal scapes shorter, often flattened and moderately broadened, club always undivided; of the antennae of the two sexes those of the male are in the distal part relatively more slender; abdomen much shorter than in the female, at the end truncate or broadly rounded.

## Key to the European*) Species of the Genus *Echthroplexiella* MERCET

### Females.

1 Ovipositor short (shorter than 1/5 of the length of the abdomen) . . . . . 2
— Ovipositor very long . . . . . 4

2 Scape long, cylindrical, ovipositor short but distinctly projecting . . . . . 3
— Scape shorter, flattened, in the middle broadened; ovipositor entirely hidden; face, middle of the pronotum, scutellum and middle of the propodeum yellow . . . . . *E. consobrina* MERCET.

3 Scutellum yellow; frons much narrower than the transversal diameter of the eyes; mesoscutum without parapsidal furrows . . . *E. submetallica* MERCET.
— Scutellum dark, frons almost as broad as the transversal diameter of the eyes; mesoscutum with slightly developed parapsidal furrows. *E. orientalis* HOFFER.

4 Body somewhat pushed together; antennal club yellow, distinctly divided into 3 segments; tegulae entirely white, scutellum orange; mesoscutum without parapsidal furrows; anterior wings dark smoky, with two transversal white bands (in the macropt. form.) . . . . . *E. moravica* HOFFER.
— Body slender, antennal club undivided; mesoscutum with distinctly developed parapsidal furrows . . . . . 5

5 Coloration of the body dark, only the anterior parts of pronotum and mesoscutum light; macropterous form with a large, rounded, dark spot in the middle of the anterior wing (in the brachypt. forms the rudiments of the wings are in the distal part) . . . . . *E. aeneiventris* MERCET.
— Body for the larger part yellow to yellowish brown, wings almost hyaline . 6

6 Brachypterous forms, only sporadically macropterous; the whole body lemon yelow; pedicel fully as broad as the scape; club undivided, 1½ times as long as broad; wings (in the macropt. f.) hyaline; abdomen in the basal two thirds parallel . . . . . *E. flava* MERCET.
— Only macropterous forms; body ochraceous yellow, antennae dirty brownish propodeum on the sides with dark rectangular spots; pedicel somewhat thinner than the scape; club indistinctly divided into 3 segments, 2½ times as long as broad; wings slightly yellowish brown smoky: sides of the abdomen only in the first third parallel . . . . . *E. similis* HOFFER.

### Males.

1 Body entirely or predominantly yellow . . . . . 2
— Body dark, only some of its parts light . . . . . 3

2 Habitus slender; only brachypterous forms; body lemon yellow, antennae and abdomen somewhat brownish; scape distinctly longer than the flagellum, thin, cylindrical; pedical broader than the scape, club twice as long as broad . . . . . *E. flava* MERCET
— Habitus moderate stock; only brachypterous forms; body dirty yellowish brown, anterior margin of the mesoscutum, distal parts of the axillae, the whole propodeum and the major part of the abdomen black . . . . . *E. similis* HOFFER.

3 Scape and pedicel dark, rest of the antennae pure white *E. aeneiventris* MERCET.
— Antennae differently coloured . . . . . 4

4 Antennae entirely dirty yellow . . . . . *E. submetallica* MERCET.
— Antennae dark, with yellow club . . . . . *E. moravica* HOFFER.

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*) The only Asiatic species, described by NIKOLSKAJA 1952 (Western Siberia) *Echthroplexiella irinae*, is characterized by shortly projecting ovipositor, developed parapsidal furrows, long cylindrical scape and in the whole length equally wide funicle; head, pronotum (with the exception of silver-glittering front border) and mesoscutum yellow, remaining part of thorax and abdomen are dark, with slight green-bronze tint. Antennae are yellowish, legs yellow, hind coxae and tibiae darker. Size: 1 mm.

## Echthroplexiella aeneiventris MERCET

*Echthroplexiella aeneiventris* MERCET, Fauna Ibér., Him. Encírt., p. 188. 1921.
*Echthroplexiella aeneiventris* MERCET, Bol. Real. Soc. Esp. Hist. Nat., XXII, p. 476 *(f. macroptra)*. 1922.
*Echthroplexilla aeneiventris* NIKOLSKAJA, Chalcidy fauny SSSR, p. 362, 1952.

### Male (new)

Size: 0.6 mm.

Head blackish brown, with a slight bronze lustre. Antennae with scape and pedicel dark brown, with the flagellum and club pure white. Pronotum dark, mesoscutum yellowish white, scutellum light brown, propodeum a little darker; tegulae for the major part (at the base) white. All three pairs of legs very light yellow, only the middle femora at the end faintly smoky. Abdomen blackish brown, first tergite with a violaceous lustre.

Head strikingly large, broader than the thorax, seen from above anteriorly broadly trucate, finely coriaceous. Ocelli arranged in an obtuse triangle, the posterior ones twice as far from the posterior margin of the head as from the inner orbits and by one half farther from each other than from the anterior ocellus. Eyes smaller than in the females, temples well developed. Forehead almost twice as broad as the transversal diameter of the eyes. Face moderately deepened. Antennae jointed very far from each other, with moderately flattened scape, with the pedicel as long as the first three segments of the funicle; funicular segments distinctly broader than long, gradually increasing; club undivided, at the end obliquely truncate. Ratio between the scape, pedicel, funicle and club 7 : 3 : 6.5 : 5.

Pronotum transverse, three times as broad as long, as long as the mesoscutum; parapsidal furrows only at the anterior margin slightly indicated; sculpture of the pronotum and mesoscutum finely longitudinally rugose. Scutellum with axillae robust, triangular, three times as long as the mesoscutum, posteriorly pointed, finely granulate. Rudiments of the wings narrow, reaching scarcely to the height of the tip of the scutellum. Metatarsus of the second pair of legs by ⅓ longer than the corresponding pair.

Abdomen short, of a length of $^2/_3$ of that of the thorax, at the end broadly rounded, finely rugose.

### Female.

In the diagnosis of the species MERCET (1921) describes the brachypterous form, later (1922) the macropterous form. It is difficult to decide whether both these forms belong with certainty to the same species. Our females show a continuous series of transitions from strongly macropterous to micropterous forms, where the length of the ovipositor is the same in the different forms just like the spurs of the second pair of tibiae.

The diagnosis of the species has to be supplemented by the description of the mandibles which have three teeth, sharp and straight and of almost equal length.

The Czechoslovak specimens vary a little in coloration, but preserve in the main the following colour scheme: head dirty yellow to brownish bronze, generally much darker than the anterior part of the pronotum, which is yellowish white, the anterior part blackish brown; praescutum somewhat darker (yellowish brown) than the scapulae, which are mostly light yellow; tegulae at the base white; scutellum with axillae blackish, with a greenish tint; anterior margin of the propodeum on the sides in the neighbourhood of the stigma light yellow to brownish; the other parts dark.

Rudiments of the wings in the brachypterous forms with smoky distal part; the (relatively rare) macropterous forms have (according to the Czechoslovak specimens) only one broad dark band in the middle part of the wing, whereas the end of the wing is hyaline.

An essential difference between the Czechoslovak specimens and MERCET's diagnosis lies also in the length of the ovipositor, which is in all our specimens as long as ½ of the abdomen, whereas in the type it has only the length of one fourth (in MERCET's macropterous form according to the description of one third). Also the spur of the second pair of the tibiae reaches to $^2/_3$ of the metatarsus, whereas in the type it is according to MERCET as long as the metatarsus.

Distribution: Spain, Czechoslovakia.

Localities in Czechoslovakia:

♂ *Forma brachyptera:* Slovakia mer.: Štúrovo (southern slope of the eastern part of the Belanské kopce, caught on steppe vegetation on a loess substratum) 7. VII. 1947. Lgt. coll. Dr A. Hoffer.

♀ *Forma macroptera:* Slovakia mer.: Štúrovo (ut supra) 5. VII. (1 specimen), 7. VII. 1947 (1 spec.). Lgt. et coll. Dr. A. Hoffer. Kováčovské kopce (steppe vegetation on andesite) 3. VII. 1947 (1 spec.). Lgt. et coll. Dr. A. Hoffer.

♀ *Forma brachyptera:* Slovakia mer.: Štúrovo (ut supra) 5. VII. (5 spec.), 7. VII. 1947 (3 spec.), 16. IX. 1947 (2 spec.). Lgt. et coll. Dr. A. Hoffer.

### **Echthroplexiella orientalis** n. sp.

Female

Size (without ovipositor): 1.2 mm.

Head brown, with a weak greenish lustre; antennae light brown. Anterior two thirds of the pronotum light yellow, posterior third blackish; mesoscutum blackish brown; scutellum with scapulae concolorous with the major part of the mesoscutum; propodeum dark except the part around the stigma, which forms a yellowish brown spot. Anterior legs dirty yellow, middle femora brown, tibiae lighter, first three tarsal segments whitish yellow, fourth dark smoky, fifth black; posterior pair of legs blackish brown, tarsi coloured as in the preceding pair. Rudiment of the wing with an intensely dark spot in its distal part, tip of the wing hyaline. Abdomen blackish brown; ovipositor brown with a black termination.

Head transversally oval, moderately arched, a little broader than the thorax, finely granular; forehead a little narrower than the transversal diameter of the eyes; ocelli arranged in an equilateral triangle with the posterior ones almost touching the inner orbits and very far from the

posterior margin of the head; temples developed; face moderately deepened; mandibles with 3 teeth; antennae as long as the thorax, relatively thin; scape very moderately flattened; pedicel twice as long as broad and a little shorter than the following 3 segments of the funicle; first segments of the funicle as long as broad, successively increasing in size and width, so that the last 2 segments are already distinctly broader than long; club undivided, as long as the preceding 3 segments of the flagellum together, truncate at the end. Ratio between the scape, pedicel, funicle and club 13.5 : 4 : 13 : 8.

Pronotum three times as broad as long, shiny, in the posterior part very finely transversally crenelate; mesoscutum short, hardly $^2/_3$ of the length of the pronotum, shiny, with weakly developed parapsidal furrows. Tegulae large, dish-shaped. Scutellum triangular, posteriorly pointed, with the axillae as long as pronotum and mesoscutum together, coarsely wrinkled. Propodeum short. Rudiments of the wings in the holotype reaching to the middle of the abdomen. Legs robust; middle metatarsus only triflingly longer than the corresponding spur.

Abdomen as long as the thorax, very shiny, with a fine reticular sculpture. Ovipositor very short, attaining the length of $^1/_6$ of the abdomen.

This species is most closely related to the species *E. aeneiventris* MERC. from which it is distinguished by the coloration, the slightly broader forehead, the shorter mesoscutum, the sculpture of the head and scutellum, the more robust legs (especially the stronger tarsi of the second pair), the longer spur and the quite short ovipositor.

Male: unknown.

Distribution: Czechoslovakia.

Localities in Czechoslovakia:

Slovakia orient.: Brehovo (hill "Imbreg", Pontian steppe on the southern slope) 14. VIII. 1950 (1 ♀, *holotype*). Lgt. et coll. Dr. A. Hoffer.

**Echthroplexiella moravica** n. sp.

Female

Size (without ovipositor): 0.9—1.2 mm.

Head pitch blackish brown: scape and pedicel brown, funicle black, club yellowish white with the base darker smoky. Thorax pitch black except for the yellowish pronotum and orange scutellum; tip of the scutellum darkened. Tegulae entirely pure white. Anterior wings in the macropterous form smoky with two transversal white bands, of which the first lies in the half of the marginal vein, and the second, arcuate, one runs behind the postmarginal vein and passes outwards into the indistinctly smoky distal part of the wing; the dark smoky part between the two white bands is delimited at the anterior margin by the prestigma and by the stigmal vein; nervature brown, submarginal vein in the part of the white band light yellow. The brachypterous forms have the rudiments of the anterior wings in the distal third smoky. Anterior legs yellowish brown, middle pair concolours except in the distal part of the femora, which is darkened; posterior pair of legs with the femora and the basal half of the tibiae dark, the rest

yellowish brown; all claws dark. Abdomen blackish brown, ovipositor light brown, tip blackish.

Head transversally briefly oval, broader than the thorax, with a rugose sculpture. Forehead almost as broad as the transversal diameter of the eyes. Ocelli in an equilateral triangle; the two posterior ones at the very margin of the inner orbits, very far from the posterior margin of the head. Eyes large; temples developed. Face moderately deepened. Mandibles with three teeth, the middle tooth longest, the upper one very small, blunt. Scape and pedicel long and very thin; funicle relatively short, with transverse segments conspicuously broadening in the direction towards the club which is only a little longer than broad, distinctly divided into 3 segments of which the last is moderately truncate. Length ratio between scape, pedicel, funicle and club: 12 : 4 : 9 : 6.

Thorax relatively broad, moderately convex, dull, finely and sparsely white pubescent. Pronotum short, forwards narrowed, as long as ⅓ of its anterior margin; mesoscutum arched, distinctly broader than the pronotum, with a fine, very scattered puncturation the scutellum and axillae form together an equilateral triangle with a somewhat rounded apex; propodeum broad, with rounded posterior corners. The anterior wings in the macropterous form project over the abdomen by more than one third of their length; submarginal vein moderately curved, not reaching to half the wing; marginal vein relatively short, but distinct, strong, as long as the stigmal vein; postmarginal vein distinct only in half the length of the stigmal vein, then indistinct; marginal ciliation of the wings distinctly developed; posterior wings hyaline. In the brachypterous forms the rudiments of the wings vary slightly in length; the longest reach (in our specimens) to the middle of the abdomen; a marginal ciliation is usually not developed in the vestigial wings. Tarsi of the middle pair of legs strong; the spur reaches to two thirds of the metatarsus.

Abdomen of the shape of a hexagon elongated posteriorly, much shorter than the thorax, dull shiny; ovipositor strong, of the length of half the abdomen.

Male

Size: 1 mm.

In habitus and coloration very similar to the female. It differs in the following characters: funiculus and propodeum somewhat lighter coloured: anterior margin of the head seen from above moderately deepened; forehead distinctly and rather closely puncturate; antennae as long as the thorax with the scapus, which is distinctly shorter than in the female; thorax in the middle part flattened and moderately broadened; flagellum with articles of similar configuration as in the female, but towards the end less broadened (antennae thinner); club undivided, more strongly truncate; ratio between scape, pedicel, funicle and club 9 : 4 : 8 : 5.5. Pronotum and mesoscutum sparsely punctate; scutellum proportionally smaller than in the female, at the end somewhat more rounded. Tarsi of the middle pair much slimmer, spur almost as long as the metatarsus. The rudiments of the wings reach in the allotype two thirds of the abdomen. Abdomen very short, slightly longer than ½ of the thorax.

The new species distinguishes itself very markedly from all our other species, especially by its stocky habitus, the shape of the mandibles, the transverse segments of the funicle, the divided club and the lack of parapsidal furrows. The whole tegulae white, scutellum orange, and antennal club light with a characteristic coloration of the anterior wings characterise this species at the first glance. In the genus *Echthroplexiella* it forms a peculiar taxonomic element, having almost the value of an independent genus.

Distribution: Czechoslovakia.

Localities in Czechoslovakia:

♂ *Forma brachyptera (allotype):* Slovakia orient.: Velký Kevežd (caught on the southern slope of the hill on steppe vegetation, substratum andesite) 5. VII. 1950. Lgt. et coll. Dr. A. Hoffer.

♀ *Forma macroptera (holotype):* Moravia orient.: Velká Javorina (mountain meadow at about 950 m) 12. VIII. 1941. Lgt. et coll. Dr. A. Hoffer.

♀ *Forma brachyptera (paratypes):* Bohemia merid.: Husinec near Prachatice (xerothermic slope and Callunetum) 31. VIII. 1950. Lgt. et coll. Dr. A. Hoffer; Moravia merid.: Kobylí na Mor. (Pannon-Pont. steppe) 8. IX. 1942 (1 spec.), Čejč near Hodonín (Pannon.-Pont. steppe vegetation on loess) 15. VI. 1940 (1 spec.), Vlkoš (xerothermic) 28. VIII. 1942 (1 spec.); Moravia orient.: Velká Javorina (mountain meadow at about 950 m above sea level) 12. VIII. 1941 (1 spec.); Slovakia merid.: Kováčovské kopce (steppe vegetation on andesite) 2. VII. 1947 (4 spec.) and 5. VII. 1949 (2 spec.). Lgt. et coll. Dr. A. Hoffer.

## Echthroplexiella flava Mercet

*Echthroplexiella flava* Mercet, Fauna Ibér. Him. Encírt., p. 189. 1921.
*Echthroplexiella flava* Nikolskaja, Chalcidy fauny SSSR, p. 362. 1952.

This species was described after one brachypterous female from the vicinity of Madrid. The Czechoslovak specimens are also for the most part brachypterous and it is only exceptionally that normally winged specimens (females) are found. In the macropterous specimens the anterior wings reach slightly to beyond the tip of the ovipositor, are relatively short, hyaline, with a very short marginal ciliation; submarginal vein distinctly shorter than half the length of the wing, straight, prestigma moderately curved; costal cell very narrow; marginal vein thin, 4 times longer than broad, as long as the stigmal vein; postmarginal vein a little shorter; all veins light yellow; linea calva narrow, but distinct, running obliquely through the whole wing. Posterior wings narrow, attaining three fourth of the length of the anterior wings.

Mercet's diagnosis of the female has to be supplemented: Mandibles with three teeth, antennal club undivided; parapsidal furrows distinctly developed.

Size of the Czechoslovak females 1.4—1.5 mm (without ovipositor).

### Male (new)

Size 0.8—1.1 mm.

Coloration as in the female, i. e. the whole body lemon yellow, antennae and abdomen slightly brownish. In shape the male is very similar to the

female. Head in front with a somewhat straighter ending, forehead slightly broader than the diameter of the eyes. The ratio of the lengths of scape, pedicel, funicle and club is in the male 9 : 3.5 : 8 : 6 (in the female 11.5 : 4.5 : 10 : 7); scape thin, club strongly broadened, much broader than the last segment of the funicle, strongly truncate (in the female almost as broad as the last segment of the funicle, moderately truncate). All the male specimens we have found so far are brachypterous; the rudiments of the wings reach to $^1/_5$—$^1/_4$ of the abdomen. Abdomen distinctly shorter than the thorax.

Distribution: Spain, Czechoslovakia.

Localities in Czechoslovakia:

♂ *Forma brachyptera:*

Bohemia centralis: Lysá nad Labem (caught on a psammophile vegetation) 13. VI. 1950; 8. VI. 1950 (3 spec.); 17. VI. 1950 (1 spec.). Lgt. et coll. Dr. A. Hoffer.

♀ *Forma macroptera:*

Bohemia centralis: Lysá n. L. (ut supra) 13. VI. 1950 (1 spec.); 12. VII. 1950 (1 spec.). Lgt. et coll. Dr. A. Hoffer.

♀ *Forma brachyptera:*

Bohemia centralis: Lysá n. L. (ut supra) 8. VI. 1950 (1 spec.); 13. VI. 1950 (5 spec.); 12. VII. 1950 (1 spec.). Lgt. et coll. Dr. A. Hoffer.

## **Echthroplexiella similis** n. sp.

### Female

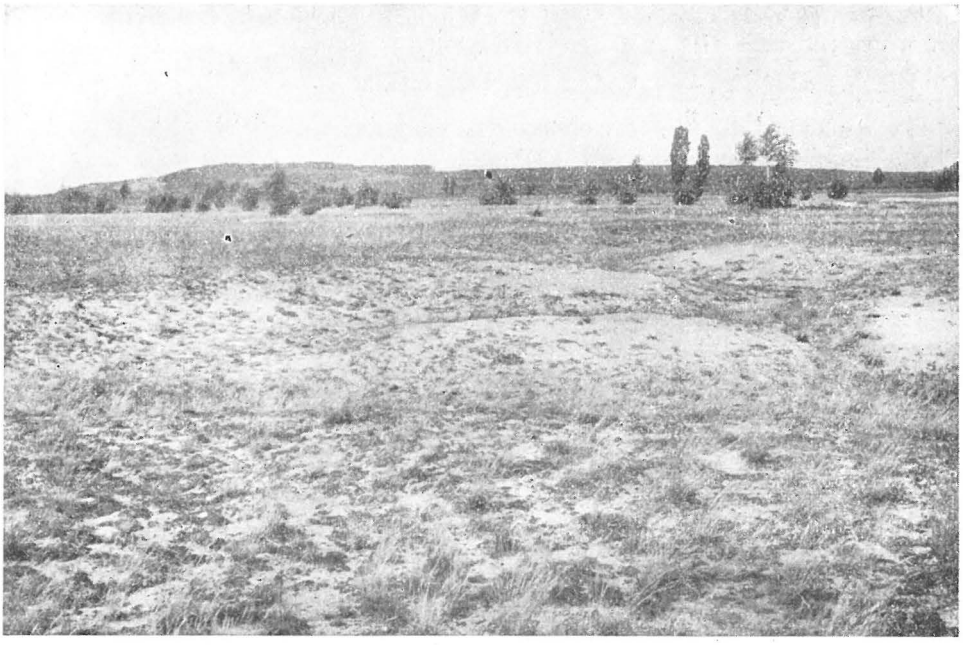
Size (without ovipositor): 0.9—1.4 mm.

Coloration: The whole body ochraceous yellow, antennae dirty brown, posterior margin of the pronotum in the middle part often with a narrow black band, tegulae dirty white; propodeum on the sides with a white rectangular spot; eyes dark with a silvery lustre, ocelli red; venation light yellowish brown; ends of the last segments of the tarsi blackened; claws black; tip of the ovipositor blackened.

Head transversally oval, as broad as the thorax, normally vaulted, dull. Forehead as broad as the transversal diameter of the eyes. Ocelli in an equilateral triangle, the posterior ones near the inner orbits. Eyes large; temples slightly developed. Mandibles with three teeth, sharp, inner tooth shorter. Antennae slightly longer than the thorax. The ratio of scape, pedicel, funicle and club is 13 : 5 : 11.5 : 7.5; scape thin, cylindrical; pedicel a little thinner than the scape, longer than the first 3 segments of the flagellum; funicle composed of segments about as long as broad, gradually increasing in size, of which the first two are half as broad as the last one; club relatively fairly long, cylindrical, 2½ times as long as broad, not broader than the last segment of the funicle, indistinctly divided into 3 segments, moderately truncate at the end.

Thorax rectangular, 1½ times as long as broad, mat. Pronotum transverse, parallel, almost 4 times as broad as long. Mesoscutum slightly longer

than the pronotum, with the parapsidal furrows well developed. The scutellum forms an equilateral triangle with the axillae. Middle part of the propodeum distinctly delimited, transversally rectangular. Wings always developed, most frequently somewhat shortened (the tips of the wings extend to the end of the abdomen without the ovipositor), more rarely longer (reaching at most the end of the ovipositor); the length



Bohemia centralis: Lysá n. L., stanoviště psammophilní vegetace, klasická lokalita druhů *E. similis* n. sp. a *flava* MERC. — Bohemia centralis: Lysá n. L., biotope with psammophile vegetation, typical locality with *E. similis* n. sp. and *flava* MERC.

of the venation exceeds half the wing; submarginal vein straight, anterior to the marginal vein briefly interrupted; marginal vein somewhat thickened, of half the length of the stigmal vein, which is as long as the postmarginal vein; linea calva narrow, running obliquely through the whole wing. Posterior wings attaining ¾ of the length of the anterior wings. Tarsi of the middle pair normally strong, spur distinctly shorter than the corresponding metatarsus.

Abdomen as long as the thorax together with the head, parallel in the anterior part, posteriorly converging into the tip; pygostyles in two thirds of the length of the abdomen; ovipositor of ⅓ of the length of the abdomen, rarely longer.

Male

Size: 0.85—0.95 mm.

Body dirty yellowish brown; antennae darker; eyes black; ocelli orange; anterior margin of the mesoscutum, distal part of the axillae,

propodeum, apical $^2/_3$ of the abdomen and claws black. Wings very slightly yellowish, venation light brown.

Forehand somewhat broader than the transversal diameter of the eyes. Ratio between scape, pedicel, funicle and club 8 : 2.5 : 9 : 6.5; scape relatively short, narrowed towards both ends, pedicel equally broad, as long as the following 3 segments of the flagellum; funicle composed of segments moderately broader than long, gradually increasing in size; club undivided, parallel, as broad as the funicle, 3 times long as broad, at the end moderately truncate.

Abdomen a little shorter than the thorax.

Otherwise resembling the female.

Distribution: Czechoslovakia.

Localities in Czechoslovakia:

♂ *(allotype):* Bohemia centr.: Lysá n. L. (psammophile vegetation, see illustration) 8. VI. 1950. Lgt. et coll. Dr. A. Hoffer; *(paratypes):* Lysá n. L. (ut supra) 8. VI. 1950 (1 spec.), 13. VI. 1950 (2 spec.); 12. VII. 1950 (1 spec.); Kozly near Neratovice (sand dune, State Reservation, psammophile vegetation) 9. VII. 1950 (1 spec.). Lgt. et coll. Dr. A. Hoffer.

♀ *(holotype):* Čejč (ut supra) VI. 1940. Lgt. et coll. Dr. A. Hoffer; *(paratypes):* Bohemia centr.: Lysá n. L. (ut supra) 8. VI. 1950 (15 spec.); 9. VI. 1950 (1 spec.); 13. VI. 1950 (23 spec.); 12. VII. 1950 (1 spec.); 7. VIII. 1949 (1 spec.). Moravia merid.: Čejč near Hodonín (steppe vegetation on loess) VI. 1940 (2 spec.).

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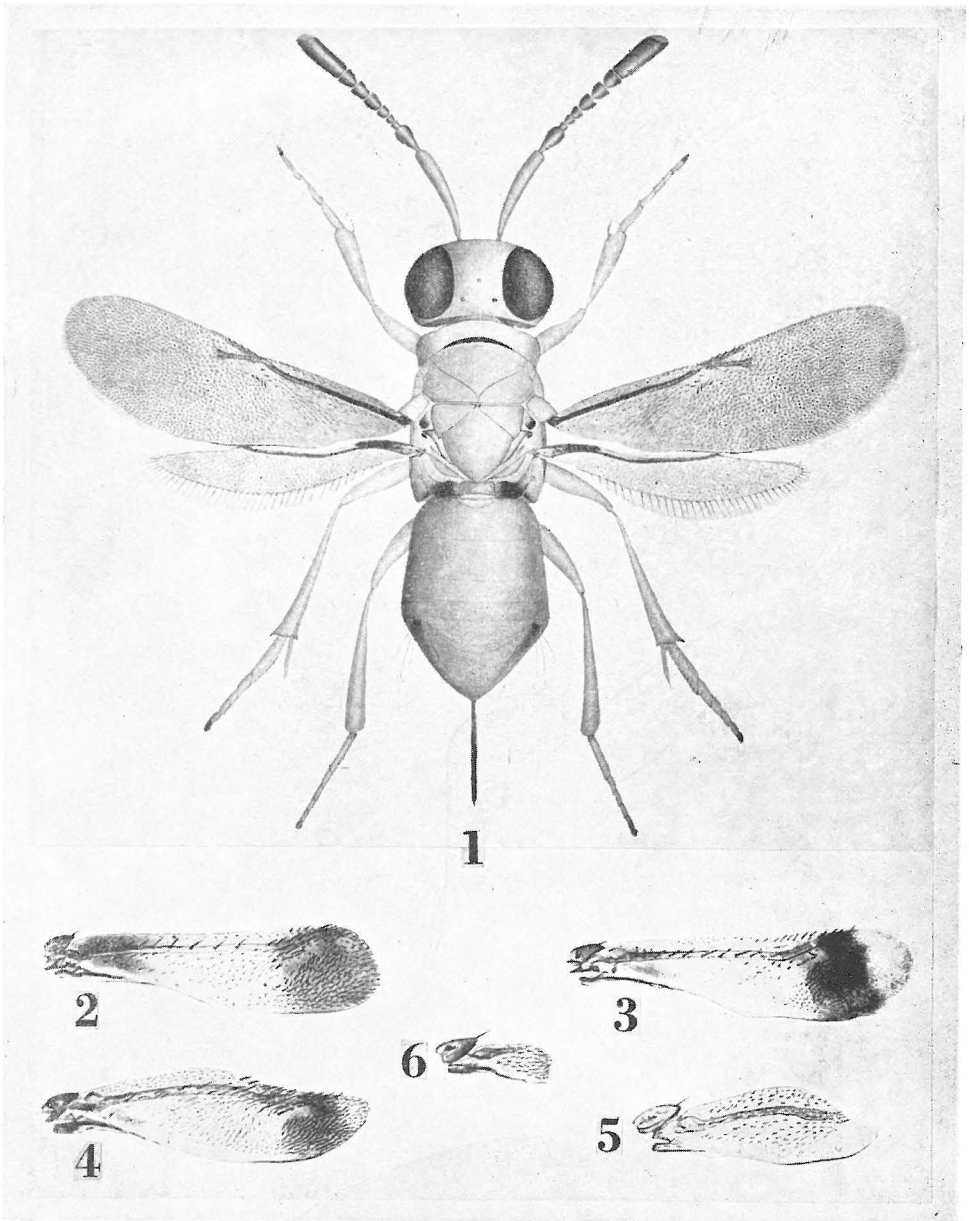
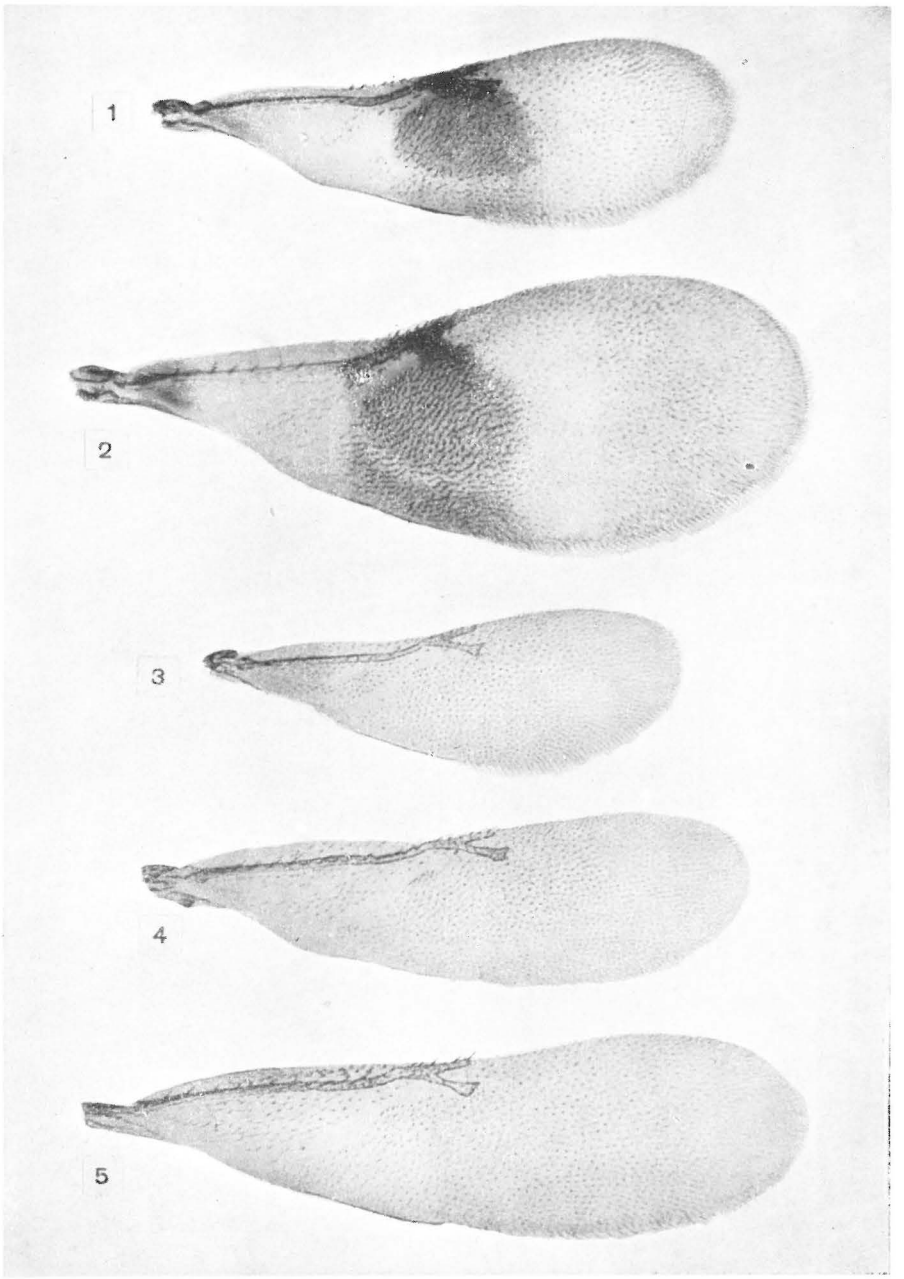



1. *Echthroplexiella similis* HFFR. ♀. Celkové vyobrazení — general view; 2. *E. moravica* HFFR. ♀, *f. brachyptera*, rudiment předního křídla — rudiment of fore wing; 3. *E. aeneiventris* MERC. ♀ *f. brachyptera*, dtto.; 4. *E. orientalis* HFFR., dtto.; 5. *E. flava* MERC. ♀ *f. brachyptera*, dtto.; 6. *E. aeneiventris* MERC. ♂ dtto.




1 *Echthroplexiella aeneiventris* ♀ *f. macroptera* MERC., přední křídlo — fore wing; 2. *E. moravica* HFFR. ♀ *f. macroptera,* dtto.; 3. *E. similis* HFFR. ♂, dtto.; 4. *E. similis* HFFR. ♀, dtto.; 5. *E. flava* MERC. ♀, *f. macroptera* HFFR., *dtto.*