

A STUDY OF CENTRAL EUROPEAN EULOPHIDAE, II:
DIAULINOPSIS AND CIRROSPILUS (HYMENOPTERA)

ZDENĚK BOUČEK

(Department of Entomology, National Museum, Praha)

Genus *Diaulinopsis* Crawford

Diaulinopsis Crawford, 1912, *Proc. U. S. Natl. Mus.*, 43: 182. — Type: *Diaulinopsis callichroma* Crawford; orig. design.

Achrysocharelloidea Girault, 1913, *Trans. Roy. Soc. South Austral.*, 37: 109. — Type: *Achrysocharelloidea pax* Girault; orig. design.

Cycloscapus Erdős et Novicky, 1951, is not a synonym to *Diaulinopsis* Crawford, as supposed by Erdős, 1954 (p. 323), but is the same as *Diglyphus* Walker. *C. pusztensis* Erd. et Nov., the type species of *Cycloscapus* is according to the lectotype (female collected at Högyész, Hungary, 25. 6. 1946) a *Diglyphus*: *D. pusztensis* (Erd. et Nov.), n. comb.

Ceraninus Walker, 1840, supposed by Erdős, 1954, to be the same as *Diaulinopsis* was declared by Graham, 1959, after a study of the type to be identical with *Thripoctenus* Crawf., though the description and Walker's figure as well would suggest rather the correctness of Erdős' view.

Diaulinopsis is most akin to *Cirrospilus* and *Diglyphus*, from which it may be distinguished by the differences summarized as follows:

- 1 Parapsidal furrows incomplete or, when complete, then more or less superficial and diverging posteriorly, archedly curved, intercepting axillæ well outside and anterior to the inner angles of the latter; axillæ considerably shifted forwards . . . *Diglyphus*
- Parapsidal furrows clearly complete, more or less straightly converging backwards, and intercepting axillæ almost at the inner angles of the latter 2
- 2 Postmarginal vein twice as long as stigmal or nearly so; hind pair of scutellar bristles in back third of scutellum, removed from hind margin; male scapus greatly swollen; thorax wholly metallic *Diaulinopsis*
- Postmarginal vein at most 1.5 times as long as stigmal; hind pair of scutellar bristles closely at hind margin of scutellum; male scapus not inflated; thorax often more or less yellow *Cirrospilus*

Diaulinopsis arenaria (Erdős), n. comb.

Cycloscapus arenarius Erdős, 1951, *Acta Biol. Acad. Sci. Hung.*, 2: 181, 182.

A single species of *Diaulinopsis* is known to me so far from Central Europe, and I am introducing it under the name *D. arenaria* (Erd.). It is very similar to the American *Diaulinopsis callichroma* (Crawford), the type species of the genus, and differs from the latter mainly by the presence of

a pale cross-fascia on gaster and by the more slender body. The specimens of *D. callichroma* were sent to me kindly by Dr. B. D. Burks from the U.S. National Museum, Washington.

Apart from the pale markings on face which are often lacking, the usually broad pale cross-fascia on gaster indicates in some specimens (both females and males) a tendency to fade out.

Hosts: Unknown. *D. arenaria* is probably associated with small Diptera mining in grasses.

Distribution: Central Europe (Poland, Czechoslovakia, Austria, Hungary, Rumania, Bulgaria).

In Czechoslovakia common in xerothermic localities. Bohemia: Praha with environments: Chuchle, 27. 6. 1954 and 11. 5. 1955 (Bouček), Sv. Prokop, 8. 1955 (Dlabola), Dívín, 30. 5. 1946 (Dlabola), Podhoř, 1. 8. 1948 (Bouček); Veselí nad Lužnicí, 11. 7. 1945 (Bouček); Velký Vřeštov, 8. 1953 (Bouček); Hradec Králové, 1. 8. 1947 (Bouček). - Moravia: Mohelno, 6. 7. 1957 (Bouček); Pavlovské kopce-Klausen, 27. 7. 1946 (Hoffer). - Slovakia: Štúrovo and district, Čenkov, 28. 7. 1955, Kamenín, 27. 7. 1955, Štúrovo, 27. 7. 1955 (all Bouček); Slanec SE of Košice, 4. 8. 1954 (Bouček); Brehovo, 16. 7. 1951; Svätá Mária-Rad, 13. 9. 1951 (both Hoffer); Somotor, 6. 7. 1952 (Kocourek); Kevežd, 5. 9. 95 (Hoffer). — I have also seen specimens from Poland and Austria.

Genus *Cirrospilus* Westwood

Subgenus *Cirrospilus* Westw., s. str.

Cirrospilus Westwood, 1832, *Philos. Mag.*, (s. 3) 1: 128. — Type: *Cirrospilus elegantissimus* Westwood; by monotypy.

Plesiospilus Ferrière, 1953, *Boll. Ist. Ent. Univ. Bologna*, 19: 398. — Type: *Eulophus unistriatus* Förster; orig. design.

Subgenus *Atoposomoidea* Howard, n. status.

Atoposomoidea Howard, 1910, *Tech. Bull. U.S. Dept. Agr. Bur. Ent.*, 19: 9. — Type:

Atoposomoidea ogimæ Howard; by monotypy.

Pseudiglyphomyia Girault, 1913, *Mem. Queensl. Mus.*, 2: 267. — Type: *Pseudiglyphomyia biguttata* Girault; orig. design.

Subgenus *Zagrammosoma* Ashmead, n. status.

Hippocephalus Ashmead, 1888, *Bull. Kansas Agr. Expt. Sta.*, 3, Appendix, p. VII. —

Type: *Hippocephalus multilineatus* Ashmead; by monotypy.

Zagrammosoma Ashmead, 1904, *Mem. Carnegie Mus.*, 1: 354. — N. name for *Hippocephalus* Ashm. (preocc.).

Zagrammatosoma Schulz, 1906, *Spolia Hym.*, p. 142. Emend.

Atoposoma Masi, 1907, *Boll. Lab. Zool. Gen. Agr. Portici*, 1: 276. — Type: *Atoposoma variegatum* Masi; by monotypy.

As for the range of this genus I agree rather with Dr. Graham than with Dr. Delucchi, who takes *Atoposomoidea* as a good genus (1958). The presence of the species which is called *Cirrospilus pulcherrimus* (Mercet) in our paper would cause considerable difficulties in limitation of *Cirrospilus* from *Atoposomoidea*. This species has no real grooved lines on scutellum in fresh state and when living, but the chitin skin is apparently thinner along scutellar lines and that is why the lines often become visible even in *C. pulcherrimus* as a post-mortem phenomenon, with the shrinkage of the delicately sclerotized body. The species *C. elegantissimus* possesses a thicker skin, and hence the relatively constant absence of grooved lines, though they are sometimes indicated by a finer sculpture (or even by colour). The grooved lines on scutellum occur in parallel in many Eulophid groups, and

I think they alone cannot be taken as a generic character if not accompanied by additional differences.

Through the other characters *C. pulcherrimus* shows a close relationship to the *vittatus*-group, and, in consequence, I do not think it should be combined with the subgenus *Cirrospilus* s. str. Hence all the species except *elegantissimus* and *variegatus* are arranged here with the subgenus *Atoposomoidea* How. *Cirrospilus variegatus* (Masi) belongs to the subgenus *Zagrammosoma* Ashm., which is placed perhaps best here, since the differently formed head (the main character of this species-group) is difficult to check in dry collapsed specimens.

Eventually, *Diaulinopsis* Crawford also might be regarded as a subgenus of *Cirrospilus*, if the characters considered generic nowadays prove to vary in some species. For the present, however, I prefer to regard *Cirrospilus* and *Diaulinopsis* as apart.

All species of *Cirrospilus* develop as ectoparasites of small larvæ of various insects, mostly of leaf-miners.

Key to the European *Cirrospilus*

- 1 Bristles of anterior pair on scutellum stunted, much shorter than posterior ones; scutellum without grooved lines or with a merest trace of them (*Cirrospilus* s. str.); thorax flavous, a broad longitudinal band metallic green; mesoscutum and scutellum microscopically alutaceous, the minute areoles formed by engraved lines *elegantissimus* Westwood
- Scutellum with all four (rarely five or six) bristles strong; grooved lines usually distinct; colouring different 2
- 2 Forewing slightly infuscated at stigmal vein and on prestigma; head thick in fresh state, antennæ inserted above lower ocular line (sg. *Zagrammosoma* Ashm.); female funicle segments broad, distinctly transverse; body, legs and antennæ with delicate but rich, fuscous markings *variegatus* (Masi)
- Forewing immaculate; head not thick; antennæ inserted lower on face (sg. *Atoposomoidea* How.) 3
- 3 Cubital hair-row strongly sinuate upwards where it joins the basal hair-row; basal cell very narrow, at most parallel-sided in its distal half; disc densely hairy, speculum usually reduced; thorax either wholly metallic or yellow with irregular longitudinal dark stripes 4
- Cubital hair-row of forewing not sinuate at basalis; basal cell triangular; speculum often large; grooved lines on scutellum always distinct 8
- 4 Thorax and gaster wholly metallic; mesoscutum and scutellum with the lines of network engraved; speculum of forewing absent or narrow; upper face usually with broadly yellow orbitæ *singa* Walker
- Body mainly yellow, with dark, metallic or black, markings tending to form longitudinal stripes on head and thorax, and transverse stripes or spots on gaster; the very minute areoles of network formed by raised lines 5
- 5 Wings very narrow (also the body), maximum width of forewing at most equal to length of marginal vein; delicate stripes on thorax black, all about equally narrow; scutellum longer than broad, grooved lines distinct *elongatus*, n. sp.
- Forewing much broader than length of marginal vein; body plumper; scutellum shorter than broad 6

- 6 Median metallic stripe on thorax always broader than that at the parapsidal furrows; scutellum with grooved lines clearly cut **vittatus** Walker
 — Median stripe on thorax very narrow, not broader than that in the parapsidal furrows 7
- 7 Scutellum without grooved lines or with a mere trace of them; median stripe on mesoscutum usually interrupted: face with rather dense scale-like white hairs at orbitæ **pulcherrimus** (Mercet)
 — Scutellum with grooved lines clearly cut; median stripe on mesoscutum complete; orbitæ with normal hairs ?**donatellæ** Mariani
- 8 Propodeum with distinct plicæ (sometimes vague in dwarf specimens) more or less reticulate; mesoscutum and scutellum with areoles of sculpture formed by engraved lines; mid lobe of mesoscutum (and scutellum) nearly always metallic (at least in females), with 4 bristles only; side lobes usually yellow; speculum of forewing narrow, closed, basal cell open below basally; second funicle segment in female distinctly longer than broad **diallus** Walker
 — Plicæ never developed; thorax differently coloured and mostly with network made by raised lines (except *starýi*), mesoscutum at least with 6 hairs 9
- 9 Thorax and gaster wholly metallic; head with brownish cross-stripe in front of median ocellus, extended to a spot at either orbita; second segment of female funicle quadrate **immaculatus** Thomson
 — Thorax at least partly pale; second funicle segment in female longer 10
- 10 Forewing speculum large, more or less open below; disc toward it sparsely hairy, basal cell usually open below, also basal hair-row often lacking; postmarginal vein not longer than stigmal; posterior bristles of mesoprescutum (mid lobe) about twice as short as distance between axillæ; mid tibiæ usually with a black ring in basal third, sometimes reduced to a spot internally 11
 — Speculum narrow, reduced, closed below; disc of forewing densely hairy; posterior bristles of mesoprescutum about as long as distance between axillæ; mid tibiæ wholly yellow; dark markings on thorax not metallic 12
- 11 Thorax metallic including scutellum (usually also axillæ), with a yellow cross-fascia on mesoscutum (rarely narrowly interrupted at meson); stemmaticum, back of head, and gaster, metallic; reticulation on thorax coarse **pictus** (Nees)
 — Male: thorax mainly yellow, sometimes with apex of scutellum, metanotum and propodeum partly brownish or black; gaster yellow, with two black cross-fasciæ, the anterior one twice as broad as posterior band **bifasciatus** Walker
- 12 Thorax strongly shiny (as in *Miotropis*), the fine alutaceous sculpture being formed by delicate engraved lines; bristles of mesoscutum and scutellum long, usually dark; thorax black, with a more or less broad yellow cross-band between forewings (a black dot usually on either axilla), and with a narrow strip, interrupted medially in darker specimens, on hind margin of pronotum; in specimens from South Europe yellow colour usually more widely spread; postmarginal vein very slightly longer than or as long as stigmal **starýi**, n. sp.
 — Thorax less shiny, distinctly reticulate, the areoles formed by raised lines (except sometimes a small area on scutellar disc) 13
- 13 Postmarginal vein at least 1.3 times as long as stigmal; mesonotal bristles usually dark; thorax at least with a yellow cross-band including hind half of mesoscutum, axillæ (except sometimes a black spot), and base of scutellum; or yellow colour widely spread **subviolaceus** Thomson
 — Postmarginal vein at most as long as stigmal; markings of thorax usually different 14
- 14 Scapulæ black along parapsidal furrows (sometimes very narrowly); yellow colour on thorax generally dominant, black colour forming longitudinal stripes; scutellum at least partially yellow **pulcher** Masi
 — No black stripe along parapsidal furrows (or in them) 15

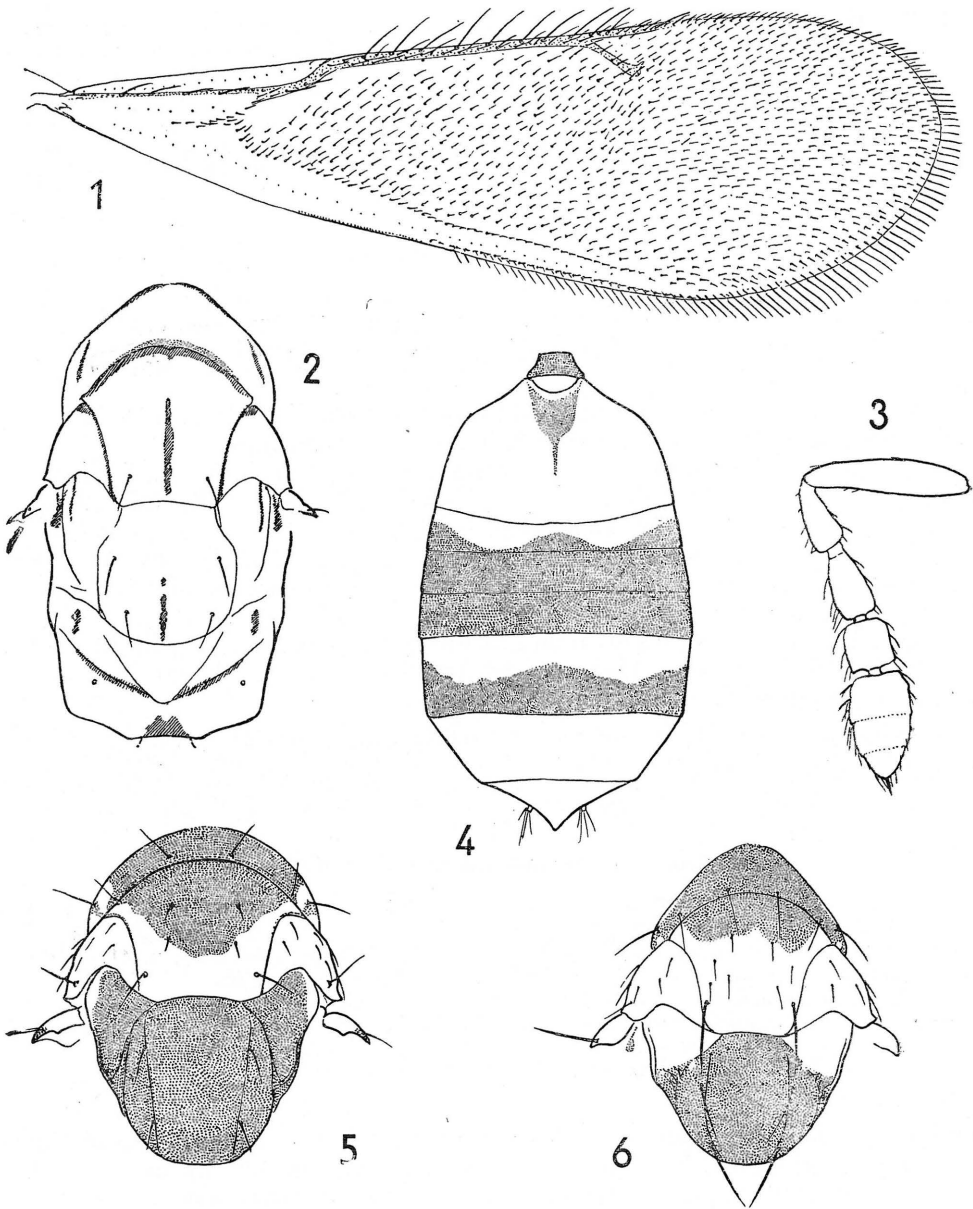


Fig. 1. *Cirrospilus elongatus*, n. sp., forewing. — Fig. 2. *Cirrospilus pulcherrimus* (Merc.), thorax, markings indicated. — Fig. 3. *Cirrospilus immaculatus* Thoms., female antenna. — Fig. 4. *Cirrospilus bifasciatus* Walk., male gaster. — Fig. 5. *Cirrospilus pictus* (Nees), pronotum and mesonotum, typical markings indicated. — Fig. 6. *Cirrospilus lynceus* Walk., dtto (a Central European specimen).

- 15 Scutellum wholly dark in female (usually so in male, too); yellow colour mostly restricted to a cross-band on posterior half of mesoscutum, axillæ usually including; in colour similar to *pictus*, but bristles of scutellum and posterior pair on meso-prescutum about as long as distance between axillæ, and sculpture on thorax much finer *lynxus* Walker
- Thorax with a yellow cross-fascia including base of scutellum (as in *subviolaceus*), or more frequently the yellow colour widely spread, sometimes the whole body pale yellow *luteus* Bukowski

Cirrospilus (s. str.) *elegantissimus* Westw.

Cirrospilus elegantissimus Westwood, 1832, *Philos. Mag. (and Journ. Sci., Lond., Edinb. Dublin)* (s. 3) 1: 128; —, Delucchi, 1958, *Entomophaga*, 3: 253.

Eulophus unistriatus Förster, 1841, *Beitr. Monogr. Pteromal.*, p. 41.

Plesiospilus unistriatus, Ferrière, 1953, *Boll. Ist. Ent. Univ. Bologna*, 19: 398.

For taxonomic and other data on this species especially the recent papers of Ferrière, 1953, and Delucchi, 1958, may be recommended.

Hosts: *Lithocolletis cerrutiella* Hart., *L. corylifoliella* Haw., *L. messaniella* Zell., *L. platani* Stgr., *L. populifoliella* Tr., *L. pyrifoliella* Bnks., *L. sp.* on *Alnus*, *Phyllocnistis suffusella* Zell. on *Populus*. The record of *Phyllocnistis labyrinthella* Bjerk. (Sundby, 1957, p. 21) as host of *C. elegantissimus* concerns most probably the following species. Ectoparasite of small leaf-mining caterpillars.

Distribution: Central and Southern Europe, from Britain through Germany, Czechoslovakia, Hungary, Switzerland to Italy. Apparently commoner in southern than in central Europe.

In Czechoslovakia not common, rather local. Bohemia: Praha, ex *Lithoc. populifoliella*, 1953 (P. Starý); Ruzyně, 28. 9. 1953 (Bouček); Velký Vřeštov, 8. 1953 (Bouček). - Moravia: Lednice, ex *Lithoc. platani*, 9. 1953 (Bouček). — I have seen this species also from Italy (reared from *Phyllocnistis suffusella* and *Lithocolletis cerrutiella*).

Cirrospilus (sg. *Atoposomoidea*) *diallus* Walker

Cirrospilus Diallus Walker, 1838, *Ann. Nat. Hist.*, 1: 312; —, Graham, 1959, *Trans. Soc. Brit. Ent.*, 13: 177.

?*Eulophus quadrimaculatus* Förster, 1841, *Beitr. Monogr. Pteromal.*, p. 41.

?*Eulophus flavomaculatus* Ratzeburg, 1844, *Ichneum. d. Forstins.*, 1: 164.

?*Eulophus punctatus* Ratzeburg, 1848, *ibidem*, 2: 165.

Cirrospilus elegantissimus, Thomson, 1878, *Hym. Scand.*, 5: 201; and subsequent Authors, not Westwood.

Atoposomoidea diallus, Delucchi, 1958, *Entomophaga*, 3: 247.

The morphological characters are sufficiently given in the key above, and were discussed recently e.g. by Delucchi. The mid lobe of mesoscutum is always metallic in the Central European specimens, but its narrow side parts ranging with parapsidal furrows (or even a cross-band anteriorly) may also be partly yellow in richly pale-coloured South European specimens (two such females of Merano, northern Italy). In males also anterolateral parts of scutellum bordering to axillæ are sometimes yellow.

Hosts: *Lithocolletis* spp. on *Quercus*, esp. *L. quercifoliella* Zell., *L. messaniella* Zell., then *L. mæstingella* Zell. on *Fagus*, *L. pastorella* Zell., *Phyllocnistis suffusella* Zell. on *Populus*, *Antispila* sp. on *Cornus mas*, and

certainly other leaf-miners. *Eulophus punctatus* Ratz. is said to have been bred from *Rhynchænus salicis* (L.), a coleopterous leaf-miner on *Salix*. For further data see Delucchi, 1958.

Distribution: Central and Southern Europe, from Sweden and Britain to northern Italy.

In Czechoslovakia rather common, apparently bound to deciduous trees. Bohemia: Bynovec near Děčín, 27. 8. 1956 (Bouček); Měrunice, Středohoří, 29. 8. 1956; Deblík Hill, 26. 7. 1956; Trabice Hill, 14. 5. 1957; Vinné near Litoměřice, 14. 6. 1956; Pohořany near Litoměřice, 11. 5. 1954; Lovoš near Lovosice, 7. 7. and 19. 8. 1956 (all Bouček leg.); Koda near Beroun, ex *Antispila* sp. mining leaves of *Cornus mas*, 3. 1954 (Gregor); Lodenice near Beroun, 4. 9. 1924 (Novicky); Revnice near Praha, 8. 10. 1956 (L. Masner); Praha, ex *Lithocolletis* sp. on *Quercus*, 1925 (Novicky), ex leaf-miners on *Quercus*, 3. 1946 (Bouček); Praha-Suchdol, 18. 5. 1957 (Bouček); Velký Vřeštov, 8. 1954 and 10.—12. 8. 1956 (Bouček); Dobrošov near Náchod, 7. 1956 (Macek). - Slovakia: Pata near Nové Zámky, ex *Lithoc.* sp. on *Quercus*, Spring 1956 (Capek). — I have seen also specimens from Germany and Austria.

Cirrospilus (*Atoposomoidea*) *pictus* (Nees)

Eulophus pictus Nees, 1834, *Hym. Ichneum. affin. Monogr.*, 2: 165.

Cirrospilus Thasus Walker, 1838, *Ann. Nat. Hist.*, 1: 309.

Eulophus arcuatus Förster, 1841, *Beitr. Monogr. Pteromal.*, p. 41.

Cirrospilus flavovarius Walker, 1846, *List Hym. Ins. Brit. Mus.*, 1, Chalcidites, p. 72.

Cirrospilus pictus var. *alnicola* Erdős, 1956, *Folia ent. Hung.* (s. n.), 9: 7. N. syn.

This is a well-known species often referred to. For the data about the life-history and morphology see e.g. Ferrière, 1933, p. 289, Dowden, 1941, and Sundby, 1957. Such colour deviations as var. *alnicola* Erdős are within the range of normal variation of the species and their naming is unnecessary.

The small specimens of *C. pictus* may be easily confounded with *C. lynceus*. They are often alike in colouring of thorax (scutellum wholly dark), and the usually clearly different pubescence of forewing is variable sometimes. Then the sculpture and structure of mesoscutum and scutellum furnish additional differences. In *pictus*, the reticulation is always rather coarse, with lines of network distinctly elevated, and hind bristles of the mid lobe of mesoscutum distinctly shorter than the distance between axillæ, which is longer than the anterior side of each axilla. In *lynceus*, on the other hand, the sculpture of mesoscutum and scutellum is nearly alutaceous, its areoles very minute, bristles much longer than the scuto-scutellar border line between axillæ, which is only about as long as anterior side of axilla; the said bristles are more removed from the scutellar margin; axillæ usually pale. The black (or metallic) colouring of scutellum is not used in segregating the species in the key, as also in *C. subviolaceus* and *C. luteus* similarly coloured specimens may appear. However, nearly in all specimens of *pictus* and *lynceus* examined heretofore the scutellum has been found wholly dark (very rarely a spot laterally behind axilla is pale), whereas in *luteus* and *subviolaceus* at least a narrow base of scutellum is always pale.

Hosts: Leaf-mining caterpillars of *Lithocolletis blancardella* F., *L. connexella* Zell., *L. corylifoliella* Haw., *L. fuscadinella* Zell., *L. populifoliella* Tr., *L. pyrifoliella* Bnks., *L. salictella* Zell., *L. schreberella* F., *L. sorbi* Frey, *L. spinicolella* Zell., *Lyonetia clerckella* L., *Phyllocnistis labyrinthella* Bjerk., then *Coleophora laricella* Hb., *C. ibipennella* Zell., leaf-mining coleopterous

larvæ of *Rhynchænus ulmi* L., leaf-mining tenthredinid larvæ *Fenusia pusilla* Klug, *F. ulmi* Sund., *Heterarthrus nemoratus* Fall., and cocoon of *Apanteles* sp. on leaves of *Salix*.

Distribution: Throughout Europe; North America.

In Czechoslovakia common on deciduous trees. Bohemia: Děčínský Sněžník; Petrovice and Varvažov near Ústí nad Labem; Měrunice, Středohoří; Deblík Hill; Lovoš Hill; Pohořany near Litoměřice, ex *C. laricella*; Noutonice-Kováry; Ruzyně; Praha-Šárka, ex *Lithocolletis* sp. on *Quercus* and ex *Lithoc. spinicolella*; Praha, ex *Lithoc. populifoliella*; Čelákovice; Malá Skála near Turnov; Holovousy, ex *C. laricella*; Velký Vřeštov; Hradec Králové (Věkoše, Piletice and Nový Hradec Kr.); Týniště nad Orli.; Sněžka, Krkonoše, ex *Lithoc. sorbi* (Soffner); Želiv. - Moravia: Milotice near Hodonín; Kyjov. - Slovakia: Gabčíkovo, ex *Apanteles* cocoon on *Salix*; Kamenica nad Hronom; Telgárt, ex *Lithoc. salicetella*.

Cirrospilus (Atoposomoidea) bifasciatus Walker

Cirrospilus bifasciatus Walker, 1872, *Notes on Chalcidiae*, p. 103.

Apparently this species was not mentioned from elsewhere but its classic locality near Bordeaux, South France, since the description. I hope to have correctly identified my specimens (Dr. Erdős agrees with me), though the types could not be seen. The following characters may be alluded to in addition to Walker's description. Dark stemmaticum reduced to small spots at each ocellus; head otherwise (foraminal region including) pale yellow; first funicle segment in male about as long as the second (which is about 1.3 times as long as broad), shorter than pedicellus; grooved lines on scutellum deep, complete; posterior pair of scutellar bristles removed from hind margin by a half the length of metascutellum, which is about twice as short as propodeum along median carina; several small spots at apex of scutellum, apex of metascutellum, a spot on either side beyond it, neck region of propodeum, uppermost part of metapleuræ below hind wings, mesopleural margin at mid coxæ, a spot on inner side of mid tibiæ (the same place as in *pictus*), a broad cross-band on gaster occupying hind margin of second tergite and two following tergites, and a narrow band on back half of fifth tergite (narrowed sublaterally), black or brown. Length 1.7—1.8 mm.

Actually, I am not quite sure that what is called here *C. bifasciatus* is a valid species, as the specimens described may prove to be only an extreme colour variety of *C. pictus*, as the morphological characters suggest. The host record is, however, noteworthy, and in the colouring no intergrades are so far known.

Host: Chrysomelid beetle (pupa) on leaves of *Populus*.

Distribution: South France, Czechoslovakia.

Two females emerged 4. 1956 from a Chrysomelid pupa found by Mr. Turček on a leaf of *Populus* in Gabčíkovo, southern Slovakia, 17. 8. 1955.

Cirrospilus (Atoposomoidea) lyncus Walk.

Cirrospilus lyncus Walker, 1838, *Ann. Nat. Hist.*, 1: 381.

Eulophus unifasciatus Förster, 1841, *Beitr. Monogr. Pteromal.*, p. 41.

?*Entedon* (?*Omphale*) *viticola* Rondani, 1877, *Bull. Soc. ent. Ital.*, 9: 290.

Cirrospilus caudatulus Thomson, 1878, *Hym. Scand.*, 5: 203.

Cirrospilus unifasciatus, Ferrière, 1953, *Boll. Ist. Ent. Univ. Bologna*, 19: 396.

Atoposomoidea unifasciata, Delucchi, 1958, *Entomophaga*, 3: 248.

This is also a well-known species, recently discussed e.g. by Ferrière, 1953, and by Delucchi, 1958. Most probably the male figured by the latter author (p. 247, fig. F) under the name *Atoposomoidea pulchra* belongs to *C. lyncus*. Males from Central Europe have the same colour, at least, and I think the Mediterranean *C. pulcher* may have dark parapsidal furrows. Some characters of *C. lyncus* are discussed under *pictus* above. As far as the variability of the colouring is concerned, in Central European specimens scutellum is always dark, but in some specimens from South-eastern Europe (e.g. a rich material kindly submitted by Mr. V. Talickij, Kishinev, Moldavian S.S.R., has been seen quite recently) the dark colour of scutellum often is reduced anteriorly, up to a small spot on disc in extreme cases. Thus a suspicion arises whether *C. luteus* Buk. would not prove a variety of *C. lyncus* only, when a really rich material of this form is available. The thorax bristles in *lyncus* are always pale, in *C. luteus* they are said to be black (original description). I have seen specimens of what I believe to be *C. luteus* with fuscous or pale bristles only.

Hosts: *Lithocolletis acerifoliella* Zell., *L. agilella* Zell., *L. blancardella* F., *L. cerasicolella* H. Sch., *L. coryli* Nic., *L. corylifoliella* Hw., *L. delitella* Zell., *L. distentella* Zell., *L. dubitella* H. Sch., *L. messaniella* Zell., *L. platani* Stgr., *L. pyrifoliella* Bankes, *L. quercifoliella* Zell., *L. roboris* Zell., *L. spinicolella* Zell., *L. spinolella* Zell., *L. ulmifoliella* Hbn., *L. spp.* on *Acer patanoides*, *Alnus glutinosa*, *Malus*; then *Tischeria complanella* Hbn., *Phyllocnistis suffusella* Zell.

Distribution: throughout Europe.

In Czechoslovakia common everywhere.

***Cirrospilus (Atoposomoidea) starýi*, sp. nova**

At first glance this species is much more shiny than any other of the similarly coloured ones in the genus, and reminds one somewhat of small slenderer specimens of *Miotropis unipuncta* (Nees). Head is mainly yellow, stemmaticum and a large spot behind eye on either side, black; thorax as mentioned in the key, the Mediterranean specimens are, however, generally more richly yellow; pronotum in one female wholly black, and scutellum only at the very base narrowly yellow; gaster with a yellow spot on either side basally, a yellow cross-streak at posterior margin of first tergite, more or less connected with basal spots and rows of small sublateral spots on following tergites fading out distally; legs mainly pale, femora usually black beneath, tibiæ and tarsi sometimes slightly infuscated (the darkest specimen). Mid lobe of mesoscutum usually with about 8—10 (or more, in larger specimens) rather long bristles anterior to the ordinary two long ones just at scutellum margin. Scutellar bristles 4 to 6 in number, grooved lines rather effaced in anterior third of the vaulted scutellum. Pubescence of forewing rather dense, speculum very narrow, basal cell with a row of hairs on lower surface; postmarginal vein 1.0 to 1.2 times as long as stigmal. Female gaster slightly longer than head plus thorax. Length 1.1—1.6 mm. — Male very

similar to female in colouring and thorax sculpture. As well as in some dark-coloured females gaster may be wholly dark except pale base. In richly yellow specimens dark colour on abdomen sometimes reduced to a few transverse streaks, and the thorax bristles are more or less pale (the same in light females); propodeum and a transverse oval spot on front half of mesoscutum then always black.

Hosts: *Aspilapteryx limosella* Zell., *Lithocolletis helianthemella* H. Sch., *Stigmella microtheriella* Stt.

Distribution: Czechoslovakia, Austria, France, Algeria, Asia Minor, Transcaucasia, Lebanon.

Described mainly from 4 females bred in Bohemia by Dr. Bohumil Starý, in whose honour the species is named; additional notes taken from material kindly submitted by Ing. S. v. Novitzky. Wien.

Czechoslovakia: Bohemia: Koda near Beroun, 1 female ex *Lith. helianthemella*, 19. 8. 1951 (B. Starý), 3 females ex *Aspilapteryx limosella*; 10.—11. 7. 1953 (one female of 11. 7. designated as holotype, Cat. № 3453, Natl. Mus. Praha) (leg. B. Starý); Praha, ex *Stigmella microtheriella*, 1925 (S. Novitzky). — Austria: Deutsch Altenburg, 3.—4. 8. 1946 (Novitzky). — Bulgaria: Varna, 19. 9. 1938 (Novitzky). — South France: Le Rouret, Alpes maritimes, 9. 7. 1935, 7. 1937 (Novitzky). — Algeria: Biskra, 24. 6. 1931 (Novitzky). — Turkey: Uşak, 27. 5. 1934 (Novitzky). — U S S R: Transcaucasia: Tbilisi, 6. 1957 (Hoffer). — Lebanon: Beirut, 8. 8. 1932 (Novitzky).

Cirrospilus (Atoposomoidea) subviolaceus Thomson

Cirrospilus unipunctus, Thomson, 1878, *Hym. Scand.*, 5: 202 (nec *Eulophus unipunctus* Nees, 1834).

Cirrospilus subviolaceus Thomson, 1878, *Hym. Scand.*, 5: 203; — —, Sundby, 1957, *Norsk Ent. Tidsskr.*, Suppl. 2: 24.

Atoposomoidea unipuncta, Delucchi, 1958, *Entomophaga*, 3: 249.

Cirrospilus setulosus Graham, 1959, *Trans. Soc. Brit. Ent.*, 13: 177. N. syn.

This species varies greatly in colour. The dark markings may be widely spread as mentioned in the key, or much reduced, nearly wholly lacking. According to Delucchi, 1958, the rich or reduced dark colouring corresponds to the "winterform" or "springform" respectively. This does not fit, however, all our records. There is no deep gap between the two forms. We have, e.g., yellow (or more often in Central Europe: orange) specimens ("springform") from the overwintering pupæ. As the most substantial character of the species may be regarded the relative length of postmarginal vein. The thorax bristles are usually dark, they may, however, turn pale in generally pale specimens, as several examples from South Europe show. The density of hairs on occiput and mesoscutum is very variable.

I have seen two syntypes of *C. subviolaceus* Thomson kindly sent me by Mr. P. I. Persson from Lund, and found them conspecific with *C. setulosus* Graham. One of these specimens has been designated as lectotype.

C. luteus Bukowski is evidently another similarly coloured species, differing from *C. subviolaceus* mainly by the postmarginal vein of forewing being shorter than stigmal.

Hosts: *Antispila rivillei* Stt., *Lithocolletis corylifoliella* Hw., *L. deliella* Zell., *L. hortella* F., *L. manni* Zell., *L. messaniella* Zell., *L. pyrifoliella* Bnks., *L. quercifoliella* Zell., *L. schreiberella* F., *L. sp. on Quercus*; *Tischeria*

complanella Hb., *Phyllocnistis labyrinthella* Bjerk., *Leucoptera coronilla* Her.; leaf-miners on *Cornus mas*, *Prunus*, etc.

Distribution: Britain, Norway, Sweden to Czechoslovakia, Hungary, Italy, Sicily, Sardinia.

In Czechoslovakia rather common. Bohemia: Koda near Beroun, from a leaf-miner on *Cornus mas*, 3. 1954 (Gregor), 28. 5. 1954 (Bouček); Karlštejn, 6. 6. 1954; Praha-Šárka, ex *Lithocolletis* sp. on *Quercus*, 1946; Praha-Podhoř, 13. 6. 1954 (all Bouček); Praha-Hlubočepy, 17. 9. 1925 (Novitzky); Pikovice nad Sázavou, ex *Lithoc. quercifoliella*, 7. 1953 (Boh. Starý); Piletice near Hradec Král., 14. and 27. 9. 1952 (Bouček); Velký Vřeščov, 8. 1953 and 12. 8. 1956 (Bouček). - Moravia: Čebinka, 10. 6. 1946 (Gregor); Pouzdřany, ex *Lithoc. delitella*, 3. 1947, ex *L. hortella*, 1948 (Gregor); Charvátská Nová Ves, ex *Lithoc. manni*, Spring 1954 (Gregor); Ratiškovice, 7. 1942 (Hoffer); Kobylí, 28. 7. 1943 (Šustera). - Slovakia: Pata near N. Zámky, ex *Lithoc.* sp. on *Quercus*, Spring 1956 (Čapek); Stúrovo, 27. 7. 1955 (Bouček); Košice, 16. 5. 1952 (Kocourek). — I have also seen specimens from Germany, Austria, Hungary, South France and Italy (Sicily and Sardinia included).

Cirrospilus (*Atoposomoidea*) *luteus* Bukowski

Cirrospilus luteus Bukowski, 1938, *Rev. Ent. URSS.*, 27: 170.

I hope to have recognized correctly this species, no authentic material of which could be seen so far. It is very similar to *C. subviolaceus* both in colour and variability. Save for the differences given in the key above the following may be emphasized to segregate *C. luteus* from *C. subviolaceus*.

Bristles on thorax usually pale, testaceous to fuscous, only in richly dark-coloured specimens blackish. Mid lobe of mesoscutum usually only with 3 pairs of them. Colour of thorax in pale specimens is usually pale yellow, not orange-yellow as in such specimens of *subviolaceus*, in which species mid lobe of mesoscutum usually bears numerous shorter hairs on its disc.

The position and validity of this species is a little questionable. Post-marginal vein seems to be varying in length, to some extent at least, and, on the other hand, in the palest specimens of *C. subviolaceus* it is often hard to recognize the actual limits of this vein. Further material would be much helpful here.

According to Erdős, 1956 (p. 2), a new name should be proposed for *Cirrospilus luteus* Bukowski, 1938, nec *C. luteus* (Ratzeburg) Kurdjumov, 1913. However, Ratzeburg described his *Entedon luteus* (1852, p. 209) from a male reared from the galls of "*Tipula*" (= *Mikiola*) *fagi* on the leaves of *Fagus*, and this undoubtedly is conspecific with a series of both sexes I saw in the Berlin Museum in coll. Reinhard (reared from the same host in Germany). As an appendix to his description, Ratzeburg mentions also a female that "gehört wahrscheinlich hierher". Most probably this female, arranged with *E. luteus* by an evident mistake, and reared from "*Tinea*" *leucatella*, is identical with *Cirrospilus luteus* Buk. or with *C. subviolaceus* Thomson, and it was obviously this specimen which was examined by Kurdjumov, and hence his transfer of *Entedon luteus* Ratz. to *Cirrospilus* (1913, p. 255). It cannot, however, be regarded as the type of *luteus* Ratz., which in its unique male type is a *Hyperteles*. Thus *Cirrospilus luteus* Bukowski cannot be preoccupied by *Entedon luteus* Ratz., and, consequently, can be a valid name for the species.

Hosts: leaf-miners on *Quercus*: moth *Lithocolletis* sp., weevil *Orchestes quercus* L.

Distribution: Czechoslovakia, Austria, Hungaria, Moldavian S.S.R., Crimea.

Checked material. Czechoslovakia: Bohemia: Lovoš Hill near Lovosice, 7. 7. 1956 (Bouček); Praha-Chuchle, 11. 7. 1955 (Bouček). - Moravia: Charvátská Nová Ves, Boří les, ex *Lithocolletis* sp. on *Quercus cerris*, coll. 12. 1953, emerg. 3. 1954 (Gregor). — Austria: Wien, 1. 10. 1958 (Novitzky); Hundsheim near Deutsch Altenburg, 9. 1940 (Novitzky). — Hungary: Mecsek Hills, 2. 7. 1951 (Erdös).

Cirrospilus (*Atoposomoidea*) *immaculatus* Thomson

Cirrospilus immaculatus Thomson, 1878, *Hym. Scand.*, 5: 202.

The main characters of this little-known species are given in the key above and the following ones may be added to them.

Body dark metallic green, except for dark testaceous markings on head: a spot below either antennal torulus, upper orbitæ connected by a stripe crossing the frons just anterior to median ocellus. Antennæ fuscous, flagellum beyond apex of pedicellus somewhat paler; legs with coxæ and femora metallic, the latter on tips and tibiæ and tarsi testaceous, tibiæ more or less infuscated at basal third. Scapus slightly dilated basally; first funicle segment plus both ring-joints hardly as long as pedicellus, second funicle segment quadrate; clava slightly broader than funicle, about 2.5 times as long as second funicle segment, with apical spine. Face and vertex with numerous black hairs. Head distinctly broader than thorax (if not shrunken). Thorax rather shiny, plump, about 1.6 times as long as broad (32:20). Mid lobe of mesoscutum with only 4 to 6 bristles, sculpture very weak, shallow. Scutellum slightly transverse (12:11), weakly convex, its disc with isodiametric areolæ, partly formed by engraved lines (otherwise made by raised curved lines). Metascutellum and propodeum delicately alutaceous, the latter with distinct median carina but without plicæ. Female gaster slightly longer than head plus thorax, weakly alutaceous, sparsely hairy; hind margin of first tergite slightly emarginate medially. Wings subhyaline, disc of forewing less densely haired toward speculum which is not much reduced and closed below by cubital hairs. Basal cell open below. Postmarginal vein about as long as stigmal, which is about 3.5 times as short as marginal vein. Male unknown. Length of body, 1.4—2 mm.

I have seen the lectotype of *C. immaculatus* kindly lent me by Mr. P. I. Persson of Lund.

Host: *Coleophora laricella* Hbn.

Distribution: Sweden, Czechoslovakia.

In Czechoslovakia rather rare. Bohemia: Chaloupky near Kraslice, 3. 6. 1957 (Bouček); Holovousy, ex *Coleophora laricella*, 18. 5. 1954 (Hostounský); Hradec Králové-Věkoše, 29. 7. 1945 (Bouček).

Cirrospilus (Atoposomoidea) pulcher Masi

Cirrospilus pulcher Masi, 1911, *Boll. Lab. Zool. Gen. Agr. Portici*, 5: 149; — —, Ferière, 1953, *Boll. Ist. Ent. Univ. Bologna*, 19: 397.
Atoposomoidea pulchra, Delucchi, 1955, *Entomophaga*, 3: 251.

So far *C. pulcher* is not known to me from Central Europe. For the variability, bionomics and distribution of this Mediterranean species see Delucchi, 1958.

Cirrospilus (Atoposomoidea) singa Walker

Cirrospilus Singa Walker, 1838, *Ann. Nat. Hist.*, 1: 383; — —, Graham, 1959, *Trans. Soc. Brit. Ent.*, 13: 177.

C. singa is very similar to the preceding *C. immaculatus*, but differs from the latter particularly by the characteristically sinuate cubital hair-row of forewing, sculpture of mesoscutum and scutellum, and by yellow legs (except coxæ). The original description does not mention the yellow triangular spot between eye and lateral ocellus on either side; perhaps it may fade out in some specimens from the more severe climate. Head and antennæ are very similar to those of *C. immaculatus*, only hairs on head are distinctly pale in *singa*, and spots at upper orbitæ are more striking. Sculpture of mesoscutum and scutellum is formed by an engraved net of lines, the areolæ at scutellar apex are very small and longitudinally drawn. The two specimens of mine show a small speculum on forewing while Graham describes it as absent for British specimens.

Host unknown.

Distribution: Ireland, Britain, Czechoslovakia, Yugoslavia.

I checked only two females that I collected in following localities. Czechoslovakia (Slovakia): Polana Mountain, 6. 1952. — Yugoslavia: Tara Valey near Žabljak, Durmitor Mts., Montenegro, 6. 7. 1958.

Cirrospilus (Atoposomoidea) vittatus Walker

Cirrospilus vittatus Walker, 1838, *Ann. Nat. Hist.*, 1: 308.
Eulophus lineatus Förster, 1841, *Beitr. Monogr. Pteromal.*, p. 41.
Entedon lineatus, Ratzeburg, 1852, *Ichneum. d. Forstins.*, 3: 209.
? *Cirrospilus Donatellæ* Mariani, 1942, *Giorn. Sci. Nat. Econ.*, 43 (Mem. 1): 12.
Cirrospilus vittatus var. *novickyi* Bakkendorf, 1955, *Ent. Medd. (Copenhagen)*, 27: 149.

A well-known and widely spread and usually common species. In most specimens the yellow colour prevails, the median stripe being the broadest and the other stripes very narrow. A dark form, var. *novickyi* Bakk., was described recently from Iceland. Oddly enough a nearly identically coloured specimen was caught by me in the Durmitor Mountains in Yugoslavia, together with the normally coloured ones. The extended metallic markings may be connected with the severe climatic conditions, but there is no sharp distinction between it and the usual poor markings of the nominate form. Marginal fringe of the wings is usually longer in dwarf specimens.

I have not seen the types of *vittatus* or *lineatus*, but of the former I received a specimen compared with the type through the courtesy of Dr. Gra-

ham, and as to *lineatus* Först., I saw several specimens identified so by Förster himself.

Cirrospilus vittatus is the commonest species (in Central Europe) of a group of very similar forms, which are often difficult to separate. E. g. collapsed specimens of *C. pulcherrimus* easily might be taken for aberrant *C. vittatus* with reduced markings. Most probably also *C. donatellæ* Mariani belongs here (the types were not accessible), or to *C. pulcherrimus*, eventually, or may be the same as the species reported by Mercet from Spain as an egg-parasite (!) of *Lymantria dispar* L., under the name *Atoposomoidea ogimæ* How.

With the shrinkage of various body parts, particularly of the head, the identification of some specimens often becomes difficult, too. This is also why I did not use the different insertion of antennæ of *C. variegatus* in the key above.

Hosts: Lepidopterous, hymenopterous, dipterous and coleopterous leaf-miners, or, rarely, their parasites; on deciduous trees as well as on lower plants (e. g. *Secale*). Our records include LEP.: *Lyonetia clerkella* L., *Ela-chista argentella* Cl., *Lithocolletis corylifoliella* Haw., *L. salictella* Zell., *Phyl-locnistis labyrinthella* Bjerk., *Stigmella* (= *Nepticula*) sp. on *Salix*, *S. obli-quella* Hein., *Antispila* sp. on *Cornus mas*; HYM.: *Heterarthrus nemoratus* Fall., *Scolioneura betulæ* Zadd., *Phanomeris phyllotomæ* Muesb.; DIP.: *Agro-myza* sp., *Phytobia crucifericola* Her., *Syringophaga chomnei* (?); COL.: *Orchestes* sp.; unidentified leaf-miners on *Populus*, *Acer*, *Quercus*, *Secale*.

Distribution: throughout Europe, except perhaps the dry south-ernmost countries; from Iceland to Yugoslavia.

***Cirrospilus* (*Atoposomoidea*) *pulcherrimus* (Mercet), n. comb.**

Atoposomoidea pulcherrima Mercet, 1916, *Bol. Soc. Esp. Hist. Nat.*, 16: 77.

?*Cirrospilus Donatellæ* Mariani, 1942, *Giorn. Sci. Nat. Econ.*, 43 (Mem. 1): 12.

This species has already been discussed partly above in connection with the problem of the generic range of *Cirrospilus* and *Atoposomoidea*.

I hope to have identified correctly this *Cirrospilus* the main character of which is the absence of grooved lines on scutellum. The description of Mercet completely fits my specimens, except those in which thorax is more or less shrunken and the grooves arise then as a secondary phenomenon. In the specimens preserved in alcohol the lines are not distinct, they often appear, however, later on, except in certain specimens with more sclerotized skin. Body length varies from 1 to 2 mm.

C. donatellæ may be this or the foregoing species.

Hosts: LEP.: *Exoteleia dodecella* L. — *C. pulcherrimus* attacks small larvæ mining the needles of *Pinus*.

Distribution: Spain, South France, Austria, Czechoslovakia.

Several hundreds of both females and males were reared by Dr. J. Lemarie in Southern Moravia: Bzenec, 4. 1957, during his investigations of the insect pests of *Pinus*. The following year only a few specimens were observed (see Lemarie, 1960, in *Beitr. z. Ent.*). Further specimens attributed to *C. pulcherrimus* come from Slovakia: Streda nad Bodrogom, 30. 6. 1952 (Kocourek); and Austria and South France (coll. Novitzky).

Cirrospilus (Atoposomoidea) elongatus, sp. nova

This species may be well separated from the other members of the *vittatus*-group by its strikingly slender body and narrow wings. The dark markings are as usual in this group; longitudinal stripes on thorax of about same breadth, median stripe usually complete from anterior margin of pronotum down to metascutellum; propodeum in median $\frac{2}{4}$ completely black or with a yellow cross-stripe interrupted at meson. Gaster usually with a longitudinal stripe reduced posteriorly, and expanded on basal tergites 1—3 or 1—4 to narrow cross-stripes; these tergites each with a lateral dark dot. Second funicle segment in female quadrate; first oblong, together with the two ring-joints about as long as pedicellus. Male unknown. Length of body, 1.1—1.5 mm.

Host: unknown. Probably associated with steppe grasses (or, at least, with xerophilous grasses).

Distribution: Czechoslovakia.

Described from 8 females caught in Bohemia: Raná Hill in Středohoří, 4. 7. and 9. 9. 1956, 13. 5. 1957 (holotype, Cat. № 3457, N. Mus. Praha) (Bouček leg.); Praha-Děvín, 1. and 30. 5. 1946 (Dlabola).

Cirrospilus (Zagrammosoma) variegatus (Masi), n. comb.

Atoposoma variegatum Masi, 1907, *Boll. Lab. Zool. Gen. Agr. Portici*, 1: 276.

Atoposoma variegatum var. *afra* Silvestri, 1914, *ibidem*, 9: 203.

Zagrammosoma variegatum, Ferrière, 1952, *Mitt. Schweiz. ent. Ges.*, 25: 32.

Although this species has not yet been found in Central Europe I include it in this paper. It may be readily separated from the other species of the *vittatus*-group by its relatively less dense pubescence on basal third of forewing, the fuscous streaks on prestigma and stigmal vein, and by the insertion of antennæ located higher on the face. As to the var. *afra* Silv. I do not see any reliable character to separate it from the typical form. The less extended dark markings of the var. *afra* may occur anywhere within the area of distribution of the species and do not seem to justify it as a taxon.

Hosts: LEP.: *Lyonetia clerkella* L., *Lithocolletis corylifoliella* Haw., *Oecophyllembius neglectus* Silv., *O. inferior* Silv., *Leucoptera coffeella* Guér., *L. sp.*, *Antispila rivillei* Stt.; DIP.: *Dacus oleæ* Gmel.

Distribution: Italy, Moldavian S. S. R., Asia Minor; northern and eastern Africa down to Tanganyika.

LITERATURE CITED

(in Parts I and II)

- Bakkendorf O., 1955: Notes on Icelandic and Greenlandic Chalcidoideous Hymenoptera. — *Ent. Medd. (Copenhagen)*, 27: 135—162.
- Bouché P. F., 1834: Naturgeschichte der Insecten, besonders in Hinsicht ihrer ersten Zustände als Larven und Puppen. — Berlin; 216 pp. + 10 pls.
- Bukowski W., 1938: Neue und wenig bekannte Chalcididen (Hymenoptera), I. — *Rev. Ent. URSS.*, 27: 152—171.
- Crawford J. C., 1912: Descriptions of new Hymenoptera, № 5. — *Proc. U. S. Natl. Mus.*, 43: 163—188.

- Dalman J. W., 1820: Försök till uppställning af insectenfamiljen Pteromalini, i synnerhet med afseende på de i Sverige funne arter. — *Sven. Vetensk. Akad. Handl.*, 41: 123—174, 340—385. (Seen a reprint with the separate pagination, I—XI, 1—48, Addenda 49—96; the quoted "Synopsis" follows p. 8).
- Delucchi V., 1958: Lithocolletis messaniella Zeller (Lep. Gracilariidæ): Analysis of some mortality factors with particular reference to its parasite complex. — *Entomophaga*, 3: 203—270.
- Dowden P. B., 1941: Parasites of the birch leaf-mining sawfly (*Phyllotoma nemorata*). — *Tech. Bull. U.S. Dept. Agr.*, 757: 1—56.
- Erdős J., 1951: Eulophidæ novæ. — *Acta Biol. Acad. Sci. Hung.*, 2: 169—237.
- , 1954: Eulophidæ hungaricæ indesciptæ. — *Ann. Hist.-nat. Mus. Natl. Hung.* (s. n.), 5: 323—366.
- , 1956: Additamenta ad cognitionem faunæ Chalcidoidarum in Hungaria et regionibus finitimis, VI, 19. Eulophidæ. — *Folia Ent. Hung. (Rovartani Közlemények)* (s. n.), 9: 1—64.
- , 1958: Eulophidæ in Hungaria recenter detectæ. — *Acta Zool. Acad. Sci. Hung.*, 3: 205—223.
- Fabricius J. Ch., 1781: Species Insectorum, I, II. — *Hamburgi et Kilonii*, I, pp. 8+552, II, pp. 494+Appendix (495—514)+Index (515—517).
- Ferrière Ch., 1933: Systematic notes on the Chalcidoidea (in Thorpe: Notes on the natural control of *Coleophora laricella*, the larch case-bearer). — *Bull. Ent. Res.*, 24: 288—291.
- , 1952: Parasites de *Lyonetia clerckella* en Valais (Hym. Chalcidoidea). — *Mitt. Schweiz. Ent. Ges.*, 25: 29—40.
- , 1953: Les parasites de «*Lithocolletis platani*» en Italie. — *Boll. Ist. Ent. Univ. Bologna*, 19: 395—404.
- Förster A., 1841: Beiträge zur Monographie der Pteromalinen Nees. — Aachen; 46 pp., 1 pl.
- , 1856: Hymenopterologische Studien, II. Heft. Chalcididæ und Proctotrupii. — Aachen; 152 pp.
- , 1861: Ein Tag in den Hochalpen. — *Programm der Realschule zu Aachen für 1860—1861*: I—XLIV.
- Gahan A. B., 1941: A revision of the parasitic wasps of the genus *Necremnus* Thomson (Eulophidæ; Hymenoptera). — *Journ. Washington Acad. Sci.*, 31: 196—203.
- Gradwell G. R., 1957: Hosts of three species of *Eulophus* Geoffroy (Hym., Chalcidoidea), one new to science and another new to Britain. — *Ent. month. Mag.*, 93: 140—142.
- , 1958: *Eulophus nigribasis* Gradwell (Hym., Chalcidoidea), the overwintering form of *E. larvarum* (L.). — *Ent. month. Mag.*, 94: 234—235.
- Graham M. W. R. de V., 1959: Keys to the British genera and species of Elachertinæ, Eulophinæ, Entedontinæ and Euderinæ (Hym., Chalcidoidea). — *Trans. Soc. Brit. Ent.*, 13 (pt. 10): 169—204.
- Györfy J., 1939: *Sympiezis Feketei* n. sp., eine neue Chalcidide aus Ungarn. — *Folia ent. Hung.*, 4: 100—101.
- Györfi J., 1941: Revision der paläarktischen Arten der Gattung *Sympiesis* Först. — *Erdészeti Kísérletek*, 43: 122—134. (Györfy = Györfi).
- , 1941: *Lithocolletis platani* Stgr. und ihre Parasiten. — *Erdészeti Kísérletek*, 43: 224—235.
- Haliday A. H., 1843: Contributions towards the classification of the Chalcididæ. — *Trans. Ent. Soc. Lond.*, 3: 295—301.
- Howard L. O., 1910: On some parasites reared or supposed to have been reared from the eggs of the gipsy-moth. — *Tech. Bull. U.S. Dept. Agr. Bur. Ent.*, 19: 1—12.
- Karsch F., 1879: Zur Hymenopterengattung *Eulophus* Geoffroy. — *Siebenter Jahresber. Westfäl. Provinzial-Ver.* pro 1878: 31—35, pl. 1.
- Kurdjumov N. V., 1913: Notes on Tetrastichini (Hymenoptera, Chalcidoidea). — *Rev. Russe Ent.*, 13: 243—256.

- Lucchese E., 1941: Contributi alla conoscenza dei Lepidotteri del melo. III. *Acroclita nævana* Hb. — *Boll. Lab. Ent. Portici*, 5: 1—60.
- Mariani M., 1942: Una infestione di *Antispila Rivillei* Stt. su vigneti del Palermitano (Revisione iconografica dell'*Antispila* e descrizione di una nuova specie di *Cirrospilus* Wstw. — Hymenoptera—Chalcididæ). — *Giorn. Sci. Nat. Econom. (Palermo)*, 43, Mem. 1: 1—16.
- Masi L., 1907: Contribuzioni alla conoscenza dei Calcididi Italiani. — *Boll. Lab. Zool. Gen. Agr. Portici*, 1: 231—295.
- Mercet R. G., 1916: Calcididos nuevos de España. — *Boll. R. Soc. Esp. Hist. Nat.*, 16: 77—79.
- , 1924: Eulófidos de España (2ª nota). — *Bol. R. Soc. Esp. Hist. Nat.*, 24: 458—464.
- Nees Ch. G. ab Esenbeck, 1834: Hymenopterorum Ichneumonibus affinium monographiæ, genera europæa et species illustrantes, II. — Stuttgartiæ et Tubingæ; 448 pp.
- Nowicki S., 1929: Eine neue Hemiptarsenus-Art. (Hym. Chalc. Eul.). — *Polskie Pismo ent.*, 8: 202—206.
- Ratzeburg J. T. Ch., 1844, 1848, 1852: Ichneumoniden der Forstinsecten . . . , Bd. I, II, III. — Berlin, Nicolai.
- Rondani C., 1877: *Antispila Rivillella* et ejusdem parassita observata. — *Bull. Soc. ent. Ital.*, 9: 287—291, tab. IX.
- Silvestri F., 1914: Viaggio in Eritrea per cercare parassiti della mosca delle olive. — *Boll. Lab. Zool. Gen. Agr. Portici*, 9: 186—226.
- Sundby R., 1957: The parasites of *Phyllocnistis labyrinthella* Bjerk. and their relation to the population dynamics of the leaf-miner. — *Norsk Ent. Tidsskr., Suppl.* 2, 153 pp.
- Szelényi G., 1941: Description of a new species of the genus *Sympiesis* Först. (Hymenoptera: Eulophidæ). — *Fragm. Faun. Hung.*, 4: 27—29.
- Thorpe W. H., 1933: Notes on the natural control of *Coleophora laricella*, the larch case-bearer. (With an Appendix by C. Ferrière.) — *Bull. Ent. Res.*, 24: 271—291.
- Walker F., 1839: *Monographia Chalciditum*, I, II. — London; Bailliere; 333 (I) and 100 (II) pp., 15 pls.
- , 1872: Notes on Chalcididæ. — London; E. W. Lanson; pts. 1—7, 129 pp.

HOST CATALOGUE TO THE PARTS I AND II

COLEOPTERA

<i>Ceutorrhynchus assimilis</i> Payk.	? <i>Necremnus tidius</i> (Walk.)
<i>Chrysomelidæ</i> sp.	<i>Cirrospilus bifasciatus</i> Walk.
<i>Lema cyanella</i> L.	<i>Necremnus leucarthros</i> (Nees)
<i>Mantura obtusata</i> Gyll.	<i>Necremnus leucarthros</i> (Nees)
<i>Orchestes quercus</i> L.	<i>Cirrospilus luteus</i> Buk.
<i>Phytonomus arator</i> L.	<i>Necremnus leucarthros</i> (Nees)
<i>Phytonomus variabilis</i> Hrbst.	<i>Necremnus leucarthros</i> (Nees)
<i>Quedius brevis</i> Er.	<i>Necremnus leucarthros</i> (Nees)
<i>Rhynchænus ulmi</i> L.	<i>Cirrospilus pictus</i> (Nees)
<i>Sirocalus posthumus</i> Germ.	<i>Necremnus leucarthros</i> (Nees)

DIPTERA

<i>Agromyza</i> sp.	<i>Cirrospilus vittatus</i> Walk.
<i>Dacus oleæ</i> Gmel.	<i>Cirrospilus variegatus</i> (Masi)
<i>Liriomyza variegata</i> Meig.	<i>Sympiesis acalle</i> (Walk.)
<i>Phytobia crucifericola</i> Her.	<i>Cirrospilus vittatus</i> Walk.
<i>Phytobia iridis</i> Hd.	<i>Hemiptarsenus unguicellus</i> (Zett.)
<i>Phytomyza nigra</i> Meig.	<i>Hemiptarsenus unguicellus</i> (Zett.)
<i>Syringophaga chomnei</i> (?)	<i>Cirrospilus vittatus</i> Walk.

HYMENOPTERA

<i>Apanteles</i> sp.	<i>Cirrospilus pictus</i> (Nees), <i>Sympiesis sericeicornis</i> (Nees)
<i>Diprion pini</i> L.	<i>Dahlbominus fuscipennis</i> (Zett.)
<i>Diprion simile</i> Htg.	<i>Dahlbominus fuscipennis</i> (Zett.)
<i>Fenusa pusilla</i> Klug	<i>Cirrospilus pictus</i> (Nees)
<i>Fenusa ulmi</i> Sund.	<i>Cirrospilus pictus</i> (Nees)
<i>Gilpinia frutetorum</i> F.	<i>Dahlbominus fuscipennis</i> (Zett.)
<i>Gilpinia polytoma</i> Htg.	<i>Dahlbominus fuscipennis</i> (Zett.)
<i>Heterarthrus nemoratus</i> Fall.	<i>Cirrospilus pictus</i> (Nees), <i>C. vittatus</i> Walk., <i>Hemiptarsenus dropion</i> (Walk.), <i>Sympiesis sericeicornis</i> (Nees)
<i>Neodiprion sertifer</i> Geoffr.	<i>Dahlbominus fuscipennis</i> (Zett.)
<i>Phanomeris phyllotomæ</i> Muesb.	<i>Cirrospilus vittatus</i> Walk.

LEPIDOPTERA

<i>Acalla</i> sp. on <i>Quercus</i>	<i>Colpoclypeus florus</i> (Walk.)
<i>Acalla logiana</i> Schiff.	<i>Colpoclypeus florus</i> (Walk.)
<i>Acroclita nævana</i> Hb.	<i>Colpoclypeus florus</i> (Walk.)
<i>Acronycta aceris</i> L.	<i>Eulophus larvarum</i> (L.)
<i>Acronycta leporina</i> L.	<i>Eulophus larvarum</i> (L.), <i>E. thespius</i> Walk.
<i>Acronycta megacephala</i> Schiff.	<i>Eulophus larvarum</i> (L.), <i>E. smerinthicida</i> Bčk.
<i>Acronycta psi</i> L.	<i>Eulophus larvarum</i> (L.)
<i>Aethia emortualis</i> Schiff.	<i>Eulophus thespius</i> Walk.
<i>Anisopteryx aceraria</i> Schiff.	<i>Eulophus larvarum</i> (L.)
<i>Antispila</i> sp. on <i>Cornus mas</i>	<i>Cirrospilus diallus</i> Walk., <i>C. vittatus</i> Walk.
<i>Antispila rivillei</i> Stt.	<i>Cirrospilus subviolaceus</i> Thoms., <i>C. variegatus</i> (Masi)
<i>Aspilapteryx limosella</i> Zell.	<i>Cirrospilus starji</i> Bčk., ? <i>Sympiesis gregori</i> Bčk.
<i>Barathra brassicæ</i> L.	<i>Eulophus pennicornis</i> Nees

- Blastobasis aurantiaca* Woll.
Cacoecia musculana Hb.
Cacoecia sorbiana Hb.
Cacoecia xylosteana L.
- Calymnia affinis* L.
Calymnia trapezina L.
Carposina scirrhosella H. Sch.
Cemistoma walesellum Stt.
Clostera anachoreta Schiff.
Clostera pigra Hufn.
Coleophora ibipennella Zell.
Coleophora laricella Hb.
- Coleophora onosmella* Brahm.
Coriscium brogniardellum F.
Demas coryli L.
Diataraxia oleracea L.
- Drymonia chaonia* Hb.
Elachista argentella Cl.
Epinotia nigricana H.-Sch.
Eriogaster lanestris L.
Euspilapteryx phasianipennella Hb.
Exoteleia dodecella L.
Gelechia mulinella Zell.
Geometra papilionaria L.
Gracilaria stigmatella F.
Graptolitha ornitopus Hufn.
Griposia aprilina L.
Laspeyresia roseticolana Zell.
Leucoptera coffeella Guér.
Leucoptera coronillæ Her.
Lithocolletis sp. on *Acer*
Lithocolletis sp. on *Alnus*
- Lithocolletis* sp. on *Quercus*
- Lithocolletis acerifoliella* Zell.
Lithocolletis agilella Zell.
Lithocolletis anderidæ Fletsch.
- Lithocolletis blancardella* F.
- Lithocolletis cerasicolella* H. Sch.
- Lithocolletis cerrutiella* Hart.
- Lithocolletis connexella* Zell.
Lithocolletis coryli Nic.
Lithocolletis corylifoliella Haw.
- Lithocolletis delitella* Zell.
- Lithocolletis distentella* Zell.
- Sympiesis acalle* (Walk.)
Colpoclypeus florus (Walk.)
Sympiesis xanthostoma (Nees)
Colpoclypeus florus (Walk.)
Sympiesis xanthostoma (Nees)
Eulophus larvarum (L.)
Eulophus larvarum (L.)
?Dycladocerus westwoodi Westw.
Hemiptarsenus walesellæ Now.
Eulophus abdominalis Nees
Eulophus æneicoxa (Thoms)
Cirrospilus pictus (Nees)
Cirrospilus immaculatus Thoms., *C. pictus* (Nees), *Dycladocerus westwoodi* Westw.,
Necremnus metalarus (Walk.)
Necremnus metalarus (Walk.)
Sympiesis gordius (Walk.)
Eulophus larvarum (L.)
Eulophus larvarum (L.), *E. pennicornis* Nees
Eulophus pennicornis Nees
Cirrospilus vittatus Walk.
Eulophus æneicoxa (Thoms.)
Eulophus larvarum (L.)
Sympiesis euspilapterygis (Erd.)
Cirrospilus pulcherrimus (Merc.)
Sympiesis acalle (Walk.)
Eulophus larvarum (L.)
Encopa brevicornis (Erd.)
Eulophus cyanescens Bék.
Eulophus pennicornis Nees
?Dycladocerus westwoodi Westw.
Cirrospilus variegatus (Masi)
Cirrospilus subviolaceus Thoms.
Cirrospilus lyncus Walk.
Cirrospilus elegantissimus Westw., *C. lyncus* Walk., *Sympiesis gordius* (Walk.)
Cirrospilus diallus Walk., *C. elegantissimus* Westw., *C. luteus* Buk., *C. lyncus* Walk., *C. subviolaceus* Thoms., *Sympiesis gordius* (Walk.), *S. sericeicornis* (Nees)
Cirrospilus lyncus Walk.
Cirrospilus lyncus Walk.
Hemiptarsenus dropion (Walk.),
Sympiesis sandanis (Walk.)
Cirrospilus lyncus Walk., *C. pictus* (Nees),
Sympiesis sericeicornis (Nees)
Cirrospilus lyncus Walk.,
Sympiesis gordius (Walk.)
Cirrospilus pictus (Nees)
Cirrospilus lyncus Walk.
Cirrospilus elegantissimus Westw., *C. lyncus* Walk., *C. pictus* (Nees), *C. subviolaceus* Thoms., *C. variegatus* (Masi), *C. vittatus* Walk., *Sympiesis acalle* (Walk.), *S. gordius* (Walk.), *S. sericeicornis* (Nees)
Cirrospilus lyncus Walk., *C. subviolaceus* Thoms.
Cirrospilus lyncus Walk.

- Lithocolletis dubitella* H. Sch.
Lithocolletis emberizæpennella Bché.
Lithocolletis faginella Zell.
Lithocolletis fuscedinella Zell.
Lithocolletis hauderella Rbl.
Lithocolletis helianthemella H. Sch.

Lithocolletis hortella F.

Lithocolletis maestingella Zell.
Lithocolletis manni Zell.
Lithocolletis mespilella Hb.
Lithocolletis messaniella Zell.

Lithocolletis oxyacanthæ Frey

Lithocolletis pastorella Zell.
Lithocolletis platani Reinh.

Lithocolletis populifoliella Tr.

Lithocolletis pyrifoliella Bnks.

Lithocolletis quercifoliella Zell.

Lithocolletis quinqueguttella Stt.
Lithocolletis rajella L.

Lithocolletis raboris Zell.
Lithocolletis salictella Zell.

Lithocolletis schreberella F.

Lithocolletis scitulella Zell.
Lithocolletis sorbi Frey

Lithocolletis spinicolella Zell.

Lithocolletis spinolella Zell.

Lithocolletis strigulatella Zell.
Lithocolletis ulmifoliella Hb.

Lophoteryx camelina L.
Lymantria dispar L.
Lymantria monacha L.
Lyonetia clerkella L.

Mamestra sp.
Mamestra brassicæ L.
- Cirrospilus lyncus* Walk., *Sympiesis sericeicornis* (Nees)
Sympiesis sericeicornis (Nees)
Sympiesis sericeicornis (Nees)
Cirrospilus pictus (Nees)
Sympiesis sericeicornis (Nees)
Cirrospilus starýi Bčk., *Hemiptarsenus droption* (Walk.), *Sympiesis gregori* Bčk.
Cirrospilus subviolaceus Thoms., *Sympiesis gordius* (Walk.), *S. sericeicornis* (Nees)
Cirrospilus diallus Walk.
Cirrospilus subviolaceus Thoms.
Sympiesis sericeicornis (Nees)
Cirrospilus diallus Walk., *C. elegantissimus* Westw., *C. lyncus* Walk., *C. pulcher* Masi, *C. subviolaceus* Thoms., *Sympiesis gordius* (Walk.), *S. sericeicornis* (Nees)
Sympiesis gordius (Walk.), *Sympiesis sericeicornis* (Nees)
Cirrospilus diallus Walk.
Cirrospilus elegantissimus Westw., *C. lyncus* Walk., *Sympiesis gordius* (Walk.), ?*S. xanthostoma* (Nees)
Cirrospilus elegantissimus Westw., *C. pictus* (Nees), *Sympiesis acalle* (Walk.), *S. dolichogaster* Ashm., *S. gordius* (Walk.), *S. sericeicornis* (Nees)
Cirrospilus elegantissimus Westw., *C. lyncus* Walk., *C. pictus* (Nees), *C. subviolaceus* Thoms., *Sympiesis acalle* (Walk.), *S. gordius* (Walk.), *S. sericeicornis* (Nees)
Cirrospilus diallus Walk., *C. lyncus* Walk., *C. subviolaceus* Thoms., *Sympiesis gordius* (Walk.)
Sympiesis euspilapterygis (Erd.)
Sympiesis gordius (Walk.), *Sympiesis sericeicornis* (Nees)
Cirrospilus lyncus Walk.
Cirrospilus pictus (Nees), *C. vittatus* Walk., *Sympiesis sericeicornis* (Nees)
Cirrospilus victus (Nees), *C. subviolaceus* Thoms., *Sympiesis sericeicornis* (Nees)
Sympiesis gordius (Walk.)
Cirrospilus pictus (Nees), *Hemiptarsenus droption* (Walk.), *Sympiesis sericeicornis* (Nees)
Cirrospilus lyncus Walk., *C. pictus* (Nees), *Sympiesis acalle* (Walk.), *S. sericeicornis* (Nees)
Cirrospilus lyncus Walk., *Sympiesis gordius* (Walk.), *S. sericeicornis* (Nees)
Sympiesis gordius (Walk.)
Cirrospilus lyncus Walk., *Sympiesis sericeicornis* (Nees)
Eulophus larvarum (L.)
? *Eulophus slovacus* Bčk.
Eulophus larvarum (L.)
Cirrospilus pictus (Nees), *C. variegatus* (Masi), *C. vittatus* Walk., *Sympiesis gordius* (Walk.), *S. sericeicornis* (Nees)
Eulophus pennicornis Nees
Eulophus larvarum (L.)

- Notolophus antiquus* L.
Oecophyllembius inferior Silv.
Oecophyllembius neglectus Silv.
Operophthora brumata L.
Oporinia dilutata Schiff.
Orgyia antiqua L.
Orgyia gonostigma F.
Orthosia cruda Schiff.
Orthosia stabilis Schiff.
Pachnobia rubricosa F.
Pandemis heparana Hb.
Pandemis ribeana Hb.
- Phalonia posterana* Zell.
Phlogophora meticulosa L.
Phyllocnistis labyrinthella Bjerk.
- Phyllocnistis sorhageniella* Lüd.
Phyllocnistis suffusella Zell.
- Pieris brassicæ* L.
Ptilophora plumigera Schiff.
Pyrausta nubilalis Hb.
- Recurvaria leucatella* Cl.
Scoliopteryx libatrix L.
Sesamia cretica Led.
Smerinthus ocellatus L.
Smerinthus populi L.
Stigmella sp. on *Salix*
Stigmella helianthemella H. Sch.
Stigmella microtheriella Stt.
Stigmella obliquella Hein.
Tachyptilia populella Cl.
- Tæniocampa pulverulenta* Esp.
Tethea or F.
Tischeria complanella Hb.
- Tortrix viridana* L.
- Xanthoecia flavago* Schiff.
- Eulophus abdominalis* Nees
Cirrospilus variegatus (Masi)
Cirrospilus variegatus (Masi)
Eulophus larvarum (L.)
Eulophus thespius Walk.
Eulophus larvarum (L.)
Eulophus larvarum (L.)
Eulophus larvarum (L.)
Eulophus larvarum (L.)
Eulophus larvarum (L.)
Eulophus thespius Walk.
Colpoclypeus florus (Walk.)
Colpoclypeus florus (Walk.), *Eulophus larvarum* (L.)
?Sympiesis viridula (Thoms.)
Eulophus pennicornis Nees
Cirrospilus diallus Walk., *C. pictus* (Nees),
C. subviolaceus Thoms., *C. vittatus* Walk.,
Sympiesis sericeicornis (Nees)
Sympiesis sericeicornis (Nees)
Cirrospilus diallus Walk., *C. elegantissimus* Westw., *C. lyncus* Walk.
Eulophus larvarum (L.)
Eulophus larvarum (L.)
Hemiptarsenus unguicellus (Zett.), *Sympiesis viridula* (Thoms.)
Sympiesis acalle (Walk.)
Eulophus larvarum (L.)
Sympiesis viridula (Thoms.)
Eulophus smerinthicida Bčk.
Eulophus smerinthicida Bčk.
Cirrospilus vittatus Walk.
Hemiptarsenus wailesellæ Now.
Cirrospilus starýi Bčk.
Cirrospilus vittatus Walk.
Sympiesis acalle (Walk.), *S. viridula* (Thoms.)
Eulophus larvarum (L.)
Sympiesis čapeki Bčk.
Cirrospilus lyncus Walk., *C. subviolaceus* Thoms., *Sympiesis dolichogaster* Ashm.
Eulophus larvarum (L.), *Sympiesis xanthostoma* (Nees)
Hemiptarsenus unguicellus (Zett.)

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Note: in brackets name of genus in present combination; synonyms printed in italics.