

TO THE TAXONOMY OF THE EUROPEAN SPECIES OF SCHIZONOTUS AND  
CAENOCREPIS — PARASITES OF ECONOMIC IMPORTANCE — WITH  
NOTES, AND SOME NEW SYNONYMY IN PTEROMALIDAE  
AND EURYTOMIDAE (HYM.)

ZDENĚK BOUČEK

(Department of Entomology, National Museum, Praha)

I. Parasites of the genus *Schizonotus* Ratz.

Though *Schizonotus* was described by Ratzeburg as early as 1852 (p. 230), as a group of the genus *Pteromalus* Sved., it remained misunderstood for a long period. So, being arranged with *Cleonyminae* for the most time its true taxonomic position was shown first by Mayr in 1904 (p. 588), and the genus was determinable in fact only after Kurdjumov's table of the Pteromalid genera (1913, pp. 1—24). Originally, *Schizonotus* was described with two species, viz. *Pteromalus (Schizonotus) Sieboldi* Ratz. and *P. (S.) Pannewitzi* Ratz. from Germany, and, up to 1915 no further species was known. Then, in 1915, there were described two species from Australia, *S. doddi* Girault and *S. amabilis* Girault (p. 204), later, in 1922, further three species from Australia, viz. *S. punctatiscutum* Girault, *S. punctifacies* Girault and *S. arboris* Girault (pp. 152—153), and, in 1925, *Schizonotus Pailloti* Ferrière et Faure was described from France (pp. 229—233). *Arthrolytus incongruens* Masi (1907, pp. 252—254) was synonymized with *Schizonotus sieboldi* Ratz. by Masi in 1921 (p. 236), and this species with *Pteromalus latus* Walker, 1835 (p. 481), by Graham, 1956 (p. 260), so that the combination *Schizonotus latus* (Walker) was proposed. In 1951 *Coelopisthia rotundiventris* Girault, 1917 (p. 113), from North America, was combined with *Schizonotus* Ratz. by Peck (p. 555). When leaving aside Girault's Australian species which hardly belong to our genus, there were known and recognized three species of the genus from Europe, i. e. *Schizonotus latus* (Walk.), *S. pannewitzi* Ratz. and *S. pailloti* Ferr. et Faure, and two species from North America, viz. *Schizonotus sieboldi* Ratz. (= *latus* Walk., according to Graham, 1956) and *S. rotundiventris* (Girault). *Schizonotus pailloti* Ferr. et Faure, however, does not fit our genus, as I judged from the diagnosis and from the host record: *Apanteles glomeratus* L. (I. suppose it might be rather a *Habrocytus* or certainly very near to it.) Later, Mr. Graham from Oxford,

who has studied the type of *S. pailloti*, and has some manuscript notes on it, has let me know his agreeing with my view. The description of the second Ratzeburg species, *S. pannewitzi*, also seems to exclude it from the genus *Schizonotus* Ratz., and I believe it is most probably the same as *Habritys brevicornis* (Ratz.), also parasitic on *Crabro*. We ought to have then only one species certainly belonging to *Schizonotus* in Europe. But there are two there.

In search after the name of the second species I tried to find it on behalf of host selections of the parasites. *S. sieboldi* Ratz. was reared originally in Germany from *Chrysomela* (= *Melasoma*) *populi* L. (Ratzeburg, 1852 p. 230). The flies *Lucilia dispar* and *Calliphora azurea*, mentioned as hosts by Dalla Torre (1898, p. 173), are due probably to Giraud, who recorded *Lucilia dispar* as host species of *Pteromalus sieboldi* Ratz. (1869, p. 148). This record concerns, however, the well known species *Nasonia* (= *Mormoniella*) *vitripennis* (Walk.), as shown by Ferrière et Faure (1924, pp. 232, 233). These do not affect then any *Schizonotus*. A further record of a host is that of Masi, 1907 (p. 254), whose *Arthrolytus incongruens* was said to have been reared from a pupa of another chrysomelid beetle, *Plagioderma versicolor* (Laich.), in Italy. One species under the name of *S. sieboldi* is believed to be of holarctic distribution, and was studied in particular in North America, where it sometimes heavily parasitizes the introduced beetle pest, *Plagioderma versicolor*. The first biological data were brought by Cushman in 1917 (pp. 128—129) and especially by Dowden, 1939 (pp. 581—592), who reviews all known data. According to that source, and Peck's records in the American catalogue (1951, p. 555), there are known *Melasoma interruptum* (F.), *M. scripta* (F.), and *Plagioderma versicolor* Laich. as hosts of *S. sieboldi* in North America, and *Melasoma populi* (L.), *M. vigintipunctatum* (Scop.) (Scheidter, 1926, pp. 209—213), and *Plagioderma versicolor* Laich. in Europe.

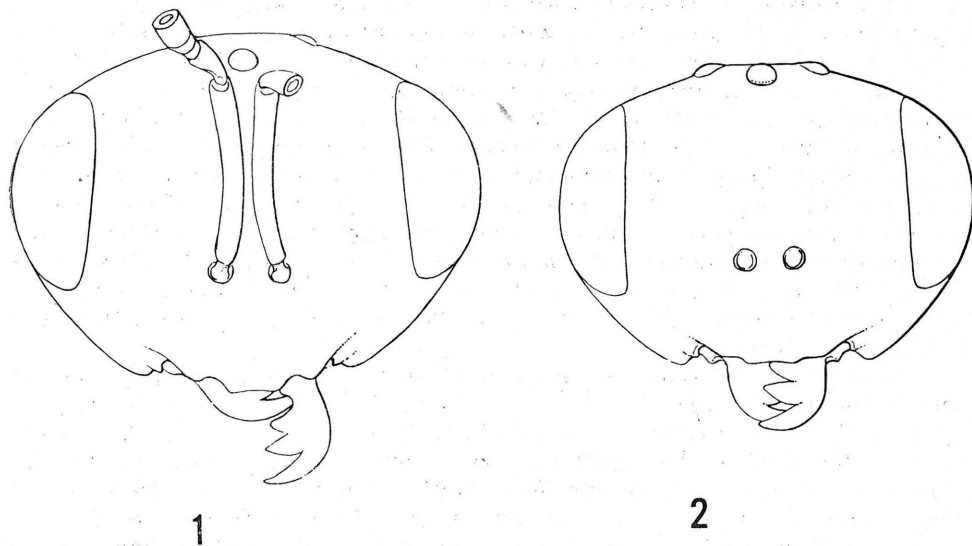
When detecting that there were two different species under the name of *S. sieboldi*, I have found that the males of only one species have the feelers yellow with a blackish club. As the Ratzeburg collection was destroyed during the second world war, it was not possible to reexamine any type specimen. Fortunately Ratzeburg (1852, p. 230), although describing the female only, writes: "Die Farben zeigen merkwürdige Abweichungen, wie ich an den Reissig'schen Stücken sehe. Das eine hat nämlich ganz helle Beine und eben so helle Fühler, an welchen nur die Spitze dunkel ist." And this can fit only the male of one species, which was reared, besides, in Bohemia and elsewhere from the same host, *Melasoma populi*, as Ratzeburg's specimens. This is then the true *Schizonotus sieboldi* Ratz.

The description of *Arthrolytus incongruens* Masi (1907, pp. 252—253) fits well, on the other hand, the second European species. After this species was synonymized with *Pteromalus latus* Walk. and with *Schizonotus sieboldi* Ratz. by Graham (1956, p. 260), I asked Mr. Graham in a letter, whether the Walker's type corresponds with Ratze-

burg's species or with Masi's one (I keyed out the differences). Mr. Graham kindly replied that *P. latus* Walk. clearly differs from *S. sieboldi* Ratz. and is identical with the other species I had identified as *Schizonotus incongruens* (Masi) before. Thus the question was settled and we have *Schizonotus latus* (Walk.) and *S. sieboldi* Ratz. in Europe.

The differences between them are as follows:

- 1 (2) ♀: Head less transverse in front view (25: 19), eyes relatively smaller (Fig. 1), clypeus protruding down beyond the level of ventral ends of cheeks; scape as long as basal part of flagellum from base of pedicellus to half the fourth funicle segment; the two ring-joints together longer than second wide, funicle slenderer, second funicle segment but very slightly transverse, subquadrate, flagellum yellow beneath along the whole length, only club wholly dark brown to blackish; sculpture of mesoscutum very coarse in the middle; ♂: Flagellum light yellow with club blackish, club broader and often not longer than two preceding joints together, distal funicle joints distinctly broader and therefore more transverse than the subquadrate basal funicle segment; Main host: *Melasoma populi* . . . *Schizonotus sieboldi* Ratz.
- 2 (1) ♀: Head more transverse in front view (22: 16), eyes relatively larger (Fig. 2), clypeus not protruding down beyond the level of ventral ends of cheeks; scape as long as flagellum from base of pedicellus up to basal quarter of fifth funicle segment; the two ring-joints together exactly as long as second wide; funicle shorter, not so slender, second funicle segment clearly transverse, about 1.2 times as broad as long; flagellum dark brown, concolorous beneath and above; ♂: Antenna with club included uniformly yellow to yellowish brown, club longer than two preceding segments together, funicle segments 2—6 subequal in form, transverse, first segment narrower than second, sometimes somewhat anellus-like; mesoscutum sculpture relatively finer; Main host: *Plagioderma versicolor* . . *Schizonotus latus* (Walker)



Figs. 1—2. — 1. *Schizonotus sieboldi* Ratz., ♀, head in front view. — 2. *Schizonotus latus* (Walk.).

*Schizonotus sieboldi* Ratz. was described as a parasite of *Melasoma populi* and was reared again from this host in Bohemia (Jirny at Praha, 16. VI. 1946, J. Král), in Slovakia (Bratislava, 12. IX. 1956, O. Majerník), and in Russian Central Asia (Tashkent, 17. VII. 1947, State University; communicated to me by the courtesy of Mrs. Nikolskaja, Leningrad). Probably also Scheidter's record of *S. sieboldi* from *Melasoma vigintipunctata* (1926, pp. 209—213) might concern this species.

*Schizonotus latus* (Walk.) was reared from *Plagioderma versicolor* Laich., as mentioned by Masi (*Arthrolytus incongruens*, 1907, p. 254). My specimens were reared from a pupa of a *Chrysomelidae* sp. in Southern Slovakia (Gabčíkovo, formerly Bés; pupa collected 15. VIII. 1955, parasites emerged V. 1956, Turček coll.), Probably American "*S. sieboldi*" belongs to *S. latus* (Walk.), too, judging from the host preference of *Plagioderma versicolor*. It was, however, apparently nowhere described in detail (only figured in Dowden, 1939, p. 584), and therefore it is not possible to say with accuracy how to name the American species correctly. —

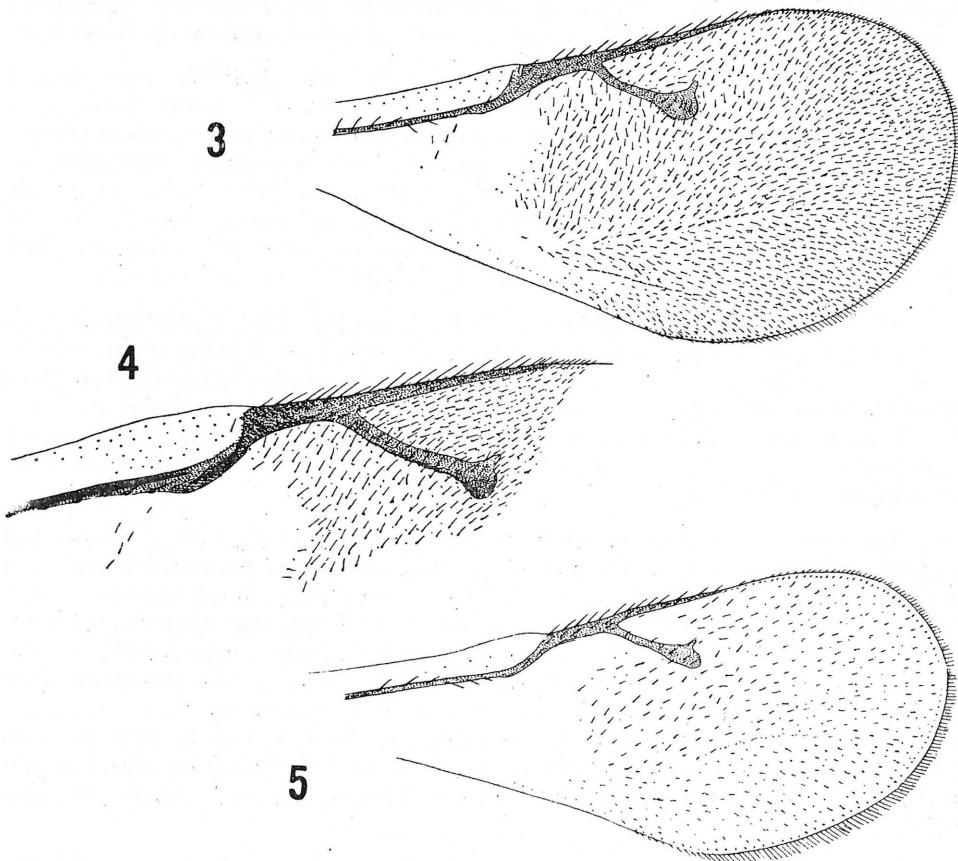
## II. Parasites of the genus *Caenocrepis* Thoms., with notes on *Dinarmoides* Masi.

The genus *Caenocrepis* Thomson (1878, p. 51) is treated here as a valid genus, in full agreement with Ferrière's statement (1954, p. 265). It cannot be regarded as a synonym of *Xenocrepis* Först. only on the base of a wrong designation of the type species (Ashmead, 1904, p. 276), though this was accepted by Gahan and Fagan (1923, p. 153). Accordingly *Xenocrepis* sensu Ashmead was arranged in *Miscogasteridae*, tribe *Metastenini*, with two spurs on hind tibiae. But *Xenocrepis* Förster (1856, p. 64) was described in Förster's family *Pteromaloidae* among genera clearly with one spur only, and belongs to the neighbourhood of *Amblymerus* Walk. (*Eutelus* Walk.), as emphasized by Mayr (1904, p. 586). Thus *Xenocrepis* Förster, with the type species *X. pura* Mayr (1904, pp. 584—586), cannot be identical with *Xenocrepis* Ashmead, with the type species *Caenocrepis arenicola* Thomson, and the genus *Xenocrepis* Ashmead, 1904 (not Förster, 1856), must be regarded as a synonym of *Caenocrepis* Thomson, 1878. Also Graham, 1957 (p. 239), is of a similar opinion. Notwithstanding only the International Commission of Zoological Nomenclature can settle the case definitively, I think.

*Caenocrepis* Thoms. belongs to *Pteromalinae*, to a group of genera named "genus *Dimachus*" by Thomson (1878, p. 50), and later, less suitably, tribe *Metastenini* (Ashmead, 1904, pp. 273, 275). As shown by Graham (1956, p. 256), the type genus of this tribe, *Metastenus* Walker, belongs to the true *Pteromalini*. Thus the name *Metastenini* had become inconvenient for that group which seems to be one of most natural in *Pteromalidae*, and Graham (p. cit.) thought to have found the new name in *Bruchobiinae*, proposed by Mani (1939, p. 75). But Delucchi proved in 1956 (pp. 237, 240—242), that *Bruchobius* Ash-

mead is again a synonym of *Dinarmus* Thomson. As nowadays *Dinarmus* Thoms. becomes the best and most widely known genus of the group, I believe the name *Dinarmini* (new name) would be most acceptable for it. I hope this change of name is suitable here, although the names of the family group may be retained also in cases where the name of the type genus becomes a junior synonym (cf. e. g. *Bull. Zool. Nomenclat.*, 14 [1957]: 97). But *Bruchobiinae* is not a generally accepted name.

A key to a part of this group was brought by Delucchi (1956, pp. 238—240), but this is very incomplete and contains, on the other hand, some foreign elements such as *Pseudocatolaccus* Masi and *Anisoptermalus* Ruská. Both are one-spurred and only the latter genus has, in some extent, a resemblance to some members of *Dinarmini* because of the white hairs on head and thorax.



Figs. 3—5. — 3. *Caenocrepis arenicola* Thomson, ♀, forewing; specimen of 2 mm. size. — 4. Veins region of forewing, from a specimen of 3.5 mm. in size. — 5. *Caenocrepis bothynoderi* Gromakov, ♀, forewing, showing sparse pubescence and speculum prolonged along marginal and postmarginal veins; specimen of about 2 mm. in size. — All figures same scale. Brownish spots nowhere drawn.

Within that tribe *Caenocrepis* Thoms. in superficially very similar to *Dinarmoides* Masi. Most recently the latter genus was redescribed by Heqvist (1957, pp. 23—24, 26) as *Gothbergia* (new syn.). But *Gothbergia elymi* Heqvist (n. syn.) is not more than the undescribed up to now male of *Dinarmoides spilopterus* Masi (1924, pp. 232—235). This genus and species were described originally from the island of Giglio (in Tuscan Archipelago), now redescribed from South Sweden, and occurs also in Czechoslovakia, where it was found on seven localities in Moravia and Slovakia, in both sexes, mostly on sandy or xerothermic substrates, similarly as *Caenocrepis arenicola* Thoms. *Caenocrepis* Thoms. differs from *Dinarmoides* Masi by the antennae with but two annelli, by the mostly thickened marginal vein, which is nearly always shorter than the radial one, and by the less thickened hind femora in male (these are strongly thickened in the male of *Dinarmoides*). The following characters may separate *Caenocrepis* Thoms. from all other genera of *Dinarmini*.

Antennae not long, with two annelli (1—1—2—6—3) in both sexes; face slightly convex, scrobe very shallow, indistinct; lower margin of clypeus bilobed with a narrow incision in the middle; pronotum rounded, collar not separated; marginal vein more or less thickened, especially at base, at the most as long as the radial one or shorter, radial knob not large; disk of fore wing often dusky; propodeum short, with a median keel, nucha almost lacking; legs strong, femora moderately thickened, mid tibiae with the spur longer than half the length of mid metatarsus.

The taxonomic discrimination of the two species of the genus was not yet published, although Gromakov, when publishing its diagnosis (1940, p. 10; 1941, p. 123), mentions that *Caenocrepis bothynoderi* differs from *C. arenicola* in having different body colour and a cylindrical pedicellus. But, as Gromakov apparently never saw any specimen of the latter species, these differences are of no value, and are not sufficient to discriminate the two species.

Through the courtesy of Prof. N. A. Telenga, of Kiev, I received several reared specimens of *C. bothynoderi* in 1956, and could compare them then with my specimens of *C. arenicola*. Quite recently I have received also 2 ♂♂ 2 ♀♀ from the Gromakov's syntypes through the courtesy of Mrs. M. N. Nikolskaja from Leningrad. They were labelled Ukr.S.S.R., Smela, egg of *B. punctiventris*, 1939, Gromakov. The two species are very near each to other, and, as *C. bothynoderi* was well figured by Gromakov (1941, p. 122) and by Telenga (1950, p. 143), I feel it sufficient to figure the main differences only (Figs. 3, 4, 5). They may be summarized as follows (besides of some further and, however, more variable differences).

- 1 (2) Wings densely pubescent, (Figs. 3, 4), space between postmarginal vein and radial knob with at least 5 rows of hairs (smaller specimens under 2 mm.), often with much more rows (more than 10 in largest specimens), speculum round, not prolonged along marginal vein, underside of costal cell in distal half with several rows of hairs; abdomen in female shortly ovate, as long as head and thorax together, with sides strongly and straightly converging from the hind corners of the fourth tergite to the

tip, first tergite only very shallowly incised or emarginate in the middle of the broadly rounded hind margin; very variable in size, 1.5—3.5 mm. . . . .

. . . *Caenocrepis arenicola* Thomson

- 2 (1) Wings with very sparse pubescence (Fig. 5), space between postmarginal vein and radial knob nearly bare, in smaller specimens (of about 2 mm.) with several hairs only, in larger specimens at most with 2—3 rows of hairs, speculum not round but prolonged anteriorly in a broad strip up to the radial vein (the nearly bare surface out of it may be taken also as its part), underside of costal cell at most with one row of sparse hairs and only in largest specimens (at 3 mm.) with a few additional hairs; abdomen of female rather lanceolate, longer than head and thorax together, first tergite distinctly incised in the middle, especially in larger specimens; size usually 1.5—2 mm., only rarely up to 3 mm. . . . .

. . . *Caenocrepis bothynoderi* Gromakov

Gromakov described *C. bothynoderi* from Ukraine (Umanj and Smela). According to Telenga (1950, p. 144), *C. bothynoderi* was ascertained in Ukraine in the regions of Kiev, Zhitomir, Tshernigov, Kirovograd, Poltava and Dniepropetrovsk, and is, as yet, not known from elsewhere. All the Ukrainian specimens are at most 2 mm. long, but I hope to be right in attributing also two larger females to this species: 1 ♀ of 3 mm., from Odessa, Ukraine, June 1957 (Dlabola lgt.), and 1 ♀ of 2.6 mm., from Ankara-Baraj, Anatolia, 3.—4. VII. 1947 (Exp. N. Mus. Praha).

*C. arenicola* Thomson was known as yet only from Sweden (Thomson, 1878, p. 52) and from Hungary (Erdős, 1947, p. 111). My specimens come from Czechoslovakia, Austria (I wish to thank for them to Mr. S. v. Novitzky) and Georgia in Transcaucasia, and were collected mostly on sandy or xerothermic substrates.

Founds in details:

Czechoslovakia: Bohemia: Chožov at Louny, 21. 7. 1948 (Bouček); Lysá nad Labem, 8. VI. 1950 (Hoffer). — Moravia: Mohelno, 6. VII. 1957 (Bouček); Dubňany 10. VIII. 1942; Bzenec, VII. 1940 (both Hoffer). — Slovakia: Banská Štiavnica, 20. VI. 1952 (Bouček); Slovenské Nové Mesto, 24. IV. 1952 (Bouček), and 31. V. 1952 (Hoffer); Baba at Ladmovce, 27. VI. 1952 (Kocourek).

Austria: Zeisselberg bei Weiden, 10. VII. 1943 (v. Novitzky).

U. S. S. R.: Transcaucasia: Georgia (Gruzia): Tbilisi, VI. 1957 (Hoffer).

### III. Some new synonymy and new combinations in *Pteromalidae* and *Eurytomidae*.

*Cricellius gracilentus* (Bouček), new comb. — The species *Dibrachella gracilenta* Bouček (1954, pp. 55—57) is congeneric with *Etroxys* (*Cricellius*) *decipiens* Thomson (1878, pp. 103—104), and thus *Dibrachella* Bouček (1954, p. 55) becomes a subjective synonym of *Cricellius* Thomson (new syn.).

*Bairamlia nidicola* Ferrière. — The species *Parasaphodes atrovirens* Bouček (1955, pp. 310—313) is the same as *Bairamlia nidicola* (1934, pp. 89—90), as discovered independently by me and Dr. Ferrière, and the former is a new synonym of the latter. I do not, however, believe it to be a *Pireninae*; I hope my opinion this to be an *Asaphini* is right.

*Gothbergia elymi* Heqvist (1957, pp. 23—24, 26) is the male of *Dinarmoides spilopterus* Masi (1924, pp. 232—235), and is a new synonym of the latter (both genus and species; see above).

*Nikanoria metallica* (Erdős, 1956), new. comb. — The genus *Biró-Lajosia* Erdős (1956, p. 189) is a new synonym to *Nikanoria* Nikolskaja (1955, p. 335). The Hungarian species occurs also in Czechoslovakia, and seems to differ from the type species *N. pavlovskii* Nik. by the longer marginal vein, slenderer radial knob, and by slenderer funicle joints in male (Erdős, 1957, p. 360). The genus may prove to be only a subgenus of *Eurytoma* Illiger in future, being different only by the metallic tinge of the body.

*Archirileya inopinata* Silvestri (1920, pp. 223—229) has a new generic and specific synonym in *Sidonia podagrica* Erdős (1957, pp. 350—352). Originally this species was described from Italy and recently by Erdős from Hungary. It is, however, widely distributed in the Mediterranean Region, common also in Czechoslovakia. I also saw specimens from Tunisia (Le Kef, V. 1930, Mařan lgt.) and Georgia in Transcaucasia (U.S.S.R., Gori, VI. 1957, Hoffer lgt.). The male has thickened hind femora as it is common in Rileyine genera. According to my present opinion also the genus *Anarchirileya* Bouček (1951, pp. 54, 55) must be considered a synonym (n. syn.) of *Archirileya* Silvestri, with *Archirileya femorata* (Bouček), n. comb. The latter species differs from *A. inopinata* Silv. mainly by the longer basal funicle joints (in male).

## REFERENCES

- Ashmead W. H., 1904: Classification of the chalcid flies... — *Mem. Carnegie Mus.*, 1: I—XI, 225—551, pls. XXXI—XXXIX.
- Bouček Z., 1951: Results of the Zoological scientific expedition of the National Museum in Praha to Turkey. 7. Hymenoptera I Chalcidoidea (first part). — *Acta Ent. Mus. Natl. Pragae*, 27: 47—57.
- , 1954: Chalcidologické poznámky I, Pteromalidae, Torymidae, Eurytomidae, Chalcididae (Hymenoptera). — *Acta Ent. Mus. Natl. Pragae*, 29: 49—80.
- , 1955: Chalcidologické poznámky III, Torymidae, Pteromalidae, Perilampidae a Eucharitidae. — *Acta Ent. Mus. Natl. Pragae*, 30: 305—330.
- Cushman R. A., 1917: Notes on the biology of *Schizonotus sieboldi* Ratz. — *Proc. Ent. Soc. Wash.*, 19: 128—129, pl. XIV.
- Dalla Torre C. G. v., 1898: Catalogus Hymenopterorum... V, Chalcididae et Proctotrupidae. — 598 pp., Lipsiae.
- Delucchi V., 1956: Beiträge zur Kenntnis der Pteromalidae (Hym., Chalcidoidea). II. (Fortsetzung). — *Zeitschr. angew. Ent.*, 39: 229—257.
- Dowden P. B., 1939: *Schizonotus sieboldi*, an important parasite of the imported willow leaf beetle (*Plagioderma versicolor*). — *Journ. Agric. Res.*, 58: 581—592.
- Erdős J., 1947: Additamenta ad cognitionem faunae Chalcidoidarum (Hymenoptera) in alveo Carpathorum. III. 10. Miscogasteridae. — *Fragm. Faun. Hung.*, 10: 108—113.
- , 1956: Chalcidoidea nova in collectione Biró (Hymenoptera). — *Ann. Hist.-nat. Mus. Natl. Hung.*, s. n., 7: 181—194.
- , 1957: Miscellanea chalcidologica Hungarica. — *Ann. Hist.-nat. Mus. Natl. Hung.*, s. n., 8: 347—374.



- Ferrière Ch., 1934: Note sur les Pireninae, avec descriptions de deux nouvelles espèces. — *Mitt. Schweiz. Ent. Ges.*, **16**: 83—93.
- , 1954: (*Scymnophagus mesnili*, n. sp., etc., pp. 264—265), in Delucchi V., *Pullus impexus* (Muls.) (Coleoptera, Coccinellidae), a predator of *Adelges piceae* (Ratz.) (Hemiptera, Adelgidae), with notes on its parasites. — *Bull. Ent. Res.*, **45**: 243—278.
- , Faure J. C., 1925: Contribution à l'étude des Chalcidiens parasites de l'*Apanteles glomeratus* L. — *Ann. Epiphyties*, **11**: 221—234.
- Förster A., 1856: Hymenopterologische Studien II. Heft. Chalcidiae und Proctotrupii. — 152 pp., Aachen.
- Gahan A. B., Fagan M. M., 1923: The type species of the genera of Chalcidoidea or chalcid-flies. — *Smiths. Inst. U. S. Natl. Mus. Bull.* **124**: 173 pp.
- Giraud J., 1869: Note sur trois Hyménoptères parasites. — *Ann. Soc. Ent. France*, s. 4<sup>e</sup>, **9**: 145—150.
- Girault A. A., 1915: Australian Hymenoptera Chalcidoidea, IX, Cleonymidae. — *Mem. Queensl. Mus.*, **4**: 203—224.
- , 1916: Description of miscellaneous chalcid-flies. — *Insector Insc. Menstr.*, **4**: 109—120.
- , 1922: New chalcid flies from Eastern Australia (Hym., Chalcididae). III. — *Insector Insc. Menstr.*, **10**: 148—154.
- Graham M. W. R. de V., 1956: A revision of the Walker types of Pteromalidae (Hym., Chalcidoidea). Part 2 (including descriptions of new genera and species). — *Ent. Mon. Mag.*, **92**: 246—263.
- , 1957: Detto, Part 3 (including descriptions of new species). — *Ent. Mon. Mag.*, **93**: 217—236.
- Gromakov P. M., 1940: Jaiceid burjakovoho dovhonosika. [The egg-parasite of *Bothynoderes punctiventris*. In Ukrainian.] — *Dopovidi T. N. Ukrain. R. S. R.*, **5**: 11—13.
- , 1941: O jaiceide sveklovičnogo dolgonosika. [On the egg-parasite of *B. punctiventris*. In Russian.] — *Sbornik Naučno-issl. robot po borbe s sveklovič. dolgonosikom, VNIS*, pp. 122—126.
- Heqvist K.-J., 1957: Notes on Chalcidoidea. I. Two new genera of the family Pteromalidae. — *Ent. Tidskrift*, **78**: 23—27.
- Kurdjumov N., 1913: Notes on Pteromalidae (Hym., Chalc.). — *Rev. Russe d'Ent.*, **13**: 1—24.
- Mani M. S., 1939: Descriptions of new and records of some known chalcidoid and other hymenopterous parasites from India. — *Ind. Journ. Ent.*, **1**: 69—99.
- Masi L., 1907: Contribuzioni alla conoscenza dei Calcididi Italiani. — *Boll. Lab. Zool. Portici*, **1**: 229—295.
- , 1921: Spolia Hymenopterologica. — *Ann. Mus. Civ. Stor. Nat. Genova*, **49**: 235—241.
- , 1924: Materiali per una fauna dell'Arcipelago Toscano. XIV. Calcididi del Giglio. Quarta serie. — *Ann. Mus. Civ. Stor. Nat. Genova*, **50**: 213—235.
- Mayr G., 1904: Hymenopterologische Miscellen. III. — *Verh. Zool.-bot. Ges.*, **54**: 559—594.
- Nikolskaja M. N., 1952: Chalcidy fauny SSSR. — *Opred. po faune SSSR*, **44**: 575 pp.
- , 1955: Novye rody i vidy chalcid iz semejstv Eurytomidae i Calliomomidae v Srednej Azii (Hymenoptera, Chalcidoidea). — *Trudy Zool. Inst. Akad. Nauk SSSR*, **21**: 335—341.
- Peck O., 1951: Chalcidoidea, in Muesebeck et al., *Hymenoptera of America north of Mexico—Synoptic catalog*, pp. 410—594.
- Ratzeburg J. T. C., 1852: Die Ichneumonien der Forstinsecten . . . , **3**, 272 pp., 3 pls.
- Scheidter F., 1926: Forstentomologische Beiträge. — *Zeitschr. f. Pflanzenkr. (Stuttgart)*, **36**: 193—226.
- Silvestri F., 1920: Contribuzione alla conoscenza dei parassiti delle ova del grillo canterino (*Oecanthus pellucens* Scop.). — *Boll. Lab. Zool. Portici*, **14**: 219—250.

- Telenga N. A., 1940: Bioložičnij metod borotbi z burjakovim dovhonosikom. [A method of the biological control of *Bothynoderes punctiventris*. In Ukrainian.] — *Visti A. N. Ukrain. R. S. R.*, no 7—8: 63—69.
- , 1950: Parazit cenokrepis (*Caenocrepis bothynoderis* Grom.) i ego značenie v razmnoženii sveklovičnogo dolgonosika. [Parasite *Caenocrepis bothynoderis* Grom. and its role in the breeding of *Bothynoderes punctiventris*. In Russian.] — *Nauč. Trudy Inst. ent. i fitopat. A. N. U. S. S. R.*, 2: 142—170.
- Thomson C. G., 1878: *Pteromalus* (Svederus) Continuatio. — *Hymenoptera Scandinaviae*, 5, 307 pp., 1 pl.
- Walker F., 1835: Monographia Chalciditum. — *Ent. Mag.*, 2: 476—502 (being continued).