

N. Kurdjumov (Poltava).

Notes on *Pteromalidae* (Hymenoptera, Chalcidodea).

(With 2 fig.).

Н. Курдюмовъ (Полтава).

Замѣтки о *Pteromalidae* (Hymenoptera, Chalcidodea).

(Съ 2 рис.).

Dr. W. H. Ashmead's classification of the subfamily *Pteromalinae* is a step backwards comparatively with that of C. G. Thomson. Whole classification of Dr. Ashmead was based on the difference in the number of the teeth on the right and left mandibles. This character is not always constant even in the limits of one species. Notes I am publishing now were made while I was studying some old collections and had before me the types of genera belonging to this family. These notes are nothing more but material for a future revision of the subfamily, which, I believe, cannot be accomplished by one person.

The idea of the present work was suggested by Mr. J. C. Crawford, assistant curator of U. S. National Museum. Writer made visits, besides of Washington, D. C., to the principal museums of European continent and had before him the types of Förster, Ratzeburg and Ashmead. The types of Walker and Thomson were studied only those, which are to be found in Washington, Vienna and Berlin.

The best thanks of the author are dew to the directions of U. S. National Museum, Washington, D. C., k. k. Naturhistorisches Hofmuseum in Vienna, Museum für Naturkunde in Berlin and to Prof. Dr. Eckstein from Hauptstation des förtlichen Versuchswesens in Eberswalde for the permission to study the collections in the question.

Number of genera described as belonging to this family remained unknown to the author. Of others he has not seen the types.

Ashmead's family *Pteromalidae* is quite unnatural one. My opinion is we should partly turn to Thomson's views on the di-

vision of *Chalcidodea*. The family *Pteromalidae* consists of two sub-families — *Metasteninae* and *Pteromalinae*. Subfam. *Sphegigasterinae*, *Spalanginae* and *Diparinae* I am inclined to put together with subfam. *Miscogasterinae* into the fam. *Miscogasteridae*. Subfam. *Eunotinae* must be combined with subfam. *Tridyminae* into the fam. *Tridymidae*. To the last one belongs also Ashmead's tribe *Isoplatini*.

Notices of omissions and mistakes are very earnestly requested.

Subfamily **Pteromalinae**.

Synopsis of genera.

Females.

1. Ovipositor exerted, thorax smooth, propodeum short, without distinct spiracular furrows. Resemble *Torymidae* 10
 Ovipositor not, or but slightly exerted, or the abdomen produced into a stylus 2
2. Antennal club subulate (♀) or conically-acute (♂), almost unjointed. Propodeum punctate, lateral folds and spiracular sulci absent. Legs not swollen 11
 Antennal club not pointed at apex, or propodeum with spiracular furrows and lateral folds 3
3. Anterior femora considerably swollen; thorax long, propodeum not very long with median carina; spiracular furrows sometimes absent or very slight, spiracles subrotund, neck absent; abdomen rather plain, not boat-shaped, ovate or conic-ovate. Clypeus unarmed 13
 Anterior femora not swollen 4
4. Antennae inserted below the middle of the face, often with 3 ring joints; if with 2 ring joints, then pedicel always longer than the first funicle joint. Propodeum mostly smooth, with distinct median carina; neck almost wanting. Occiput immargined 17
 Antennae inserted on or above the middle of the face; when below, then occiput margined or propodeum densely punctate and bearing a distinct neck 5
5. Head large, thick, much wider than the thorax; vertex wide; occiput excavated, without margin. Cheeks strongly compressed, sharp. Antennae with 2 ring joints; pedicel more than one and a half times as long as first funicle joint. Thorax short; mesonotum shorter than scutellum. Postmarginal vein of anterior wing almost equal to the stigmal vein. Stigmal vein is about one half as long as the marginal vein. The sides of the propodeum covered with dense hairs; the sides of the

- second abdominal segment bare. Abdomen conic-ovate, longer than the thorax. *Dibrachoides*, gen. nov. (Type of genus: *P. dynastes* Förster).
- Occiput not excavated; otherwise the occiput margined or in other respect not so shaped 6
6. Occiput with a sharp margin (the margin visible in the middle of the occiput, seeing from above) ~~20~~ 21
- Occiput immargined 7
7. Sides of the propodeum as well as of the second abdominal segment and coxae, covered with dense hairs. If the sides of the second abdominal segment are bare, then the eyes hairy. Occiput immargined, prothorax with sharp margin anteriorly; pedicel usually longer than the first funicle joint. Propodeum with neck 19
- Propodeum moderately covered by the hairs on its sides, almost bare. Not all above cited characters combined 8
8. Wings hairy at base (above of the basal cell); head swollen, abdomen mostly strongly carinated beneath, with prominent hypopygium. Antennae sometimes clavate, with hardly distinguishable joints; pedicel always longer than the first funicle joint. Black or dark-aeneous insects with somewhat dusky wings. Mandibles three-dentate, median tooth sometimes forked at apex. 29
- Wings naked at base. In other respects not so shaped 9
9. Antennae with three ring joints 32
- Antennae with two ring joints 39
10. Antennae inserted almost in the middle of the face 10
- Rhopetrocerus* Ratzeburg.
- Antennae inserted a little above the clypeus.
- Anogmus* Foerster.
11. Antennae with three ring joints. Neck on the propodeum large, punctate. Coxae mostly yellow *Micromelus* Walk.
- Antennae with two ring joints 12
12. Antennal club large enough, not tapering into a short spine. Abdomen subcylindrical, third segment short . *Merisus* Förster.
- Antennal club small, with a short spine at apex. Abdomen mostly suboval, 3-d—5-th abdominal segments subequal in length *Phaenacra* Förster.

Note. *Homoporus* Thoms. is a synonym of this genus. Among the collections of k. k. Hofmuseum, Vienna, *Ph. nubigera* Förster was placed by Dr. G. Mayr to the genus *Homoporus* Thoms. We restore here Förster's name, as more old. Genus *Uriella* Ashmead is also syno-

nym of genus *Phaenacra* Förster. Genus *Tropidogastra* Ashmead was not examined by the writer, but most probably it is synonymical with this genus too.

13. Last joint of antennae stylate *Rhaphiteles* Walker.
Last joint of antennae normal 14
14. Marginal vein thickened 15
Marginal vein slender, normal 16
15. Stigmal and postmarginal veins short, each about half as long as marginal vein. Ring joints transversal . *Metaecolus* Förster.
Stigmal and postmarginal veins each more than half as long as the marginal vein. Ring joints not transversal, large. *Pandelus* Förster.
16. Knob of stigmal vein widened *Dinotus* Förster.
Knob of stigmal vein not widened, small or middle-sized *Rhopalicus* Förster.
17. Marginal vein distinctly longer than the stigmal vein; lateral folds on the propodeum distinct; club of the male antennae black *Eutelus* Walk.
Marginal vein not or but slightly longer than the stigmal vein. Lateral folds on the propodeum absent 18
18. Antennae inserted only a little below the middle of the face *Amblymerus* Walk.

Antennae inserted just above the clypeus. Propodeum very short. Hypopygium reaching almost to the tip of the abdomen *Psilonotus* Walk.

19. Eyes hairy, second abdominal segment bare . . *Isocyrtus* Walk.
(Partly: *I. dentifer* Thoms.)

Note. I have never been able to see any representative of this genus. If *I. dentifer* Thoms. is really so shaped as described by Thomson, it should be selected as a type species for a new genus.

Eyes naked, second abdominal segment pubescent . . 20

20. Eyes rotund, prominent; wings with dusky spots. Male antennae with white ring *Polyscelis* Thoms.
Eyes ovate, otherwise the wings immaculated and the male cheeks with a smooth space between the base of the mandibles and the eye *Trichomalus* Thoms.

Note. As I have seen, the type species (*I. punctinucha* Thoms. = *lucidus* Först.) has immargined occiput. Thus Ashmead's interpretation of this genus is wholly erroneous. Genus *Epipteromalus* Ashmead is a part of the genus *Trichomalus* Thoms.

21. Propodeum without neck, or with very small one, which is not subglobose. Postmarginal vein shorter than the stigmal vein 22
Propodeum with distinct globose neck 24
22. Abdomen rotund 23
Abdomen ovate *Dibrachys* Förster.
23. Eyes hairy *Diglochis* Förster.
(*Trichoglenes* Thoms.)
Eyes naked *Coelopisthia* Förster.
24. Hind segments of the abdomen, beginning from the third, are produced into a long slender compressed stylus, resembling an ovipositor *Belonura* Ashmead.
Note. According to Dr. W. H. Ashmead the type species has antennae with 3 ring joints. I was unable to see more than two.
Abdomen normal 25
25. Eyes hairy 26
Eyes naked 27
26. Second abdominal segment occupying most of the whole surface; third one very small. Abdomen subpetiolate . *Isocyrtus* Walk.
Second abdominal segment small or never occupying more than a half of the whole surface *Urolepis* Walk.
27. Antennae inserted below the middle of the face, which is somewhat swollen. Front somewhat impressed 28
Antennae inserted on or above the middle of the face, which is plain. Front not impressed. Pedicel longer than the first funicle joint *Euptermalus*, n. gen.
(Type of genus: *Pteromalus nidulans* (Förster) Thoms.).
Note. This genus replaces the genus *Trichomalus* Ashmead (nec *Trichomalus* Thoms.!).
28. Marginal vein strongly thickened at base . *Muscidivorax* Girault.
Marginal vein normal, not thickened at base.
Mormoniella Ash.
Note. *Mormoniella brevicornis* Ash. is identical with *Nasonia brevicornis* Ashm. Thus the genus *Nasonia* Ash. is a synonym of *Mormoniella* Ash.
29. Antennae thick, strongly clavate, with hardly distinguishable sutures; club almost unjointed. Hypopygium very prominent; abdomen strongly compressed 31
Antennae slender, weak, not clavate; scape not reaching the anterior ocellus 30
30. Antennae with 3 ring joints *Merisoides* Masi.
Antennae with 2 ring joints *Catolaccus* Thoms.

Note. *Pteromalus ater* Ratzeburg is a synonym of the type species *C. cavigena* Thoms. Dr. W. H. Ashmead misunderstood the Thomson's description. Therefore none of the american species described under this generic name really belong to it, they are either *Habrocytus* Thoms. or *Zatropis* Crawford.

31. Scutellum normal, convex *Metapon* Walk.
(*Psilocera* Walk.)

Scutellum elevated and produced posteriorly into a conical spine *Acanthometapon* Ash.

32. Marginal vein thickened *Xenocrepis* Förster.

Note. Dr. G. Mayr described as the type-species *pura* (Förster) and removed it from *Miscogasteridae*, where it was incorrectly placed by W. H. Ashmead as a synonym of *Caenocrepis* Thoms. From *Scymnophagus* Ashm. the genus *Xenocrepis* differs only by having the median carina on propodeum. Whereas this carina is very slight one I see no reason to separate these two genera.

Marginal vein slender 33

33. Head subtriangular, eyes prominent, round. Praesterna large. Pronotum with sharp margin anteriorly. Propodeum punctate, with small round spiracles. Neck absent. Abdomen subovate, wider than the thorax, not boat-shaped . . . *Cricellius* Thoms.

Note. From Thomson's description.

Head more rounded, praesterna small. In other respects not so shaped 34

34. Mesonotum narrowed forward. Pronotum small, narrower than the mesonotum, not forming the sharp margin anteriorly. 37

Mesonotum not much narrowed forward. Pronotum large, somewhat dilated to the sides, as wide as mesonotum, with sharp anterior margin 35

35. Neck on the propodeum wanting *Neocatolaccus* Ash.

Neck on the propodeum distinct. 36

36. Abdomen shorter than the head and thorax united, strongly compressed. Head and thorax covered with hairs . *Bruchobius* Ash.

Abdomen longer than the head and thorax united. Head and thorax clothed with scales. *Zatropis* Crawford.

37. Propodeum with a subglobose neck, punctate. Marginal vein long, a little more than twice the length of the stigmal vein

Lophocomodia Ash.

Note. From Dr. W. H. Ashmead's description.

Propodeum without a subglobose neck. In other respects

- not so shaped 38
38. Pedicel longer than the first funicle joint. Flagellum clavate. Propodeum punctate. Neck wanting. Abdomen ovate, plain enough *Meraporus* Walk.
- Note.* American Pteromalids bearing this generic name have a distinct neck on the propodeum and the pronotum with acute margin anteriorly. I do not consider them as belonging to this genus.
- Pedicel shorter than the first funicle joint; flagellum cylindrical. Propodeum not punctate . . . *Pseudocatolaccus* Masi.
- Note.* The type species *P. asphondiliae* Masi is a synonym of *Pteromalus polyphagus* Förster, described under № 20 in 1841. Dr. G. Mayr, as it could be seen from the collection of k. k. Hofmuseum, Vienna, proposed to create a new genus upon this species. *P. polyphagus* Förster among the cited collections was bred from different Cecidomyids: *Asphondilia verbasci*, *ononidis*, *Cecidomyia ulicis* and others.
39. Clypeus with a median tooth at apex . . . *Stenomalus* Thomson. Clypeus unarmed 40
40. Scutellum with a cross furrow before the apex, punctate on the whole surface. Postmarginal vein shorter than the stigmal one. Head large, neck on the propodeum absent; abdomen subrotund *Schizonotus* Ratz.
- Note.* Dr. W. H. Ashmead erroneously placed this genus to *Cleonymidae*. Its proper place is here, as it was shown by Dr. G. Mayr. Synonym of *S. sieboldi* Rtz b. is *Arthrolytus incongruens* Masi.
- Scutellum either without a cross furrow before the apex, or its apex smooth and shining 41
41. Abdomen short-rotund, plain; neck on the propodeum wanting; face somewhat swollen; postmarginal vein often shorter than the stigmal one 44
- Abdomen ovate or conic-ovate, never rotund 42
42. Face swollen beneath. Marginal vein much longer than the stigmal one. Propodeum with or without a neck, in the last case the abdomen very deep, never impressed from above, convex 43
- Face normal, not swollen. Abdomen impressed from above, or the pedicel shorter than the first funicle joint 45
43. Propodeum without neck, median carina distinct. Abdomen not very deep. Wings with a dark cloud. Pedicel much shorter than the first funicle joint *Arthrolytus* Thomson.

Note. *Arthrolytus maculipennis* Walker I have seen in Vienna. There were not Walker's types, but some specimens identified by Förster and Mayr. They agreed fairly well with Thomson's description.

Arthrolytus rugifrons Thomson (type) has antennae with 3 ring joints; pedicel longer than the first funicle joint; the postmarginal vein longer than the stigmal one. Would better run to *Meraporus* Walker.

Propodeum with distinct subglobose neck. Abdomen deep, convex above. Head not wide. Wings without a cloud. Pedicel much longer than the first funicle joint

Lariophagus Crawford.

- 44. Vertex broad. Antennae inserted below the middle of the face *Psychophagus* Mayr.

Vertex not broad. Antennae inserted on the middle of the face *Dirhicnus* Thoms.

Note. From Thomson's description.

- 45. Stigmal knob enlarged, pronotum with sharp margin anteriorly. Spiracles round or round-ovate 46
Stigmal knob normal 47

- 46. Propodeum short, without a neck. Clypeus incised medially. *Cecidostiba* Thoms.

Propodeum not short, sometimes with transversal costula and with neck. Head and thorax covered with rigid pubescence.

Caenacis Förster.

- 47. Head triangular, narrowed towards the mouth; eyes large, rounded, convex; praesterna large, mesosternal furrows distinct; spiracles on the propodem rounded, remote from the postscutellum 48

Head not triangular, viewed from in front more rounded, very slightly wider than long; eyes oblong-oval or oval; praesterna not large; mesosternal furrows not distinct; vertex broad; spiracles on the propodeum mostly lengthened 50

- 48. Pronotum not distinctly separated from the mesonotum, its front margin always rounded *Stinoplus* Thoms.

Pronotum well separated from the mesonotum, its front margin sharp 49

- 49. Vertex broad, abruptly ending posteriorly (not margined!), the front impressed. (By general aspect resembling *Cleonymidae*).

Etroxys Westw.

Note. *Etroxys elongatus* Thoms. has immargined occiput, but deep concave, resembling that of *Dibrachoides*. Vertex narrow, occiput not deeply concave . . . *Holcaeus* Thoms.

50. Head wider than the thorax, which is long and plain enough. Pedicel shorter than the first funicle joint. Propodeum punctate, with large subglobose neck at apex. Abdomen not boat-shaped, oval, usually shorter than the head and thorax united. Marginal vein mostly shorter, or not longer than the postmarginal one *Pteromalus Swederus*.
Not so shaped 51
51. Scutellum polished at apex. Propodeum without a neck, median carina distinct, abdomen ovate . . . *Parapteromalus Ash.*
Whole scutellum punctate, abdomen long, boat-shaped . . . 52
52. Propodeum smooth, short, median carina distinct, spiracles small, oval-rotund. Head thin, subtriangular; antennae inserted below the middle of the face; hypopygium large, abdomen strongly compressed from the sides . *Spintherus Thoms.*

Note. According to C. G. Thomson *S. obscurus* has both mandibles 3-dentate and pedicel a little shorter than the first funicle joint. In the U. S. National Museum the insect under this name has pedicel longer than the first funicle joint. In k. k. Naturhistorisches Hofmuseum in Vienna the specimens bearing this name were identified so by Dr. G. Mayr. In this case both mandibles 4-toothed and pedicel longer than the first funicle joint. *Pteromalus linearis* Walker is identical with these specimens. The specimens determined by Dr. G. Mayr were bred from the clover *Apion*. In Russia this species was bred by different persons from *Apion trifolii* and *A. apricans*.

Propodeum with or without neck, spiracles large, lengthened. Antennae inserted above or on the middle of the face; when below the neck on the propodeum present. Pedicel mostly shorter than the first funicle joint. In other respects not so shaped as the preceding genus . . . *Habrocytus* Thoms.

Genus *Endomychobius* Ashmead as having the petiolate abdomen does not belong to the subfamily *Pteromalinae*. The same is true in the case of *Hypopteromalus* Ashmead too.

Genus *Simopterus* Förster was described in 1856. As a type species was given *Pteromalus venustus* Förster, described under № 191 in the year 1841. This genus belongs to the subfamily *Eunotinae* and differs easily from all known genera of this subfamily by the anterior wing, of which costal cell extends far forwards. Parapsidal furrows slight. Femora rather brown and sometimes almost red.

Herewith I give an additional list of the species of several genera belonging to the subfamily *Pteromalinae* and others. These species, if

it is not stated otherwise, were described under generic name *Pteromalus*. In the case of Dr. A. Förster's „Beiträge zur Monographie der Pteromaliden Nees“, 1841, Aachen, I give simply the year 1841; in the case of Ratzburg's species I give the number of the volume of „Ichneumonien der Forstinsekten“, where the species in the question is described.

Gen. Phaenacra Förster.

femoralis Förster, 1841, p. 15, n. 58.

Gen. Dinotus Förster.

capitatus Ratz., I, p. 192.

immaculatus Ratz., I, p. 205.

Note. This species is a transitional form to the genus *Rhopalicus*.

lanceolatus Ratz., II, p. 204.

Note. One specimen I received from A. A. Sopotzko (Tula, Russia), who bred it from „a bark-beetle“.

Gen. Rhopalicus Förster.

atricornis Förster, 1841, p. 22, n. 147.

azureus Ratz., I, p. 203.

brevicornis Thomson, Hymen. Scand., V, p. 43, 1878.

neostadiens Ratz., I, p. 204.

cupreus Walker, Entom. Mag., II, p. 493, 1835.

einersbergensis Ratz., I, p. 198.

hohenheimensis Ratz., I, p. 198.

Note. The anterior femora are less stout than in other species. A transitional form.

epistenus Walker, Entom. Mag., II, p. 493, 1835.

Note. *P. cupreus* Walker cited above is probably a synonym of this species.

magdalis Ratz., II, p. 201.

opisthotomus Ratz., II, p. 194.

quadratus Ratz., I, p. 203.

suspensus Ratz., I, p. 189.

aemulus Ratz., II, p. 203.

lunula Ratz., II, p. 193.

spinolae (multicolor) Ratz., I, p. 189.

virescens Ratz., I, p. 204.

Gen. **Eutelus** Walker.

bidentis Ratz., II, p. 205.

Note. Form transitional to *Rhopalicus*, but antennae inserted below the middle of the face, pedicel longer than the first funicle joint. Propodeum with lateral carinae.

citrinus Ratz., III, p. 248.

clavatus Ratz., I, p. 202.

crassipes Ratz., II, p. 205.

dilutipes Ratz., II, p. 206.

laticornis Walker, Entom. Mag., III, 1836, p. 475.

semiclavatus Ratz., II, p. 202.

stenonotus Ratz., II, p. 206.

subfumatus Ratz., III, p. 236.

tinearum Ratz., II, p. 202.

Gen. **Trichomalus** Thomson.

(See Dr. Gustav Mayr. Hymenopterologische Miscellen. II. Verhandl. k. k. Zool. Bot. Ges. Wien, 1903, pp. 392—395).

bracteatus Walker, Ent. Mag., II, p. 483, 1835.

flammiger Walker, Ibid., II, p. 485, 1835.

herbidus Walker, Ibid., II, p. 484, 1835.

lucidus Walker, Ibid., II, p. 484, 1835.

pilosus Ratz., I, p. 194.

xanthopterus Ratz., I, p. 200.

Gen. **Dibrachys** Förster.

boucheanus Ratz.

albinervis Ratz., I, p. 199.

decedens Walker, Ent. Mag., I, 1835, p. 478.

Note. Under the name of *decedens* Walker there are different insects in Vienna and Berlin collections. Part of them are *Dibr. boucheanus* Ratz., others belong to *Habrocyrtus*, etc.

vesparum Ratz., III, p. 233.

zelleri Ratz., I, p. 190.

cavus Walker, Ent. Mag., II, 1835, p. 447.

Note. Legs unusually dark. Similar specimens I have seen among the collections of Mr. K. E. Demokidov in St. Petersburg. These specimens were identified by Dr. W. H. Ashmead as *Dibrachys audouinii* Ratz. (sic!).

Whether that is an independent species or only variety of *boucheanus* Ratz. is not clear to me.

saltans Ratz., III, 232.

Note. Legs, with exception of coxae, bright yellow. Mandibles totally black. The same species I bred at Poltava from the puparia of the Tachinid *Compsilura concinnata*. Probably a variety of *D. boucheanus*.

***Dibrachoides*, gen. nov.**

Allied to *Dibrachys* Förster. Head large, thick; vertex wide; occiput excavated, immargined, as in *Dibrachys* Förster. Cheeks strongly compressed, sharp. Left mandible 3-dentate, right 4-dentate. Antennae with 2 ring joint; pedicel more than one and a half times as long as the first funicle joints, antennae somewhat widened to the tips. Thorax (♀) shorter than the abdomen; mesonotum shorter than the scutellum, vice versa in the case of *Dibrachys* Förster. The postmarginal vein of the anterior wing a little longer (♀) or distinctly shorter (♂) than the stigmal one; the stigmal vein is about one half as long as the marginal. The sides of the propodeum covered with dense white hairs. Abdomen conical ovate (♀) or ovate (♂).

Type of the genus: *Pteromalus dynastes* Förster, 1841, p. 24, n. 183.

***D. dynastes* Förster.**

? *Pteromalus communis* Nees, Hymen. Ichn. affin. Monogr., II, 1834, p. 103, n. 17.

This species was reared as a parasite of the larvae of the alfalfa-weevil (*Phytonomus posticus* Gyll.) by the U. S. Gypsy Moth and Alfalfa-weevil Laboratory, Portici, Italy, and imported into U. S. America during years 1911—1912. I had the opportunity to do comparison between several specimens presented to me by Mr. H. S. Smith and the Förster's type in Vienna. Italian specimens are colored somewhat lighter than the type. Yet there are among them some specimens almost of the same coloration as the Förster's one. At Poltava I collected two females colored darker than the Italian specimens. Thus the species in the question must be rather variable in color, as it is the case with the allied *Dibrachys boucheanus* Ratz. ♀ & ♂ of *D. dynastes* Förster are figured by Prof. F. M. Webster in his Report on the alfalfa-weevil¹⁾.

Gen. *Eupteromalus*, gen. nov.

This genus replaces Ashmead's genus *Trichomalus* (nec *Trichomalus* Thomson!). The sides of the propodeum and of the second abdominal segment as well as the coxae are very moderately pubescent, like in the case of others *Pteromalidae*. Type of genus is *Pter. nidu-*

¹⁾ Preliminary Report on the Alfalfa Weevil. U. S. Dep. Agric. Bur. Entom., Bull. 112. Washington 1912, fig. 19—20, p. 37.

lans Förster. This species was simply named by Förster, but described by C. G. Thomson. In Thomson's description it is stated that the median carina on the propodeum is obsolete (♀) or wanting (♂). Among the types of Förster's collection in Vienna the specimens of this species have more or less distinct carina and are identical with *Pteromalus egregius* Howard and Fiske. Many of the specimens in Vienna were reared from the *Porthesia chryssorrhoea* in Russia and identified by Dr. G. Mayr by the comparison with original Förster's type. This species was bred from *chryssorrhoea*, besides of Gypsy Moth Laboratory, U. S. America, by Mr. J. V. Emeljanov at Kupjansk, Charkov prov., Russia, by Mr. V. P. Pospelov at Kiev, Russia, and by the writer at Poltava. In 1908 I bred it from the cocoons of *Apanoteles fulvipes* Hal. at Achtyrka, Charkov prov., and in 1910 from *Angitia armillata* Grav. at Novyj Oskol, Kursk prov., Russia.

To the genus *Eupteromalus* belong several other species. The difference between them is so slight that it is not always possible to decide, whether it is independent species or but a variety of other. *P. nidulans* Masi does not agree well with *nidulans* Förster.

List of species.

- gentilis* Förster, 1841, p. 19, n. 108.
hemipterus Walker, Entom. Mag., III, 1835, p. 196.
nidulans (Förster) Thomson, Hymen. Scand., V, 1878, p. 155.
nidulans Masi, Boll. Lab. Zool. Gen. Agrar. Portici, III, p. 122.
pedestris Förster, Progr. Realsch. Aachen, 1861, p. XXXVI, n. 43.
pospjelovi Kurdjumov, Revue Russ. d'Entom., XII, 1912, p. 299, № 2.
punctatus Ratz., I, p. 192.
submarginatus Thomson, Hymen. Scand., V, 1878, p. 156.

Gen. *Neocatolaccus* Ash.

- proximus* Förster, 1841, p. 11 u. 9.

Gen. *Meraporus* Walker.

- foveolatus* Förster, 1841, p. 15, 48.
micropterus Förster (Dalla Torre, Jahresber. Natur. Ges. Graubünd., XXVIII, 1885, p. 68, n. 46).
modestus Förster, 1841, p. 24, n. 179.
rugifrons Thomson (*Arthrolytus*). Hymen. Scand., V, 1878, p. 160.

Gen. *Stenomalus*.

- bicolor* Förster, 1841, p. 17, n. 77.
continuus Walker, Entom. Mag., III, 1836, p. 471.

fallax Förster, 1841, p. 17 u. 78.

liparæ Giraud, Verhandl. zool.-bot. Ges. Wien, XIII, 1863, p. 1271.

longulus Förster, Progr. Realsch. Aachen, 1861, p. XXXVI, n. 48.

micans Olivier, Mém. Soc. Agric. Dpt. Seine, XVI, 1813, p. 477.

mutia Walker, Monogr. Chalcid., I, 1839, p. 246.

ovatus Nees (teste Förster), Hymen. Ichneum. affin. Monogr., II, 1834, p. 103, n. 18.

Description of **Stenomalus micans** Olivier.

Chalcis micans Olivier.

Pteromalus micans Curtis, Farm insects. London, 1883, p. 243, plate H, fig. 17 and 18 and No. 34, fig. 9 and 10.

Pteromalus micans Порчинский, Естественная история хлѣбной или зеленоглазой мушки (*Chlorops taeniopus*), С.-Петербургъ, 1881, стр. 11.

Female. Length 2,5 mm. Antennae slender, inserted above the middle of the face, which is convex enough. Scape reaching far beyond the first ocellus, flagellum long, slender. Pedicel shorter than the first funicle joint and as long as the third. Joints of the funicle gra-

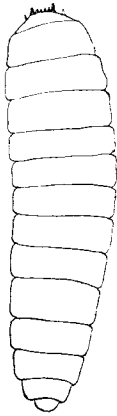


Fig. 1. Larva of *Stenomalus micans* Oliv.

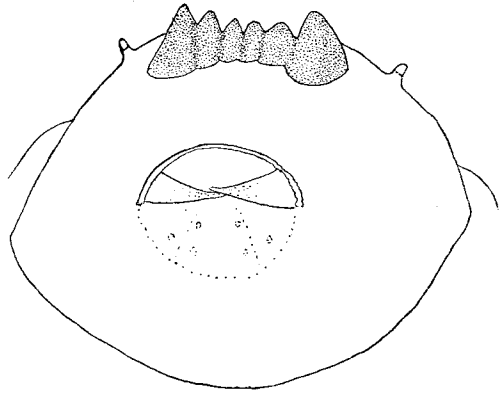


Fig. 2. The head of the larva of *Stenomalus micans* Oliv.

dually decreasing in length; first joint is one and a half times as long as the last joint. The thickness of the flagellum is equal on its whole length. First funicle joint twice longer than wide, last joint one and a fourth longer than wide.

Vertex convex; head wider than thorax; thorax long, pronotum sloping; scutellum convex, with small tooth at apex. The marginal vein of the anterior wing almost twice as long as the stigmal

vein and but a little longer than the postmarginal one. Propodeum reticulate, sloping enough, neck wanting, costula strong, middle carina distinct on the first half length of propodeum. Spiracles oval, removed enough from the margin of the postscutellum. Abdomen plain, after the death shorter and a little wider than the thorax.

Dark green; head blue-violaceous, pronotum and scutellum bluish, mesonotum copper-green as well as propodeum. Abdomen shining copper-green with golden tint on the borders of the segments. Scape of antennae brown-yellow; coxae aeneus, trochanters straw-yellow, femora aeneus, posterior sometimes brown with metallic tint; tibiae and four posterior tarsi white yellow, ultimate joints dusky. Wings somewhat dusky.

Male. Similar to the female. Antennae longer, flagellum hairy; scape dusky; apical part of the tarsi dusky; abdomen aeneus with somewhat lighter spot in the middle.

Habitat. Bred at Poltava Experiment Station from the stems of the growing wheat, where its larva feeds externally upon the larvae of *Meromyza saltatrix* Meig. The larva of this *Stenomalus* has horn-like appendix on the front as shown on the figures (1 and 2) and is situated in the stem, head downwards. I know no other chalcid larva having such a peculiar armor on the head.

Gen. **Lariophagus** Crawford.

abnormis Boheman (determ. by Dr. Gustav Mayr in Vienna).

Note. Some specimens have a slight margin on the occiput, others do not have it. Transitional form to *Mormoniella* Ash.
distinguendus Förster, 1841, p. 17, n. 84.

Note. In k. k. Naturhist. Hofmuseum, Vienna, there are many specimens of this species labeled „from *Sitophilus granaria*, 1879“. John Curtis mentions *Meraporus graminicola* Walker or nearly allied insect being parasitic upon *Calandra oryzae*. I do not doubt, it was really *P. distinguendus* Först. This winter the stored barley at Poltava Experiment Station was found to be infested by *Calandra granaria*. Among living weevils and injured grains there were found many dead larvae evidently sucked by any parasite and quite a lot of the different pieces of an adult Pteromalid or even uninjured dry specimens. There were too hibernating pupae of this insect, from which adults began to emerge to the end of march. They proved to be identical with *Pteromalus distinguendus* Förster.

hilaris Förster, 1841, p. 22, n. 152.

klugii Ratz., I, p. 198.

muscarum (Hartig) Ratz., I, p. 199.

Note. Thorax almost smooth, parapsidal furrows well defined, but not complete. Near to *abnormis* Boh.

puncticollis Möller (*Arthrolytus*) Entom. Tidsk., III, 1882, p. 180.

Note. The type of Möller in Vienna has pedicel longer than the first funicle joint, propodeum with a small neck, post-marginal vein longer than the stigmal.

vitripennis Förster, 1841, p. 20, n. 128.

Gen. **Psychophagus** Mayr.

omnivorus Walk.

processioneae Ratz., I, p. 194.

rotundatus Ratz., I, p. 194.

Gen. **Dirhicnus** Thoms.

In the synoptic table cited above the genus *Dirhicnus* is treated in a somewhat wider sense than it was done by its author. Therefore to this genus run quite a lot of different insects which in the future must be splitted into several genera. Some species, placed herewith to the genus *Dirhicnus*, are similar to *Coelopisthia*, but have immargined occiput, others are quite different.

alboannulatus Ratz., III, p. 231.

Note. Anterior femora considerably swollen, thus resembling *Rhopalicus*. Abdomen rotund, venation of the wing similar to that of *Coelopisthia*.

clandestinus Förster, 1841, p. 19, n. 117.

complanatus Ratz., I, p. 197.

Note. *P. complanatus* Ratz. is totally different from *Diglochis* (*Trichoglenes*) *complanatus* Thomson by the naked eyes and immargined occiput.

patulus Walker, Entom. Mag., II, 1835, p. 479.

Note. Cheeks acute; marginal, stigmal and postmarginal veins are equal in length, wings hyaline.

Gen. **Cecidostiba** Thomson.

inflexus Ratz., II, p. 196.

meconotus Ratz., II, p. 206.

naubolus Walker, Proc. Linn. Soc. London, I, 1845, p. 263, n. 17

Gen. **Caenacis** Förster.

capnopterus Ratz., II, p. 189.

Gen. **Etroxys** Westwood.

glechomae Förster, 1841, p. 21, n. 138.

rufiventris Förster, 1841, p. 17, n. 89.

Gen. **Holcaeus** Thoms.

glabriculus Nees, Hymen. Ichneum. Aff., II, 1834, p. 118, n. 34.

impar Walker, Entom. Magaz., III, 1836, p. 469, n. 108.

siccatorum Ratz., III, p. 240.

Gen. **Pteromalus** Swed.

(Species which must remain as yet under this generic name).

blandus Förster, 1841, p. 15, n. 61.

claviger Förster, 1841, p. 24, n. 181.

compactus Förster, 1841, p. 15, n. 56.

Gen. **Spintherus**.

leguminum Ratz., III, p. 234.

Note. Larger than the following species. Head not so thin, abdomen not so compressed.

linearis Walker, Entom. Mag., III, 1835, p. 189, n. 79.

Note. It is open to the doubt whether this species is identical with Thomson's *obscurus*. Thomson insists *Spintherus obscurus* has vingo mandibles three-dentate. I dissected quite a lot of females and males of this species and never found both mandibles less than four-toothed. I give here the description of this species.

Spintherus linearis Walker.

Female. Length 2,32 mm. Pedicel of antennae one and a half times as long as first funicle joint; others funicle joints increase in length with exception of the 6th, which is shorter than the preceding; funicle slender, club conic-oval. Head and thorax reticulate. Mesopleurae reticulate, mesepisterna smooth, mesepimeron shining and striated by rather curved lines. Marginal vein of the anterior wing $1\frac{1}{3}$ times as long as the stigmal. Propodeum very short, neck wanting, median carina present, lateral folds obsolete, middle part of propodeum finely rugose, lateral parts perfectly smooth. Abdomen more than two times as long as hind femora, smooth, its sides almost bare, compressed, strongly carinated beneath; hypopygium prominent. Head and thorax covered with short black bristles. Legs weak, aeneous, with greenish tint; scape of antennae aeneous, with brown base; eyes brown; clypeus green; veins brown; abdomen somewhat purple violaceous; knees and anterior tibiae brown-yellow; ends of the four posterior tibiae and tarsi with exception of ultimate joints yellow; four posterior tibiae dusky in the middle.

Male. Length 1,6 mm. Pedicel as long as the first funicle joint; funicle more thick, pubescent; marginal vein a little longer than stigmal

one. Dark green, with copper tint; all tibiae, femora at apex and tarsi, ultimate joints excepted, lemon yellow.

Hab. 1 ♀ and 3 ♂♂ reared under direction of Mr. W. K. Deeters of Bogoroditzk, Tula prov., from *Apion trifolii*. 1 ♀ and 1 ♂ bred by Mr. D. M. Korolkov of Moscow from the same weevil, and 3 ♀♀ reared by Mr. A. A. Sopotzko at Tula Entomological Station from *Apion africanum*. There are also several females and males of this species among the parasites of *Apion* sp. on clover, bred at Kiev by Mr. W. P. Pospelov.

Gen. *Habrocytus* Thomson.

This genus includes many different types of *Pteromalinae* and is unquestionably an artificial one. At present it would be unsuccessful to split it; our knowledge of this group being rather poor.

aurinitens Förster, 1841, p. 19, n. 115.

crassinervis Thoms.

braconidis (Bché) Ratz., I, p. 200.

Note. Belongs to the group C of C. G. Thomson.

celer Förster, 1841, p. 14, n. 39.

Note. Propodeum without neck.

compos Förster, 1841, p. 16, n. 66.

concinus Förster, 1841, p. 16, n. 65.

Note. Abdomen short, but strongly boat-shaped.

crassus Förster, 1841, p. 27, n. 218.

Note. Belongs to the section A of C. G. Thomson's classification of this genus.

cupreus Nees (teste Förster), Ichneum. aff. Monogr., II, 1834, p. 102, n. 16.

Note. Allied to the section C of C. G. Thomson. Stigmat vein longer. Abdomen as long or a little longer than the thorax which is long and rather plain.

dalmani Förster, 1841, p. 26, n. 214.

Note. Propodeum rugose. Probably only a variety of *ju-cundus* Förster (See below.).

delectus Förster, 1841, p. 26, n. 205.

Note. Abdomen similar to that of *Pteromalus*, not boat-shaped. Propodeum smooth, neck wanting, costula present.

egregius Förster, 1841, p. 24, n. 185.

Note. Belongs to the section A of C. G. Thomson. Costula yet weak and very slight. Similar, if not identical with, *Habrocytus albipennis* Walk., from which differs by its smaller size and weak costula. Further, *albipennis* Walk. is cyanous and *egregius* bluish-green. Not impossible that *egregius*

are only small-sized specimens of *albipennis*. I found *egregius* Förster identical in St. Petersburg, Museum of Academy of Sciences, and in Vienna, k. k. Naturhist. Hofmuseum. Dr L. O. Howard found in the museum of Jardin des Plantes in Paris under the name of *egregius* Förster an insect identical with that reared from the hibernating caterpillars of *Euproctis chrysorrhoea*. Most probably the Parisian collection is wrong inasmuch as the original description of Förster agrees pretty well with specimens of *egregius* both in Vienna and St. Petersburg.

elatus Förster, 1841, p. 27, n. 216.

elevatus Walker (*Eutelus*), Entom. Mag., II, 1834, p. 366, n. 23.

Note. Belongs to the section A of C. G. Thomson. Similar to *albipennis* Walker. Whole tibiae yellow, costula well marked.

esuriens Förster, 1841, p. 14, n. 35.

Note. Neck on the propodeum wanting.

eucerus Ratz., II, p. 198.

Note. Belongs to the section C of C. G. Thomson, notwithstanding the marginal vein being comparatively short. I do not believe this last character is a constant one. Most probably several new species of *Habrocytus* like *microgasteris* Kurdjumov, *poecilopus* Crawford and *distinguendus* Masi will prove to be only varieties of this one.

exoletus Förster, 1841, p. 16, n. 62.

famulus Walker, Entom. Mag., II, 1835, p. 496, n. 49.

Note. Propodeum smooth, with a median carina and the lateral folds present, neck distinct, abdomen middle-sized.

ferox Förster, 1841, p. 16, n. 68.

Note. Most probably does belong to the section A of C. G. Thomson. Costula subdistinct. Body short.

festivus Förster, 1841, p. 14, n. 44.

Note. Allied to *tenuicornis* Förster. Propodeum more plain, neck not well separated, with no deep pits on its sides.

filicornis Walker, Entom. Mag., III, 1835, p. 183, n. 69.

fungosus Olivier (after Förster), Encycl. méthod. insect., V, 1790, p. 781, n. 6.

semifascia Walker, Entom. Mag., II, 1835, p. 494, n. 40.

Note. Allied to *H. bedeguaris* Thomson, wings dusky.

herbaceus Förster, 1841, p. 16, n. 63.

Note. Very near to *tenuicornis* Förster, but propodeum rugose instead of being punctate. Neck smaller; the coloration of legs more of lemon tint.

hercyniae Ratz., I, p. 204.

Note. Stigmal vein almost equal to the marginal vein, only a little shorter. Neck wanting, costula absent, median carina present, lateral folds weak but distinct, spiracles large, lengthened. Pedicel shorter than the first funicle joint.

hilaris Walker, Entom. Mag., III, 1836, p. 489, n. 148.

Note. The specimens of this species I have seen were identical with or very nearly allied to *jucundus* Förster.

honestus Förster, 1841, p. 23, n. 172.

intermedius Walker (*Eutelus*), Entom. Mag., II, 1834, p. 366, n. 24.

Note. Very near to *H. cioni* Thoms. and may be identical with it. Yellow colour somewhat darker.

jucundus Förster, 1841, p. 13, n. 26.

laetus Förster, 1841, p. 11, n. 3.

maculiscapus Ratz., I, p. 201.

Note. Near to *eucerus* Ratz., but head large, somewhat swollen; tibiae darker.

moereus Walker, Ent. Magaz., III, 1836, p. 474, n. 117.

Note. Section C of C. G. Thomson.

obductus Förster, 1841, p. 23, n. 171.

Note. Belongs to the section C of C. G. Thomson, but propodeum with very small neck.

opimus Förster, 1841, p. 27, n. 221.

Note. Section A of C. G. Thomson.

orchestis Ratz., I, p. 205.

Note. Near to section C of C. G. Thomson, but propodeum smooth, shining, with a median carina and two lateral folds; pedicel longer than the first funicle joint.

ornatus Förster, 1841, p. 24, n. 173.

papaveris Förster, 1841, p. 21, n. 136.

Note. Neck and costula absent.

picinus Förster, 1841, p. 27, n. 222.

praepes Förster, 1841, p. 13, n. 33.

Note. Neck almost wanting, head subtriangular.

praepotens Förster, 1841, p. 12, n. 21.

rapax Förster, 1841, p. 12, n. 19.

Note. Abdomen *Pteromalus*-like, not carinated beneath. Propodeum smooth, neck wanting, costula distinct.

remotus Walker (*Eutelus*), Entom. Mag., II, 1834, p. 367.

Note. Near to *eucerus* Ritzb., larger; tibiae yellow, with a dark spot below on the base; marginal vein less than one and a half times as long as the stigmal.

sequester Walker, Entom. Mag., II, 1835, p. 495.

Note. By general aspect similar to *Pteromalus*, but propodeum almost without neck; marginal vein one and a half times as long as the stigmal one.

signatus Walker, Entom. Mag., III, 1836, p. 479.

Note. Propodeum smooth, neck wanting.

sincerus Förster, 1841, p. 27, n. 223.

Note. Belongs to the section A of C. G. Thomson.

solidus Förster, 1841, p. 11, n. 11.

Note. Abdomen short, plain, not boat-shaped beneath.

Propodeum smooth, costula present, neck wanting.

strenuus Förster, 1841, p. 11, n. 10.

Note. Very similar to the preceding species.

sulphuripes Förster, 1841, p. 25, n. 196.

Note. Very similar to the preceding species.

sybarita Förster, 1841, p. 13, n. 31.

Note. Antennae somewhat thickened.

tenuicornis Förster, 1841, p. 16, n. 64.

jouaensis Ratz.

Note. One of the specimens in k. k. Hofmuseum. I consider as the type. It is identical with *jouaensis* and with our specimens bred from *Anthonomus pomorum*. Femora reddish yellow. Another specimen has femorae fuscous.

validus Förster, 1841, p. 12, n. 22.

ventricosus Förster, 1841, p. 22, n. 148.

vorax Förster, 1841, p. 16, n. 174.

List of species not associated with any one of the genera listed above.

altus Walker (*Eutelus*), Entom. Mag., II, 1834, p. 367, n. 26.

Note. Antennae inserted above the middle of the face; pedicel longer than the first funicle joint, antennae thickened; propodeum punctate, spiracles rather small, rounded. Probably an intermedial link between *Caenacis* and *Habrocytus*. Similar in many respects to *Caenacis parviclava* Thomson.

bifrons Walker (*Pteromalus*), Entom. Mag., III, 1836, p. 485.

Note. Near to *Trichomalus*, but the pubescence is slight.

catillus Walker (*Pteromalus*), Entom. Mag., II, 1835, p. 480.

Note. Similar to *Coelopisthia* and pinned in Vienna under this name. Some of the specimens however have no margin on the occiput. Probably a combined species.

flavitarsis Förster (*Pteromalus*), 1841, p. 21, n. 143.

Note. Very near to *Xenocrepis* Förster, but has antennae only with two instead of three ring joints. *P. subniger* Förster, 1841, p. 22, n. 150 is very similar if not identical with it.

laevis Förster (*Pteromalus*), 1841, p. 22, n. 158.

Note. Pedicel longer than the first funicle joint; probably a *Habrocytus*.

lethargicus Förster (*Pteromalus*), 1841, p. 13, n. 29.

Note. Propodeum perfectly smooth, neck distinct, pedicel longer than the first funicle joint.

occultus Förster (*Pteromalus*), 1841, p. 24, n. 186.

Note. Most probably belongs to *Isocyrtus* (occiput immargined). But the sides of the propodeum are not much pubescent.

Subf. Cleonymidae.

Pteromalus meyerinckii Ratzeburg, II, p. 198.

Note. Forms probably a new genus allied to *Habritys*, but has the antennae with two ring joints. Head swollen, smooth, almost shining; eyes rotund, plain, somewhat impressed. Antennae inserted almost on the middle of the face. Scape does not reach the anterior ocellus, and the distance between its apex and ocellus is about the half of its length. Antennal furrow is deep enough. Pedicel longer than the first funicle joint, which is somewhat longer than wide. Other joints are transversal. The distance between the lateral ocelli is almost equal to their distance from the eye margin. Pronotum conical, legs considerably swollen. Costal cell of the anterior wing very narrow; marginal vein somewhat thickened, twice longer than the stigmal vein and less than twice than the postmarginal one. Propodeum slightly punctate; median carina subdistinct, transversal costula weak and separates very small, plain, not punctate neck, which is not prominent. Lateral folds absent, spiracles rotund. Abdomen longer than the head and thorax united, cylindrical-oval.

Pteromalus dahlbomi Ratz., I, p. 202.

Note. Has three ring joints; eyes naked; most probably forms a new genus. Propodeum small. Thorax covered with small white scales (or hairs) like in *Zatropis* Crawford.

Gen. *Cheiopachys* Westwood.

colon L.

bimaculatus Spinola (Nees), Hymen. Ichneum. Affin. Mon., II, p. 96, 1834.

„ Ratz., III, p. 231.

bicaliginosus Ratz., I, p. 190.

binaevius Ratz., I, p. 191.

binimbatus Ratz., I, p. 191.

binubeculatus Ratz., I, p. 191.

fraxini Ratz., I, p. 191.

This species is very widely distributed. I have it from Turkestan as a parasite of *Scolytus rugulosus*. A. A. Ogloblin reared it at Poltava from *Hylesinus fraxini* and W. P. Pospelov, at Kiev, from an unknown bark-beetle.

**Species described under generic name *Pteromalus*,
but having the abdomen petiolate.**

cecidomyiae Ratz., I, p. 192.

Note. Posterior tibiae with two spurs, one of normal size and another very minute. I believe it is better to consider this species as belonging to *Miscogasterinae*. Abdomen with petiole, which is very short. Propodeum convex, neck very small, spiracles round. Abdomen shorter than the thorax, wings large, eyes naked. Males have normal palpi. Tribe *Halticopte-rini*, near to the genus *Dicyclus* Walker.

eremita Förster, 1841, p. 29, n. 253.

Note. Very similar to *Coelopisthia*, but the abdomen not sessile and occiput immargined. Dr. G. Mayr proposed to describe a new genus upon an undescribed species, to which genus this species must be placed also.

halidayanus Ratz., II, p. 207.

Note. Has two spurs on the hind tibiae and therefore must be placed to *Dicyclus* Walker. Resembling in its generic characters *cecidomyae* Ratz. Second spur of the hind tibia larger.

monochrous Förster, 1841, p. 14, n. 40.

Note. Belongs to *Sphegigasterini*.

pini Ratz., I, p. 193.

Note. Congeneric with *halidayanus* Ratz.

singularis Förster, 1841, p. 27, n. 227.

Note. Belongs to *Sphegigasterini*.

Gen. *Pachyneuron* Walker.

(All species listed below have antennae with two ring joints.)

amoenus Förster, 1841, p. 28, n. 238.

coccorum Ratz., II, p. 197, n. 37.

Note. Marginal vein not very thick, its width is equal on the whole length. Parapsidal furrows deep enough, but not reaching scutellum.

flavifus Förster, 1841, p. 27, n. 228.

syrphi Ratz. (*Chrysolampus*), II, p. 185.

formosum Walker (specimens determined so by Förster).

innoxius Förster, 1841, p. 12, n. 17.

picea Ratz. (*Chrysolampus*), II, 184.

Note. Similar in the venation and shape of mesonotum to *coccorum* Ratz.

solitarius (Hartig) Ratz. (*Chrysolampus*), I, p. 180.

Note. See preceding species.

Gen. **Asaphes** Walker.

vulgaris Walker.

aeneus Ratz., (*Chrysolampus*) II, p. 185,

aphidiphagus Ratz. (*Chrysolampus*), I, p. 181.

concolor Förster, 1841, p. 28, n. 236.

Fam. **Eulophidae.**

Subfam. **Elachertinae.**

Gen. **Elachertus** Spinola.

Pteromalus walkeri Ratz., II, p. 207.

Note. This species is a typical *Elachertus*.

Gen. **Olinx** Förster.

Pteromalus bivestigatus Ratz., I, p. 191.

Note. This species is an *Olinx*.