

SOME SAWFLIES  
OF THE EUROPEAN ALPS  
AND THE MEDITERRANEAN REGION

HYMENOPTERA : SYMPHYTA

BY

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# SOME SAWFLIES OF THE EUROPEAN ALPS AND THE MEDITERRANEAN REGION (HYMENOPTERA : SYMPHYTA)

By ROBERT B. BENSON

## SYNOPSIS

The paper deals mainly with new or little-known sawflies (Hym. Symphyta) collected in recent years in Cyprus and other parts of the Mediterranean Region with a few from the European Alps. In all 16 new species and 5 new subspecies are described, and 4 are reinstated from the synonymy.

A list is also included of the sawflies collected for the Museum in Cyprus by Mr. G. A. Mavromoustakis.

THE following species or subspecies of sawflies are nearly all from the Central European Alps or the lands in or bordering the Mediterranean, and most of them are described here for the first time. The specimens on which the new forms are being based have come to me from many sources and have been accumulating in the British Museum (Natural History) awaiting description over several years, although not all of them belong to that institution. I should like here to thank all those who have sent me the specimens and especially those who have waited patiently a long time for results.

At the end of the paper I have included a list of all the sawflies collected in Cyprus for the British Museum by Mr. G. A. Mavromoustakis. Three of these species were also found by Dr. Håkan Lindberg during his stay in Cyprus in 1939 and I am indebted to him for lending me his material for study. As virtually no records of sawflies from Cyprus have been published before, except for some Cephidae by Benson (1946), most of these records are new; and the list probably includes all the species that have yet been collected on the island.

I am using here, as I have before, the expression "*(statu novo)*" or "*(stat. nov.)*" after a species name to indicate that I am changing its status, raising for example a subspecies to the level of a species. I now propose to introduce still another of these expressions, "*(species revocata)*" or "*(sp. rev.)*", to draw attention to the fact that the species referred to is being recalled from wrong synonymy; "*(genus revocatum)*" and "*(nomen revocatum)*" may be used in a similar way.

POL : OOL is a well known abbreviation in Hymenoptera to indicate the comparative distance between the posterior ocelli (i.e., posterior ocellar line = POL) and the distance between one of these ocelli and the eye margin (i.e., ocellar ocular line = OOL). In the same way I am using the abbreviation OO-CL to indicate the distance between a hind ocellus and occipital-carina or the hind margin of the head where this carina would be if it were developed (i.e., ocellar occipital-carina line).

## CEPHIDAE

*Calameuta festiva* sp. n.

♀. Black except for the following parts which are yellow: apical half of the front femur, the front tibia and the front tarsus, extreme apex of the middle femur, sides of the 3rd tergite, whole of the 4th and 5th except medially behind, sides of the 6th and 7th, 8th except the extreme lateral margins, also spot each side of 3rd, 4th and 5th sternites. *Wings* hyaline with stigma and venation piceous except for extreme base of C in forewing which is yellow.

*Head* with eyes slightly closer together in front than the height of one; distance between antennal sockets about  $\frac{2}{3}$  as long as the distance between an antennal socket and the anterior tentorial pit on the same side (ant. ant.: ant. tent. as 1.0:1.5). *Antenna* 21-segmented; club thickening from 9th to 13th segment; penultimate segments about  $\frac{2}{3}$  as long as broad. *Thorax* and *abdomen* normal but legs with sub-bifid tarsal claws and hind tibia with 2 pre-apical spines; cerci about  $\frac{1}{2}$  as long as sawsheath and reaches back as far; sawsheath  $\frac{1}{2}$  as long as basal plate.

*Pubescence* on head and thorax above dark; pale and evenly distributed on underthorax and whole of abdomen; on head, pronotum and anterior and lateral lobes of mesonotum the pubescence is about  $\frac{1}{2}$  as long as the diameter of an ocellus. *Punctuation*: head shining between the small follicles on the face but at the back of the head these are dense and conspicuous; prothorax likewise has only very fine follicles, but medial lobe of the mesonotum is dull with fine dense punctures; lateral lobes shining with large widely-separated punctures in the middle and behind though on the anterior  $\frac{1}{4}$  and the outer lateral margin the punctures are a little smaller and closer together though much larger than those on the anterior lobe, and the interspaces are still shining; scutellum almost impunctate; mesopleura covered with large shallow follicles. Abdomen with the surface roughened by the dense follicle. *Length* 9.5 mm.

CYPRUS: Yerasa, 1000 ft., 1 ♀ (Holotype), 2.iv.1945 (G. A. Mavromoustakis) (British Museum).

This species is superficially like *C. gaullei* (Konow), from Algeria, which, however, is distinguished by its much more heavily infuscated wings and by the punctuation of the lateral mesonotal lobes (dull with dense punctures as is the anterior lobe), by the punctuation of the anterior margin of the scutellum, and by its ant. ant.: ant. tent. ratio of 1.0:2.0 (see Benson, 1946). Structurally it is much more like *C. apicicornis* Pic (on the basis of a ♀ collected at Jerusalem, 2.iv.1941, by Mr. H. Bytinski-Salz) which has very similar sculpture, but this species can be distinguished by its rich marking of yellow on the face and the thorax, and by the longer sawsheath (sawsheath: basal plate as 1.0:1.8) with its broad subtruncate apex when viewed from above. *C. idolon* Rossi is distinguished by its rich yellow colouring on face and pronotum, its yellow costa and stigma in the forewing, and the thicker club of its antenna (the subapical segments of which are about twice as broad as long), and its single pre-apical spine on the hind tibia as well as by its ant. ant.: ant. tent. ratio of 1.0:2.0.

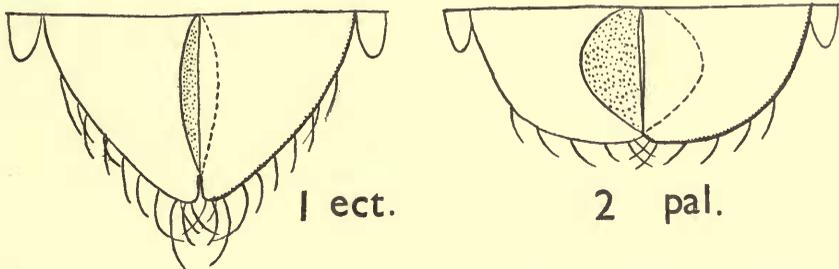
## ARGIDAE

*Kokujewia palestina* sp. n.

♀. Head black. Thorax with mesonotum including scutellum reddish yellow (except for the depressed lateral and hind margins of the side lobes and the hind margin of the scutellum which are black); underside, metanotum and legs entirely black. Abdomen reddish yellow except for 1st tergite and sawsheath which are black. Wings smoky with a black spot under the base of the stigma; stigma and venation black.

In *structure* not distinguishable from *K. ectrapela* Konow except that the sawsheath is broadly rounded behind (Figs. 1 and 2) (instead of narrowing to a rounded point) and the hind basitarsus is about as long as the three following tarsal segments together (instead of clearly longer than this). *Length* 10 mm.

PALESTINE: Wadi Umbaghik, larva on ? *Rumex* 1♀ (Holotype) emerged iii. 1945 (*H. Bytinski Salz*) (*British Museum*).



FIGS. 1-2.—Sawsheath of *Kokujewia* spp. from above: (1) *ectrapela*; and (2) *palestina*.

I am indebted to the late Dr. Gussakovskii for giving to the British Museum a paratype of *K. ectrapela* (Caucasus and Transcaucasia) with which I have been able to compare the specimen from Palestine. *K. ectrapela* differs, in addition to the characters in the form of the sawsheath and tarsi mentioned above, in having a black scutellum and a red supra-clypeal area. *K. clementi* Zirngiebl (Anatolia), the only other described species in the genus, is said to differ from *K. ectrapela* in having a black medial stripe on the mesonotum and red on the frons.

## CIMBICIDAE

*Abia plana* sp. n.

♀. *Colour* dark metallic green; antenna with apex of 3rd segment, 4th, and obscurely 5th and 6th brown; 1st, 2nd, base of 3rd and 7th black; labrum and mouthparts piceous; legs with coxae, trochanters and femora (except for apices) black; apices of femora, tibiae and tarsi yellowish brown, slightly fuscous beneath on the hind legs. *Wings* as in *A. sericea* L. but that the apical cloud is obsolete.

*Head* as in *A. sericea* L. but that the surface is entirely dull with fine coriaceous sculpture round the orbits and between the punctures. *Thorax* dull with fine coriaceous surface sculpture between the punctures which are mostly smaller than the interspaces between them. *Legs* as in *A. sericea* L., but that the inner tooth of the tarsal claw is broader and longer than the end tooth (Fig. 3). *Abdomen* with the tergites flat, not longitudinally arched as they are in *A. sericea*; and dull all over with dense hair follicles in the middle parts of each tergite while the margins and sides are densely coriaceous and the whole is covered in a fine dense pile; hypopygium simple (not produced slightly in the middle as it is in *A. sericea*); sawsheath parallel-sided in dorsal view and trifid at apex; cerci long and extending back almost as far as the apex of the sawsheath; saw very similar to that of *A. fulgens*. *Length* 13 mm.

♂. As in ♀, but the eyes above approach to each other to a distance that is little more than  $\frac{1}{2}$  the diameter of an ocellus, the 4th, 5th and 6th abdominal tergites each have the central quarter modified as in *A. sericea* and covered with a dense fine mat of short black tomentum surrounded by a shining glabrous margin, but, unlike *A. sericea*, etc., the modified areas are scarcely depressed and are (as in *A. fulgens*) in the same plane as the lateral portions of the same tergites. *Length* 11.5 mm.

HUNGARY: Retyezáth, 1,200-1,800 ft., 1♂, 1♀ (Holotype), 6-7.vi.1937, 1♂, 24.v-4.vi.1937 (*B. Liphay*) (British Museum).

This species is very close to *A. fulgens* Zaddach as is shown by the very similar saws (vide Kangas, 1946, fig. 1a) and by the fact that in these 2 species alone of the European species known to me<sup>1</sup> the tomentum patches on the modified portions of the 4th to 7th abdominal tergites in the male are not depressed below the level of the rest of the tergite (in *A. sericea* L., *nitens* L., *candens* Konow, *melanocera* Cameron, *imperialis* Cameron and *vivilisi* Turner the tomentum patches are in depressions). The new species is, however, at once distinguishable from *A. fulgens* by its heavier punctation and by its tarsal claws, which have the inner tooth minute in *A. fulgens* but larger than the end tooth in the new species (cf. Figs. 3 and 4).

### *Corynis semisanguinea* (Pic.)

The description by Pic (1916[1]) of this species from Algiers and of *C. subcarinata* from Greece (1916[2]) seem generally to have been overlooked; Gussakovskii (1947), for example, omitted them from his key to the genus. I had in fact already prepared a description of the specimens before me as a new species and informed the collector about this when I came upon Pic's paper quite by chance. So far as Pic's description goes it covers Guichard's specimens very well and I think it probably refers to the same species, but as Pic's description is very incomplete as well as being generally inaccessible I include a fuller description herewith:

<sup>1</sup> Excluding those species which Kangas places in *Abia* (*Aenoabia*) and which really belong to *Zaraea* as defined in Benson, 1951.

♀. Reddish yellow with the following parts bronzey black: antennae and head (except for the fronto-clypeal area below the antennae), longitudinal fleck in the middle of each of the lateral lobes of the mesonotum, sunken lateral parts of the mesonotum beside the mesoscutellum, metanotum (except for the meta-post-scutellum), mesosternum, mesepimeron, front and lower part of mesepisternum, metapleura, coxae, trochanters, basal half of fore and middle femora, and extreme base of hind femur, 1st and 2nd tergites except at sides above, a medial fleck on each of the 3rd, 4th and 5th tergites, the medial part of the margins between these segments, a broad broken band on the hind margin of the 8th tergite, almost the whole of the underside of the abdomen with the sawsheath (except the apex of the hypopygium and the 9th sternite).

*Wings* hyaline with stigma costa and rest of venation yellow.

*Antenna* (Fig. 6) with 3rd segment twice as long as 4th; 3rd + 4th = 5th; 5th a little more than  $1\frac{1}{2}$  times as long as broad (1.0 : 1.7). Head with malar space about as long as  $\frac{1}{2}$  diameter of front ocellus; POL : OOL as 1.0 : 0.8; POL : OO-CL as 1.0 : 0.6. *Pubescence* on head and thorax grey and upstanding, the longest hairs being about the same as the diameter of an ocellus; on abdomen fine, dense and recumbent.

*Punctuation*: the larger punctures over almost the whole of the upper surface are interspaced with more numerous very fine punctures; on the middle of the mesonotum, scutellum, middle of mesopleura, and middle of the abdomen, the larger punctures are mostly separated from each other by from 1-2 diameters; on the head the punctures are coarser than on the body, and, round the orbits, between the antennae and on the postocellar area are very densely spaced and partly confluent; on the sides of the apical tergites the punctures are also very densely set. *Length* 6.5 mm.

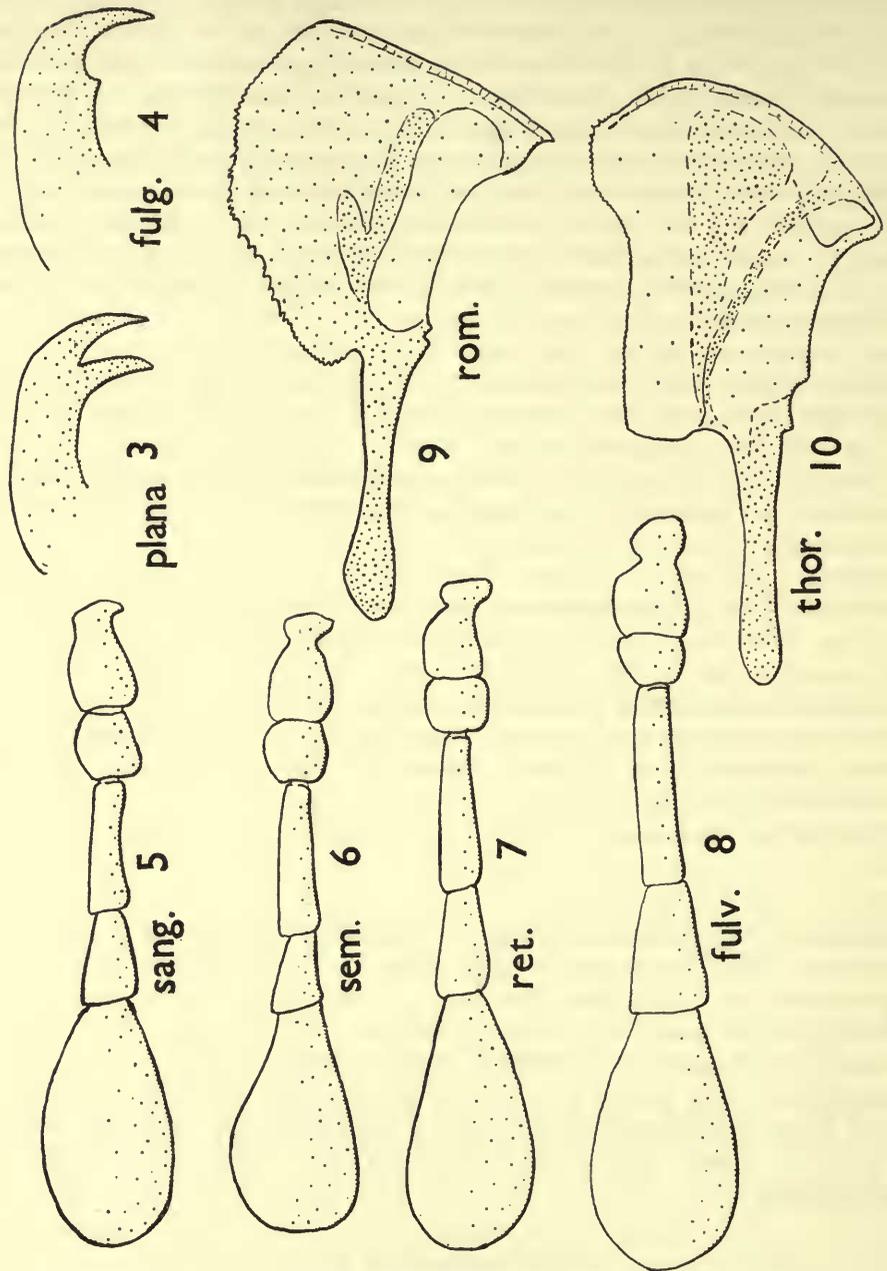
TRIPOLITANIA: 75 km. S. of Bou Ngem, 5 ♀, 4.ii.1952 (*K. M. Guichard*) (British Museum).

Superficially this species is very like *C. sanguinea* (Vollenhoven) of which I have before me 1 ♀ from the Canary Islands (Tho. V. Wollaston Coll., B.M. 1869-65). The punctuation in *C. sanguinea*, however, is very much denser; on the mesonotum, for example, many of the larger punctures are contiguous or with interspaces little more than a diameter. Furthermore in *C. sanguinea* the 3rd segment in the antenna is only about  $1\frac{1}{2}$  times as long as the 4th, and the club, forming the 5th segment, is about twice as long as broad (cf. Figs. 5 and 6). The abdomen is also paler above in colour, and the stigma and apex of the costa are blackish brown instead of yellow.

### *Corynis reticulata* sp. n.

♂. Black except for the yellowish white tarsi, tibiae and extreme apices of femora. Wings hyaline; stigma and rest of venation yellowish brown.

*Antenna* (Fig. 7) with 3rd segment  $1\frac{1}{2}$  times as long as 4th; 5th (club) = 3rd + 4th; 5th about twice as long as wide. *Head* with malar space very short, scarcely



FIGS. 3-4. Hind tarsal claw in *Abia* spp.: (3) *plana*; and (4) *fulgens*.

FIGS. 5-8. Antenna in *Corynys* spp.: (5) *sanguinea*; (6) *semisanguinea*; (7) *reticulata*; and (8) *fulvicrus*.

FIGS. 9-10. Penis valve in *Dolerus* spp.: (9) *romanus*; and (10) *thoracicus*.

longer than the greatest breadth of the apical segment of the maxillary palp; supra-clypeal area concave above but below and on clypeal area slightly concave medially; front margin of clypeus with an excision about the size of the front ocellus; POL : OOL is as 1.0 : 0.7; POL : OO-CL as 1.0 : 0.5. *Claws* bifid; inner front tibial spur about  $\frac{2}{3}$  as long as basitarsus, and outer spur  $\frac{1}{2}$  as long as inner spur. *Abdomen* with 8th tergite unmodified. *Punctuation*: whole insect reticulate in appearance, so densely covered in punctures that the only interspaces larger than a puncture are: one immediately adjoining each ocellus, a few in the middle of the front lobe of the mesonotum and a few on the front of the scutellum. *Pubescence* outstanding and silvery; on head and upper mesopleura about as long as diameter of front ocellus; on rest of thorax and abdomen about  $\frac{1}{2}$  this length. *Length* 5 mm.

PALESTINE: Shapat near Jerusalem, 1 ♂ (Holotype), 27.iii.1918 (E. E. Austen) (British Museum).

This species appears to be nearest to *C. andrei* Konow and *C. similis* Mocsáry and runs to the couplet containing these two species in Gussakovskii's key (1947), but in both these species the antennal club is much shorter than the 3rd and 4th antennal segments combined. *C. similis* (known from Crete, Cyprus, Syria, etc.) has very much shorter pubescence on the whole body, except on the head it is nowhere as long as  $\frac{1}{2}$  the diameter of the front ocellus; and the punctures on the head and thorax are much less dense with abundant shining interspaces larger than individual punctures; and it also has a longer malar space (about as long as the diameter of the front ocellus in the ♀ and about  $\frac{4}{5}$  this diameter in the ♂). *C. andrei* (Konow) (from Oran) I have not seen but it is described as having the pubescence on the head and mesonotum fuscous and the apical 3rd of the hind femur pale.

### *Corynis fulvicrus* sp. n.

♀. Black with the following parts reddish yellow: labrum, mouthparts, suffused fleck on underside of antennal club, apical  $\frac{1}{2}$  of front and middle femora above, and hind femur (except for extreme base above and basal  $\frac{1}{2}$  below) hind tibia and tarsus (except for the apical tarsal segments which are brownish). Wings hyaline; stigma, C. and Sc. yellow; rest of venation brown.

*Antenna* (Fig. 8) with 3rd segment  $\frac{3}{4}$  longer than 4th; 5th (club) = 3rd + 4th. *Head* with clypeus excised in front to a depth of about  $\frac{3}{4}$  diameter of front ocellus; malar space very short (about as long as greatest breadth of apical segment of the maxillary palp; POL : OOL as 1.0 : 0.8; POL : OO-CL as 1.0 : 0.6. *Legs* with inner front tibial spur about  $\frac{3}{4}$  as long as basitarsus; outer spur about  $\frac{1}{2}$  the inner spur. *Abdomen* with 8th tergite unmodified.

*Punctuation* mostly very dense with interspaces as large as individual punctures only on clypeus, middle of supra-clypeal area, in frontal basin adjoining front ocellus and beside each lateral ocellus, middle of mesonotum and mesoscutellum, upper mesopleura, and most of 6 basal tergites. *Pubescence*, dense silvery up-standing and about as long as diameter of front ocellus, on head mesonotum and whole mesopleura. *Length* 7.5 mm.

ALGERIA: Hammān Ben Hadjar, 1 ♀ (Holotype), 31.iii.1910 (*F. D. Morice*) (British Museum); Misserghim, 1 ♀, 1929 (*Allauaud* and *Jeannell*) (Paris Museum).

Another ♀ from Algeria: Chellala, 1895 (*de Vauloger*) (Paris Museum) agrees with the above in colour and structure except that the whole punctation is sparser; the punctures on all the mesonotum (except the margins), including the scutellum, and most of the middle of the mesepisternum are separated by interspaces as large or larger than individual punctures.

## TENTHREDINIDAE

### SELANDRIINAE

#### *Selandria serva fuscitarsis* subsp. n.

This differs from the typical subspecies in that the 4 apical tarsal segments of the hind legs and  $\pm$  middle legs are infusate and that in the forewings the costa has little more than the basal  $\frac{1}{2}$  yellow and almost the apical  $\frac{1}{2}$  black (in the typical subspecies the basal  $\frac{2}{3}$  of the costa are yellow and only the apical  $\frac{1}{3}$  black).

CORFU: 1 ♂ (Holotype), 8.iv.1912 (*F. D. Morice*) (British Museum).

ITALY: Romagne, 2 ♂, 1 ♀, 1945 (*P. Zangheri*) (1 ♂, 1 ♀ in Zangheri Coll.; 1 ♂ in B.M.); Bologna, Gaibola, 1 ♀, 24.iv.1950 (*G. Grandi*) (in B.M.) and 1 ♀, 30.iv.1951 (*G. Grandi*).

#### *Strongylogaster lineata cypria* subsp. n.

This form differs from the typical *S. lineata* (Christ) in that the hind femora are entirely pale yellow (instead of infusate at base) and the two basal antennal segments are entirely black (instead of  $\pm$  yellow).

CYPRUS: near Platania Forest station, 3,500–4,000 ft., 2 ♀ (including Holotype), 7.v.1945 (*G. A. Mavromoustakis*); Mt. Troodos, 5,500–6,000 ft., 1 ♀, 28.vi.1937 (*G. A. M.*) (British Museum).

Since writing this I have seen 3♀ of this subspecies from LEBANON: Falonka, 17.v.1953 (*G. A. M.*) (British Museum).

#### *Dolerus romanus* sp. n.

♂. Black; wings hyaline with black stigma and venation.

*Head* contracted behind the eyes; clypeus with front half inflexed along a medial transverse carina and anterior excision not so deep as half total height of clypeus; antenna about as long as vein C of forewing, 8th segment being about four times as long as its basal breadth; head densely and rather coarsely punctured above without interspaces larger than the punctures except adjoining each of the lateral ocelli and each side of the post-ocellar area which is margined laterally by a deep pit; hind ocelli nearly as far apart as the distance between an ocellus and the occipital carina (POL: OO-CL as 1.0:1.2); occipital furrow behind the temples and carina well developed.

*Mesonotum* with front lobe heavily punctured, dense at the sides with an impunctate area in front and in the middle with interspaces between the punctures larger than the punctures; lateral lobes with smaller shallow punctures sparser towards the front and sides and denser behind; scutallum flat and except for a shining sparsely punctate area in front is coarsely and very densely punctured; post-tergite of scutellum with obsolescent surface sculpture and no medial carina; mesopleura very densely and rather finely punctured above, but with the punctures thinning out below and the mesosternum is almost impunctate.

*Abdomen* with the 1st tergite shining and sparsely punctured, but with the other tergites densely transversely coriaceously sculptured all over except for a small medial apical bare patch on the 8th tergite; ♀ penis-valve as Fig. 9.

*Pubescence* very dense and grey and long on head above and the whole of the thorax, the longer hairs being about as long as  $1\frac{1}{2}$  the diameter of the front ocellus; abdomen with a hair patch each side of the middle line on each of the first 4 tergites, those on the 1st tergite being very long; 5th to 8th tergites clothed all over except in the middle line. *Length* 8 mm.

ITALY: Ermilia, Rivola, Fuenza, 1 ♂ (Holotype), 18.ii.1951 (*P. Zangheri*) (in the Zangheri Collection).

This most interesting new species would run to the *megapterus-asper* couplet in my recent key to the British species (Benson, 1952, p. 77) but differs from both these species and from *D. thoracicus* Fallén (cf. Figs. 9 and 10) in the form of the penis valve, in its much denser punctation on the mesonotum and base of the abdomen, and the much denser and longer pubescence on the abdomen. The penis-valve appears to be closest to that of the N. American *D. sericeus* Say but it differs from that species in almost every other character not common to all the "black" *Dolerus*, lacking, for instance, the strong tubercle on the apex of the 8th tergite, the deep excision of the clypeus and the coarse punctation of the mesopleura. In the pubescent clothing the new species resembles *D. nigratus* Müller and the possibility that it might prove to be the unknown male of the Mediterranean *D. rufotorquatus* Costa had to be considered. *D. rufotorquatus* ♀ is not known to differ in any way structurally from *D. nigratus* ♀, but it would appear that the new species is far too densely sculptured on the thorax and base of the abdomen to be the male of *D. rufotorquatus* which now appears to me to be no more than a southern race of *D. nigratus* with a red instead of black pronotum and front lobe of the mesonotum. (*Dolerus rufotorquatus* Costa = *D. nigratus rufotorquatus* *stat. nov.*).

#### BLENNOCAMPINAE

##### *Athalia cuspidata* sp. n.

♀. Head black except for the clypeus, labrum, mouthparts and underside of the antennae which are yellow. Thorax and abdomen yellow except for the following parts which are black: front lobes of mesonotum, a spot covering the posterior  $\frac{1}{4}$  of the raised part of each of the lateral lobes, the post-tergite of the scutellum together  $\pm$  with the sunken lateral parts of the metanotum, the mesosternum, the extreme apices of the front and middle tarsal segments and the sawsheath. *Wings*

hyaline; stigma and apical  $\frac{1}{4}$  of vein C as well as Sc + R  $\pm$  piceous; rest of venation yellow.

*Impunctate* except only for faint hair follicles. *Head* with clypeus very short (laterally only about as long as the 2nd antennal segment) and slightly produced medially (where it is about as long as the 1st antennal segment) and sparsely pubescent; malar space less than  $\frac{1}{2}$  the diameter of the front ocellus; distance between antennal sockets about the same as the distance between an antennal socket and the nearest eye margin. *Antenna* 12-13-segmented; 3rd segment greater than 4th + 5th; 6th onwards broader than long. *Legs* with tibial spurs broad and very short (inner hind tibial spur about  $\frac{1}{3}$  as long as basitarsus and about  $\frac{2}{3}$  as long as apical breadth of tibia); claws with a small middle tooth in addition to the end tooth. *Abdomen* with hypopygium as in *A. cordata* Lep. (see Benson, 1952, p. 82, fig. 254) and saw (Fig. 11) with prominent and sharp marginal teeth very like those of *A. cordata* (l.c., fig. 252).

*Pubescence* on head and mesonotum long and grey but rather sparse, on the mesopleura it is evenly spread but it becomes very sparse on the mesosternum; abdomen entirely glabrous above. *Length* 6-7 mm.

♂. Coloured as in ♀ but that the whole upperside of the thorax is black (except only for the declivous parts of the mesonotum round the wing bases) and that the black spreads also from the mesosternum to cover the lower parts of the espisternum and the whole of the epimerum to the base of the wings; the metasternum and the middle of the 1st tergite are also  $\pm$  infusate.

In *structure* as in ♀ except for the sexual segments, and that the malar space is linear, that the pubescence on the thorax is much denser and covers the under-thorax evenly; hypopygium entire behind.

PALESTINE: Jerusalem, 1 ♀ (Holotype) 16.iv.1943, 2 ♀, 1 ♂, 1.v.1941, 1 ♀, 7.v.1943 (*H. Bytinski-Salz*) (Holotype, 1 ♂ and 1 ♀ paratype in British Museum; 2 ♀ in Bytinski-Salz collection).

There are only 3 species of *Athalia* with toothed claws previously known (I do not regard *A. galericulata* Kontuniemi<sup>1</sup> as anything more than a dark form of *A. scutellariae* Cameron such as are often to be found in Britain with the typical form); and of these I can find no structural differences between the darker *A. scutellariae* (Europe) and the paler *A. flammula* Zhelochovtsev (E. Asia), so that I believe they are but races of the same species. [*Athalia galericulata* Kontuniemi, 1951 = *scutellariae* Cameron, 1880, **syn. nov.** *A. flammula* Zhelochovtsev, 1927 = *A. scutellariae flammula* Zhel. **stat. nov.**]

*A. scutellariae* and also *A. dimidiata* Konow (Transcaucasia) differ from the new species in their longer tibial spurs and in the form of their antennae (which have only the 9th segment onwards transverse). The new species is otherwise very similar to *A. dimidiata* in structure, having a very similar hypopygium and saw to that species, though in colour *A. dimidiata* is very different in having an entirely black thorax and 1st tergite.

<sup>1</sup> Likewise *Athalia cordatooides* Kontuniemi, 1951, and *A. longifoliae* Kont., 1951, are synonyms of *A. lineolata* Lepeletier, 1823, **syn. nov.**

*Athalia glabricollis meridiana* subsp. n.

This subspecies differs from the typical subspecies (see Benson, 1952, p. 81) in that approximately the basal  $\frac{1}{2}$  of the veins C and Sc + R are yellow (instead of only about the basal  $\frac{1}{3}$ ) and that the mesonotum is more densely pubescent.

PERSIA: Suva, 2 ♂, 8 ♀ (including Holotype), *Escalera Coll.* (British Museum 1900-61). TURKEY: Ockmen, 1 ♀, 12.viii.1939 (*F. S. Bodenheimer*) (Brit. Mus.); Aksehir, 1 ♂, 8.viii.1951 (*Wahrman Coll.*). PALESTINE: Jaffa, 2 ♂, 2 ♀, 24.iii.1951 (*H. Bytinski-Salz*); Jerico, 1 ♂, 3.iv.1943 (*H. B.-S.*); Jordan, Al Maghtas, 1 ♀, 24.ii.1942 (*H. B.-S.*).

*Empria persephone* sp. n.

♂. Black except for the following parts which are brownish white to brown: labrum, mouthparts,  $\pm$  the apices of the front and middle femora, fore and lower side of front tibia and tarsus, fore side of middle tibia,  $\pm$  bases of middle and hind tarsal segments, and a fleck each side of tergite 2, 3, 4, 5 and 6.

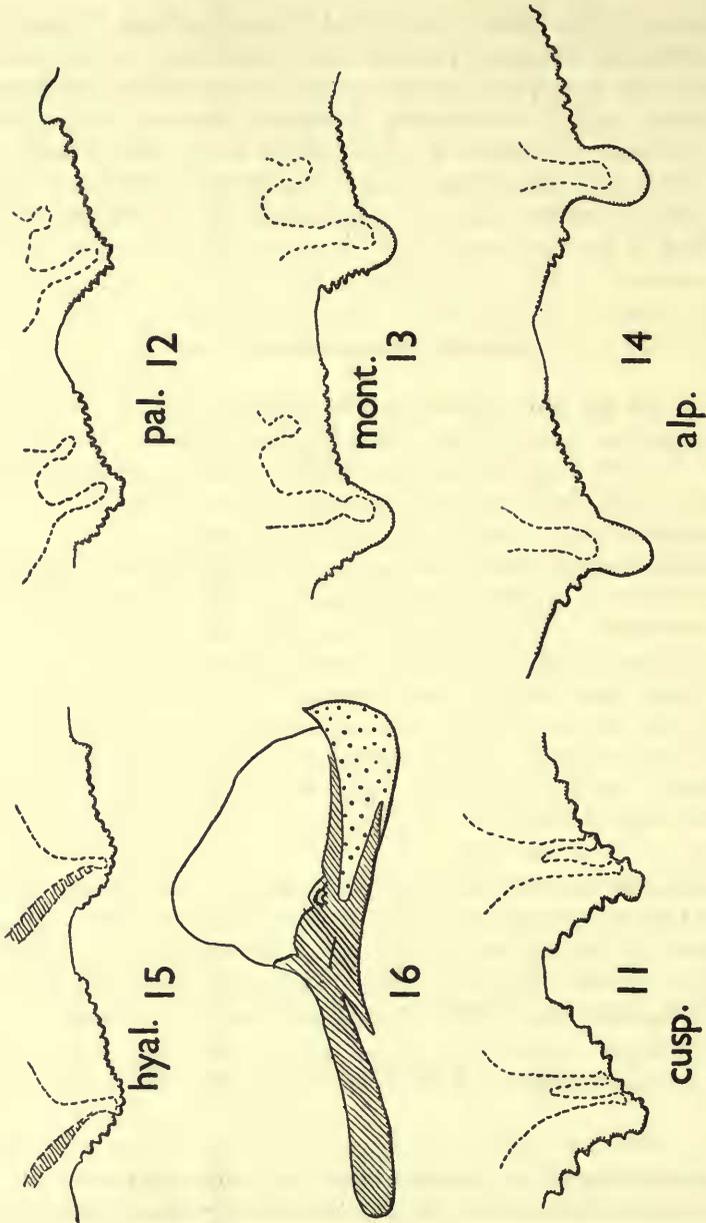
*Wings* infusate; stigma and venation piceous brown.

*Head* contracted behind eyes; the whole covered with dark pubescence (about as long as the diameter of a lateral ocellus) arising from minute tubercles surrounded by shining interspaces; occipital carina reaches from mandible almost to level of top of eyes; clypeus about as long as the distance between the hind ocelli, subtruncate in front, very slightly emarginate, with a small medial tooth continued back almost to the base of the clypeus as a longitudinal rib; eyes about  $\frac{1}{3}$  longer than broad; malar space about equal to length of 2nd antennal segment; frons as a raised platform; frontal furrow very shallow and ill-defined; hind ocelli further apart than distance of each from hind margin of head (POL:OO-CL = 1.0:0.8); POL:OOL as 1.0:1.2; postocellar area about twice as wide as long.

*Thorax* shining and impunctate though in places covered with minute tubercles; the whole with dense pubescence mainly fuscous in colour; hind tibial spurs about as long as apical width of tibia; claws with a minute medial tooth in addition to the end tooth. *Wing* venation normal, with vein m-cu missing in hind-wing. *Abdomen* with hypopygium slightly emarginate medially; penis-valve as in figure 16. *Length* 6 mm.

FRANCE: Var, Les Args, 1 ♂ (Holotype), 15.iv.1939 (*W. Fassnidge*) (British Museum).

This species would run in Conde's key to European *Empria* (Conde, 1940) to *E. liturata* (Gmelin) and in my key to the British species to couplet 10 which includes *E. liturata* (Benson, 1952, p. 86-90). It differs from *E. liturata* by its infusate wings, its very dark colour pattern, its longer antenna (in *liturata* the subapical segments are less than 3 times as long as broad), in its flat table-like frontal area, in its almost truncate clypeus and in its different penis-valve (cf. fig. 16 with fig. 275 in Benson, *l.c.*).



FIGS. 11-15. Ninth and tenth marginal teeth of saw of: (11) *Athalia cuspidata*; (12) *Monophadnus pallescens*; (13) *M. monticola*; (14) *M. alpicola*; and (15) *Paracharactus hyalinus*.

FIG. 16. Penis valve of *Empria persephone*.

*Monophadnus alpicola* sp. n.

♀. Black with the following parts brown to brownish white: labrum, tegula, apices of femora of all legs, tibia of front and middle legs, and base of tibia of hind legs and  $\pm$  bases of tarsal segments. Wings hyaline; stigma with the upper  $\frac{1}{2}$  black and the lower  $\frac{1}{2}$  brown; rest of venation brown.

*Head* swollen behind the eyes; and eyes small so that the temples in dorsal view appear as long as the eyes; genal carina short and fading out at about level of the bottom of the eyes; clypeus slightly emarginate in front and faintly punctate; malar space about  $\frac{1}{2}$  length of front ocellus; antenna about  $\frac{8}{9}$  as long as costa of forewing, with 2nd segment about as long as broad, 3rd about  $\frac{1}{4}$  longer than 4th segment, 4th-6th of almost equal length, so are 7th-9th; frontal area flat with its sides continued forwards to join, on the antennal sockets, the conspicuous supra-antennal crests which border the deep concave antennal furrow; post-ocellar area about twice as wide as long; hind ocelli about as far apart as each is from the hind margin of the head; hind orbits with a deep furrow from the top with a line of coarse irregular punctures in the furrow.

*Thorax* impunctate; prepectus to mesopleura absent. Wing venation and legs as in *M. pallescens* Gmelin but that the tarsal claws have each a definite middle tooth in addition to the end tooth. *Abdomen* mostly impunctate except for very faint coriaceous sculpture in places; sawsheath almost twice as long as basal plate (1.0 : 0.6), parallel-sided in dorsal view and truncate at the apex where it is about as wide as the apex of the apical tarsal segment; ovipositor about as long as 4 basal tarsal segments; saw with sharp marginal teeth (Fig. 14). *Pubescence* pale and covering whole insect including mesosternum (though it is sparser here) except for the 4 basal tergites of the abdomen which are glabrous. *Length* 4.5-6.5 mm. ♂ unknown.

SWITZERLAND: Valais, Arolla, 7,000 ft., 2 ♀ (including Holotype), 18.vi.1935, 14 ♀♀, 29.vi.1935 (*J. E. & R. B. Benson*); Les Haudères, 4-5,000 ft., 2 ♀, 6-27.vi.1935 (*J. E. & R. B. B.*).

*Monophadnus*, as restricted by Benson (1952, p. 97-98), includes 5 or 6 previously described species of which 3 are nearctic and 2-3 European. *M. alpicola* sp. nov. is distinguished at once from any of these species by its small eyes (so that when the head is viewed from above the length of the temple behind the eye appears about as long as the eye from that viewpoint).<sup>1</sup>

From *M. pallescens* Gmelin and *M. monticola* Hartig it is also distinguished by its toothed claws, by the form of the teeth on the saws (cf. Figs. 12, 13 and 14), and by the pubescent clothing of the underthorax, which in these two species is interrupted by a broad glabrous band at the junction of the mesosternum and episternum and is extremely sparse on the mesosternum. *M. semicinctus* Hartig is so different from any of the species already mentioned that it may perhaps represent a different generic group, having very short antennae (scarcely  $\frac{2}{3}$  as long as costa of forewing),

<sup>1</sup> It is interesting that *Empria alpina* Benson, another high alpine sawfly we collected in Switzerland at the same time but which also occurs in arctic regions such as Lapland and the mountain tops of Scotland, likewise differs from all other species in its genus by its similarly small eyes.

an elongate 2nd antennal segment, very large eyes having very short temples behind (in dorsal view eyes about twice as long as temples behind the eyes), and an up-turned apex to vein  $A_3$  in the forewing.

Superficially the new species is very similar to *Paracharactus hyalinus* (Konow) which we collected at the same time and place as the new species. In *P. hyalinus* the pubescent clothing is the same, the eyes are not so reduced in relation to the length of the temple (in dorsal view about 1.3 : 1.0), the claws are very similar, but its elongate antennae at once distinguish it (segments 3, 4 and 5 are subequal in length) and the saws are different (cf. Figs. 14 and 15).

It would seem that the genera *Monophadnus* and *Paracharactus* (+ *Phymatoceropsis*) are extremely closely related and may even really belong to one series. The presence or absence of a prepectus to the mesopleura is not the clear-cut character that recent writers would have us think. In *Paracharactus longicornis* (Hartig) (**comb. nov.**) (= *Monophadnus longicornis* Hartig of previous authors) the prepectal furrow is reduced to a very short pit, in *P. hyalinus* it is obsolete and only indicated by an ill-defined depression, while in *Dicrostema gracilicornis* (Zaddach) the prepectus itself is reduced to a very narrow flange; all these three were yet treated by Enslin (1912-18) as lacking a prepectus.

I characterise *Paracharactus* as follows:

Blennocampini having antennal segments 3, 4 and 5 of almost equal length, claws without a basal lobe, a post-genal carina developed on the head below, the stub to vein  $A_3$  of the forewing simple (not bifid or turned up at apex) and with a prepectus to mesopleura  $\pm$  defined.

*Paracharactus longicornis* (Hartig) is attached to *Helleborus* and this association again suggests the view that *Paracharactus* and *Monophadnus* are closely related, for *Monophadnus* is so far as is known entirely associated with Ranunculaceae.

### *Eutomostethus gagathinus meridionalis* subsp. n.

This form differs from typical *Eutomostethus gagathinus* (Klug) of Europe in being on the average larger (6.5-7.5 mm. : 5.5-6.5 mm.) and in that the apical antennal segment is  $1\frac{1}{2}$  to twice as long as the 8th segment (in *E. gagathinus gagathinus* the apical segment is about  $\frac{1}{3}$  times as long as the 8th) and the mesonotum is more densely pubescent.

CYPRUS: Chiffliccondia, near Limassol; 3 ♂, 4 ♀, 13.iii.1946; 2 ♂, 3 ♀ (including Holotype), 20.iii.1946; 3 ♂, 5 ♀, 21.iii.1946; 2 ♂, 28.iii.1946; and 2 ♀, 31.iii.1946 (*G. A. Mavromoustakis*) (British Museum).

## TENTHREDININAE

### *Tenthredopsis convergens* sp. n.

♂. Black: except for the labrum, mandibles, 7th segment of the antenna and probably also 8th and 9th (which are missing in the type) which are white; and except for the following parts which are reddish brown: palps, femora of all the legs, tibiae and tarsi of front and middle legs (tibia of hind legs piceous).

*Wings* hyaline; stigma white at the extreme base, but with the apex and the rest of the venation piceous.

*Head* clearly contracted behind the eyes, which are large and strongly converging in front, where they are closer together than the height of an eye (1.0 : 1.2); malar space only about as long as the width of the apical segment of the maxillary palp; clypeus subtruncate in front and slightly emarginate medially; antennal sockets moderately expanded on their inner margins (as in *T. excisa* Thomson), but the medial fovea is not deep and is separated behind from the 3-pronged frontal concavity adjoining the front ocellus; occipital carina well-developed throughout, but most prominent behind post-ocellar area and genae; POL : OOL as 1.0 : 1.8 and POL : OO-CL as 1.0 : 1.4; postocellar area about twice as broad as long and defined laterally by very deep furrows. Above, the head is smooth and almost impunctate except for the hair follicles though the genae and hind orbits are rough; and the pubescence is short and dark. *Thorax* above shining and smooth except for the follicles and except for some clear punctures on the posterior half of the meso-scutellum; mesopleura dull with coarse irregular surface puncturing. Legs normal, with basitarsus of hind legs equal to three following tarsal segments together. Wings normal, with external vein surrounding hind pair. Abdomen transversely coriaceous and evenly clothed in pubescence; 1st tergite with slight medial carina; penis valve as in *T. excisa* group (see Benson, 1952, fig. 310). Length 9.5 mm.

PALESTINE: Elon, 1 ♂ (Holotype), 16.vii.19--. (*N. Bytinski-Salz*) (in British Museum).

This species is readily distinguished at once from every other known species in the genus by its strongly converging eyes in front where they are closer together than the height of an eye and, correlated with this, by the exceptionally short malar space and the strongly narrowed head behind the eyes in dorsal aspect. On all other counts it is a typical *Tenthredopsis* and there seems no reason to erect for it a distinct genus.

#### *Sciapteryx costalis corcyrensis* subsp. n.

Differs from *S. costalis costalis* F. in the ♀ in that the whole of the inner orbits are white-margined (instead of only the upper half) and that the lower  $\frac{1}{3}$  of the outer orbits are also white-margined and that the supra-clypeal area is banded across with white; the ♂ likewise is more profusely marked with white than is *S. costalis costalis*, having the whole of the face below the eyes white (except along the post-genal carina and the tips of the mandibles), as well as a white spot on the mesapisternum.

CORFU: 1 ♂ and 1 ♀ (Holotype) (*S. S. Saunders Coll.*) (British Museum, 1886-19).

The colour pattern on the head of the new subspecies is similar to that of *S. sorrow* Konow which, however, differs from all *S. costalis* not only in its black veins C and Sc + R of the forewing but also in the fact that its hindwings are as smoky in colour as its forewings (all forms of *S. costalis* have the hindwings subhyaline in contrast to the smoky forewings).

*Sciapteryx cleopatra* sp. n.

♀. Black with the following parts yellowish white : palps, labrum (except front margin) front  $\frac{1}{2}$  of clypeus (except front margin), inner orbits and lower  $\frac{1}{2}$  of outer orbits, front of tegula and hind margin of pronotum, line along upper side of all femora and front side of all tibiae (except apical  $\frac{1}{4}$  in hind tibiae and extreme apex in the other legs), apical and lateral margins of all tergites of abdomen and apical margins of sternites. *Wings* yellowish subhyaline ; basal  $\frac{2}{3}$  of stigma, C and Sc + R of forewing orange in colour ; rest of venation piceous.

*Head* shining with very dense coarse punctures becoming rugose on frons, thinning out on post-ocellar area and temples behind the eyes where the punctures are separated by large shining interspaces. Malar space about as long as greatest width of 2nd antennal segment ; POL : OOL as 1.0 : 1.4 ; POL = OO-CL ; postocellar area about as long as its greatest breadth ; postgenal and occipital carinae continued to level with top of eyes. Antenna as in *S. costalis* F.

*Thorax* shining between the punctures which are sparse and fine on the medial parts of the front lobes of the mesonotum, coarse and tending to fuse at sides of the lobes, dense and small on the front of the lateral lobes, becoming coarse and irregular behind, large and distinct on the front of the scutellum, smaller behind, but here the interspaces between them are densely sculptured with fine surface reticulations ; mesopleura densely rugose above, shining between scattered punctures below ; legs with tibial spurs short (on hind legs the inner spur is scarcely longer than the apical breadth of the tibia). *Wings* normal. *Abdomen* with transverse alutaceous sculpture above ; sawsheath and saw very similar to that of *S. costalis*. *Length* 7-8 mm.

PALESTINE : Jerusalem, 1 ♀ (Holotype), 1929 (*S. Tahudhi*) " *Sciapteryx costalis* F., ♂, *det.* R. Forsius " (British Museum).

EGYPT : Alexandria, 1 ♀, 1902 (*J. de Joannis*) (Paris Museum).

This species is close to *S. costalis* but distinguishable from it at once by its subhyaline instead of smoky forewings and by its different punctation (for in *S. costalis* the whole of the mesonotum and mesopleura are dull, densely covered with small irregular punctures and with the interspaces between these punctures dull with irregular coriaceous sculpture). In *S. costalis* the malar space is also shorter (in the ♀ about as long as the greatest breadth of the 1st antennal segment). *S. cleopatra* is also much more profusely marked with white on the face of the female than is *S. costalis*, in fact it is almost as pale here as male *S. costalis* and the holotype was actually identified by Forsius as a male *S. costalis*.

*S. levantina* André has its wings coloured as in *S. cleopatra* but has a different type of punctation from both species, with small regular wide-spaced punctures on the head and thorax and dense reticulate surface sculpture between.

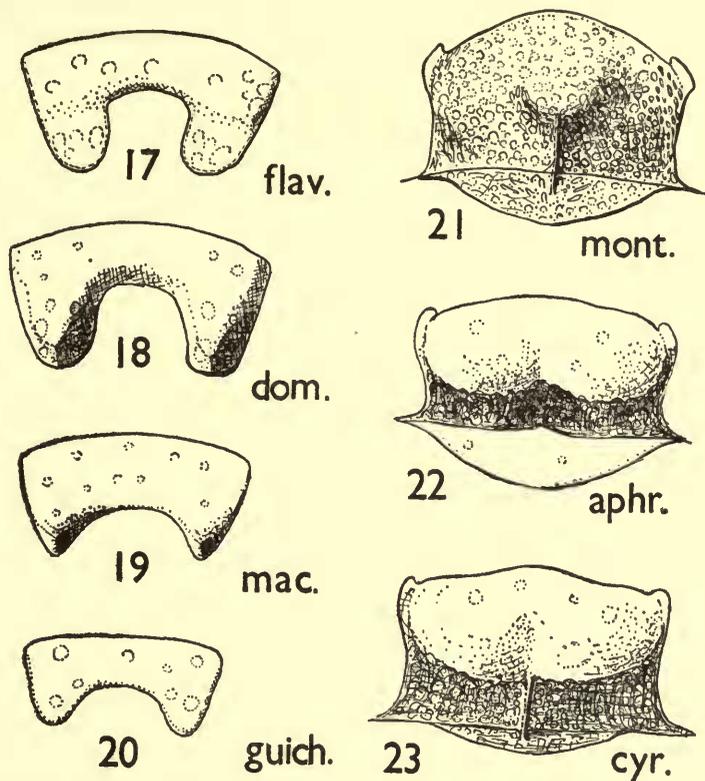
*Elinora flaveola* (Gmelin) and *E. dominiquei* (Konow)

In addition to the differences in colour and the differently shaped and segmented antennae in these two species (*flaveola* has longer and thinner 9-segmented antennae ;

*dominiquaei* has shorter more compressed and 8-segmented antennae) there are noteworthy differences in the shape of the clypeus which have not been mentioned before :

*E. dominiquaei* (Gmelin) has the front lobes of the clypeus convex with declivous sides (Fig. 18).

*E. flaveola* (Konow) has these lobes flat and the sides as though pressed out (Fig. 17).



FIGS. 17-20. Clypeus of *Elinora* spp.: (17) *flaveola*; (18) *dominiquaei*; (19) *maculata*; and (20) *guichardi*.

FIGS. 21-23. Meso-scutellum of *Macrophyia* spp.: (21) *montana*; (22) *aphrodite*; and (23) *cyrus*.

*Elinora corynetes* (Kirby) (comb. nov.)

*Macrophyia corynetes* Kirby (1882) 1: 264-5, and pl. 10, fig. 3.

Mr. K. M. Guichard collected at Jebel Soda and also at 75 km. south of Bou Ngem in Tripolitania on 2nd-4th March, 1952, a series of 16 ♀ of a species of *Elinora* very like *E. pectoralis* Kriechbaumer except that the wings are entirely hyaline (instead of yellowish) that the vein Sc + R of forewing is piceous (instead of yellow) and that the 2nd antennal segment is black. 14 of these specimens agree closely with the type specimen of *Macrophyia corynetes* from Tunis and are presumed to

belong to that species. Two specimens, however, taken at Jebel Soda on 2nd March in company with normal specimens differ in that the outer spur of the middle tibia has a small tooth half-way down the inner side and a flange from the tooth to the base of the spur; the spur is, in fact, modified in the same way for cleaning the antennae as the inner front spur, though to a lesser extent (cf. Figs. 27 and 28). As no other differences in these insects seem to be correlated with this form of spur it is assumed to be aberrational, but in *E. maculata* Kriech. (= *syriaca* André) and in the two new species which follow here the middle outer spur is apparently normally modified in this way like a front spur.<sup>1</sup> For the saw of this species compared with that of *E. caspia* and *guichardi* sp. n. see (Figs. 24-26).

*Elinora saharensis* sp. n.

♀. Yellowish white marked with black as follows: head above antennae (except fleck on inner orbits above and streak continuing from genae to temples behind eyes almost to vertex), antenna (except basal segment), apical segment of labial palp and basal parts of labium together with apex of mandible, margins of supraclypeal area, axis, mesonotum (except for a streak each side of front each side of front lobe) as well as whole of scutellum (except its post-tergite), metanotum (except for the post-scutellum) upper edge of mesepisternum, mesosternum and streak on mesepimerum and mesopleura, legs with a touch on the outer apex of the tibiae the apices and a line on the outer side of the tarsal segments, basal tergite (except laterally) and front part of each of the following tergites though the black thins out laterally to end before reaching the lateral edge of the segment and is smaller on each succeeding tergite so that on the 8th and 9th it occupies no more than the narrow front margin. Wings hyaline; stigma, C and Sc (i.e., front half of the fused Sc + R) yellow; rest of the venation brown except for the yellow extreme bases.

*Head* broadened behind the eyes and face very flat; malar space about equal to diameter of front ocellus; antenna 8-segmented with 3rd longer than 4th + 5th; clypeus (cf. Fig. 20) almost in one plane and scarcely incurved along the margins, almost glabrous and smooth except for a few coarse but shallow punctures on the lobes; frons and temples smooth between minute scattered punctures; POL: OOL as about 1.0:1.5. *Thorax* shining between very fine scattered punctures which, however, become thicker on lower part of mesopleura and mesosternum; outer spur on middle tibia modified as in corresponding spur on front tibia being stout with a strong tooth near the apex. *Abdomen* dull with fine transverse alutaceous surface sculpture; sawsheath and saw similar to that of *E. pectoralis*.

*Pubescence* white and on head and mesonotum about as long as malar space; on mesopleura longer, outstanding and apically curved, becoming adpressed on mesosternum. *Length* 10.5 mm.

SAHARA DESERT: Ahaggar Mountains, Oued Tamanrusset, 10° E., 24° N., at about 1,300 m., 1 ♀, 5.iii.1928 (Paris Museum).

<sup>1</sup> Captain D. B. Baker tells me that in several species of *Eucera* as well as in some other genera of bees the middle spur is likewise modified similarly to the front spur and that this is sometimes accompanied by several modifications of the basitarsus, but I am not aware that the middle spurs are ever so modified in other Hymenoptera.

This species is extremely close to *E. corynetes* which differs in having shorter pubescence on the mesopleura (not longer than malar space), a simple or but slightly modified inner spur on the middle tibia, a slightly longer malar space and no dark colour on the sternites. It may well be that *E. saharensis* will ultimately be treated as a fourth subspecies of *E. pectoralis* together with *lindbergorum* (Forsius) (Atlas Mountains), *pectoralis* (Kriechbaumer) (Algiers), and *corynetes* (Kirby) (Tunisia and Tripolitania); *E. dominiquei* (Konow) (W. Europe) and *flaveola* (Gmelin) (C. and S.E. Europe) are also closely related.

*E. saharensis* is, however, of particular interest in that it is the first sawfly recorded from the Ahaggar Mountains, probably because so few collectors go there early enough in the year.

*E. saharensis* is very similar in general appearance to *E. maculata* Kriechbaumer (= *syriaca* André) which has its outer middle tibial spur modified in the same way. *E. maculata* is, however, readily distinguished by its thickened clypeus with slightly projecting anterior lobes and declivous margins (cf. Figs. 19 and 20), as well as by its slightly convex and more strongly punctured scutellum.

#### *Elinora guichardi* sp. n.

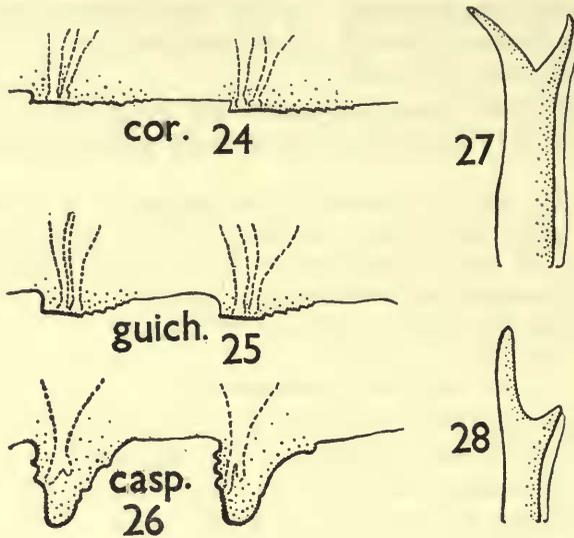
♀. Black with yellowish white on the base of the mandible, the labrum, ± a stripe on the gena, ± the tegula, and sometimes ± the 1st perapterum, an oblique streak behind on the mesepisternum and another on the metapleura; and with reddish yellow to yellowish white in middle of mandibles, at least front of clypeus, sometimes ± basal segment of antenna, at least on hind angles of pronotum, legs (though ± infuscate throughout and at least on bases and on posterior sides of coxae, apices of tibiae and most of tarsi), hind margins of tergites laterally with the ventral portions of them entirely, together with the broad hind margins of the sternites. Wings hyaline; stigma (except lower margin), C and Sc (front half of Sc + R) yellowish brown; lower margin of stigma and rest of venation piceous. *Otherwise* as in *E. saharensis* Bens. sp. n., but that the malar space is only about as long as  $\frac{1}{2}$  diameter of a front ocellus, the 3rd antennal segment is about as long as the 4th + the 5th and about  $\frac{1}{2}$  of 6th. The inner spur of the middle tibia bears a medial inner tooth and from the tooth a flange runs to the base of the spur (cf. Figs. 27 and 28). Saw with sharp ventral teeth (Fig. 25).

♂. *Colour* extremely variable as in ♀ and though the abdomen may be entirely black (except ± for whitish hypopygium and margins to the sternites) it may be ± reddish yellow to entirely reddish yellow and in the palest forms the reddish yellow spreads over the 4th and 5th tergites at least posteriorly, and sometimes even across the posterior margins of the other tergites also. Wings as in ♀.

*Structure*, except for sexual segments, as in ♀; but the malar space is very short (only about  $\frac{1}{3}$  diameter of front ocellus) and in one of the males (out of 8 ♂) the inner tibial spur is un-modified. *Length* 7-9.5 mm.

TRIPOLITANIA: 75 km. south of Bou Ngem, 2 ♀ (including Holotype), and 1 ♂ (with simple middle tibial spurs), 4.ii.1952 (*K. M. Guichard*) (British Museum); Jebel Soda (Wadi Ghodaifa), 5 ♂, 3.iii.1952 (*K. M. G.*); Wadi Tonzist (51 miles south of Bou Ngem), 1 ♂, 8.iii.1952 (*K. M. G.*).

Structurally this very variable species appears to be closest to *E. corynetes* which is distinguished from it, however, by having a longer malar space (about as long as front ocellus in ♀) and a saw with teeth that are much less sharp and prominent (cf. Figs. 24-26).



FIGS. 24-26. Ninth and 10th marginal teeth of saw in *Elinora* spp.: (24) *corynetes*; (25) *guichardi*; and (26) *caspia*.

FIGS. 27-28. Inner tibial spurs of *Elinora guichardi*: (27) foreleg; and (28) middle leg.

### *Rhogogaster arctica* Kiaer.

Dr. E. Enslin has most kindly presented to the British Museum (Natural History) 1 ♀ *Rhogogaster arctica* Kiaer which he collected himself in the Frankische Jura of Bavaria, on 2. vii. 1933; this species was previously only known from arctic and sub-arctic Europe and is therefore an addition to the known fauna of Central Europe. Superficially it is very like *Pachyprotasis rapae* L., but that the antennae are shorter with the 3rd segment about  $1\frac{1}{2}$  times as long as the 4th, the stigma of the forewing is pale, and, of course, except for the generic characters, the flatter and more broadly emarginate labrum, and the tibia longer than the femur and with shorter spurs.

### *Macrophya orientalis* Mocsáry (stat. nov.) and *M. rufipes* (L.).

*Macrophya rufipes* var. *orientalis* Mocsáry, 1891, p. 156.

Mocsáry described this form as a variety of *M. rufipes* L. differing from the typical form in having an entirely black abdomen instead of one banded with red. A series in the British Museum from S.W. PERSIA, B.M. 1900-61 (*Escalera Coll.*) evidently belonging to the form described by Mocsáry differs so markedly from *M. rufipes* in

sculpture as to indicate that the two belong to different species, distinguishable as follows :

*M. orientalis* Mocsáry. Head with strong and dense punctures on the frontal area which become finer on the inner orbits; the surface between the punctures is shining. Abdomen black with lateral flecks on 6th and 7th tergites, dull above with dense transverse striae, and the pubescence sparse and very short. Wings smoky. Inner hind tibial spur shorter (spur : basitarsus as 1.0 : 1.8).

*M. rufipes* (L.). Head shining between shallow setiferous punctures, the punctures becoming smaller and sparser on the orbits and temples. Abdomen black with  $\pm$  reddish yellow band on the 3rd and 4th tergites, and in ♀ with a large lateral fleck on each side of the 6th tergite, a smaller one on each side of the 7th and on the middle of the 9th, shining above without surface sculpture between the follicles and the adpressed hairs from these follicles are longer than the distance between them so that they overlap. Wings yellowish hyaline. Inner hind tibial spurs very long (spur : basitarsus as 1.0 : 1.4).

### *Macrophya aphrodite* sp. n.

♀. Black with the following parts yellow : mouthparts, labrum, clypeus, hind angles of pronotum, tegula, meso-scutellum (except hind margin), and its post-tergite, fleck on mesopleura, legs (except for black hind coxae, bases of fore and middle coxae, apical  $\frac{1}{3}$  of hind femur; and brownish extreme apices of fore and middle tibia and tarsal segments; and for reddish brown hind tibia and tarsus); 1st tergite of abdomen almost entirely, 3rd, 4th, 5th and 6th tergites each with a lateral fleck each side increasing in size progressively so that on the 6th the flecks almost meet dorsally, 7th with a small lateral fleck and 9th entirely. Wings yellowish hyaline; venation piceous though the lower part of the disc of the stigma is brown.

*Head* with malar space very short (only about  $\frac{1}{3}$  the transverse diameter of the front ocellus), densely punctured on frons, orbits, vertex and genae, with interspaces alutaceous and smaller than the punctures; on temples the punctures are much sparser so that the interspaces are in places larger than the punctures and with the surface smooth and shining. *Thorax* : mesonotum very thickly covered with small punctures dull with alutaceous sculpture between; scutellum (fig. 22) in front tumid and shining, with sparse punctures, but with the posterior quarter depressed and densely punctured and without a medial keel; post-tergite about as long as the width of a cencher, and shining with only 2 or 3 vague punctures and no medial keel; under-thorax with dense fine punctures and a few scattered interspaces larger than punctures and with alutaceous surface sculpture. *Legs* with hind tibia about as long as hind tarsus; basitarsus longer than following tarsal segments (as about 1.2 : 1.0); inner hind tibial spur more than  $\frac{1}{2}$  as long as basitarsus (as about 1.0 : 1.6). *Fore wing* : anal cell with very short cross vein in the middle. *Abdomen* with dense transverse alutaceous sculpture; saw not distinguished from that of *M. montana*.

♂. *Coloured* as in ♀ but that the front and middle coxae are black only at the extreme apex and the hind coxae are only black above on the basal  $\frac{2}{3}$ , the hind tibia

and tarsus are on the other hand entirely black (except for a yellow apical outer spot on the tibia, and on the basitarsus, and for the mainly yellow 2nd and 3rd tarsal segments), that the yellow flecks on the abdomen are smaller (that on the 1st tergite is medially contracted and the 9th tergite is only yellow at the extreme apex), *Structurally* as in ♀ except for the sexual segments and that the malar space is linear. *Length* ♀ 10–11.5 mm. ; ♂ 9.5–10.5 mm.

CYPRUS: Episcopi, 7 ♀ (including Holotype), 9 ♂, 14–30.v.1937 (*G. A. Mavromoustakis*); Platus, 1 ♂, 19.vi.1937 (*G. A. M.*); and Platus, 3,800 ft., 1 ♀, 10.viii.1937 (*G. A. M.*).

This species is apparently most closely related to *M. montana* Scopoli which it much resembles in colour; but the stigma is brown instead of piceous and in the ♀ the hind tibia and tarsus are reddish brown instead of being black with yellow flecks (as they are, however, in its ♂). In sculpture the head of the new species is far more densely and finely punctate all over (though not so densely and finely punctate as is *M. postica* Brullé). The scutellum (Fig. 22), however, is different in form, being tumid and smooth and almost impunctate in front, without a medial keel behind or on the post-tergite (in *M. montana* it is flatter and dull, with numerous punctures except on the front  $\frac{1}{3}$ , and there is a medial keel over the posterior  $\frac{1}{3}$  and continued across the anterior 3rd of the post-tergite (Fig. 21)).

#### *Macrophya cyrus* sp. n.

♀. Black with the following parts yellow: mouthparts, labrum, clypeus,  $\pm$  1st, 2nd, and base of 3rd antennal segments, hind angles of pronotum, tegula, meso-scutellum (except hind margin and post-tergite), fleck on mesopleura, legs (except coxae and  $\pm$  femora especially inner side of hind pair, but that on the hind legs the yellow colour has an orange tinge, and the tibia and tarsal segments are brown at their apices), 1st tergite of the abdomen almost entirely, broad apical margins of 3rd to 9th tergites (broken medially on the 3rd and 4th, and laterally on 7th and 8th), also  $\pm$  medial apical flecks and narrow apical margins of sternites except hypopygium. *Wings* subhyaline with the forewings slightly infusate apically (the infuscation occupies cell 3R<sub>1</sub> and  $\pm$  overflows the margins of the surrounding cells); stigma, C, Sc and anal veins of forewing yellow; rest of venation brown to piceous.

*Head* with frons and area beside ocelli heavily punctures though with interspaces as large as punctures, giving way to shining and sparsely punctured lower face, orbits and temples with a large impunctate area each side of post-ocellar region, the interspaces and impunctate areas being without surface sculpture beyond the hair follicles; malar space very short (about  $\frac{1}{3}$  diameter of front ocellus). *Thorax* with mesonotum and mesopleura heavily punctured and with coriaceous sculpture on the interspaces which are in places as large as the punctures; meso-scutellum (Fig. 23) with anterior  $\frac{2}{3}$  tumid, rounded and almost impunctate; while the posterior  $\frac{1}{3}$  and post-tergite are dull with dense coarse punctures and coriaceous sculpture between the punctures, and are transected by a sharp medial longitudinal keel; the post-tergite is extremely short (only about  $\frac{1}{2}$  width of a censer). *Fore wings* with the anal cell constricted medially for about as long as is the greatest width of the apical portion of the cell.

*Abdomen and legs* as in *M. aphrodite*, but that the saw has very acute marginal teeth.

♂. *Coloured* as in ♀ but that the fore and middle legs are entirely pale and the hind femora are only black on the inner side, though the hind tibia may be  $\pm$  infuscate below as well as on the inner side, and on the abdomen the 1st and 3rd-6th tergites and all the sternites together with the hypopygium are yellow (except at the extreme bases, and the 3rd and 4th tergites medially). *Structurally* as in ♀ except for the sexual segments and that the malar space is linear. Length ♀ 10-11 mm.; ♂ 8.5-10.5 mm.

S.W. PERSIA: K. Sefid, 6 ♀ (including Holotype), 10 ♂; and Bazuft, 2 ♀, 2 ♂. (*Escalera Coll.*) (British Museum 1900-61).

This species belongs to the same group as the preceding but forms a sub-group, distinguished by the yellow stigma, C and Sc of forewing, together with *M. postica* Brullé, *M. superba* Tischbein and *M. ottomana* Mocsáry all occurring in S.E. Europe and the E. Mediterranean. It is closest to *M. superba* with which it agrees in general colour and sculpture including details of the mesoscutellum and its abnormally short post-tergite. It differs, however, in its wings being subhyaline with apical infuscations (uniformly yellowish hyaline in *superba*) in its much shorter malar space in the ♀ ( $\frac{1}{8}$  diameter of front ocellus instead of  $\frac{1}{3}$ ) and in the constriction of the anal cell of the forewing (*superba* has a short cross-vein). *M. postica* has much denser punctation on the head with the interspaces coriaceous, a scutellum as in *M. aphrodite* Benson sp. n. (see above), uniformly yellowish hyaline wings with but a narrow constriction of the anal cell of the forewing and a saw with blunt marginal teeth. *M. ottomana* (if I have correctly interpreted this species) was represented by 1 ♂ in the Escalera Collection from S.W. Persia, K. Sefid, which agrees well with the original description of this species so far as that goes; it differs from the new species in having a scutellum like that already described above for *M. aphrodite*, with a normal post-tergite (cf. Figs 22 and 23), wings coloured as in *M. cyrus* but with anal cell constricted for only a short way (as in *M. postica*), a head with denser punctation (as in *M. postica*), but without microsculpture between the punctures, antennae entirely black, hind femur with basal  $\frac{1}{2}$  yellow and apical  $\frac{1}{2}$  black on both outer and inner sides and abdomen with much less extensive yellow colouring as follows: a yellow lateral fleck each side joined by a narrow apical margin on the 1st tergite, lateral flecks on the 3rd to 7th tergites (those on the 5th and 6th being much larger than the others but still interrupted medially), and the apex of the last tergite; while the hypopygium and sternites are black.

#### NEMATINAE

##### *Cladius ordubadensis* Konow (species revocata)

Mr. Mavromoustakis has taken in Cyprus a long series of this form which was originally described by Konow (1891, p. 211-12) from the Caucasus and is known also in the Crimea. In this series there is scarcely any variation in the structure of the male or female antennae or deviation from Konow's description; and Zhelochovt-

sev's view (1952) that this species, together with *C. difformis* Panzer and *C. comari* Stein, are but forms of *C. pectinicornis* Geoffroy is not acceptable without much stronger evidence.

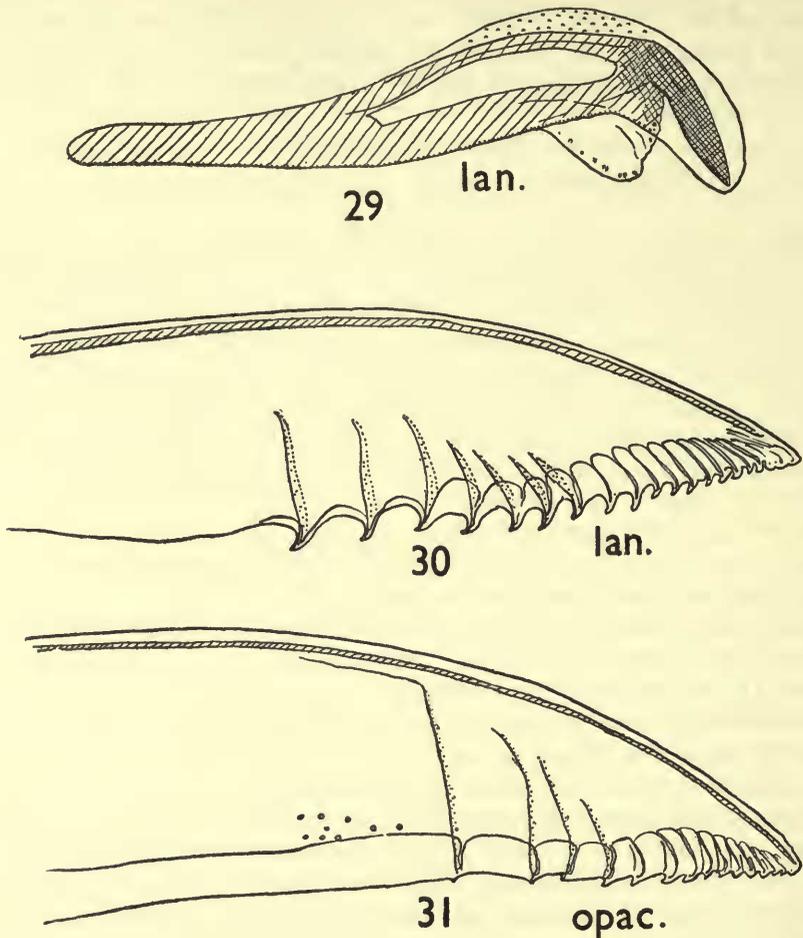


FIG. 29. Penis valve of *Mesoneura lanigera*.

FIGS. 30-31. Saw of *Mesoneura* spp. with the clothing of flattened pubescence omitted :  
(30) *lanigera* and (31) *opaca*.

***Mesoneura lanigera* sp. n.**

♀. Yellowish brown with the following parts black or piceous: head above clypeus (except for the supra-clypeal area), antennae, axis, a broken vitta on each lateral lobe of the mesonotum, suture beside the mesoscutellum, mesosternum, sunken and lateral parts of the metanotum, bases of coxae and extreme base of front

and middle femora,  $\pm$  apex of hind tibia and hind tarsus, sternites and sawsheath of abdomen. Wings hyaline; stigma, C and Sc (i.e. front half of Sc + R) yellow, rest of venation piceous.

*Pubescence*: head and thorax covered with dense woolly pubescence, much of it as long as the long inner spur on the fore tibia, and yellowish white in colour. *Abdomen* with long woolly pubescence below but this is very short and sparse above.

*Punctuation*: head and thorax smooth and shining except for the fine surface follicles; abdomen above with dense alutaceous surface and transverse striae.

*Head* with malar space linear; clypeus medially excised in front to about  $\frac{1}{3}$  its total length; frontal area slightly concave and carinate laterally, but with the frontal basin confluent in front with the deep antennal groove; POL: OOL as 1.0:0.7; POL: OO-CL as about 1.0:0.8; postocellar area defined laterally with short deep pits. *Antenna* almost as long as C of forewing; 3rd segment a little shorter than 4th and obliquely truncate apically; 4th-5th; 6th onwards progressively shorter.

*Thorax, wing venation and abdomen* as in *Mesoneura opaca* F., but inner hind tibial spur about as long as apical width of tibia, sawsheath broadly emarginate behind—about as broad as the apex of the hind femur and saw with more marginal teeth (cf. Figs. 30 and 31).

♂. Black with the following parts yellowish white: mouthparts, base of mandibles, labrum, front  $\frac{1}{2}$  of clypeus, prothorax, tegulae,  $\pm$  trochanters, apical  $\frac{1}{2}$  of front and middle femora, and hind femur (except extreme base and a line beneath basal  $\frac{1}{2}$ ), tibiae (except apex of hind pair), fore and middle tarsi, and 2nd, 3rd and 4th tergites and front of 5th. Otherwise as in ♀ except for sexual segments; hypopygium broadly truncate at apex, very slightly emarginate medially; penis valve (Fig. 29). Length 7-8 mm.

CYPRUS: Pera Pedi, 2,000 ft., 3 ♀ (including Holotype), 4. iv. 1952 (*G. A. Mavromoustakis*; Potamitissa, 3,000 ft., 1 ♂, 25-26. iii. 1944 (*G. A. M.*) (in British Museum).

Mr. Mavromoustakis tells me, in a letter dated 19. iii. 1953, that these specimens were all captured at flowers of *Quercus infectoria* Oliv., which is probably the food-plant as the genus is associated so far as is known entirely with *Quercus*.

This new species can be distinguished from *M. opaca* F. by the pale colour of the abdomen in the ♀, by the saws (cf. Figs 30 and 31), and by the long woolly golden pubescence on the head and thorax in both sexes; in *M. opaca* this pubescence is nowhere as long as the inner front tibial spur. The colour pattern and pubescence would serve also to distinguish the new species from the two other described species in the genus, *M. arquata* Klug (C. Europe) and *M. macroptera* Takeuchi (Japan), but no male of any species in the genus has been found before.

#### SAWFLIES OF CYPRUS

##### CEPHIDAE.

*Syrista parreyssi* Spinola. (S. Europe and E. Mediterranean to Caucasus.) Mt. Troodos, Krios River, 5 ♂, 1 ♀, 15-20. vi. 1937. Platus, 3,800 ft., 1 ♂, 3 ♀, 5-12. vii. 1937.

- Pachycephus smyrnensis* J. P. F. Stein. (Balkans and E. Mediterranean.) Amathus, Kyrenia, Larnaca and Limassol, iii-iv. 1931-5.  
*Trachelus armenius* (Konow). (E. Mediterranean.) Amathus, Larnaka, Limassol, Mesagitionia and Yermasogia, iii-iv. 1935-46.  
*T. tabidus* (F.) (C. Europe and Mediterranean to Caucasus.) Amathus, Limassol, Mesagitionia and Yermasogia, iii-iv. 1935.  
*Calameuta idolon* (Rossi). (Mediterranean to Caucasus.) Fasoulla, 400-500 ft., 8 ♂, 8 ♀, iii-iv. 1940, on flowers of *Sinapis*.  
*C. festiva* Benson sp. n. (Cyprus.) Yersa, 1,000 ft., 1 ♀, 2. iv. 1945.

## SIRICIDAE.

- Urocerus gigas gigas* L. (W. Palaearctic.) Limassol, 1 ♀, iv. 1932.  
*Sirex noctilio* F. (Holarctic.) 5 ♂, 3 ♀, 25. x. 1927, H. M. Morris. ex pine log.

## ARGIDAE

- Arge ochropus* Gmel. (Mediterranean and Europe to C. Asia.) Platus, 3,800 ft., 2 ♀, 20. vi. 1937; Pera Pedi, 2,000 ft., 1 ♂, 18. vi. 1937; Kykko, 2 ♂, 1 ♀, 15-17. vii. 1939 (H. Lindberg).  
*A. cyanocrocea syriaca* (Mocsáry). (Asia Minor.) Amathus, 1 ♂, 23. iii. 1935; Kato Amiandos, 3,500 ft., iv. 1946; Platus, 3,800 ft., 2 ♀, 3 ♂, 10. vi. 1937; Mt. Troodos, Krios River, 4,500-5,000 ft., 3 ♂, 1 ♀, 15-17. vi. 1937; Yermasogia, 4 ♂, 12. iii-28. iv. 1935; Yersa, 1,000-1,200 ft., iii-iv. 1945-47; Galata, 1 ♂, 15-21. vi. 1939 (H. Lindberg).  
*A. nigritarsis* Klug. (E. Mediterranean to N. Persia.) Limassol, 1 ♂, 1 ♀, 10-17. iii. 1931; Platus, 3,800 ft., 18 ♂, 6 ♀, 11-19. vi. 1937; Pera Pedi, 4,000 ft., 1 ♀, 18. vi. 1937; Mt. Troodos, Krios R., 4,500-5,000 ft., 4 ♂, 2 ♀, 15. vi. 1937; Yermasogia, 4 ♀, 13-14. iii. 1935.  
*A. proxima* André. (E. Mediterranean to Turkmen.) Mandria, 2 ♀, 16. vi. 1937; Pera Pedi, 2,500 ft., 7 ♂, 7 ♀, 18. vi. 1937; Platus, 3,800 ft., 11 ♂, 6 ♀, 11-19. vi. 1937; Mt. Troodos, Krios R., 4,500-5,000 ft., 10 ♂, 16-17. vi. 1937; Kykko, 2 ♂, 3 ♀, 15-17. vii. 1939 (H. Lindberg).

## CIMBICIDAE.

- Corynis similis* (Mocsáry). (E. Mediterranean.) Amathus and Limassol, iii-iv. 1931-35.

## TENTHREDINIDAE

## SELANDRIINAE

- Strongylogaster lineata cypria* Benson subsp. n. (Cyprus.) Near Platonia Forest Station, 3,500-4,000 ft., 2 ♀, 7. v. 1945; Mt. Troodos, 5,500-6,000 ft., 1 ♀, 28. vi. 1937.

## BLENNOCAMPINAE.

- Athalia cordata* Lepeletier. (W. Palaearctic.) Limassol and Mesagiotomia, xii.1934–iii.1935; Mt. Koznos, 2,500 ft., 3.vi.1936; Kato, Amiandos, 3,500 ft., 4.iv.1946.
- Allantus balteatus* Klug. (C. Europe and Mediterranean.) Amathus, Limassol, Mesagiotomia, Sphalagiotissa, Yesmasogia, xi–iv and vii.1933–35.
- Empria archangelskii* Dovnar-Zapolski. (E. Mediterranean to Caucasus.) Koznos Mts., 2,500 ft., iii.1936; and Ayia, Izini R., 7 miles from Limassol, 1 ♂, 1 ♀, 25.xii.1947.
- Eutomostethus gagathinus meridionalis* Benson subsp. n. (Cyprus.) Chifliccondia, nr. Limassol, 13–31.iii.1946; Akrotiri Bay, 2 ♂, 1 ♀, 26.iii.1947.

## TENTHREDININAE

- Macrophya aphrodite* Benson sp. n. (Cyprus.) Episcopi and Platus, iv–v.1937. Platus, 3,800 ft., 1 ♂, 19.vi.1937, 1 ♀, 10.vii.1937.

## NEMATINAE

- Cladius ordubadensis* Konow. (E. Mediterranean to Caucasus.) Limassol, Mesagiotomia, Sphalagiotissa, and Yermasogia, xi–vii.
- Mesoneura lanigera* Benson sp. n. (Cyprus.) Pera Pedi, 2,000 ft., 3 ♀, 4.iv.1952; Potamitissa 3,000 ft., 1 ♂, 25–26.iii.1944.
- Nematus lucidus* Panzer. (Palaearctic.) Kellaki, 2,000 ft., 1 ♀, 28.iii.1952; Pera Pedi, 2,000 ft., 1 ♀, 4.vi.1952.
- Pristiphora* ? sp., near *biscalis* Förster. Pera Pedi, 2,000 ft., 1 ♀, 4.iv.1952.

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