CLASSIFICATION OF THE FOSSORIAL, PREDACEOUS AND PARASITIC WASPS, OR THE SUPERFAMILY VESPOIDEA.

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FAMILY XXXIV.—Sapygidæ.

The wasps belonging to this family, on account of the emarginate eyes in the females, and the abdomen being usually marked with yellow or white, closely resembles those in the families *Myzinidæ* and *Scoliidæ*, but may be easily distinguished by the great difference in the legs, the middle coxæ being approximate, the outer face of the tibiæ being smooth, unarmed, *without* tubercles or spines, while the tarsi are without strong spines or bristles, and unfitted for digging.

The antennæ, too, are different; they are inserted much farther apart, being nearer to the eye margin than to each other. The pronotum is broader, abruptly truncate anteriorly, with the front angles more acute, while the venation, at least in the front wings, is wholly different from the venation in the *Myzinidæ* and the *Scoliidæ*, the stigma being distinct, never small, the marginal cell larger, lanceolate, the basal nervure slightly arcuate, with the cells different. The males are easily known by the *unarmed* hypopygium.

In habits the species agree with those in the *Trigonalidæ*, being parasitic in the nests of wasps and bees.

Table of Genera.

1. Head normal, *without* smooth, blister-like swellings along the inner margin of the eyes and on the vertex; ocelli large, distinct.....2.

   Head *with* smooth, blister-like swellings along the inner margin of the eyes and on the vertex; ocelli small, indistinct.

   Antennæ at apex similar in both sexes, the last joint in the male not enclosed by the penultimate..... (1) Eusapyga, Cresson. (Type E. rubripes, Cr.)

2. Antennæ dissimilar in the sexes, not filiform; mandibles with unequal teeth.....3.

   Antennæ similar in both sexes, filiform, tapering off at apex; mandibles broad, 3-dentate, the teeth blunt, equal; maxillary palpi 6-jointed, labial palpi 4-jointed.....(2) Polochrum, Spinola. (Type P. repanda, Spinola.)

3. Third joint of the antennæ *not* longer than the fourth; second cubital cell narrowed above; antennæ in female clavate, in male subfiliform, the last joint more or less enclosed by the penultimate; mandibles 3-dentate, the teeth acute, the outer tooth a little the longest.....(3) Sapyga, Latreille.
(Type Apis clavicornis, Fabr.)

Third joint of the antennæ longer than the fourth; second cubital cell not much narrowed above; antennæ in female subfiliform.....(4) Sapygina, Costa.
(Type Sapyga decemguttata, Jurine.)

Family XXXV.—Myzinidæ.

This family is usually classified with the *Scoliidæ*. According to my views, it is quite distinct, although closely allied, and is easily separated by the difference in the shape of the eyes in the females, and by the totally different armature of the male genitalia.

The eyes in a female Myzinid are always *entire*, never emarginate within, as in the *Scoliidæ* The males have the eyes emarginate or sinuate within, much as in the *Scoliidæ*, but are easily distinguished by difference in venation and by the armature of the genitalia, the tip of the abdomen always ending in a single upward curved aculeus.

In the *Scoliidæ* the abdomen in the males terminates in three straight spines.

The family is without doubt *parasitic*, but nothing seems to be known of the habits of the many species already described.

Many of our species are common in midsummer and early fall; they are conspicuous and easily observed, and some of our younger entomologists should make an effort toward unravelling their life-histories.

The genus *Menisus*, Du Buysson, I do not know; it may be Sapygid, but I am unable to place it from the description.

The species in our catalogues, under the genus *Myzine*, do not belong to it, but should be removed to the genus *Plesia*, Jurine.

Table of Genera.

1. Females: eyes entire, *not* emarginate within.....2.
Males: eyes more or less emarginate within.....11.
2. Wings fully developed, normal.....3.
Wings much abbreviated, the apex pointed, incised or bilobed.....9.

3. Front wings with *three* cubital cells, *rarely with two cubital cells* ..4.
Front wings with two cubital cells.
Second cubital cell receiving both recurrent nervures.....Poecilotiphia, Cameron.
(Type P. albomaculata, Cam.)

4. Marginal cell not at all or only slightly separated from the costa; *three* cubital cells, the second and third each receiving a recurrent nervure.....8.

Marginal cell widely separated from the costa, nearly to the stigma, and directed forward into the disc of the wing, so as to occupy the place usually occupied by the third cubital cell.
Two cubital cells.....5.
Three cubital cells.....6.

5. Thorax elongate, the pronotum long; hind tarsi twice longer than their tibiæ; cubitus in hind wings originating *before* the transverse median.....Hemimeria, Saussure.
(Type Myzine Savignyi, Guér.)

6. Second cubital cell neither small nor petiolate.....7.
Second cubital cell very small, longly petiolate; hind tarsi not twice longer than their tibiæ.....Myzine, Latreille.
= Tachus, Jurine.
= Meria, Illiger.
(Type Tiphia tripunctata, Rossi.)

7. Second cubital cell large, longer than wide, trapezoidal, receiving the recurrent nervure far beyond the middle; hind tarsi about twice as long as their tibiæ; cubitus in hind wings originating behind the transverse median nervure; mandibles long, sickel-shaped, edentate.....Plesia, Jurine.
(Type Tiphia namea, Fabr.)

Second cubital cell not so large, receiving the recurrent nervure at the middle; mandibles stout, curved, edentate..Dimorphoptera, Smith.
(Type D. scoliiformis, Smith.)

8. Cubitus in hind wings originating *beyond* the transverse median nervure; hind tibiæ elongate, triangulate; last joint of hind tarsi not smaller than the fourth..Micromeria (Westwood) Saunders.
(Type Meria, Llugii, Westwood.)

Cubitus in hind wings originating (?) *before* the transverse median nervure; hind tibiæ globose; last joint of hind tarsi very minute.....Parameria, Guérin.
(Type P. femorata, Guér.)

9. Wings glabrous, *not* hairy.....10.
Wings hairy, strongly fimbriate.
Apical lobes of front wings unequal; stigma and veins absent.....Komarovia, Radoszkowski.
(Type K. victoriosa, Radoszk.)

10. Apex of wings bilobed, the marginal cell wanting; *one* cubital and *two* discoidal cells; mandibles at apex bifid; hind tibial spur moderate, straight and acute.....Pseudomeria, Saunders.
(Type P. graeca, Saund.)
Apex of wings pointed; *one* or *two* discoidal cells; mandibles at apex simple, edentate; hind tibial spur very long, slender, acute (Africa).....Pseudotiphia, Ashm., g. nov.
(Type Tiphia brevipennis, Lucas.)

11. Front wings with *three* cubital cells.....12.
Front wings with *two* cubital cells.
Second cubital cell receiving both recurrent nervures.....Poecilotiphia, Cameron.

12. Marginal cell at apex *not* at all or only slightly separated from the costa; second cubital cell large, irregularly quadrangular, trapezoidal or pentagonal, longer than the third.....13.
Marginal cell at apex widely separated from the costa; second cubital cell small, longly petiolate.....Myzine, Latreille.

13. Marginal cell *shorter*, rounded or truncate at apex; second cubital cell long, in outline triangular.....14.
Marginal cell long, its apex oblique and with a slight curve inwards *near* the costa; *three* cubital cells, the second cell large, the second and third each receiving a recurrent nervure, or the second recurrent is interstitial with the second transverse cubitus; cubitus in hind wings originating *before* the transverse median nervure.....Plesia, Jurine.

14. Apex of marginal cell narrowly rounded; second cubital cell receiving the first recurrent nervure *at* or a little before the middle, the second recurrent nervure received by the third cubital cell *before* the middle.....Micromeria, Saunders.

Apex of marginal cell briefly truncate ; second and third cubital cells each receiving a recurrent nervure at or a little beyond the middle; cubitus in hind wings originating a little before the transverse median nervure.....Mesa, Saussure.
(Type M. diapherogamia, Sauss.)

FAMILY XXXVI.—Scoliidæ.

This family is very closely allied to the *Myzinidæ*, but may be easily separated by having the eyes in the females distinctly *emarginate* within. The males also have emarginate eyes, but are more easily distinguishable by abdominal peculiarities, the tip ending in *three* straight spines, but never in a single upward curved aculeus as in the *Myzinidæ*.

The species are parasitic upon the larvæ of beetles belonging to the family *Scarabaeidæ*, and probably also upon other ground-inhabiting beetle larvæ.

Two subfamilies may be recognized :

Front wings with only *one* recurrent nervure ; if with two, the second recurrent is incompletely formed, and bends backwards so as to unite with the first, the second cubital cell receiving only one recurrent nervure.....Subfamily I.—Scoliinæ.

Front wings with two complete recurrent nervures, both of which are received by the second cubital cell..... Subfamily II.—Elidinæ.

SUBFAMILY I.—Scoliinæ.

In this subfamily the front wings have only a single complete recurrent nervure, which is received by the second cubital cell. The group is evidently an offshoot from the *Elidinæ*, which have two complete recurrent nervures.

Table of Genera.

1. Front wings with *four* discoidal cells, the third usually triangular, often petiolate.....2.

Front wings with *three* discoidal cells.

Two closed cubital cells.....Discolia, Saussure.
(Type Scolia apicicornis, Guér.)

Three closed cubital cells.....Scolia, Fabricius.
= Triscolia, Sauss.
= Triliacos, Sauss. (partim.)
(Type S. flavifrons, Fabr.)

2. *Two* cubital cells.....Diliacos, Sauss. et Sich.
(Type Compsomeris violacea, Lepels.)

Three cubital cells.....Liacos, Guérin.
= Triliacos, Sauss. et Sich (partim.)
(Type L. dimidiata, Guérin.)

SUBFAMILY II.—Elidinæ.

This subfamily is separated from the *Scoliinæ* by having two recurrent nervures, and both being received by the second cubital cell. It is the older type of the two subfamilies, and is clearly shown by the more numerous cells in the front wings.

The present conception of the genus *Elis* appears to be wrong. *Elis*, as established by Fabricius, was a most composite group, and some of the species originally placed in it by Fabricius did not even belong to the same family.

Fabricius, when he established *Elis*, placed under it *seven* species, viz.: (1) *E. sexcincta*, (2) *E. interrupta*, (3) *E. seniles*, (4) *E. 7-cincta*, (5) *E. cylindrica*, (6) *E. volvulus* and (7) *E. cochleata*. Subsequently, some of these were placed in other genera, and the first species, *Elis sexcincta*, became the type of the genus *Myzine*, Latr. After going carefully over the literature, I find that the only species left to which the Fabrician name *Elis* may be applied is *Elis (Scolia) 7-cincta*. This must now be considered the type of the genus; it will throw out the generic names, *Colpa*, Lep.; *Compsomeris*, Lep., and *Dielis*, Sauss., and what we have been calling *Elis* becomes *Trielis*, Saussure.

Table of Genera.

1. Front wings with *three* or *four* cubital cells.....2.
Front wings with *two* cubital cells.
Three discoidal cells.....Elis, Fabricius.
= Compsomeris, Lep.
= Colpa, Lepel.
= Dielis, Sauss.
(Type Scolia 7-cincta, Fabr.)

2. Front wings with *three* closed cubital cells.
Three discoidal cells.....Trielis, Saussure.
= Elis, Sauss. et Auc.
(Type Elis consanguinea, Sauss.)
Four discoidal cells.....Trisciloa, Gribode.
(Type T. Saussurei, Grib.)
Front wings with *four* closed cubital cells..Tetrascolia, Ashm., g. nov.
(Type Compsomeris Urvillii, Guér.)