development and emerged thirty days earlier than those under moist conditions. Professor Quaintance said that the same thing holds true for the peach borer (*Sanninoidea exitiosa* Say), the larvæ from nearly dead trees transforming before those from trees which are living and more or less vigorous. He then described the method of birth and the prolificacy of the black peach aphis (*Aphis persicæ-niger* Er. Sm.) no males or eggs of which, as is also the case with the cabbage aphis (*Aphis brassicæ* L.) and the cotton or melon aphis (*Aphis gossypii* Glov.), have ever been found. Mr. Titus stated that some specimens of the melon aphis had been known to reproduce agamically for two years. During all this time they were under observation and it was known that no eggs were laid.

—Mr. Banks made some remarks on the classification of the Perlidæ and on the characters which he had found to be most valuable in the separation of the various groups. Doctor Hopkins asked him whether there were good sexual characters in the Perlidæ, and Mr. Banks replied that there are characters in the anal plate. Doctor Ashmead said that there are characters in the anal veins of saw-flies, but that these disappear in the higher Hymenoptera.

—Mr. Knab made some remarks on the habits of South American passalid beetles. Among other things he stated that they seem to be monogamous. The larvæ are cared for by the adults, and this care is evidently necessary to the larvæ.

—Doctor Ashmead reported the taking of a ponerid ant, *Leptogenys falcigera* Rog., in the Philippines. It had previously been recorded from Ceylon and Madagascar.

—Mr. Banks presented the following paper:

A REVISION OF THE NEARCTIC CONIOPTERYGIDÆ.

By NATHAN BANKS.

(PLATES VI, VII.)

The Coniopterygidæ are a small and peculiar family of the true Neuroptera. One of the most characteristic marks of the family is the mealy exudation upon the wings and some parts of the body. More vital structures, however, distinguish the group from its allies. The antennæ are short, moniliform,

and hairy; the wings have very few transverse veins, rarely as many as 10, and no series of costal cross-veins such as is found in all other true Neuroptera, nor are the veins forked just before the margin as in nearly all allied forms. The maxillary palpi have five joints, the last joint longer and more slender than the others; the labial palpi have three joints, the last joint large and compressed. There are no ocelli. The hind wings are smaller than the front pair, without anal space, and the margin is very minutely ciliate. The legs are moderately long; the middle and hind tibiæ are often fusiform; the tarsi are of five joints, the basal joint the longest; the claws are simple. The abdomen is shorter in the male than in the female; the genitalia are not very distinct; but I have figured their shape in the males of two species.

The adults can be collected from various trees and shrubs in late spring and summer by beating.

I have found the larva of Coniopteryx several times on the leaves of various trees at and near Washington, D. C. It is a rather flat, fusiform larva, broadest on the mesothorax, having a triangular head, with the middle portion slightly extended, and antennæ that are two-jointed and cylindrical. The color is dark reddish or brown, with bands and spots of white. The tip of the abdomen ends in a slender sucker. In California Professor Woodworth has observed the larva of a Coniopteryx —a mottled black and white larva—sucking the eggs of the red spider. He noticed that when fully grown it spun a double cocoon, made up of an outer flat layer and an inner spherical case.

In Europe the larvæ of two genera, Coniopteryx and Aleuropteryx, have been described by Löw. The former has a very slender beak and slender palpi; the antennæ are also simple, of two joints, the second much the longer and tapering to the tip. In Aleuropteryx the beak is short and broad at base; the palpi have the terminal joint greatly swollen; the last joint of the antennæ is truncate at tip and rather broader there than elsewhere, and has a long bristle; the body is more slender than in Coniopteryx.

The Aleuropteryx larva was found feeding on scale insects on a pine tree. It pupated in a double cocoon, composed of an inner dense spherical case and some loose outer layers. It remained in the pupal state twenty days. Dr. Löw, who bred this larva, believed that there were two generations in a year. I think that our eastern species have two generations each year, as Mr. J. H. Emerton has recently bred *Coniopteryx vicina* from cocoons found during the winter.

These tiny mealy-winged insects were a puzzle to the early

entomologists, yet the first species described—by Müller in 1767—was placed correctly in Hemerobius, as that genus was then understood. Other authors, however, placed them in the caddice-flies, in the Psocidæ, and in the Aleyrodidæ. Westwood was the first to show their true position, and Burmeister the first to consider them a distinct family.

Very little work has, until recently, been done on the Coniopterygidæ, either in this country or in Europe. In 1885 Dr. Franz Löw published a revision of the then known European forms, and recently Dr. G. Enderlein of Berlin has given us several papers, including an elaborate classification and a monograph. On one important point, however, I differ from that author as to the type of the genus Coniopteryx. Curtis[a] gives *C. tineiformis* as the type of his genus Coniopteryx, and gives figures of the venation. In his generic description he says that there are three closed cells in both wings; and the figures show that in the hind wing the median vein is forked as well as the radial sector, and that in the fore wings the connecting veinlet from the cubitus runs into the lower branch of the median vein, instead of directly into the median vein; in other words, the venation is on the same plan as Löw figures for *C. aleyrodiformis*. Löw considers that Curtis had two species in his *C. tineiformis,* for Curtis says, "antennæ about 25 joints," and the size given is too small for *C. aleyrodiformis.* He admits that the form Curtis figures is *C. aleyrodiformis,* while the form fitting to the size and antennæ, he says, is *C. lactea* Wesm. Curtis may not have been careful in counting the antennal joints, for it is not easy to be sure of their number, and the size as given by him may have been a misprint. But even if Curtis did have two species before him, surely the name must hold for that form which he figures, and to which figures he refers in both the specific and generic descriptions. This reference in the specific description to the figures makes the venation exhibited by the figures an integral part of the description, a part fully as important as the number of antennal joints or the size. Moreover, Tullgren, in a recent paper on the Swedish species, claims that the male of *lactea* Wesm. has 28 joints in the antennæ instead of 25, so that the differences in this respect between the two forms is less than was supposed by previous writers. There cannot be the faintest doubt as to what the figures of Curtis represent, and since he considered them typical of both genus and species, they must stand for *C. tineiformis,* rather than the doubtful supposition that Curtis had *C. lactea* before him, a form totally at variance with the figures.

[a] Brit. Entom., 1834, Plate 528 and text.

Enderlein[a] has made a new genus, Semidalis, for *C. aleyrodiformis,* but, as I have shown, Curtis's own figures show that *C. tineiformis* has the same venation as *C. aleyrodiformis;* therefore Semidalis is a synonym of Coniopteryx. Wesmael described his species as *Malacomyza lactea,* and the genus is a good one. Fitch based his genus Aleuronia on a precisely similar form; therefore it is a synonym of Malacomyza.

SYNOPSIS OF GENERA.

1. Radial sector of fore wings simple; median vein with two branches; hind wings large and with two forks.....*Aleuropteryx.*
   Radial sector of fore wings forked; median vein with but one branch 2
2. In fore wings the cross-vein from cubitus runs into the lower branch of median vein (not into median itself); two forks in hind wings. *Coniopteryx.*
   In fore wings the cross-vein from cubitus runs into the median vein before the fork 3
3. Hind wings very small and narrow, only one-half the length of fore wings; in hind wings the radial sector is not forked nor does it reach the margin .....*Conwentzia.*
   Hind wings but little smaller than front pair.....4
4. In hind wings both the median vein and the radial sector are forked. *Parasemidalis.*
   In hind wings the radial sector is forked, but the median vein is simple .....*Malacomyza.*

Genus CONIOPTERYX Curtis.

Coniopteryx Curtis, Brit Ent., XI, tab. 528, 1834.
Coniortes Westwood, Introd. Mod. Class. Ins., II, p. 49, 1840.
Semidalis Enderlein, Wien Ent. Zeit., 1905, p. 197.

Head rather longer than broad, much smaller than the thorax; second joint of antennæ without tooth below in male; tibia of middle and hind legs slightly swollen in the middle. In the fore wings the radial sector is forked once, and likewise the median vein; the cross-vein from the cubitus connects to the lower branch of the median vein beyond the fork. The hind wings are about two thirds the size of the fore wings, and are similarly veined, showing two forked veins.

Type: C. tineiformis Curtis (fig. 9 of Curtis's plate).

Coniopteryx vicina Hagen (Pl. VI, fig. 5; Pl. VII, fig. 10).

Head pale yellowish brown, vertex darker; antennæ pale yellowish, hairy, in female very slender, in male somewhat heavier, of about thirty joints (I think there is some variation). Thorax dark brown.

[a] Wien. Ent. Zeit., 1905, p. 197.

Abdomen nearly black. Legs brown, mealy; the hind tibia plainly fusiform, one and one third times as long as femur; tarsi short. Wings dark, mealy (when not rubbed), the extreme outer margin of fore pair often pale. Venation as figured, the veinlet connecting subcosta and radius about its length or more beyond the veinlet closing discal cell; no cross-vein between first and second anal veins. In hind wings the venation is very similar to that of fore pair; the hind wings in both sexes reaching beyond discal cell of fore wing. The apical and posterior margins in both pairs are minutely ciliate. The abdomen of male is very short, and ends as in figure; in female it is nearly twice as long and swollen in the middle.

Length, 2.6–2.9 mm.

I have specimens from Sea Cliff and Hamburg, N. Y.; Lakehurst, N. J.; Plummers Island, Maryland, and Falls Church, Va. I have examined Hagen's type in the Museum of Comparative Zoology; it has outer margin of forewings pale; it is from Washington, D. C. This is our most common species.

Coniopteryx angustus, n. sp. (Pl. VII, fig. 8).

Very similar to *C. vicina,* but the fore wings are more elongate and slender, the apical margin not pale. Venation like *C. vicina,* except that the veinlet connecting subcosta and radius is fully three times its length beyond that closing the discal cell; and that the forks of the radial sector are longer. In the male the upper genital appendage tapers toward tip, while in *C. vicina* it is rather clavate.

Length, 3 mm.

Specimens from Claremont, Cal. (Baker), and Williams, Ariz. (Barber and Schwarz), U. S. N. M.

Genus PARASEMIDALIS Enderlein.

Parasemidalis Enderlein, Wein. Ent. Zeit., 1905, p. 197.

Similar in many respects to Malacomyza, but with rather larger front wings and more slender, while the hind wings have both the radial sector and the median vein forked, and reaching to the posterior margin.

Type: P. annæ Enderlein.

Parasemidalis flaviceps, n. sp. (Pl. VII, fig. 9).

Head yellow; antennæ yellowish, of about 38 joints; thorax and abdomen dark; legs brown, mealy; hind tibia slightly fusiform, not one fourth longer than femur, tarsi rather long, the basal joint longer than usual. Wings dark, mealy; venation as figured, the cross-vein connecting subcosta to radius is about twice its length beyond that closing the discal cell; the cross-vein from median to cubitus is oblique

(not transverse as in Conwentzia and Malacomyza); a veinlet connecting cubitus and first anal present. In hind wings, which are long and slender, reaching beyond discal cell of fore wings, the venation is similar to that of the front pair, but the branch from the radial sector seems to be rather a branch from the median; margins of wings minutely ciliate.

Length, 3.6 mm.

Two specimens from Los Angeles, Cal.

Genus CONWENTZIA Enderlein.

Conwentzia Enderlein, Ber. West-preuss. Bot.-Zool. Ver., 1905, p. 10.

Head rather longer than broad, smaller than the thorax; antennæ simple; tibia of middle and hind legs swollen in middle. Fore wings rather long, both radial sector and median vein forked once; connecting veinlet from cubitus ends in the median before the fork of the latter; the hind wings are scarcely more than one-half as long as the fore pair, and less than one-half as broad, being rather strap-shaped; neither the radial sector nor the median vein is forked, and they do not reach the posterior margin of the wing.

Type: C. pineticola Enderlein.

Conwentzia hageni, n. sp. (Pl. VI, figs. 3, 4).

Head black; antennæ brown, of about 35 joints, more slender in female than in the male; thorax and abdomen brown, male abdomen very short, in female as long as hind wing; legs dark, hind tibia slightly fusiform, one fourth longer than femur, tarsi rather short. Wings pale, mealy; barely ciliate on margins, the cilia being extremely minute. Fore wings rather long, venation as figured, the cross-veinlet from radius to subcosta varies somewhat in position, as well as that from fork of radial sector to the upper branch of median. The hind wings are very short in both sexes, slender and strap-shaped; with but few veins barely reaching the margin.

Length, 3.6 to 4 mm.

I have specimens from Sea Cliff, N. Y.; Washington, D. C.; Falls Church, Va., and Aurora, W. Va., but it is not as common as *Coniopteryx vicina.*

Genus ALEUROPTERYX Löw.

Aleuropteryx Löw, Sitzungsb. Kais. Akad. Wiss. (Math. Natur. Cl.), XCI (1), p. 79, 1885.

Head as broad as long, a little smaller than the thorax; antennæ of male with a tooth below on the second joint; tibia of middle and hind legs not swollen in the middle. In the front wings the radial sector is simple, and the median vein has two branches; the cross-vein

from the cubitus ends in the median much before the forking of the latter vein. The hind wings are but little shorter than the fore pair, and have both radial sector and median vein forked, and reaching the posterior margin.

Type: A. lowii Klapalek.

This genus was supposed by the author to be based on *A. lutea* Wallengren, but it has been shown that Löw's species was not the same. Enderlein has recently[a] made a new genus —Helicoconis—for *A. lutea,* but the differences, in my opinion, are altogether too slight to be of generic importance; the exotic species he places in this genus probably represent two new genera.

Aleuropteryx walshi, n. sp. (Pl. VI, figs. 1, 2).

Head yellowish; antennæ yellowish, short, of about 24 joints; thorax brownish; abdomen yellowish brown; legs brownish, hind tibia not swollen, tarsi long and slender. Wings pale, somewhat mealy (specimen partly rubbed), margins with long cilia, those on costal margin shorter than elsewhere. Wings with venation as figured, the cross-veins in groups, the cross-vein from subcosta to radius only a little beyond that closing discal cell; four basal cross-veins present; in the hind wings the radial sector arises near the base of wing and is forked before the oblique cross-vein closing the discal cell; the median and cubitus in basal half of wing run close together.

Length, 4.5 mm.

One specimen from Agricultural College, Mich., 3 July (Pettit Coll.). It appears to be more like *A. löwii* than like *A. lutea.*

Genus MALACOMYZA Wesmael.

Malacomyza Wesmael, Bul. Soc. Sci. Bruxelles, III, pp. 166, 214, 1836.
Sciodus Zetterstedt, Ins. Lapp., p. 1050, 1840.
Aleuronia Fitch, Nox. Ins. N. Y., I, p. 97, 1856.

Head longer than broad, much smaller than the thorax; second joint of male antennæ simple; tibia of middle and hind legs slightly swollen in middle. Fore wings rather shorter than in the other forms, radial sector and median vein both with one fork, the connecting veinlet from the cubitus ends in median vein much before the fork of latter. In the hind wings, which are only a little shorter than the fore pair, the radial sector is forked, but the median vein is simple, and all the veins reach the margin.

Type: M. lactea Wesmael.

[a] Zool. Anz., XXIX, p. 226, 1905.

SYNOPSIS OF SPECIES.

1. In front wings the cross-veinlets in apical half fairly distinct.....2
   In front wings the cross-veinlet connecting cubitus and median vein distinct; the others almost invisible; in hind wings the radial sector has a long fork .....*westwoodi.*
2. In hind wings the radial sector has a long fork.....*fitchi.*
   In hind wings the radial sector has only a very short fork, close to the margin .....*farinosa.*

Malacomyza westwoodi Fitch (Pl. VII, fig. 7).

Head yellowish; antennæ brown, of about 24 joints, thicker in the male than in the female; thorax and abdomen brown; legs brown, hind tibia barely swollen, tarsi rather long. Wings dark, mealy, with extremely minute cilia around edge, some on hind margin of hind wings quite long. Venation as figured; the cross-veins in outer part of fore wings very faint and indistinct, except that connecting cubitus and median; this one is very prominent. The hind wings are long; the radial sector arises near base and has a long fork, as long as the pedicel; the median is simple, no cross-veins are visible, except that connecting median and cubitus.

Length, 2.4 mm.

Specimens from Falls Church, Va., and Lakehurst, N. J., in May and August. Fitch's specimen was from central New York; I do not think it is now in existence, but his description leaves no doubt as to the species.

Malacomyza fitchi Banks (Pl. VII, fig. 6).

Head brownish; antennæ yellowish, slender in female, heavy in male, of about 28 joints; thorax brownish; abdomen yellowish; legs pale, hind tibia not swollen, tarsi long. Wings pale, with long cilia around outer and posterior margins, short on front margin. Venation as figured, forks of radial sector longer than discal cell, the veinlet closing discal cell and that next below out some distance on the forks (not at base as in other species), the veinlet between median and cubitus at least its length before the fork of median; in one specimen the veinlet to subcosta is just above that closing the discal cell. In hind wings, which are almost as long as fore pair, the radial sector has long forks, and the median is simple.

Length, 2.5 mm.

Besides the type from Colorado, I have one specimen from Onaga, Kans. (Crevecoeur), which agrees in all essential points.

Malacomyza farinosa, n. sp. (Pl. VII, fig. 11).

Head brown, small; antennæ pale yellowish brown, of about 26 joints; thorax brown; abdomen yellowish; legs pale brownish, mealy, hind tibia barely swollen, one-fourth longer than femur, tarsi long. Wings pale, mealy, minutely ciliate on margins, venation of fore wing as figured; the cross-vein between cubitus and median more than its length in front of the fork of median; forks of radial sector fully as long as discal cell. The hind wings are long and reach much beyond discal cell of fore wings; the median vein is not forked; the radial sector is forked only near tip, so that the pedicel from discal cross-vein is twice as long as the fork.

Length, 2.7 mm.

One female from San Mateo Co., Cal. (Baker). Readily known by short fork of radial sector in hind wings.

CATALOGUE.

Genus CONIOPTERYX Curtis.

C. vicina Hagen, Syn. Neur. N. Amer., p. 197, 1861.
C. angustus Banks, n. sp.

Genus PARASEMIDALIS Enderlein.

P. flaviceps Banks, n. sp.

Genus CONWENTZIA Enderlein.

C. hageni Banks, n. sp.

Genus ALEUROPTERYX Löw.

A. walshi Banks, n. sp.

Genus MALACOMYZA Wesmael.

M. westwoodi Fitch, First Rept. Ins. N. Y., p. 98, 1856. (*Aleuronia.*)

M. fitchi Banks, Trans. Amer. Ent. Soc., XXII, p. 315, 1895. (*Coniopteryx.*)

M. farinosa Banks, n. sp.

EXPLANATION OF PLATES.

FIG. 1. *Aleuropteryx walshi:* fore wing.
2. *Aleuropteryx walshi:* hind wing.
3. *Conwentzia hageni:* hind wing.
4. *Conwentzia hageni:* fore wing.
5. *Coniopteryx vicina:* fore wing.
6. *Malacomyza fitchi:* fore wing.

7. *Malacomyza westwoodi:* fore wing.
8. *Coniopteryx angustus:* male genitalia.
9. *Parasemidalis flaviceps:* fore wing.
10. *Coniopteryx vicina:* male genitalia.
11. *Malacomyza farinosa:* fore wing.

In the discussion which followed Doctor Ashmead stated that he had found Coniopteryx feeding on a red spider (Tetranychus) on rose leaves. He had also found it eating aphides.

MAY 10, 1906.

The 205th regular meeting was held at the residence of Mr. O. Heidemann, 531 Randolph street, N. W., Petworth, D. C. Vice-president Hopkins occupied the chair and there were present Messrs. Busck, Caudell, Currie, Hopkins, Knab, Patten, and Piper, members, and Mr. Douglas H. Clemons, visitor.

Mr. W. W. Yothers, of the Bureau of Entomology, U. S. Department of Agriculture, was elected a corresponding member.

The Executive Committee reported that they had rented a room of the Security Storage Company, of Washington, D. C., for the storage of the publications of the Society.

Doctor Hopkins reported finding the larva of *Pissodes dubius* Rand. in balsam fir in New Hampshire, in the splintered portion of storm-broken trees. There was none of this species, however, in the trees which died of a root fungous disease. The work of *Dendroctonus piceaperda* Hopk. was found at altitudes above 2,000 feet, but none below. Old galleries were observed which must have been made some thirty or forty years ago.

Mr. Busck presented the following paper:

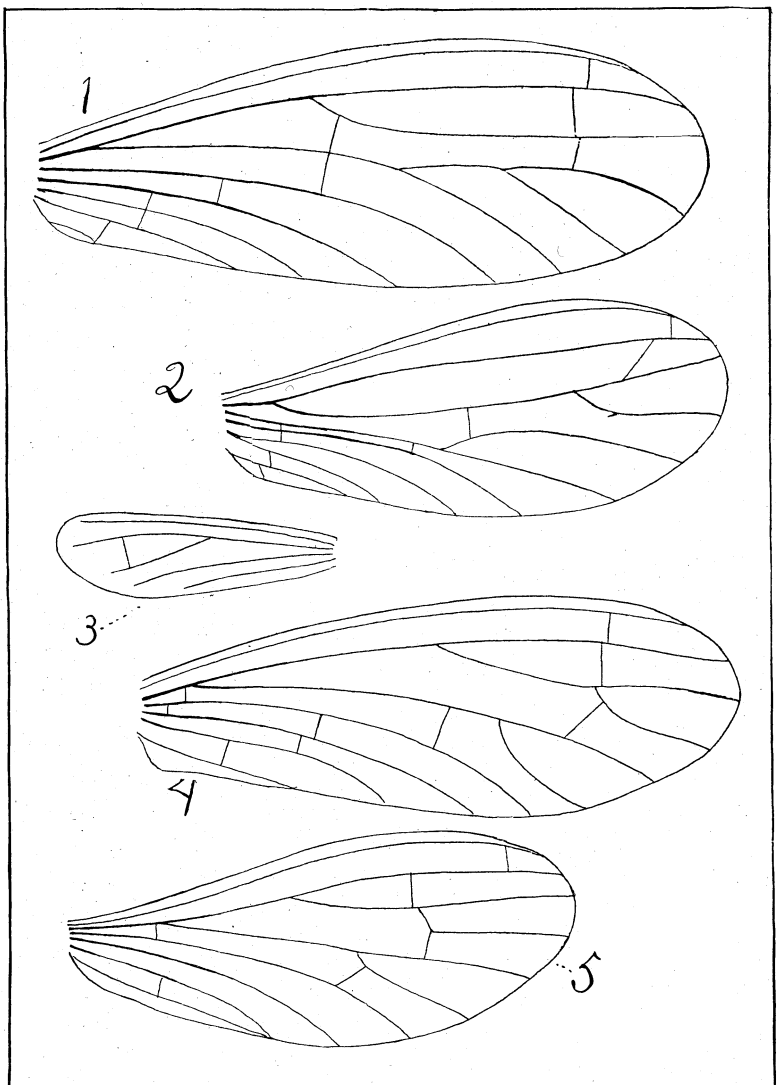
NEW AMERICAN TINEINA.

By AUGUST BUSCK.

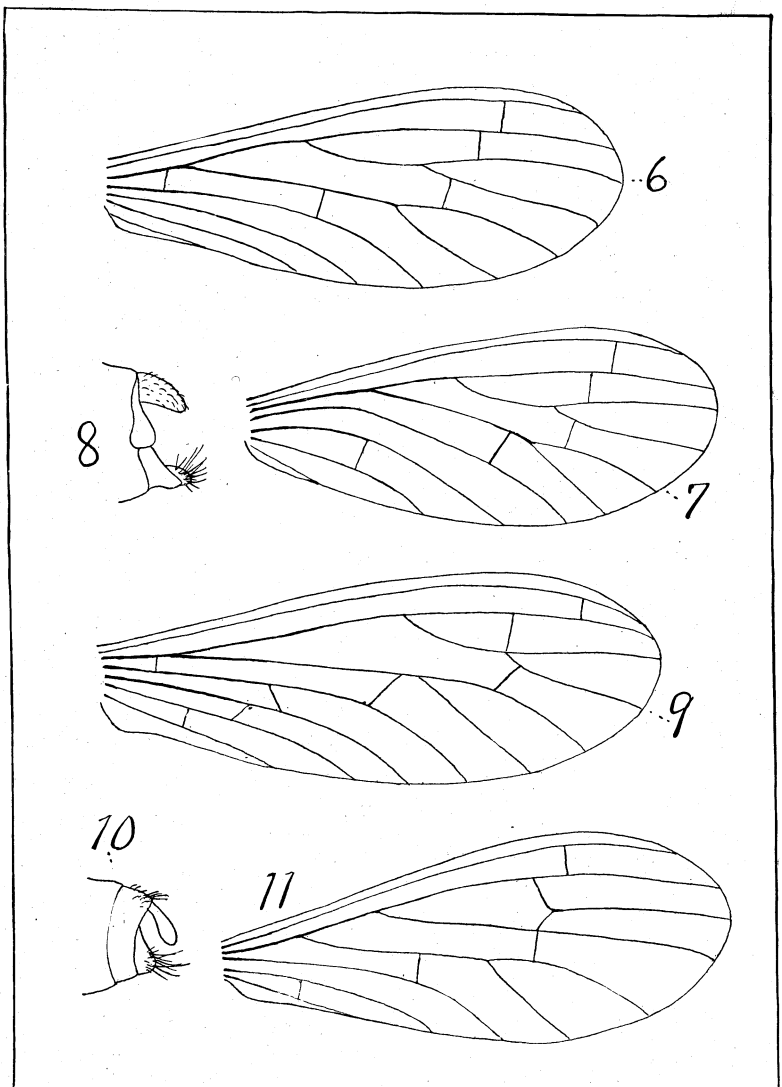
Family YPONOMEUTIDÆ.

Choreutis schausiella, n. sp.

Antennæ blackish brown, checkered above with white, and witn long ochreous cilia. Labial palpi dark brown, liberally sprinkled with white



NEARCTIC CONIOPTERYGIDAE.



NEARCTIC CONIOPTERYGIDAE.