

—The Secretary read the following note, submitted by Mr. T. D. A. Cockerell:

INSECTS IMPALING THEMSELVES.

By T. D. A. COCKERELL.

While the insects impaled on thorns by shrikes are familiar objects, it seemed to me, when the subject was under discussion, that the probabilities of an insect ever impaling itself must be very slight. Therefore, it seems worth while to bring before you a couple of instances just communicated to me by eye-witnesses, whose veracity I do not in the least doubt. Mr. C. W. Alexander tells me he has seen the big lubber grasshopper—which is common in this region—impale itself on the sharp leaf of the broad-leafed *Yucca* at the Gold Camp, near the Organ Mountains. Mr. R. E. Condit, when driving by Coats Creek, in S. W. Colorado, found numbers of large black crickets which, in their haste to escape from the feet of the horses, jumped against the cacti lining the road, and many of them were impaled on the spines.

—The following paper was presented by Mr. Ashmead:

DESCRIPTIONS OF FIVE NEW HYMENOPTEROUS PARASITES ON *CANARSIA HAMMONDI* (RILEY).

By WILLIAM H. ASHMEAD.

The descriptions of the following new species were drawn up some two years ago at the request of Prof. S. A. Forbes, of the Illinois State Laboratory of Natural History, to accompany an article by Prof. W. G. Johnson, on the habits of *Canarsia hammondi*, and represent only a small proportion of the parasites reared from this moth.

FAMILY ICHNEUMONIDÆ.

Spilocryptus Thomson.

Spilocryptus canarsiæ, sp. n. [Fig. 4.]

♂.—Length 6 mm. Head and thorax black, shining, clothed with a sparse whitish pubescence, the thorax rather closely punctate, with distinct parapsidal furrows, the head almost smooth, with some minute punctures on cheeks; face, except two black lines extending forward from base of each antenna, the clypeus, except the extreme apical margin which has a medial emargination, the mandibles, except the teeth, mouth-parts, ex-

cept basal joints of maxillary and labial palpi, the inner orbits on frons, interrupted opposite the lateral ocellus, a small line behind the eyes, a spot on scape beneath, the scutellum, except at base, the postscutellum, the tegulæ, a spot beneath and before, a line before anterior coxæ, the basal margin of prosternum, a large spot beneath the anterior and the middle coxæ and their trochanters, tibiæ and tarsi *outwardly* and the hind tarsi, except basal half of first joint and the last joint, all white; the anterior and middle femora, tibiæ and tarsi *beneath* and the extreme base of

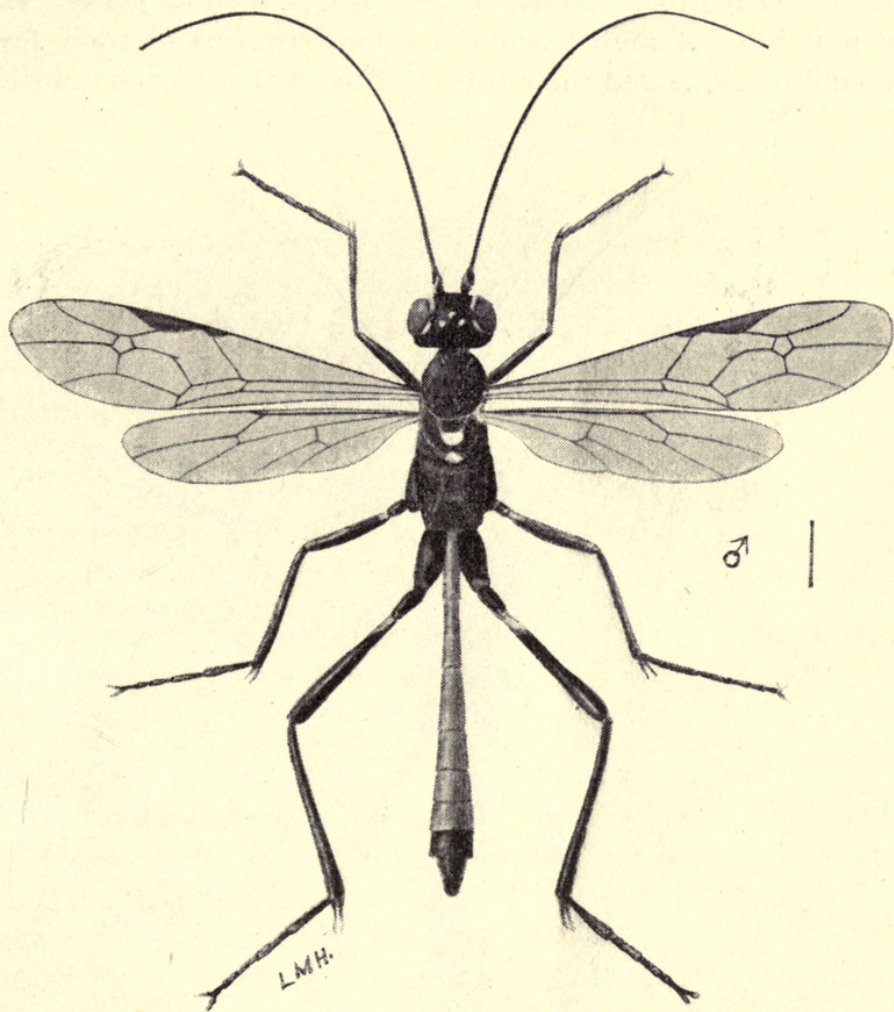


FIG 4.—*Spilocryptus canarsis*.

hind femora, including part of trochanters, are brownish-yellow; abdomen, except the last dorsal segment and the very broad genital sheaths which are black, rufous; the petiole is a little longer than the second segment, the third segment a little shorter than the second, the fourth about half the length of the second, the following gradually shortening; wings hyaline, the costæ and stigma fuscous.

Hab.—Champaign, Ill.

Types in Coll. Illinois State Laboratory of Natural History and my collection.

Described from a single ♂ specimen bred September 15, 1894, from a cocoon of *Canarsia hammondi*, by W. G. Johnson, and several specimens in my collection taken at Washington, D. C., and elsewhere.

The species comes closest to *Cryptus nigricornis* Prov.

Limneria Holmgren.

Limneria (*Sinophorus*) *canarsiae*, sp. n. [Fig. 5.]

♀.—Length 5 mm.; ovipositor 1.5 mm. Black, finely punctate; mandibles, palpi and tegulæ, yellowish-white; legs reddish-yellow, the hind coxæ, the first joint of their trochanters, extreme tips of their femora, a subbasal band on tibiæ and their tips, and their tarsi, black; an annulus

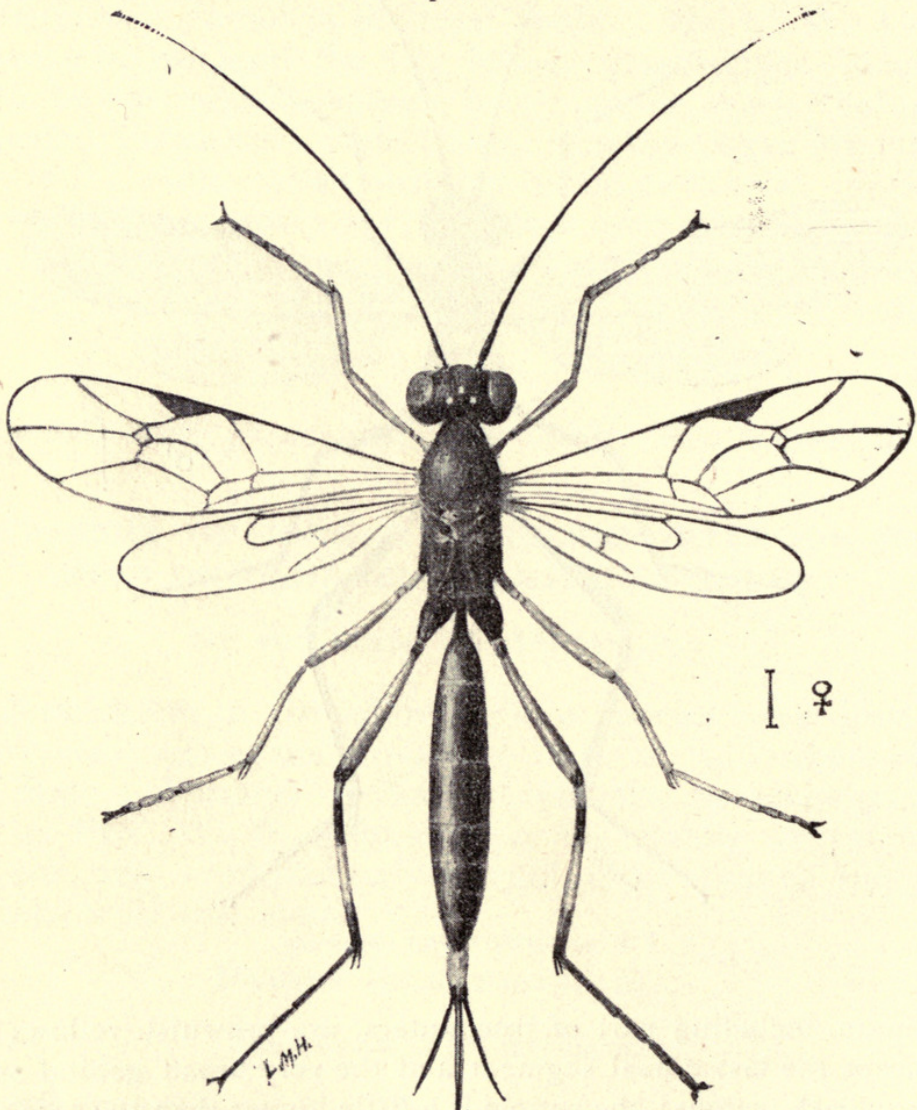


FIG. 5.—*Limneria canarsiae*.

at base of the hind tibiæ, a broad band at their middle and the base of first and second tarsal joints, white; claws pectinate; wings hyaline, the costæ, except toward base, and the stigma fuscous, the internal veins paler; areolet distinct, sessile.

Hab.—Normal, Illinois.

Type in Coll. Illinois State Laboratory of Natural History.

Described from a single ♀ specimen bred July 23, 1886, from *Canarsia hammondi*, by C. M. Weed.

This species in general appearance comes nearest to *Limneria annulipes* Cr. and *L. pterophoræ* Ashm., but it is larger and readily separated by the subsessile areolet, pectinate claws, and by the color of the anterior and middle coxæ and trochanters. It belongs evidently in Förster's subgenus *Sinophorus*.

FAMILY BRACONIDÆ.

Apanteles Förster.

Apanteles canarsiæ, sp. n. [Fig. 6.]

♀.—Length 2.1 to 2.25 mm.; ovipositor prominent, about two-thirds the length of abdomen. Black, shiny, pubescent, finely, closely punctate, the

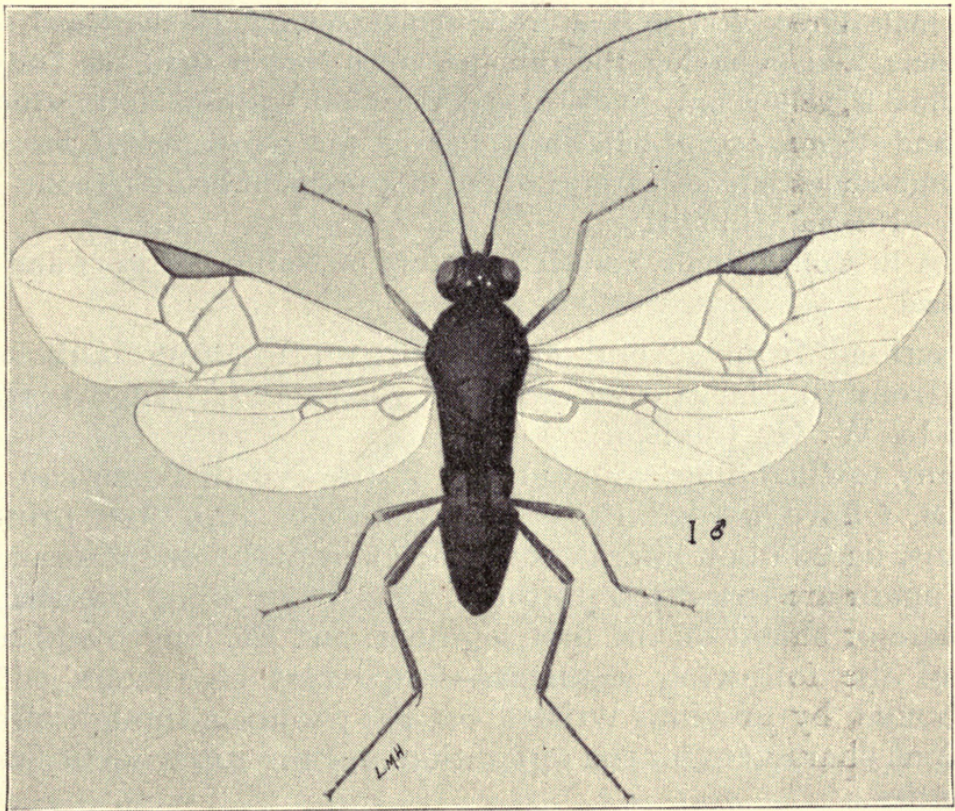


FIG. 6.—*Apanteles canarsiæ*.

occiput, temples posteriorly, and the posterior half of the mesopleura and the metapleura smooth, shining, impunctured. The thorax above is subopaque, closely punctate; palpi white; second joint of anterior trochanters, apical half of anterior femora, and their tibiæ and tarsi, except last joint, knees of intermediate legs, base of their tibiæ and tarsi, except last joint, basal two-thirds of hind tibiæ and an annulus at extreme base of their tarsi, honey-yellow; all tibial spurs white. Metathorax transverse quadrate, smooth, shining, with a large well-defined rhomboidal or

hexagonal median area. Abdomen as long as the thorax, the ventral valve very large, plowshare-shaped, and projecting considerably beyond the tip of the abdomen, the ovipositor long; plate of first segment about twice as long as wide, with the sides parallel, the apical corners slightly rounded, shagreened, and with a longitudinal median sulcus towards apex; second and third segments nearly smooth, at the most feebly shagreened, the second very short, about half the length of the third, with oblique grooved lines at basal lateral margins, but so widely separated and so close to the lateral margins as to be easily overlooked; fourth segment a little shorter than the third, the fifth a little longer than the fourth, the following very short. Wings hyaline, the costa and stigma dark brown or fuscous, the internal veins hyaline, the areolet open behind, the inner margin of same being about half the length of the first branch of the radius, while the submedian cell is one-half the length of the discoidal cell longer than the median cell.

The male agrees very well with the female, except in the usual sexual differences, and in having the antennæ much longer than the body, the hind tibiæ is yellow only at base, and the tarsi entirely black, while the costæ and stigma, except outer margin, and the postmarginal, are white, the membranous lateral margins of the first segment being piceous.

Hab.—Normal, Illinois.

Types in Coll. Illinois State Laboratory of Natural History and Coll. Ashmead.

Described from several specimens, representing both sexes, bred from the larva of *Canarsia hammondi*, August 10–14, 1894, by W. G. Johnson.

In my forthcoming monograph of the North American Braconidæ, I have divided the genus *Apanteles* into five principal sections, based upon characters derived from the metathorax, and these again are separated into divisions based upon the shape of the plate or shield on the first segment, and the length and sculpture of the following segments—important characters entirely overlooked by previous writers on the group, although offering excellent characters for the separation and the ready identification of species.

The present species belongs to my Section I, and comes nearest to *A. carpatus* Say and *A. edwardsii* Riley, but is quite distinct from both, in color of legs, and in sculpture and relative length of the abdominal segments.

FAMILY CHALCIDIDÆ.

Elasmus Westwood.

Elasmus meteori, sp. n. [Fig. 7.]

♀.—Length 1.6 mm. Æneous-black; abdomen mostly rufous, the third and fourth segments above with a transverse black band at apex, the fifth

with a black band at base, the sixth and seventh segments and ovipositor sheaths entirely black; scape white, flagellum brown, pubescent, about one and a half times as long as the scape; pedicel and first funicular joint with ring joint, of an equal length, the second joint of funicle slightly the shortest joint, the third a little longer and stouter than the second; legs mostly white, but clothed with a black pubescence; anterior coxæ with a triangular black spot at base a little toward one side, their femora with a row of short black bristles within and along the posterior margin; middle femora, except at base and apex, black, their tibiæ with two straight rows of bristles outwardly, their tarsi blackish from the density of the pubescence; hind coxæ and femora outwardly black, their tibiæ and tarsi white, but somewhat obscured by the pubescence; the pubescence on the hind margin of the tibiæ is arranged to form about seven links of a chain,

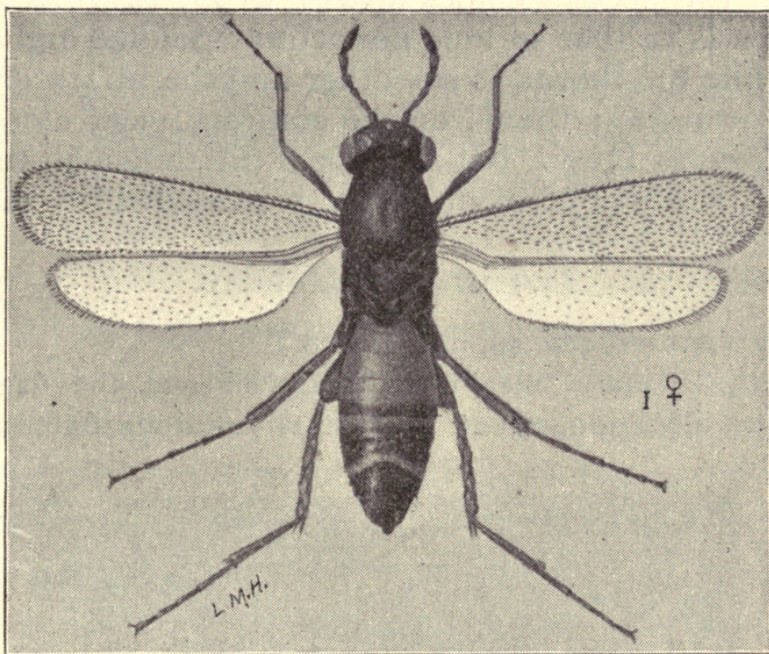


FIG. 7.—*Elasmus meteoris*.

the first and last links or areas being small, while the pubescence on the tarsi is quite dense and entirely hides the white color, except along the hind margins of the joints.

The head, viewed from in front, is a little longer than wide, the vertex rounded, the frons convex, and with a sparse, thimble-like punctation, about as in *E. atratus* How., the facial impression distinct, extending upwards to about half the length of the head, where it terminates in a transverse ridge which sharply separates the frons from the lower part of the face; thorax nearly smooth, but with a feebly impressed reticulated sculpture; postscutellum narrowly margined with white; wings hyaline, pubescent, the marginal vein a little more than twice as long as the submarginal, the stigmal vein minute, sessile.

♂.—Length 1 mm. Entirely black or deep blue-black, except the sutures

between the articulations of the legs (coxæ, trochanters, &c.), the apex of anterior femora and all tibiæ and tarsi, are white, but appear black from the dense pubescence that cover them; the scape is æneous-black, the flagellum dark brown with three long branches; otherwise similar to female.

Hab.—Champaign and Tonti, Illinois.

Types in Coll. Illinois State Laboratory of Natural History and Coll. Ashmead.

Described from several specimens bred August 27 and September 9, 1894, by W. G. Johnson, from cocoons of *Meteorus vulgaris*, a primary parasite of *Canarsia hammondi*, and possibly also from the cocoons of *Apanteles canarsiæ* described above.

The ♀ of this species comes nearest to *E. varians* How., but the abdomen is neither so long nor acutely pointed and differently colored, while the thorax is smoother and the pubescence of legs differently arranged; the ♂, on the contrary, very closely resembles *E. nigripes* How., but the slight difference in the color of the legs and the arrangement of the bristles readily separate the species.

Tetrastichus Haliday.

Tetrastichus cœrulescens, sp. n. [Fig. 8.]

♀.—Length 1.5 mm. Steel-blue; scape æneous, the flagellum subclavate, brown-black, pubescent, the joints delicately fluted; funicle 3-

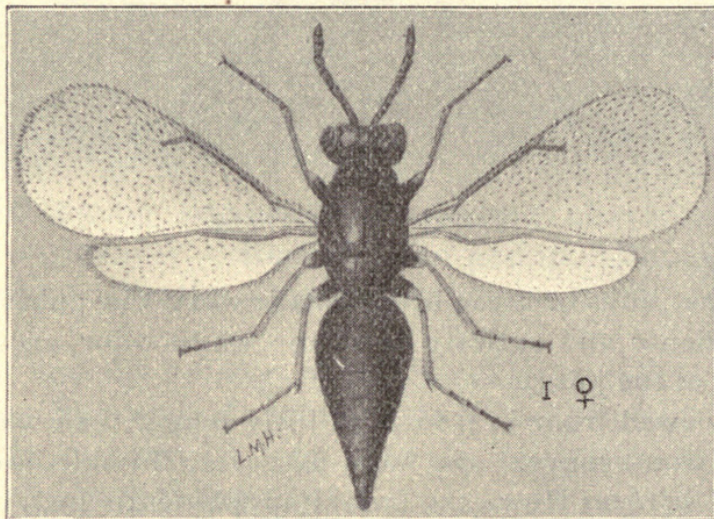


FIG. 8.—*Tetrastichus cœrulescens*.

jointed, the first joint the longest, slightly longer than the second, the third slightly shorter than the second; club fusiform, 3-jointed, a little longer than the last two joints of funicle united and stouter; tips of femora, and the tibiæ and tarsi, except two last joints, white, the two

terminal joints of tarsi fuscous, while the hind tibiæ toward base behind has a slight brownish blotch or spot; abdomen conic-ovate, pointed at tip, a little longer than the head and thorax united; wings hyaline, the venation pale brown; otherwise the characters are typical of the genus.

♂.—Length 1.2 mm. Agrees with the ♀, except the funicle is 4-jointed, the abdomen being oblong-oval, cylindrical, not longer than the head and thorax united.

Hab.—Champaign, Ill.

Types in Illinois State Laboratory of Natural History.

Described from 1 ♂ and 1 ♀ specimen bred September 6 and 21, 1894, by W. G. Johnson, from *Habrobracon (Bracon) gelechiæ* Ashm. and the primary parasite of *Canarsia hammondi*.

In discussing this paper, Mr. Johnson spoke of the great injury which *Canarsia hammondi* had done to young apple trees in McLain county, Illinois. In one season damage to the amount of \$1,500,000 had been done. One block of trees containing 125,000 had been completely destroyed. He found, among other interesting facts, that this insect pupates in the ground and not in the leaves, so that Riley's recommendation to burn the leaves as a remedy is ineffective. In the course of his investigations, he reared 13 species of parasites, all but one of which were hymenopterous. Of the 12 Hymenoptera, 10 were primary parasites. He gave some rearing notes concerning these 10 species and showed that *Habrobracon gelechiæ* was the most important, and constituted in number of specimens four-fifths of all which were reared. The habits of this species were given in full, showing that only 12 days elapsed in the development of the insect from the egg to the adult. Among other species, he mentioned a *Perilampus* as a primary parasite, and this record was at once questioned by Mr. Howard, who suggested that the insect was more likely to have been a parasite of the *Chrysopa* which had crawled into the *Canarsia* cocoon to spin its own cocoon.

Mr. Johnson stated that he had not examined the *Canarsia* cocoon from which this insect emerged. Mr. Ashmead considered it more likely that the *Perilampus* had been a parasite upon the dipterous parasite reared by Mr. Johnson.

—The following paper was read:



Ashmead, William H. 1898. "Descriptions of five new Hymenopterous parasites on *Canarsia hammondi* (Riley)." *Proceedings of the Entomological Society of Washington* 4, 124–131.

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