

The Canadian Entomologist.

VOL. XLVII.

LONDON, NOVEMBER, 1915

No. 11

POPULAR AND ECONOMIC ENTOMOLOGY.

INSECT FRIENDS AND FOES OF AGRICULTURE.*

BY LAWSON CAESAR, GUELPH, ONT.

Every farmer is forced to come in contact with his insect foes, and, therefore, knows something about them, but very few farmers know that there is a large number of insects that are not foes at all, but are friends. We shall, therefore, discuss these friends first.

Insect Friends.

The first class of friends we shall treat of is composed of those insects which aid agriculture by acting as pollenizers of plants. Almost everyone knows that before a plant can produce a fruit or seed some of the pollen must first be placed on the sticky tip of the pistil. This act fertilizes the plant and is called "pollination." In this work honey bees are the most important insect agents, but bumble bees and numerous other wild bees help greatly, as do also wasps, various kinds of flies, moths, butterflies and many other insects. Many of the lower kinds of plants, or plants with inconspicuous flowers, are pollinated in other ways, such as by the wind, but nearly all plants with conspicuous bloom require the aid of insects for proper and full fertilization. What would happen if we had none of this class of insect friends? We should not have more than one apple, or pear, or plum, or peach or any of our other much loved fruit to the one hundred or more we now enjoy. Moreover, there would be practically no fields of tomatoes, peas or beans, or of several other crops that are so necessary to us as foods.

The second class of insect friends consists of those insects that supply us with food, either directly or indirectly, through serving as food for the fish and birds that we use as food. Many tons of honey are produced in every country by the honey bee. A large part of the food of fresh-water fishes consists of the water insects

*An address delivered before the School for Rural Leadership.

NEW FOSSORIAL HYMENOPTERA.

BY NATHAN BANKS, EAST FALLS CHURCH, VA.

Included below are descriptions of several new species of fossorial wasps of the families *Psammocharidæ* and *Philanthidæ*.

PSAMMOCHARIDÆ.

***Ageniella hestia*, n. sp.**

Similar to *A. apicipennis*; clypeus and basal joints of the antennæ yellow; posterior margin of the pronotum whitish; abdomen partly reddish yellow on sides of the second segment, and basal part of the venter; legs partly yellow, but on mid legs the tibiæ are brown and tarsi blackish, and on hind legs black on tip of femur, all of tibia and tarsus; spurs pale. Wings scarcely darker at tip, the third submarginal higher than long, a little narrowed above, receiving the second recurrent before the middle; thorax sericeous; abdomen sessile, slender.

One male from Falls Church, Va., Aug. 30, differs from *A. apicipennis* in pale margin of the pronotum, black on middle and hind legs, heavier venation, and slightly different shape of the third submarginal cell.

***Ageniella cupidella*, n. sp.**

Female resembles *cupida*, but smaller, the first recurrent meeting second submarginal cell plainly before middle, and antennæ shorter, the second and third joints together hardly equal the vertex width. Head and thorax bluish green, abdomen blackish, shining, few long hairs on clypeus and vertex, and tip of the abdomen. Legs black, inner spur of hind tibia one-half the length of the metatarsus; fore wings blackish, third submarginal all long below, much shorter above, receiving the second recurrent at middle; second submarginal plainly shorter than the third, receiving the first recurrent plainly before middle.

Length 7 mm.

From Ridgeway, Ont., Can., July 9 (Van Duzee).

***Ageniella tenella*, n. sp.**

Male black, slightly sericeous, spurs pale, anterior tibiæ and tarsi pale, and sometimes pale on mid and hind legs; abdomen rather

brownish black, hind margins of segments faintly reddish. Body very slender, abdomen sessile; wings faintly dusky, basal transverse veins of fore wings disjointed; second submarginal longer than broad, receiving first recurrent at middle; third submarginal higher than long, narrowed above, receiving the second recurrent before middle, latter vein faintly bent out in middle; these cells nearly as in *atrata*, but in that species the second recurrent is received at middle and the discoidal is consequently longer.

Length 5.8 mm.

From Niagara Falls, July 31, and Boston, Aug. 1, both N. Y. (Van Duzee). Differs from *A. atrata* in white spurs, and more slender body.

Priocnemis hesperus, n. sp.

Very similar to the Eastern *P. subopacus*, the marginal cell blunt at tip as in that species. It is separated by the coarsely striated metanotum. It is black, with few long hairs on vertex and mesonotum, none on the face, pronotum nor metanotum, but some on the venter and apex of the abdomen. The vertex and the ocellar triangle are broader than in *P. subopacus*, the eyes not being as much approximated as in that species; the abdomen is more shining than in *P. subopacus*. The wings are deep black, the venation like that of *subopacus*, but the outer side of marginal cell is more angulate rather than rounded; size the same.

From Stanford Univ., Calif. (Doane).

Priocnemis fortella, n. sp.

This is close to *P. fortis*, but differs in pale wings, much smaller size, in the still shorter antennæ, and longer hind spurs. The body is black and densely hairy, the face and ocelli about as in *P. fortis*; the antennæ short and thick; the fourth and fifth joints hardly twice as long as broad (three times or more in *fortis*); metanotum striate as in *fortis*; the hind tibia, even in female, still less serrate than *fortis*, the serrations scarcely distinguishable; the inner spur of the hind tibia fully one-half the length of the metatarsus (in *fortis* scarcely one-half the length of the metatarsus). Venation about the same, the veins extending out to the margin; the fore wings are scarcely darkened (deep black in *fortis*).

Length 10 mm.

From Great Falls, Va., June 12, 29.

PHILANTHIDÆ.

Cerceris nigritulus, n. sp.

Male very similar to *C. nigrescens* Sm., but distinct by dark stigma. Markings as in *C. nigrescens*, rather more yellowish, but in only specimen seen no spots on pronotum, nor on basal segment of abdomen, and ventral marks nearly obsolete. The face broader, or rather not so long as in *C. nigrescens*, the clypeus broadly, evenly rounded below, and very strongly convex in the middle, so that when seen from the side it is plainly protuberant, hair lobes not as broad as in *C. nigrescens*, punctation and enclosure as in *C. nigrescens*; pygidial area not as long as in *C. nigrescens*, and with nearly parallel sides. A size smaller than that species.

From Colden, N. Y., July 3 (M. C. Van Duzee). In my table it runs to 24, and of the species there included it is nearest *C. nigrescens*, but differs from all in dark stigma.

Cerceris dakotensis, n. sp.

Female black; base of mandibles, spot on the clypeal process, large spot each side of face near the eyes, small spot each side on pronotum, tegulæ, postscutellum, broad band on second abdominal segment (slightly narrowed in the middle), narrow bands on other segments (broader at sides), yellow. Legs rufous, or yellowish, front and middle femora dark at base; basal half of antennæ yellowish, or rufous beneath, tip rufous behind. Body moderately coarsely sculptured, clypeal process longer than broad, narrowed toward tip, not horizontal, but very much deflected; enclosure rather strongly striate all over; abdomen slender, basal segment only a little more than one-half as wide as the second at tip; others not wider than the second; pygidial area very long, with subparallel sides. Wings plainly fumose, darker at costal tip, stigma yellowish.

Male similar in size to the female, and the abdomen also slender; face below antennæ all yellow, other marks as in female, small lateral spots on venter yellow; and one specimen shows spots on the metanotum and first abdominal segment; large dark spot near tips of hind femora, and faint dark mark near tips of hind tibiæ. Last joint of antennæ slightly curved, third joint not as long as fourth and fifth together. Clypeus slightly convex in the middle, the anterior margin here black, and with three teeth; clypeal hair

lobes about one and one-half their breadth apart, pygidial area coarsely punctate, sides parallel, about one and a third times as long as broad; enclosure as in female.

Length 11 mm.

From Fargo, N. Dak., July 7 to Sept. 6 (Stevens coll.), on *Solidago serotina*. In Swenk's table it runs to *imitatoria*, but in that species the band on the second segment is no broader than the others.

***Cerceris floridensis*, n. sp.**

The male runs to *C. morata* in my table, but larger, the hair-lobes of clypeus much narrower, and the enclosure different. Head broad, face reddish, clothed with white hair; clypeus prolonged in middle, the hair lobes small, fully three times their width apart; antennæ pale on base, and extreme tip; vertex and back of eyes reddish, pronotum, tegulæ, spot beneath on side, scutellum, postscutellum, large spot on sides of metanotum, first and second segments of abdomen above and below, reddish or yellowish red; legs mostly yellowish red. Wings blackish, marginal cell black, stigma yellowish; second submarginal twice as long as high. Body very coarsely punctate, enclosure large, smooth, faint traces of striation. Abdomen broad, basal segment much broader than long, but little more than one-half as wide as the second. Pygidial area hardly one half as wide at tip as at base, once and a half as long as broad at base, coarsely punctate. Last joint of antenna longer than preceding, curved.

Length 14 mm.

From Gulfport, Fla. (Reynolds). In general it is related to *C. gnarina*.

***Cerceris carrizonensis*, n. sp.**

In the New Mexico table this runs to *C. convexus*; it differs in the marginal cell being not black, but hyaline, and in lacking a spot on pleura behind the tubercles.

Male small, black, face below antennæ yellow, enclosing a black dot each side at angle of clypeus; basal joint of the antennæ yellow, next black, beyond brown. Two spots on the pronotum, tegulæ, two spots on the scutellum, the postscutellum, band across basal segment, rather narrow band at apex of each of the other segments.

Legs yellow, mid femur black on base, hind femora with large black spot near the tip, hind tibiae also with black spot near tip; hind tarsi dark. Wings infuscated, but not very dark, the stigma dark brown, marginal cell no darker than rest of the wing. Body not very coarsely punctate, face with dense white hair, clypeus slightly, evenly convex; hair lobes rather broad, hardly one and a half their breadth apart; antennae short, last joint short, not curved. Enclosure roughly punctate, no striation. Abdomen short, hardly longer than thorax, basal segment narrow, longer than broad, not one-half the width of the second segment; pygidial area not much wider at base than at tip, not one and a half times as long as broad; in the wings the first recurrent runs into second submarginal cell before middle. Body densely long haired, especially noticeable on the thorax, the hair here twice as long as in most species.

Length 6 mm.

From Walde, Texas.

Eucerceris apicata, n. sp.

Male reddish, face yellow up to the ocelli; the pronotum, scutellum, postscutellum, two oblique spots on the enclosure, tegulae, tubercles, two large spots on pleura below tegulae, large side spot on the metathorax, all yellow. On the anterior part of the mesonotum are four yellow streaks, and between them the surface is blackish. Abdomen yellow, the narrow basal part of each segment reddish to blackish; venter with yellow side spots on the basal segments. Legs reddish, with yellow on front of the femora and tibiae of anterior and middle pairs. Wings hyaline, a dark cloud from the second submarginal and marginal cell out to tip, this spot not extending basally. Body rather coarsely punctate, but the enclosure smooth; third and fourth ventral segments with erect row of yellow hairs. Related to *E. canaliculatus*; the second submarginal cell more quadrangular, and the smooth enclosure distinctive.

Length 11 mm.

From Yuma, Arizona.

Philanthus assimilis, n. sp.

Male close to *P. bilunatus*; thorax and abdomen smooth as in that species, enclosure with the pit as in *bilunatus*. Markings about

as in that species; the middle face-mark, however, is much larger and broader below, and at this point the head is more protuberant than in *P. bilunatus*; there is a spot behind eye, and below tegulae, yellow. Abdomen with the first segment showing two small spots, the second segment with a very broad band, almost divided in the middle; third and fourth bands narrow, and emarginate each side in front. Last segment more emarginate than in *P. bilunatus*. Legs with femora (except tip) black, rest of legs yellow. Wings infuscate, rather broader than *P. bilunatus*, the third submarginal as broad as long; vertex broader than in *P. bilunatus*.

Length 10 mm.

From Boston, N. Y. (Van Duzee).

***Philanthus subversus*, n. sp.**

Male—Face yellow, an oblique black streak up from the base of the antenna, connecting to the black vertex; malar space and the mandibles (except tip) yellow; basal three joints of antennae yellow, rest rufous, darker above, second joint with a black dot above; vertex with curved yellow band and long streak back of eye (as in *sublimis*), collar, tegulae, tubercles, most of pleura, four short streaks on anterior part of mesonotum, two spots on scutellum, and spot each side of it toward base of wing, postscutellum, two oblique spots at side of enclosure, large side stripes on mesonotum reaching down on pleura, all yellow. Abdomen with broad spot each side nearly meeting above; other segments with bands, very broad on the sides, triangular median incision in front of second, emarginations on other bands, last segment all yellow; venter almost all yellow, with two black bands. Wings faintly fumose, stigma yellow, veins brown; legs yellow, last joint of tarsus rufous. Head minutely punctate, the clypeus nearly smooth, acutely produced in the middle below; thorax sparsely punctate, collar and the postscutellum smooth, metathorax more densely punctate; enclosure finely, transversely striate; abdomen broad, rather coarsely punctate, last segment smooth. In wing the third submarginal cell no broader above than second, basal sides of the second submarginal cell subequal.

Length 8.5 mm.

From Palmerlee, Arizona (Biederman).

Philanthus vertilabris var. **completus**, n. var.

Male similar in markings to type, but the bands of abdomen beyond that on the second segment are all much broader than in normal eastern form. Sculptured as in typical form; the upper yellow face mark much larger than *vertilabris*, and its upper edge not so much emarginate; in the wings the second submarginal cell has its upper basal side twice as long as the lower basal side. In the new Mexico table it runs to *P. cockerelli*, from which it is separated by different markings.

Length 12 mm.

From San Diego Co., California (Van Duzee).

FIELD NOTES AND QUESTIONS.**MIGRATING NOTES ON THE MILKWEED BUTTERFLY,
Anosia plexippus.**

BY F. M. WEBSTER, WASHINGTON, D. C.

For a number of years the writer has been able to record the banding together of this butterfly as observed by him at various points in the United States. Supposedly these gatherings are preparatory to the annual southward autumnal migration of the species.

The present year, 1915, my son, R. L. Webster, observed one of these gatherings near Ames, Iowa, on August 30th; an exceptionally early record, as such assemblings together do not usually occur until September or October.

The writer observed a swarm of these butterflies near Waterman, DeKalb County, Illinois, on September 18, a little north of the latitude of Ames, but some two hundred and seventy-five miles farther east.

It would seem that there is no general uniformity in the dates of the congregating together of these detachments and it would be exceedingly interesting to learn just what laws, if any, regulate the collecting together and of the different swarms, and if they resemble in any way the systematic migrations of birds.