

NOTES ON THE EASTERN SPECIES OF CERCERIS. (HYM. PHILANTHIDÆ.)

By NATHAN BANKS.

The species of *Cerceris* are among the prettiest of our entomophilous wasps; usually black, with bands and spots of yellow, of the general appearance of many species of *Crabro*. They are most abundant on flowers in July, some occur in June, and others as late as October. They are not especially shy, so are readily taken in the net.

The sexes are easily distinguished as the male shows seven abdominal segments, while the female has apparently but six. In the male at each side of the clypeal margin is a series of hairs set close together, forming a hair-lobe. In the females of many species the upper part of the clypeus is elevated into various shapes, according to the species. In the female the pygidial area is rather dull, and slightly transversely wrinkled or rugose, with few hairs, while in the male this area is strongly punctate, and hairy.

The characters of value for the distinction and identification of species are the coloration, the punctuation, the breadth of the face, shape of clypeal process in the female, of the clypeal margin and hair-lobes in the male, the length of the second joint of flagellum, and shape of the last joint, the distance of ocelli apart, the sculpture of the triangular area or enclosure at the base of the metanotum, the shape of the basal segment of abdomen, and the pygidial area at tip of body. In a few forms there is a tooth or ridge on each side of mesosternum. The number and spacing of the spines on the hind tibiæ is variable, but sometimes useful.

The color markings, as in other insects, are more or less variable; the spots on the metanotum are especially unstable, while the color of the hind femora is much more constant. All (except one) species have yellow spots or a band on the pronotum, and with one exception there is a yellow band on the second abdominal segment; the face of the male is wholly yellow. The color of the stigma of wings is quite constant, and of considerable systematic value.

The sculpture of the enclosure on metanotum is of great value, but there is some variation observable when one examines a series of one species; however, a considerable difference in

this sculpture seems to be of specific value. It is not always exactly alike in the sexes of a species.

In the tables I have used the coloration as far as possible, not because it is the most important, but because it is easily observable; and the more essential characters are described, or have been described by others.

Most of our species were described many years ago by Mr. Cresson; Packard treated them very briefly in his "Fossorial Hymenoptera"; a few new species have been added by others since, but no synoptic table of the Eastern species. Viereck and Cockerell tabulated the New Mexico species, and Swenk those of Nebraska. Schletterer has revised the European forms, and there are various other tables of local faunæ.

Many other species occur in the Eastern States, and I hope this table will serve to interest others in their collection.

Through the kindness of Dr. Skinner, I have examined the Cresson types in the American Entomological Society at Philadelphia, and wherever I did not already possess the species I have inserted it in the table according to the specimen in the Cresson collection bearing the label, which specimen I consider the type.

A few other species have been described from the Eastern States, principally by Smith, from Florida, and Georgia; his *C. rufopicta* is probably a good species allied to *C. rufinoda*, but much larger. Saussure has described two from Texas which are unknown to me.

MALES.

1. Hind femora pale on base, with a large black spot near apex; rarely spot on scutellum, post-scutellum yellow.....19
Hind femora, mostly dark, mostly pale, or dark on base.....2
2. Scutellum not spotted, but post-scutellum yellow; large species; enclosure not transversely rugose.....3
Scutellum marked with yellow.....5
3. Wings black; a large lateral spot on each side of face; scape of antennæ black; hind femora and stigma also black.....**fumipennis**
Wings sub-hyaline; face all yellow; scape of antennæ yellow beneath; hind femora mostly yellowish; stigma yellow.....4
4. Band on second segment of abdomen not emarginate, legs II and III wholly yellow; no tuft of golden hair on last segment.....**gnara**
Band on second segment of abdomen emarginate in front, femora II and III black on base; apical segment with tuft of dense golden pubescence each side, basal joint of hind tarsus curved.....**venator**
5. Enclosure irregularly, transversely rugose; stigma blackish; hind femora mostly black; small, coarsely punctate species.....6
Enclosure more or less smooth, or longitudinally striate.....9
6. Basal segment of abdomen mostly reddish.....7
Basal segment black, sometimes with a spot or band of yellow.....8
7. Band on second segment of abdomen not emarginate.....**rufinoda**
Band on second segment emarginate in front.....**blakei**

8. Face wholly yellow.....*finitima*
Face with a large black spot each side between clypeus and base of the
mandibles.....*finitima nigroris*
9. A yellow band or spots on the vertex; scutellum, post-scutellum, and the
metanotum with yellow; legs almost wholly yellow; enclosure mostly
smooth.....10
No spots nor band on the vertex.....11
10. First segment mostly yellow, second segment yellow on base; vertex with a
band; antennæ short; hair-lobes on clypeus very broad, not their breadth
apart, clypeus truncate in front.....*morata*
First segment mostly black, second segment with yellow band on apical half;
antennæ normal; hair-lobes of clypeus very narrow, about twice their
breadth apart, clypeus produced in middle below.....*zelica*
11. No band on the second segment of abdomen, which is wholly black; a band
on first segment; no marks on postscutellum.....*insolita*
A band of yellow on second segment.....12
12. A tooth or ridge each side on mesoternum; antennæ situated high above
clypeus, the last joint thick; bands on abdomen subequal in width.....13
Neither tooth nor ridge on mesosternum.....15
13. Spine pointed downward, rather slender; no metanotal stripes, hind femora
black.....*compar*
Spine directed backward, rather the tip of a raised ridge.....14
14. No metanotal stripes; hind femora with two black stripes.....*jucunda*
Metanotal stripes present, hind femora mostly yellowish.....*jucunda carolina*
15. Hind femora black, except at tips.....16
Hind femora pale, except at base.....17
16. Post-scutellum yellow, enclosed area partly yellow; abdomen mostly reddish;
stripes on metanotum; head reddish; large species.....*ampla*
Post-scutellum black; antennæ situated high above clypeus; stigma dark;
small coarsely punctate species.....*kennicotti*
17. Scutellum and also post-scutellum spotted; last joint of antennæ thick, barely
longer than preceding joint.....18
Post-scutellum black; stigma yellowish; clypeus roundedly produced below,
terminal joint of antennæ longer than preceding, and concave within at
tip.....*robertsoni*
18. Stigma dark; venter black; no band on basal segment; clypeus acutely pro-
duced below in the middle.....*compacta*
Stigma yellowish; venter ferruginous; first segment of abdomen often reddish.
mimica
19. Enclosure irregularly transversely rugose, or obliquely striate on sides,
clypeus convex below in middle.....*clymene*
Enclosure more or less smooth or longitudinally striate.....20
20. Enclosure broad, nearly wholly smooth; lateral spots on first segment of
abdomen.....21
Enclosure more or less plainly striate.....22
21. Clypeus swollen out transversely above middle.....*fasciola*
Clypeus evenly, faintly convex.....*alaope*
22. Clypeus flat, broadly truncate in front, with a transverse depression before
tip; face only slightly hairy; first segment of abdomen with spots; enclosure
finely striate; last ventral segment only slightly emarginate at tip.*deserta*
Clypeus convex, rather rounded below, no transverse impression.....23
23. Enclosure with prominent median groove, first segment of abdomen much
broader than long, unspotted, body rather finely punctate.....*chryssipe*
Enclosure without prominent median groove; first segment of abdomen
hardly broader than long.....24
24. Rarely spots on first segment; enclosure striate all over, last ventral plate
furcate at tip.....25
Spots on first segment; enclosure striate only on sides; venter spotted.
prominens
Spots on first segment; ornaments white; enclosure striate all over; venter
with large spots or bands.....*nigrescens*

25. Enclosure finely evenly striate; abdomen very slender, first segment narrow; usually but four or five teeth above on hind tibia.....**imitatoria**
 Enclosure more coarsely striate; abdomen broader, more coarsely punctate; six to eight teeth above on hind tibia.....**clypeata**

FEMALES.

1. Clypeus with an elevation or process with a free apical edge.....2
 Clypeus without such elevation, although more or less swollen29
2. The clypeal process erect, and as long as broad.....3
 The clypeal process broader than long or not erect.....7
3. No yellow mark on first abdominal segment, and that on second not emarginate in front; enclosure longitudinally striate.....**clypeata**
 Some yellow on first abdominal segment.....4
4. Pronotum red all across, yellow on scutellum and post-scutellum, abdominal segments broadly yellow, enclosure striate all over.....**morata**
 Pronotum black, with yellow spots, scutellum not marked with yellow.....5
5. Band on second abdominal segment not emarginate in front; enclosure finely striate and only on the sides.....**gnara**
 Band on second abdominal segment strongly emarginate in front.....6
6. All femora blackish; no metanotal spots; segments beyond second hardly marked; basal joint of antennæ black; enclosure mostly smooth....**alaope**
 Only fore femora partly blackish; spots on metanotum; all segments (except first) plainly banded; scape of antennæ yellowish; enclosure mostly striate.
prominens
7. First, and often second, abdominal segments mostly reddish.....8
 First abdominal segment black.....13
8. Enclosure transversely irregularly rugose; small species, head mostly black; stigma dark brown.....9
 Enclosure smooth, or punctate on sides; head mostly reddish; large species; stigma yellow.....10
9. Black beneath clypeal process; second segment and metanotum black..**blakei**
 Yellow beneath clypeal process; second segment and metanotum partly reddish.....**irene**
10. Clypeal process very broad, broadly and deeply concave in front.....11
 Clypeal process not so.....12
11. Lateral angles of clypeal process not much elevated; abdomen pale only on base; wings dark.....**bicornuta**
 Lateral angles of clypeal process high, all abdomen pale; wings paler.. **frontata**
12. Clypeal process truncate in front; face very hairy.....**mimica**
 Clypeal process convex in front, a tooth on each side at its base; face not especially hairy.....**ampla**
13. Clypeal process acute; vertex all red, pronotum red across; metanotum nearly all red, enclosure smooth, scarcely punctate on sides; stigma yellow.....**firma**
 Vertex and pronotum not all red.....14
14. From the tip of clypeal process, which is not much elevated hangs a thin lamella, usually divided in middle.....15
 No such lamella present.....17
15. These lamellæ or plates very small not half the width of clypeal process, which is low; spots on scutellum, band on second abdominal segment very broad, not emarginate; enclosure smooth in middle, faintly striate on the sides.....**robertsoni**
 Lamellæ reach almost wholly across the tip of clypeal process.....16
16. Clypeal lamella not emarginate in middle; spots on scutellum, none on post-scutellum; hind femora more or less blackish; enclosure mostly smooth.
mandibularis
 Clypeal lamella emarginate in middle, practically divided; scutellum and post-scutellum both marked with yellow, hind femora (as well as most of others) yellowish; enclosure strongly rugose.....**compacta**
17. Scutellum marked with yellow; usually a mark on first abdominal segment. 18
 Post-scutellum only with yellow.....21

18. Metanotum with yellow stripes; hind femora all reddish yellow, spot on clypeus each side at base of mandibles; clypeal process sub-conic; enclosure smooth in middle, punctate on sides..... **zelica**
No metanotal stripes; hind femora blackish..... 19
19. Narrow bands on all segments; clypeal process small; enclosure smooth in middle..... **compar**
All segments not banded, clypeal process plainly truncate in front..... 20
20. Very coarsely punctate; no yellow on interantennal ridge, band on fourth abdominal segment, small species, a small tooth or ridge on mesosternum each side..... **Kennicotti**
21. Enclosure strongly transversely, irregularly rugose; basal segment of abdomen not spotted..... 22
Enclosure smooth in part, or longitudinally striate..... 23
22. Clypeal process twice as broad as long, yellow beneath, stigma brownish..... **halone**
Clypeal process nearly as long as broad, black beneath; stigma yellowish..... **clymene**
23. Basal abdominal segment not spotted clypeal process nearly square; stigma yellowish; enclosure coarsely striate..... **chryssipe**
Basal segment spotted..... 24
24. Spot at base of mandibles, ususally also on metanotum..... 25
No spot at base of mandibles, clypeal process not or but little narrowed in front..... 27
25. Marks white; enclosure striate all over; clypeal process emarginate in front..... **nigrescens**
Marks yellow; enclosure mostly smooth or clypeal process narrowed in front and not emarginate..... 26
26. Clypeal process narrowed in front and almost rounded below; enclosure finely striate, except at tip, hind femora yellowish..... **psamathe**
Clypeal process broad, emarginate in front, enclosure almost wholly smooth, hind femora black at tips..... **fasciola**
27. Angles of clypeal process very sharply produced; enclosure strongly striate; spots on first abdominal segment connate..... **dentifrons**
Clypeal process only slightly emarginate in front..... 29
28. Enclosure large, mostly smooth; no metanotal marks; stigma yellowish; clypeal process not emarginate..... **deserta**
Enclosure finely striate; stigma brownish; clypeal process emarginate in front; scape of antennæ black..... **arelate**
29. Wings wholly black; face with three transverse pale spots, post-scutellum yellow, scutellum unmarked, band only on second abdominal segment, enclosure broad and smooth..... **fumipennis**
Wings not wholly black..... 30
30. Second segment of abdomen unmarked..... **insolita**
Second segment of abdomen banded..... 31
31. Enclosure transversely rugose; stigma dark brown; spots on scutellum and band on post-scutellum yellow; small, coarsely punctate species..... 32
Enclosure smooth in part or longitudinally striate; stigma yellowish; first segment of abdomen with a band..... 34
32. First segment of abdomen red; band on second segment usually not emarginate in front..... 33
First segment of abdomen black, usually with yellow mark; band on second segment usually emarginate in front..... **finitima**
33. Metanotum black..... **rufinoda**
Metanotum reddish (except enclosure)..... **rufinoda crucis**
34. Scutellum, but not post-scutellum yellow; clypeus all yellow; band on basal segment of abdomen; hind femora blackish; enclosure punctate on sides..... **catawba**
Post-scutellum, but not scutellum, yellow; yellow spot on clypeus; basal segment of abdomen spotted; hind femora yellowish, enclosure mostly smooth..... **fulvipediculata**

Cerceris ampla n. sp.

♀ Reddish; face yellow; tips of mandibles black; vertex reddish, two elongate yellow spots, and a long yellow patch behind the eyes; antennæ rufous on basal half, rest black; large spots on pronotum, tegulæ, about five large spots on pleuræ; scutellum and post-scutellum, metanotum on sides, and the enclosure, yellow; first segment of abdomen mostly yellow, others with apical yellow bands, very broad on sides of second segment, fourth, fifth, and sixth segments mostly black; venter red on base, black beyond, apical segments with broad apical band of short tawny hairs; legs mostly yellow and rufous, hind femora black behind, and a spot on the middle tibiæ. Wings fuscous on anterior half, stigma yellowish. Body coarsely, confluent punctured. Clypeal process prominent, apex rounded, (as figured) a lateral process on each side-lobe, not erect, and seen from the side as broad at tip as at base; lower edge of clypeus with two teeth near the middle; ocellar triangle very low, rather forming a curved line; enclosure swollen, broad, smooth in the middle, punctate on the sides; first segment of abdomen with nearly parallel sides, hardly one-half as wide as the second segment; pygidial area about twice as long as broad, the sides nearly parallel, but a little bowed outward near base.

The male is colored similar to the female, but more black, especially on the thorax, the metanotum mostly black, side stripes yellow, and a spot on the enclosure, front and middle femora above and hind femora mostly black, tibia black on apical half. Middle joints of antennæ very short, last two joints very long subequal, the last curved, but not tapering; the hair-lobes scarcely more than breadth apart; pygidial area scarcely as long as broad, the apex undulate.

Length ♀ 22 mm., ♂ 18 mm.

From Fedor, Lee County, Texas, (Birkmann) Mr. Rohwer had given this name, but has not published a description. It is related to *hebes* Cam., *bidentata* Say, and *macrosticta* Vier, & Ckll., but differs in several points from each of them.

Cerceris bicornuta Guerin.

From Southern Pines, N. Car. The pygidial area of the female is two and one-half times as long as broad, and very much narrowed near base. It is allied to *C. frontata* by shape of the clypeal process.

Cerceris frontata Say.

This is a Western species, but was described from "Arkansas"; I have it from Palmerlee, Arizona. The pygidial area of female is of the same shape as in *C. ampla*. The radius of the wing is black until a little before the stigma, other veins yellowish.

***Cerceris fumipennis* Say.**

From Washington, D. C., Falls Church, Va., and Fedor, Texas. The pygidial area of the female is about two and a-half times longer than broad, broadest near base, and much narrowed to the tip. In male this area is more than twice as long as broad, the sides nearly parallel, and as broad at tip as anywhere. The hair-lobes are nearly one and a-half times their breadth apart; the last joint of antennæ is as long as preceding, slightly tapering and somewhat curved.

***Cerceris mandibularis* Patton.**

From Washington, D. C., and Falls Church, Va., in June. It is allied to *C. compacta* by structures of clypeus; the enclosure is very broad and smooth; the pygidial area two and one-half times longer than broad, tip about one-half as broad as in middle, the sides strongly curved, the base very narrow.

***Cerceris robertsoni* Fox.**

From Falls Church, Va., and Southern Pines, N. Car., in June and July. The pygidial area of the female is about two and a-half times longer than broad, broadest near base, about one-half as broad at the rounded tip, the sides curved. In the male it is about twice as long as broad, and plainly narrower at tip than elsewhere; the last joint of antennæ is as long as the penultimate, a little curved, but not concave behind; the hair-lobes are fully three times their breadth apart; the clypeus very hairy.

***Cerceris compacta* Cress.**

This is the most common species in Virginia, and occurs from June to September; also from Southern Pines, N. Car., and Lee County, Texas. The pygidial area of female is nearly twice as long as broad, broadest near base, narrow at tip, the upper part of sides strongly curved. In the male this area is hardly one and a-half times longer than broad, broadest at base; the last joint of antennæ is barely longer than the preceding, tapering, but not concave behind. The hair-lobes are fully twice their breadth apart, the lower part (in fact all) of face is very hairy; in both sexes the stigma is plainly darker than the cell beyond it. In the female the front tarsi are broader and more flattened than in any other species. Cameron's figure shows that *C. mexicana* is perhaps the same species.

Cerceris chryssipe n. sp.

♀ Similar in most respects to *C. clypeata*, but the clypeal process is broader than long, the abdomen is rather broader and the punctuation less coarse; the enclosure is raised in middle with a median furrow, and very coarsely striate on sides.

♂ The male is similar to *C. clypeata* in markings and clypeus, but has the abdomen very much broader, and with finer punctuation; the enclosure more coarsely striate than in *C. clypeata*.

From Falls Church, Va., in July, on *Cicuta*.

Cerceris dentifrons Cress.

The type from Illinois has the clypeal process broad, and the lateral angles are very strongly produced; more so than in any other species seen from the Eastern States.

Cerceris clypeata Dahlbom.

From Ithaca, N. Y., and Falls Church, and Glencarlyn, Va., in June and July. The pygidial area of the female is more than twice as long as broad, the sides sub-parallel, and the tip only a little narrower than the base; in the male this area is scarcely one and a-half times as long as broad, with broad, truncate tip; the hair-lobes are fully twice their breadth apart, I have restricted this species more than Cresson or Packard, with a definite clypeal process.

Cerceris deserta Say.

From Sea Cliff, N. Y., and Falls Church and Glencarlyn, Va., in June, July and September; the September specimens are all males. The pygidial area of female is two and a-half times longer than broad, the sides nearly parallel, and the tip hardly narrowed. In male this area is a little over twice as long as broad, sides parallel; the hair-lobes are very small, fully three times their breadth apart.

Cerceris arelate n. sp.

♀ Black; mandibles all black, barely a trace of pale near base; a spot on clypeal process, a large spot each side on face, tegulae, post-scutellum, two spots on basal segment (nearly connected), narrow, emarginate bands on other segments, yellow; legs yellow, front and middle femora black, hind femora black on base, inner tip of hind tibia, and most of hind tarsi blackish; flagellum somewhat yellow at base beneath; scape, interantennal carina, and pronotum black, venter also black, unspotted; wings fumose, darker on costal apex, stigma yellowish. Clypeal process moderately elevate, much broader than

long, seen from in front the edge is concave; lateral ocelli as near to eyes as to each other; enclosure large, striate, the lateral striæ rather oblique; abdomen not very broad, basal segment more than one-half width of second segment; pygidial area about two and one-fourth times longer than broad, nearly twice as broad at base as at tip, but the sides are nearly straight; body moderately punctate.

Length 10 mm.

From Great Falls, Va., 20 June. By black pronotum, and scape it is quite distinct from allies, and omitting these it will not fit any other form.

***Cerceris morata* Cress.**

Males from Fedor, Lee County, Texas, (Birkmann). The pygidial area is about one and a-half times longer than broad, broad at base, and fully twice as broad in middle as at the narrow tip. The last joint of antenna is longer than the penultimate, but not concave behind; the hair-lobes are exceedingly large, only about one-third their breadth apart. The second segment is yellow in front, instead of behind as usual. I have figured the clypeal process of the female from the type.

***Cerceris prominens* n. sp.**

♀ Black; base of mandibles, a large spot each side between antennæ and eyes, spot on clypeal process, dot behind eyes, two spots on pronotum, tegulæ, metanotal stripes, two spots on first segment of abdomen, a broad band, deeply, triangularly indented, on second, narrow bands on next three segments, yellow. Legs yellow, front coxæ, and basal part of femora, blackish; rather dark on base of mid femora and tip of hind tibia, hind tarsi dusky; scape and first two joints of flagellum beneath yellowish. Wings dusky, stigma yellow. Body coarsely punctate, clypeal process a little longer than broad, nearly square, enclosure with a deep median groove, and lateral somewhat oblique striæ; pygidial area two and one-fourth times as long as broad, broadest near base, much narrowed at tip (not as narrow as in *C. clypeata*). Venter black, finely punctate.

♂ With face all yellow, no metanotal marks, that on second segment not indented, front and mid femora black behind, hind femora and tibia black on apical half, last joint of antennæ fulvous; clypeus apparently rounded below, but with three black teeth; hair-lobes about one and a half breadth apart; second joint of flagellum much longer than third, apical joint scarcely longer than the preceding, curved; enclosure smooth in middle, striate on sides; pygidial area about twice as long as broad, scarcely broader in the middle, apical corners rather prominent.

Length 13 mm.

From Falls Church, Va., September and October.

Cerceris firma Cress.

I have seen only the types, these (females) have a small almost acutely pointed depressed clypeal process, partly obscured by hair; it is shown in the figure.

Cerceris imitatoria Schlett.

Specimens from Falls Church, Va., in June, I have placed doubtfully as this species, which in nearly all structures seems almost identical with *C. clypeata*.

Cerceris nigrescens Smith.

From Ithaca, N. Y., and Southern Pines, N. Car. The pygidial area of the female is figured. The male has not been described, so the following is given:

♂ Black, basal part of mandibles, face, two spots on pronotum, tegulae, post-scutellum, a small spot each side on the metanotum, two spots on basal segment, bands on following segments, all broader on sides, pale yellowish. Venter black, second, third and fourth segments with pale bands; legs pale yellowish, front and mid femora more or less black, mostly behind, hind femora with black apical spot, also on hind tibia, hind tarsi dusky. Scape of antennae yellow, black above, flagellum more or less fulvous beneath. Wings nearly hyaline, dark on costal apex, stigma yellow. Face and rest of body very finely punctate, vertex more coarsely punctate; second joint of flagellum short, but little longer than the third, apical joint smaller than the preceding joint, curved; lateral ocelli nearer to each other than to eyes; clypeus rounded below, with three blunt, black teeth; hair-lobes three times their breadth apart; enclosure rather broad, striate; pygidial area small, two and one-eighth times as long as broad, tip faintly rounded; about five or six spines on hind tibia.

Length 8.5 mm. to 10 mm.

From Ithaca, N. Y., and Southern Pines, N. Car., (Manee).

Mr. Rohwer has informed me that the type of Smith has the clypeal process truncate, and differs somewhat in other points; however this is the *C. nigrescens* of Cresson and Packard, and so I leave it until it is shown that there is another species more closely agreeing with the type, or the limits of variation in the shape of the clypeal process are better known than at present.

Cerceris clymene n. sp.

♀ Black; base of mandibles, spot above their base, sides of face, upper surface (except tip) of clypeal process, dot behind eye, two spots on pronotum, tegulae, post-scutellum, a broad band on second segment of abdomen, a narrow line on each of next two segments, and the fifth

with a spot each side, yellow. Interantennal ridge black, scape yellow, black line above, first and second joints of flagellum partly rufous; wings dark, darker on costal apex, stigma yellow; venter black; legs pale, coxæ wholly and femora partly black, hind tibia dusky at tip, hind tarsi dusky. Body densely and quite coarsely punctate, venter nearly smooth. Clypeal process a little broader than long, emarginate in front; clypeus below the process shows a ridge each side; second joint of flagellum much longer than third; lateral ocelli plainly nearer to each other than to the eyes; enclosure coarsely transversely rugose; abdomen quite broad, the segments not much narrowed at base, the basal segment much broader than long; pygidial area a little more than twice as broad as long, sides sub-parallel; six or seven spines on hind tibiæ, sub-equally spaced. One specimen shows a small spot each side on basal segment of abdomen.

♂ Similar to female, face all yellow, large metanotal spots, small spot each side on basal segment, last segment more plainly banded than in female. Clypeus with three blunt, black teeth below on middle; hair-lobes about one and a half their breadth apart; last joint of antennæ not as long as preceding, curved, and tapering; enclosure with oblique striæ on lateral angles, elsewhere transversely rugose; abdomen rather broad, segments but little constricted at base; pygidial area hardly twice as long as broad, sides parallel, apex truncate, surface coarsely punctate. Legs with front and middle femora largely black, hind femora with large black spot, but the base pale, hind tibia blackish each side near tip, tarsi blackish.

Length ♀ 11 mm. ♂ 10 mm.

From Glencarlyn, Va., 23 June (*Ceanothus*), and Falls Church, Va., 30 July.

***Cerceris psamathe* n. sp.**

♀ Black; basal half of mandibles, spot above base of mandibles, clypeal process above, spot each side on face, interantennal carina, dot behind eye, two spots on pronotum, tegulæ, post-scutellum, stripes on metanotum, two spots on basal segment, rather broad and broadly emarginate bands on other segments, yellow; band on second segment not much broader than others; legs mostly yellow or rufous, anterior and middle femora black at base, spot near tip of hind tibia, and tarsi dusky; antennæ blackish above, except at tip. Body very finely punctate (not near as coarse as in *C. nigrescens*), clypeus as figured; enclosure large, finely striate; basal segment of abdomen scarcely one-half the width of second segment; pygidial area long, plainly constricted near tip.

Length 11 mm.

From Lee County, Texas, (Birkmann). *C. convergens* Vier. & Ckll., from New Mexico has a similar pygidial area, but is said to be coarsely punctate, with spots on scutellum, etc. The description of *C. novomexicana* agrees very well, except the constriction of pygidial area is not mentioned.

C. occipitomaculata was described from one male from Kansas; I have not seen it, but it belongs in this group of the genus and was compared with *C. nigrescens*. The female, above described, is near to *C. nigrescens*, and, barring sexual characters, agrees fairly well with Packard's description, however there is some doubt. A female specimen named *C. occipitomaculata* in the Cresson collection is very near to *C. deserta*; until the female of *C. occipitomaculata* is surely known it is better to consider this form new.

***Cerceris gnara* Cress.**

A pair from Lee County, Texas, (Birkmann). The pygidial area of the female is a little more than twice as long as broad, broadest near base, the sides nearly straight, and the tip not much narrowed and rounded. In the male this area is not quite twice as long as broad, with parallel sides and truncate tip; the hair-lobes are about once and a-half their breadth apart; the last joint of antennæ is longer than the penultimate, curved and concave behind.

***Cerceris alaope* n. sp.**

♂ Face, two spots on pronotum, tegulæ, post-scutellum, two spots on basal segment of abdomen, a broad band, emarginate in front on second segment, and narrower bands on following segments, pale yellow. Antennæ black above, scape beneath yellow, flagellum fulvous beneath. Wings fumose, darker on tip, stigma dull yellowish. Legs pale yellow; front and mid femora, apical part of hind femora, and apical half of hind tibia, black; venter black, a few pale spots each side. Clypeus very slightly evenly convex, almost flat, not swollen above, lower margin truncate, upper edge slightly rounded, coarsely punctate; hair-lobes rather narrow, fully twice their breadth apart; second joint of flagellum much longer than the third, apical longer and narrower than the preceding, and somewhat curved; lateral ocelli about as near to eyes as to each other; enclosure very large, smooth, with a median groove and indistinctly striate on base; abdomen (including basal segment) much broader than in *C. fasciola*; pygidial area hardly twice as long as broad, truncate at tip, sides parallel, rather densely punctate, and very hairy; spines on hind tibia, seven or eight, evenly spaced.

Length 10 mm.

♀ Similar to male; clypeal process black across tip; large spot each side on face, spot at base of mandibles, extreme base of mandibles, spot behind eyes, yellow; flagellum mostly fulvous, abdomen marked as in male, but the bands more narrow, and that on second segment is more deeply emarginate; all femora mostly black, but pale on tips; clypeal process erect, longer than broad; enclosure large, and mostly smooth as

in the male; pygidial area about two and a fourth times longer than broad, sides sub-parallel, but narrowed at tip.

From Falls Church, Va., 5 June on *Ceanothus*. Related to *C. fasciola*, but with broader abdomen, different clypeus, and more coarsely punctate, especially on metanotum and abdomen.

***Cerceris fasciola* Cress.**

Described from Texas; I have a pair from Lee County. The pygidial area of the male is about twice as long as broad, the sides parallel, the tip truncate. The hair-lobes are plainly more than twice their breadth apart. The female in structure is near *C. nigrescens*, but the smooth enclosure, and mostly yellow legs will easily separate it.

***Cerceris insolita* Cress.**

From Falls Church, Va., 30 July, and Lee County, Texas, July. In the male the hair-lobes are very broad, so that they are hardly more than one-half their breadth apart; the clypeus shows two little black spots at apex; the last joint of antennæ is thick and short; the pygidial area is less than twice as long as broad, the sides parallel, tip truncate, surface coarsely punctate, but scarcely hairy; on the venter the third segment shows a yellow band. *C. obsoleta* of Mexico is very close to this species.

***Cerceris zelica* n. sp.**

♂ Black, basal part of mandibles, face (except little black spot at tip of clypeus) inter-antennal streak nearly reaching the ocelli, two spots on vertex, spot behind eye, pronotum all across, tegulæ, spot beneath wings, scutellum, and spot on post-scutellum, broad stripes on mesonotum, median spot on basal segment of abdomen, bands on other segments, yellow. Band on second segment broader than others, all narrowed in middle; venter with spots each side, some connected by lines; scape yellow, first joint of flagellum brown, rest rufous, but black above beyond base; legs all yellowish. Body coarsely punctate; clypeus rounded in middle below, hairy each side, truncate above; hair-lobes fully three times their breadth apart; antennæ high above clypeus; second joint of flagellum longer than the third, apical not much longer than the preceding, tapering, not concave within. Enclosure mostly smooth, a median groove, and punctate on sides; abdomen rather broad, the segments strongly constricted at base, first segment plainly broader than long; pygidial area once and two-thirds as long as broad at base, narrowed to tip, which has prominent angles, surface coarsely punctate; venter nearly smooth, punctate a little on sides.

Length 12 mm.

Fedor, Lee County, Texas, 7 June, (Birkmann). The female which seems to agree in all essential points with the male is described as follows:

♀ Black, most of mandibles, spot at base of mandibles, all of clypeal process, above and below, oblong spot each side on face, inter-antennal mark, two spots on pronotum, tegulae, scutellum, stripes on metanotum, all segments of abdomen with bands, yellow. Band on last segment of abdomen very narrow, on second quite broad, scarcely emarginate, legs yellowish, coxae and bases of femora blackish. Body not very coarsely punctate; clypeal process small, sub-conic; lateral ocelli as near to each other as to eyes; enclosure mostly smooth, punctate on sides; the abdomen moderately broad, the segments not much constricted at base; pygidial area about three times as long as broad, narrowed at base; hind tibia with about seven spines, nearly evenly spaced; second joint of flagellum plainly longer than third. Wings not very dark, except tip, stigma yellowish.

Length 12 mm.

From Lee County, Texas, 7 July (Birkmann).

***Cerceris halone* n. sp.**

♀ Black; a small spot at base of mandibles, spot beneath clypeal projection, one on its upper surface, a large triangular mark on each side of face, two spots on the pronotum, tegulae, post-scutellum, a broad band (emarginate in front) on second abdominal segment, an elongate lateral spot each side on third segment, and narrow bands on the next two segments, yellow; basal two joints of flagellum yellowish beneath; legs yellow, coxae, and front and mid femora black, hind femora black behind, (except tip), black at inner tip of tibia, and the hind tarsi mostly blackish; venter black. Body densely and rather coarsely punctate. Clypeal process small, from above it is about three times as broad as long, and emarginate in front, from in front it shows as an even arch, above it is transversely convex, and very hairy at sides; lateral ocelli a little nearer to each other than to eyes; enclosure not very coarsely but very irregularly and mostly transversely rugose. Abdomen moderately slender but basal segment is much broader than long; pygidial area about two and one-fourth times longer than broad, sides sub-parallel, but narrowed at tip, and margined with much blackish hair; venter rather finely punctate; hind tibia with seven not evenly spaced spines. Wings dusky, darker at tips, stigma yellowish.

Length 12 mm.

From Falls Church, Va.

***Cerceris fulvipediculata* Schlett.**

This is the *C. fulvipes* Cress., the name being preoccupied. From Falls Church, Va., 4 September. The pygidial area of the female is fully three times longer than broad, the sides practically parallel, but the tip rounded, and a little more narrow than the base.

***Cerceris kennicotti* Cress.**

This is a very common species in northern Virginia, and also occurs in Texas. The pygidial area of the female is about twice as long as broad at base, and fully twice as broad near base as at the truncate tip. The male has the hair-lobes fully three times their breadth apart; the pygidial area is hardly twice as long as broad, with curved sides, the tip almost one-half narrower than base.

***Cerceris compar* Cress.**

From Ithaca, N. Y., and Falls Church, Va., The pygidial area of female is two and a-half times longer than broad, broadest at middle, and much narrower at base than at tip. The male has hair-lobes so large that they are less than their breadth apart; the pygidial area is not twice as long as broad, and more narrow at base than at tip, its surface very coarsely pitted except near tip. The spines on mesosternum easily separate the male.

***Cerceris catawba* n. sp.**

♀ Black, face and clypeus pale yellow, on the sides extending above antennæ and a line between them; antennæ yellowish or reddish beneath, dark above, an elongate spot each side on pronotum, the scutellum, a stripe each side on metanotum pale yellow; all segments of abdomen with complete posterior yellow bands, that on the first segment as wide as that on second, but the latter concave in front; legs yellowish, the femora black on basal half or two-thirds, the hind tibiæ black at tip, the mid tibiæ with dark streak behind, the hind tarsi dusky, the basal joint only at tip. Wings smoky, darker in marginal cell and beyond, the stigma brown. Clypeus of female not elevated, produced below in middle, but truncate at tip, above broadly truncate; enclosure smooth in middle punctate on sides, pygidial area two and one-half times as long as broad, nearly as broad at apex as in middle, but narrowed at base.

♂ Similar to female; with clypeus slightly convex, sparsely, coarsely punctate, lower margin slightly rounded but with a black, truncate edge; hair-lobes broad, but about their breadth apart; antennæ high above clypeus, second joint of flagellum short, barely longer than the third, apical joint thick, but a little longer than the preceding; pygidial area twice as broad as long, sides subparallel, tip truncate, surface with a few coarse punctures; last ventral broadly emarginate at tip.

Length 9 mm.

From Southern Pines, N. Car., June, (Manee).

***Cerceris jucunda* Cress.**

From Fedor, Lee County, Texas, 6 April (Birkmann). The hair-lobes of male are scarcely more than one-half their breadth apart. The pygidial area is narrower than in *C. compar*, and more narrowed at base; the last joint of the antennæ is as long as preceding joint, but thick, and not curved.

***Cerceris jucunda carolina* n. var.**

From Southern Pines, I have specimens a little larger than the type, with a rather broad head; there are large yellow stripes on the mesonotum, and the pygidial area is hardly narrowed at base; the mesosternal processes are of the same shape as *C. jucunda*. With a larger series it will perhaps prove a distinct species.

***Cerceris blakei* Cress.**

From Falls Church, Va., 28 July, and Southern Pines, N. Car., June and July. In the female the clypeal process is more erect than in *C. irene*, the pygidial area of female is fully twice as long as broad, the sides convex.

***Cerceris rufinoda* Cress.**

From Falls Church, Va., August, and Fedor, Texas, June. The female from Falls Church has the face black, except a large spot each side; the pygidial area is long, very narrow at base, sides convex, and tip truncate; in the male the pygidial area is short, and not narrowed at base; the clypeus convexly rounded below as in *C. finitima*, the hair-lobes nearly one and a-half times their breadth apart. The variety *C. rufinoda crucis* Vier, and Ckll., comes from Lee County, Texas.

***Cerceris irene* n. sp.**

♀ Face wholly yellow; scape yellow, barely reddish above, flagellum rufous beneath, blackish above; vertex with a reddish spot each side, and reddish behind, and with a yellow spot behind the eyes; large spots on pronotum, tegulæ, large spots (almost contiguous) on the scutellum, and band on the post-scutellum, yellow. Mesonotum mostly reddish, with a black patch each side, meso- and meta-sternum reddish. First and second segments of the abdomen reddish, latter with apical yellow band and moderately wide bands on the next three segments; venter reddish at base; legs wholly reddish yellow; wings fumose, stigma almost black. Body very coarsely punctate; clypeal process but little elevated, apex nearly truncate, and reddish; antennæ situated

more than the diameter of sockets above the clypeus; second joint of flagellum but little longer than the third; lateral ocelli scarcely nearer to each other than to eyes; enclosure coarsely, mostly transversely rugose; basal segment of abdomen hardly one-half the width of the second segment; pygidial area twice as long as broad, sides strongly convex, broadest in middle, and narrower at tip than at base; hind tibiae with about seven spines above, nearly evenly spaced.

Length, 7 mm.

From Fedor, Lee County, Texas, 25 June, (Birkmann).

***Cerceris finitima* Cress.**

From Falls Church, Va., Southern Pines, N. Car., and Lee County, Texas. The female pygidial area is very slender as figured; in the male it is about twice as long as broad, about equally broad at base and tip, with slightly curved sides; the last joint of the antenna is thick and heavy; the hair-lobes are about once and a-half their breadth apart.

***Cerceris finitima nigroris* n. var.**

This is a variety of the male which is larger than the type, and with a large black spot each side of clypeus above the base of mandibles.

From Falls Church, Va., in August.

EXPLANATION OF PLATES.

- Fig. 1. *Cerceris psamathe*, head, clypeus in front.
- Fig. 2. *Cerceris psamathe*, pygidial area of female.
- Fig. 3. *Cerceris mandibularis*, clypeal process, front from above.
- Fig. 4. *Cerceris clymene*, clypeal process, above.
- Fig. 5. *Cerceris clypeata*, clypeal process above.
- Fig. 6. *Cerceris ampla*, pygidial area of male.
- Fig. 7. *Cerceris prominens*, clypeal process, above.
- Fig. 8. *Cerceris chryssipe*, clypeal process, above.
- Fig. 9. *Cerceris alaope*, clypeal process, above.
- Fig. 10. *Cerceris finitima*, pygidial area, female.
- Fig. 11. *Cerceris finitima*, clypeus in front, female.
- Fig. 12. *Cerceris zelica*, clypeal process, front.
- Fig. 13. *Cerceris bicornuta*, clypeal process, front.
- Fig. 14. *Cerceris gnara*, clypeal process, above.
- Fig. 15. *Cerceris blakei*, clypeal process, above.
- Fig. 16. *Cerceris ampla*, clypeal process, above.
- Fig. 17. *Cerceris compacta*, clypeal process, front.
- Fig. 18. *Cerceris compar* clypeal process, front.
- Fig. 19. *Cerceris nigrescens*, pygidial area, female.
- Fig. 20. *Cerceris robertsoni*, female, pygidial area, and clypeal process in front.
- Fig. 21. *Cerceris mandibularis*, clypeal process, front from below.
- Fig. 22. *Cerceris kennicotti*, head, female.
- Fig. 23. *Cerceris frontata*, clypeal process, above.
- Fig. 24. *Cerceris compacta*, pygidial area, male.
- Fig. 25. *Cerceris morata*, clypeal process, above.
- Fig. 26. *Cerceris arelate*, clypeal process, above.
- Fig. 27. *Cerceris irene*, clypeal process, above.
- Fig. 28. *Cerceris halone*, clypeal process, above.
- Fig. 29. *Cerceris deserta*, clypeal process, above.
- Fig. 30. *Cerceris mandibularis*, clypeal process, above.
- Fig. 31. *Cerceris fasciola*, clypeal process, above.
- Fig. 32. *Cerceris nigrescens*, clypeal process, above.
- Fig. 33. *Cerceris fasciola*, pygidial area, female.
- Fig. 34. *Cerceris mandibularis*, pygidial area, female.
- Fig. 35. *Cerceris fumipennis*, pygidial area, male.
- Fig. 36. *Cerceris fulvipediculata*, pygidial area, female.
- Fig. 37. *Cerceris firma*, clypeal process, above.
- Fig. 38. *Cerceris clypeata*, male, last ventral segment.
- Fig. 39. *Cerceris prominens*, male, last ventral segment.
- Fig. 40. *Cerceris deserta*, male, last ventral segment.



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