DESCRIPTIONS OF NEW BRACONIDÆ IN THE COLLECTION OF THE U. S. NATIONAL MUSEUM.

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For some months past, under the direction of Dr. Riley, Curator of Insects in the U. S. National Museum, it has been my pleasant duty to arrange the extensive collection of *Braconidæ* and *Ichneumonidæ* brought together from various sources by the above institution.

The collection contains not only the valuable collections of Dr. Riley and the celebrated Belfrage collection, donated by the former gentleman some years ago, but the extensive rearings of these insects made by Dr. Riley during his administration as Entomologist of the U. S. Department of Agriculture and while State Entomologist of Missouri.

The insight that these rearings give into the habits of the different species, genera, and groups into which these Hymenopters have been divided is of incalculable value, both from a scientific and economic standpoint; and the aid afforded to the systematist in classifying the complexity of forms can not be too highly estimated, and is of the greatest biological importance.

The *Braconidæ* have been but slightly studied in this country, and, naturally in such an extensive collection, many undescribed forms were discovered. These, with the exception of the Microgasters and some species in other genera, to which Dr. Riley has given especial attention, are described in the following pages.

All types of the new species described below will be found in the collections of the U. S. National Museum. I desire here to thank my friends Dr. George H. Horn and Mr. E. T. Cresson for freely permitting me to examine and make comparison with the types of these insects contained in the collection of the American Entomological Society of Philadelphia, whereby errors that might otherwise have been made have been avoided.

Subfamily BRACONINÆ.

VIPIO Latreille.

Vipio coloradensis n. sp.

Female.—Length 7^{mm}; ovipositor 9^{mm}. Orange red; ocelli, antennæ, clypeus, labrum, extreme tips of mandibles, all coxæ and trochanters, middle and posterior legs, base of mesopleura, and anterior femora at base and stripe above to near tip, black; a stripe along inner side of posterior femora, the sutures of middle and posterior knees, and extreme base of posterior coxæ, behind, are red. The head is rostriform, smooth and polished, with a slight sericeous pile; thorax smooth, polished, the mesothorax trilobed, the middle lobe being prominent; scutellum

smooth, convex and triangularly rounded behind; metathorax rounded posteriorly, smooth and polished. The abdomen is longer than the head and thorax together; the 1st segment, laterally, with broad, deep grooves, forming a broadly oval central plate; on the 2d is a large lozengoidal-shaped shield, extending almost to the tip of the segment, and laterally on each side of this shield are distinct longitudinal depressions; the 3d segment is separated from the 2d by a distinct, slightly crenulated suture; the following segments are not distinctly separated, and all are smooth and polished.

The wings when folded extend slightly beyond the apex of the abdomen; the venation as in typical species in the genus *Bracon*; there is a pale stripe across the middle of first submarginal cell and another clear spot behind the first discoidal cell.

Habitat.—Custer County, Colorado.

Described from one female specimen, sent to the Department by Mr. T. D. A. Cockerell, West Cliff, Custer County, Colorado.

This is the first species in this interesting genus to be detected in our fauna, and may at once be recognized from the Braconids by its rostriform head and peculiar color.

It might easily be mistaken for an *Agathis*, but the venation will readily separate it from that genus.

BRACON Fabricius.

Bracon agrili n. sp.

Female.—Length $7\frac{2}{5}$ mm; ovipositor $2\frac{2}{5}$ mm. Head, labial and maxillary palpi, antennæ, thorax, excepting metathorax, legs, and ovipositor, black; abdomen orange red.

The head and thorax are smooth, polished, covered with sericeous pile, the face densely covered, so that the sculpture can not be seen. Head almost as long as wide; a deep longitudinal groove extends from first ocellus to between the antennæ; ocelli arranged in a triangle on a rounded convex surface; antennæ very long, black, inserted on prominent tubercles, the scape not as long as the width between the eyes, the apex obliquely truncate and slightly angulated at outer side. Thorax trilobed, the middle lobe prominent; scutellum polished, rounded behind; tegulæ black, polished; the surface just beneath the insertion of anterior and posterior wings, reddish.

The wings are black with a hyaline streak across the first submarginal cell, connected with a large hyaline spot back of the posterior angle of the first discoidal cell. Abdomen broadly ovate, with the segments deeply constricted, the 2d and 3d being crenulate; on the 1st segment is a raised oval plate, on either side of which are broad, deep, lateral grooves; at the base of the 2d is a small lunate shield connected behind with a delicate longitudinal keel, the surface on either side being rugose with lines and ridges, and two broad, deep, oblique lateral grooves. Legs entirely black, covered with rather dense, long sericeous

pile; the incisions between the coxæ, trochanters, and femora more or less reddish.

The male is but $6\frac{2}{5}^{mm}$ long; it is like the female except the suture of the 5th abdominal segment as well as the 2d and 3d are crenulate; the 5th segment is abnormally shortened.

Described from three specimens, two females, one male, labeled No. 4087°, and reared from *Agrilus* on maple, April 21 and 23 and May 3, 1887.

The cocoon or pupal covering of this species is in the collection attached to a piece of maple bark. It is oval in outline, perfectly flat above and beneath, 7^{mm} long, $2\frac{1}{2}^{mm}$ wide, and 1^{mm} in depth, and composed of delicate silken threads, which are woven into a dense, tough, parchment-like substance.

The species approaches nearest to *B. orbitalis* Cr., but the absence of an orbital line and the structure of the abdomen will at once separate it.

Bracon Kœbelei n. sp.

Male.—Length, $4\frac{2}{5}^{mm}$. Head, labial and maxillary palpi, prosternum, and legs, black; thorax and abdomen sanguineous. Head transverse, nearly twice as wide as long and not full behind the eyes, polished; face covered with pale sericeous hairs; antennæ 49-jointed, nearly as long as the whole insect, very gradually slenderer towards apex; scape oval, one-third shorter than the width between the eyes, the apex not dilated; joints of the flagellum, after the first, only slightly longer than wide. Thorax smooth *not* trilobed, blackish, excepting sanguineous parapsidal lines. Wings black, excepting a pale streak across first submarginal cell, connected with a large pale spot just behind the upper angle of first discoidal cell, a spot in the second discoidal cell, and the transverse vein separating the second and third submarginal cells; tegulæ black; a black spot on mesopleura directly beneath posterior wings. Legs, including coxæ, black; the sutures between coxæ and trochanters yellowish. Abdomen ovate, about as long as the head and thorax together and delicately rugose; 1st segment with an oval plate and a longitudinal keel or raised line laterally; no shield at base of 2d segment, and, while there are oblique depressions laterally on this segment, they do not form distinct grooves, as is usual in this genus; the sutures between 2d, 3d, and 4th segments are broad, distinct, and subcrenulate. The whole insect is covered with pale sericeous hairs.

Habitat.—Alameda County, California.

Described from one male received from Mr. Albert Koebele.

Bracon rugosiventris n. sp.

Female.—Length 6^{mm} to 8^{mm}; ovipositor 6^{mm} to 8^{mm}. Head, antennæ, palpi, thorax, excepting the metathorax, wings, legs, and ovipositor, black; metathorax, excepting a dusky median line and sides, and the abdomen, brownish-yellow. The head is large when viewed from above, quadrate, smooth, and polished, pilose, the hairs on face long and white;

a narrow inner red orbital line joins a wider postorbital line; the surface in front of the ocelli impressed, with a longitudinal grooved line extending from the front ocellus to the base of the antennæ; base of mandibles reddish; antennæ long, 49-jointed, the scape not as long as the breadth between the eyes, obliquely truncate at apex, the edges sharp and outwardly slightly dilated; thorax smooth, polished, the parapsides obliterated; there is a small red spot on the middle and another at posterior angles of the propleura, wanting, however, in the male; metathorax smooth, polished, the sides covered with long hairs; the venation of the wings normal, the second submarginal cell longer than the first, the first transverse cubital nervure slightly oblique; the abdomen is all very coarsely rugose with coarse irregularly raised lines, having more or less of a longitudinal direction; the plate of the 1st segment is narrowed at base, rugose, separated at sides by a deep longitudinal groove from a keel on each side, extending from base to apex of the segment, this keel itself being separated from the lateral margins of the segment by a deep groove; the second segment has a long triangular shield medially, and on either side of it about midway between it and the lateral margins another much narrower shield or keel; all the other segments are irregularly longitudinally rugose, the apical margins of which are more or less rimmed.

The male measures but 7^{mm} in length, and differs from the female as follows: The head is entirely black, without the red orbital lines; mandibles wholly black; antennæ 46-jointed instead of 49-jointed; the pleuræ are not spotted; the metathorax almost entirely black; while the sculpture of the abdomen is not quite so coarse as in the female, the two apical segments being perfectly smooth.

Habitat.—Bosque County, Texas.

Described from five females and one male in the Belfrage collection from Texas.

The peculiar rugosity of the abdomen at once separates this species from all others in our fauna.

Bracon atripectus n. sp.

Female.—Length 8^{mm}; ovipositor 8^{mm}. In stature and general appearance very similar to *B. orbitalis* Cr., only the upper portion of the mesothorax, propleura, small triangular piece of mesopleura, scutellum, a broad dorsal line on metathorax and the abdomen are sanguineous; the margins of the scutellum and the rest of the insect black. The wings have a whitish spot behind the upper angle of the 1st cubital cell, extending as a slight streak into the lower outer angle of the 1st submarginal cell. The 1st abdominal segment is sculptured as in *B. orbitalis*, but the triangular shield at base of the 2d segment is extended posteriorly into a narrow keel to near the apical margin, the tip not, however, separated from the surrounding surface; broad oblique depressions extending from the base of the shield make the basal angles

of the segment prominent; the 3d segment is also obliquely impressed, the following segments smooth.

Habitat.—Folsom, California.

Described from a single specimen, labeled Folsom, Cal., July 4, 1885.

Bracon montanensis n. sp.

Female.—Length 7^{mm}; ovipositor 3^{mm}. Yellowish red; the head, antennæ, wings, tegulæ, and legs, black. The head is smaller than in the species just described; the inner orbits very narrowly yellowish, dilated at base of antennæ, postorbital line broader; antennæ 48-jointed; the shield at base of 2d abdominal segment is large, triangular, the surface on each side wrinkled or rugose, the oblique lines not distinctly defined; the following segments all smooth, polished.

Habitat.—Montana.

Described from one specimen labeled Montana.

This species in structure also approaches near to *B. orbitalis*, but its smaller head, color, sculpture, and shorter ovipositor at once distinguish it.

Bracon alaskensis n. sp.

Female.—Length 7^{mm}; ovipositor 8^{mm}. An elongated form, the abdomen not much broader than the thorax, almost linear, and subcompressed along the venter. Head, thorax, legs, and ovipositor, black. The head is very slightly broader than long; an indistinct postorbital line, and a spot between the base of the antennæ and the eyes, red. The submarginal ridge of the prothorax, blotch on upper and lower margin of mesopleura, and dorsal surface of metathorax medially, red. Abdomen slightly longer than the head and thorax together, lemon-yellow; the plate of the 1st segment narrow, the margins parallel, except just at the base, with the usual longitudinal groove and keel on each side of it; the shield of the 2d segment is long, narrow, triangular, extending almost to the apical margin, the segment without oblique grooves laterally; the 3d segment is somewhat keeled or roof-shaped; the hypopygium is long, sharp, plowshare-shaped, extending much beyond the tip of the abdomen. Wings blackish hyaline; a pale line across 1st submarginal cell, a spot back of 1st and another at apex of 2d cubital cells; the 2d submarginal cell is long and narrow, twice as long as the 1st submarginal cell.

Habitat.—Fort Yukon, Alaska.

Described from one specimen received from Mr. L. M. Turner; taken at Fort Yukon, Alaska, in 1877.

It is very distinct from any described form in our fauna.

Bracon Schwarzii n. sp.

Female.—Length, $8\frac{2}{5}$^{mm}; ovipositor, 10^{mm}. Yellowish-red; the antennæ, eyes, ocelli, palpi, three terminal joints of anterior tarsi, middle and posterior tarsi, wings, and ovipositor, black. The parapsidal

grooves are distinct, punctate at bottom, lateral sutures of mesonotum, black; metathorax finely rugose on disk; abdomen slightly longer than the head and thorax together; the 1st segment rugose, the plate large, oval, the following segments all distinctly longitudinally striated, excepting the tip of the 4th and the following segments, which are retracted in the 4th; the 2d segment has two distinct oblique grooves at base, but no shield; the hypopygium is long, obtusely pointed, plowshare-shaped.

Habitat.—St. Catherine Island, Georgia.

Described from one specimen taken by Mr. E. A. Schwarz, April 20, 1880.

The species bears a superficial resemblance to *B. croceus* Cr., but it is larger, and the sculpture of abdomen is very distinct from that species.

(?) **Bracon arizonensis** n. sp.

Female.—Length, $3\frac{1}{5}^{mm}$; ovipositor, $2\frac{3}{5}^{mm}$. Honey-yellow; eyes, tips of mandibles, and apical portion of 3d abdominal segment, blotches on dorsal surface of the 4th, 5th, and 6th segments, and the ovipositor, black. The head is transverse, delicately shagreened, the face sparsely covered with white hairs; the thorax delicately shagreened with three distinct grooves—a median besides the parapsidals—all punctate at bottom; the scutellum is separated from the mesonotum by a broad, transverse groove, which is crenulate with delicate raised lines; the metathorax is rugose with some irregular raised lines; abdomen broadly ovate, not longer than the head and thorax together; all longitudinally striated, except the apical half of segments 3 and 4, and the following segments; all the femora are swollen, the last pair being the longest and stoutest. Wings, hyaline; stigma and veins, pale brown; the recurrent nervure is interstitial with the 1st transverse cubital, the latter oblique, the 2d submarginal cell being longer than the first along the lower margin; the submarginal cell is a little longer than the median, which would seem to place the species in the group *Exothecinæ*.

The metathorax in the male is black; otherwise it does not differ from the female.

Habitat.—Fort Grant, Arizona.

Described from three specimens, two females, one male, labeled No. 2610°, and reared July 27, 1883, from a cynipidous oak gall; collected by Mr. H. K. Morrison, at Fort Grant, Arizona.

Bracon cecidomyiæ.

Female.—Length, 3^{mm}; ovipositor, $2\frac{1}{5}^{mm}$. Honey-yellow, smooth and polished; vertex of head blackish; antennæ 32-jointed, longer than the whole insect, black, excepting the second joint, which is yellow; parapsidal grooves not sharply defined, nearly obliterated; lower portion of the mesopleura and mesosternum black; the metathorax has an impressed line down the center, the dorsal surface mostly black; abdomen ovate, the length of the thorax, lateral edges of 1st segment

rimmed, the plate smooth; all the following segments are smooth and polished, the 2d with a dorsal black blotch occupying most of its surface, leaving only the base and lateral margins yellow, the 3d, 4th, and 5th dorsally entirely black, excepting the suture between the 3d and 4th; ovipositor, black. Wings hyaline, iridescent; veins, pale brown, the stigma darker; venation as in *B. phycidis* Riley.

Habitat.—Alameda County, California.

Described from one specimen, labeled No. 3815^{x}, and reared January 28, 1886, from a cecidomyious gall on *Mimulus glutinosus*, taken in Alameda County, California, by Mr. Albert Koebele.

Bracon diastatæ n. sp.

Female.—Length, 2^{mm}; ovipositor, $\frac{1}{5}^{mm}$. Brownish-yellow, smooth and polished; antennæ twice the length of the whole insect, 36-jointed, black, excepting the two basal joints, which are concolorous with the body. Head large, transverse, as broad as the widest part of the thorax; parapsides not sharply defined, parallel; an irregular impression on disk of mesopleura; metathorax very short, finely rugose; abdomen ovate, the plate on 1st segment large, narrowed at base, the 2d with deep impressed lines extending from apical corners of 1st abdominal plate; other segments smooth; the very short ovipositor, black. Wings grayish hyaline, veins brown.

Described from one specimen, labeled No. 3205, and reared June 28, 1886, from a dipterous corn-leaf miner, *Diastata* sp.

Bracon gastroideæ n. sp.

Male.—Length, 3^{mm}. Head and thorax, smooth, polished, black; antennæ longer than the whole insect, 30-jointed, black, excepting the suture between the 2d and 3d joints; palpi black; head transvere, as broad as the thorax across from wing to wing; parapsidal grooves distinct, converging and almost meeting at base of scutellum; the latter with the transverse groove at base, and separated from the mesothorax by a slight ridge; mesopleura with two transverse, parallel grooves on the disk; metathorax with median and lateral keels; legs yellowish-red, tips of posterior tibiæ and tarsi, dusky; the plate of the 1st abdominal segment is oval, black, as well as the lateral grooves and keels, the lateral margins yellow; a black blotch at base of 2d segment conforming to the black plate of 1st segment. Wings, smoky hyaline; costæ and stigma, black, other veins clouded; the recurrent nervure is almost interstitial, joining the 1st submarginal cell at it lower posterior angle, the 1st transverse cubital vein oblique; the upper margin of 2d submarginal, therefore, shorter than the lower.

Described from a single specimen, labeled No. $329L^{01}$, reared June 7, 1886, from *Gastroidea cyanea* Mels.

Bracon pissodis n. sp.

Female.—Length, $3\frac{1}{5}^{mm}$; ovipositor, $2\frac{2}{5}^{mm}$. Head and thorax, smooth, polished, black; antennæ about the length of the whole insect, 40-

jointed, black; the first three joints of the flagellum are only a little longer than wide and shorter than the following, the others being about twice as wide; thorax smooth without parapsidal grooves and flat in front of scutellum, the latter subconvex, elevated above the dorsal line of the mesonotum, with a transverse groove at base, the groove punctate at bottom; metathorax with a red median carina, the rest of the surface smooth and polished, black, pleura pubescent. Abdomen yellowish red; plate of 1st segment narrowed at base, the lateral keels distinct; 2d segment has a long, narrow, triangular shield medially, extending from base to apex of segment, with lateral foveæ or grooves; the whole surface of these two segments is wrinkled, the following segments smooth, polished; ovipositor yellowish, its sheaths black. Wings black, stigma and veins brown; the recurrent nervure joins the 1st submarginal cell between the middle and the apex, the first transverse cubital oblique, the 2d submarginal cell small, subtrapezoidal.

Habitat.—Penacook, New Hampshire.

Described from one specimen, reared August 19, 1886, from *Pissodes strobi*, living in Norway spruce, sent to the Department by Mr. J. Whitaker, of Penacook, New Hampshire.

Bracon bucculatricis n. sp.

Male.—Length, $1\frac{4}{5}$mm. Honey-yellow; eyes, ocelli, lateral lobes of thorax, and middle lobe anteriorly, black; mesopleura, disk of metathorax, and four apical abdominal segments dorsally, dusky or brown; the abdomen is microscopically and delicately punctate. Wings hyaline, veins pale brown; the 2d cubital cell is triangular; the recurrent nervure is not interstitial, but joins the 1st submarginal cell just back of the base of the 1st transverse cubital, the latter very oblique and the 2d branch of the radius is much shorter than the 1st, making the 2d submarginal cell long, triangular.

Habitat.—Washington, D. C.

Described from one specimen, labeled "Parasite on *Bucculatrix* on oak, June 10, 1886."

The peculiar shape of the 2d cubital and the 2d submarginal cells at once distinguishes this species from all others; and these peculiarities will eventually necessitate the erection of a new genus for its reception.

Bracon xanthonotus n. sp.

Female.—Length, $2\frac{4}{5}$mm; ovipositor, $\frac{2}{5}$mm. Black, the surface all granulated and more or less pubescent; orbital lines, a spot on cheeks at base of eyes, and a dilated spot below base of antennæ, the legs, excepting black coxæ, and the dorsum of abdomen, excepting lateral margins, yellow; the antennæ are 24-jointed, yellowish, more or less dusky beyond apical half; abdomen ovate, the plate of 1st segment large, trapezoidal, occupying most of its surface, black, the lateral margins of this segment alone being yellow; the 2d segment is more than twice as wide as long and is slightly rugose on either side of a more or less dis-

tinct median ridge. Wings hyaline, veins pale brown, the costæ darker; venation as in *B. phycidis* Riley. The male is but $2\frac{1}{5}^{mm}$ in length and similar to the female, excepting that the abdomen is brown and the antennæ but 21-jointed.

Habitat.—San Diego, California.

Described from one male and fourteen female specimens, labeled No. 734 P°, reared from an unknown Phalænid sent to the Department by Mr. G. W. Bares, of San Diego, California.

Bracon analcidis n. sp.

Female.—Length, $3\frac{2}{5}^{mm}$; ovipositor, 2^{mm}. Pale yellowish-brown, smooth and polished; head reddish-brown, the face dusky; eyes black; antennæ 35-jointed; mesothoracic parapsides distinct; metathorax finely rugose; abdomen ovate, the three basal segments shagreened, the following segments smooth, polished; the plate of 1st segment is large, trapezoidal, margins rimmed; ovipositor black. The wings are hyaline, iridescent, veins pale brown, stigma yellowish; venation as in *B. phycidis* Riley.

Habitat.—Missouri, ? St. Louis.

Described from one specimen, labeled No. 428°, reared by Professor Riley in September, 1870, from a snout beetle, *Analcis fragariæ.*

Bracon vernoniæ n. sp.

Female.—Length, 3^{mm}; ovipositor, 2^{mm}. Yellowish-brown; eyes, ocelli, palpi, antennæ, a spot at base of anterior wings, sutures surrounding scutellum, metathoracic disk, mesopectus, plate of 1st abdominal segment, a spot at base of 2d medially, and the ovipositor, black. Head and thorax smooth, polished, parapsidal grooves distinct, although not sharply defined; antennæ long, 31-jointed; abdomen ovate, shagreened, plate of 1st segment large, trapezoidal; all tarsi and posterior tibiæ toward tips dusky. Wings dusky hyaline, veins pale brown, the costæ darker, the stigma more or less yellowish; venation as in *B. phycidis* Riley.

The male is but 2^{mm} long, all black excepting the 2d abdominal segment, which is yellow excepting a triangular spot on middle at base; the whole abdomen is smooth and polished; antennæ 26-jointed; the knees and bases of tibiæ are brown, while the wings are much darker than in the female and strongly iridescent. It may be a different species from the female, although reared from the same plant.

Described from one male and one female, labelled No. 3557°, the male reared May 18, the female May 15, 1885, from the seed capsules of *Vernonia noveboracensis;* two other males are in the collection labeled as having been reared from larvæ feeding in capsules of same plant.

The female comes nearest to *B. xanthostigma* Cress.

Bracon junci n. sp.

Male and female.—Length, 2^{mm}. Black, smooth, and polished, sparsely pubescent; inner orbits to summit of eyes, mandibles, and palid pale

yellowish; antennæ 22-jointed, black; parapsidal grooves delicately impressed, lined with pale sericeous hairs, pleura pubescent; metathorax smooth; abdomen ovate, in the female black, excepting the lateral margins of 1st segment, the plate oval, smooth, polished; ovipositor slightly exserted; in the male the lateral margins of 1st segment and the sutures of the following segments are yellowish, the dorsal portions being brownish instead of black; legs brown, tarsi dusky. The wings are hyaline, iridescent; venation as in *B. phycidis* Riley, the veins pale brown.

Described from two specimens, one male and one female, reared September 18, 1876, from *Juncus balticus*, and evidently parasitic on some dipterous larva infesting this grass.

Bracon juncicola n. sp.

Male.—Length, 2^{mm}. Honey-yellow; vertex of head and the surface back of eyes, the raised basal corners of 2d abdominal segment and the apical margins of the following segments more or less brownish; antennæ 27-jointed, black; parapsidal grooves delicately impressed, converging behind; metathorax smooth, polished; abdomen ovate; the plate of the 1st segment narrowed in front, rounded behind, the lateral margins elevated; legs pale, pubescent. Wings grayish-hyaline, veins pale brown; the recurrent nervure is almost interstitial with the 1st transverse cubital, joining the 1st submarginal cell just in front of it. The female does not differ from the male except in having a short black ovipositor not two-fifths of a millimeter long, and in the posterior tibiæ and tarsi being slightly dusky.

Described from three specimens, two males, reared September 11, 1876, from *Juncus balticus*, and one female, reared July 10, 1884, from a case bearing Tineid, probably *Coleophora*, living on *Juncus*.

In addition to the difference in color and number of joints in the antennæ there is a slight difference in the venation of anterior wings, which will at once distinguish this species from the other just described from the same plant.

Bracon pomifoliellæ n. sp.

Male.—Length, 2^{mm}. Pale honey-yellow; eyes and ocelli black; abdominal segments from the 3d inclusive, pale brown; antennæ 24-jointed, the two basal joints pale yellow, flagellum brown; parapsidal grooves delicately impressed, and meeting before reaching the scutellum; between their apices and the base of the scutellum are some large confluent punctures; the scutellum is deeply impressed at base; metathorax smooth; abdomen ovate, the sutures beyond the 3d strongly constricted; the 1st segment is slightly longer than the 2d, with deep lateral grooves, the plate thus formed being delicately longitudinally aciculated; legs pale; wings hyaline, veins yellowish, the venation as in *B. junci*, the apical margins ciliated.

Described from a single specimen, labeled No. 82^{xol}, reared April 20, 1871, from *Bucculatrix pomifoliella* Clem.

Bracon euuræ n. sp.

Female.—Length, $2\frac{3}{5}$mm; ovipositor, $1\frac{3}{5}$. Honey-yellow, smooth and polished; head, tips of mandibles, antennæ, lower margins of mesopleura, extreme apex of scutellum, postscutellum, dorsum of metathorax, plate of 1st abdominal segment at base, a quadrilateral blotch on 2d segment, and blotches occupying most of the dorsal surface of 3d and 4th segments, and ovipositor, black. Head transverse, an orbital line at summit of eyes and face, yellow; antennæ 32-jointed, slightly longer than the whole insect, 1st joint basally and the 2d joint apically, yellow; parapsidal grooves not distinctly impressed; metathorax smooth, with a slight median groove; abdomen ovate, the plate of 1st segment trapezoidal, the following segments smooth; legs concolorous with the body, the terminal joint of all the tarsi and the apex of posterior tibiæ and tarsi, except the sutures of joints, dusky. Wings hyaline, strongly iridescent, veins dark brown, excepting the costæ, median and submedian veins, which are more or less yellowish; the stigma almost black; venation as in *B. phycidis*, the 2d submarginal cell being narrowed and somewhat lengthened.

Habitat.—California.

Described from one specimen, labeled No. 3747[x], reared January 23, 1886, from a saw-fly (*Euura* sp.) found on *Salix*, sent to the Department from California by Mr. Albert Koebele.

Bracon juglandis n. sp.

Male.—Length, $2\frac{2}{5}$mm. Black, smooth, and polished; vertex of head (excepting a black spot inclosing ocelli, the depressed space for reception of scape and a line running from between antennæ connected with a triangular black spot on clypeus), tegulæ, parapsidal grooves connected with a transverse line in front of the scutellum, lateral margins of 1st and 2d segments and the suture between, bright yellow; occiput, with the exceptions already mentioned and the antennæ, black. The antennæ are broken and the joints can not be counted. Metathorax smooth; the abdominal segments beyond the 2d are distinctively separated by distinct grooves, and each segment has a median dorsal impression; legs, black; tips of coxæ and trochanters, basal and apical tips of femora and the tibiæ and tarsi, yellow, the latter more or less obfuscated. Wings, dusky hyaline, paler at tips, veins brown, venation as in *B. phycidis*.

Habitat.—Los Angeles, California.

Described from one specimen, labeled No. 151°; reared by Mr. Albert Koebele from a lepidopterous larva infesting old walnuts, at Los Angeles, California.

Bracon tortricicola n. sp.

Female.—Length, $2\frac{4}{5}$mm; ovipositor, $\frac{4}{5}$mm. Pale ferruginous and black; a spot inclosing ocelli connected with a line running to the base of each antenna, vertex of head, occiput, and antennæ, black; parapsidal

grooves and posterior half of middle lobe of mesonotum, posterior angles of prothorax, tegulæ, the triangular piece beneath anterior wing, mesopleura, except along the basal margin, metathorax and legs, including coxæ, pale ferruginous; metathorax smooth polished, excepting a slight median keel connected with some slight wrinkles posteriorly; abdomen ovate, delicately shagreened; the plate of the 1st abdominal segment trapezoidal, black, and connects with a black spot of the same width on the 2d, which is itself connected with broader black bands on the 3d, 4th, and 5th segments, the lateral margins of the 1st and the following segments all yellow; ovipositor, black. Wings, dusky hyaline, iridescent; veins and stigma, pale brown; venation as in *B. phycidis* Riley.

Habitat.—Kirkwood, Missouri.

Described from one specimen received from Miss Mary E. Murtfeldt, of Kirkwood, Missouri, and labeled "Parasite on Tortricid in seeds of *Ambrosia trifida*, April 28, 1885."

Bracon trifolii n. sp.

Male.—Length, $1\frac{3}{5}$mm. Black, polished, with a fine, sparse, whitish pubescence; orbital line, lateral margins of 1st abdominal segment and the 2d, except a slight blotch medially at base, bright yellow; legs, honey-yellow. The antennæ are long, 24-jointed, black, the flagellar joints being slightly more than twice as long as wide. Parapsidal grooves are distinct, but not sharply defined or deep; the transverse groove at base of scutellum is small and not very deep; metathorax, short, smooth; abdomen ovate, smooth, the plate on 1st segment distinct; convex posteriorly, smooth. Wings, hyaline, strongly iridescent; the veins and stigma, pale brown; venation as in *B. phycidis* Riley.

Habitat.—Washington, D. C.

Described from a single specimen, labeled No. 101°, and reared June 30, 1879, from a Tineid living in the flower-heads of white clover.

Bracon atricollis n. sp.

Female.—Length, 4mm; ovipositor, $2\frac{2}{5}$mm. Brownish-yellow, smooth, and polished; ocelli connected with a black spot in front, tips of mandibles, antennæ, collar, mesothoracic sutures, postscutellum, metathorax excluding the metapleura, plate of 1st abdominal segment conforming to a quadrate spot on 2d, and dorsal blotches on the following segments, and ovipositor, black.

The face below the middle ocellus is microscopically shagreened; parapsidal grooves distinct; the mesopleuræ have a round fovea at the middle of the posterior margin; metathorax finely rugose, pubescent, with a short median keel anteriorly; abdomen long-ovate, very slightly longer than the head and thorax together, shagreened; plate of 1st segment trapezoidal, the posterior portion convex; legs long, slender, the posterior tibiæ one-third longer than the middle pair, the posterior tarsi being almost as long as the tibiæ; apical tibial spurs short. Wings

dusky hyaline, iridescent, veins brown, stigma yellowish; venation as in *B. phycidis*, but the 2d submarginal cell is much lengthened along its basal margin being twice as long as the 1st submarginal cell.

Described from one specimen, taken probably in Missouri. Coll. C. V. Riley.

Bracon nevadensis n. sp.

Female.—Length, $3\frac{3}{5}$mm; ovipositor, $1\frac{3}{5}$mm. Black, smooth, polished, and sparsely covered with long, sericeous hairs. The head is rather large, subquadrate; orbital line, extending into a wider streak on the cheek back of the eye, a large irregular spot above base of mandibles, clypeus and mandibles, the parapsidal grooves, tegulæ and the triangular piece in front, scutellum, mesopleuræ, metapleuræ, legs, lateral margins of 1st abdominal segment, the 2d, except a black spot back of the plate of 1st segment, the basal half of the 3d, and a slight streak at the base of the 4th widened at lateral margins, all red, or reddish-brown. The antennæ are broken at tips, but of the remaining portion, 28 joints can be counted; the flagellar joints are not much longer than wide; maxillary and labial palpi, black; parapsidal grooves not sharply defined, smooth, lined with hairs; the groove at base of scutellum crenulated; metathorax smooth, with indications of a median carina posteriorly, very hairy; mesopleuræ smooth, polished; the sternum and the middle and posterior coxæ, *beneath*, are black; there is a black streak along the under surface of the middle femora, and their tibiæ and tarsi are dusky; the 2d joint of posterior trochanters and posterior tibiæ and tarsi, are black.

The abdomen is ovate, the plate of 1st segment quadrate, roughened, keeled laterally; the 2d and basal half of 3d segments aciculated; following segments polished. Wings. dusky hyaline, iridescent, stigma and veins brown; the venation is similar to *B. phycidis*.

Habitat.—Nevada County, California.

Described from one specimen, collected by Mr. A. Koebele, September 3, 1885.

Bracon gelechiæ n. sp.

Male and female.—Length, $2\frac{1}{5}$mm; ovipositor, $\frac{3}{5}$mm. Black, subopaque, delicately shagreened and sparsely pubescent; anterior and superior orbits, lateral margins of 1st abdominal segments, and sometimes the 2d segment, except a black streak down the middle, and the 3d, 4th, and 5th segments laterally, venter, palpi, trochanters, apices of femora and tibiæ, with all the tarsi, honey-yellow.

The antennæ are 26-jointed; parapsidal grooves wanting. Wings, hyaline; veins, brown; the median transverse nervure is interstitial with the basal nervure; the 1st discoidal cell petiolate; the recurrent nervure joins the 1st submarginal cell about two-thirds its length, the 1st branch of the radius being about as long as the 1st transverse cubital nervure, which is oblique, the upper margin of the 2d submarginal cell being therefore about half the length of the lower margin.

Habitat.—Washington, D. C., and Kirkwood, Missouri.

Described from three specimens, reared October 5, 1880, from an unnamed *Gelechia* on oak, and three specimens received from Miss Mary Murtfeldt, labeled "Parasite on *Gelechia cinerella* Murtfeldt."

Bracon notaticeps n. sp.

This species in size, color, and sculpture is exactly similar to the above, only the legs are slightly paler and the antennæ are 28-jointed.

Habitat.—Washington, D. C.

Described from two specimens, labeled No. 709[a], reared from an oak-leaf skeletonizer.

Bracon Cookii n. sp.

Male.—Length, $2\frac{3}{5}^{mm}$. Head and thorax smooth, polished, black; orbits below antennæ, lower portion of cheeks, mandibles, legs, and abdomen, pale brownish yellow; the apical two-thirds of posterior tibiæ and their tarsi, excepting incisions of joints, the plate of the 1st abdominal segment, a spot on the disk of the 2d, and the disks of the 3d, 4th, 5th, and 6th segments, black, or brownish-black. The antennæ are long, cylindrical (broken at tips), the flagellar joints after the 2d are hardly twice as long as wide. The parapsidal grooves are only indicated anteriorly; the mesopleuræ are smooth with a curved line on the disk behind the middle; scutellum smooth, with a crenulate furrow at base; metathorax smooth, polished, with spiracle sulci; abdomen minutely shagreened.

Wings, hyaline; veins, brown; the venation as in *B. vernoniæ*.

Habitat.—Lansing, Michigan.

Described from a single specimen, received from Prof. A. J. Cook, labeled No. 569, "Parasite on leaf-miner on basswood."

Subfamily **EXOTHECINÆ**.

EXOTHECUS Wesmael.

Exothecus magnificus n. sp.

Female.—Length, 15^{mm}; ovipositor, 24^{mm}. Head, antennæ, middle coxæ and 1st joint of trochanters and the tarsi, posterior legs, wings, 4th abdominal segment and those following, and ovipositor, black; thorax, legs, three basal joints of abdomen, and two broad bands across the wings, orange red; the 2d joint of posterior trochanters and tibiæ at base, red. The antennæ about 93-jointed, extending to the middle of abdomen, the joints being broader than long; the abdomen is longer than the head and thorax together, compressed along the venter; the ventral valve prominent and obtusely rounded at apex.

Habitat.—Columbus, Texas.

Described from a single specimen, taken by Mr. E. A. Schwarz at Columbus, Texas, in July, 1879.

It is the largest and most beautiful Braconid known to me, and may be recognized at once by its beautifully banded wings.

RHYSIPOLIS Förster.

Rhysipolis carinatus n. sp.

Male.—Length, 8mm. Head and thorax black, coarsely shagreened, and covered with pale sericeous hairs; abdomen, except the 1st segment, and the legs, except coxæ, ferruginous. Head short, transverse; eyes within, opposite the base of antennæ, slightly emarginate; mandibles rufous, the tips black; palpi, pale; ocelli, yellowish; antennæ, 62-jointed, black; parapsidal grooves sharply defined; scutellum with a deep transverse fovea at base; metathorax rugose with median and lateral keels; abdomen, long, the sides nearly parallel; no plate on 1st segment; the 1st and 2d segments with a longitudinal keel medially, the sculpture coarser than on the following segments, somewhat longitudinally aciculated; the other segments are smoother. Wings, hyaline, strongly iridescent, the stigma black, veins brown; the submedian cell is much longer than the median; the recurrent nervure joins the 1st submarginal between the middle and its apex, the 2d submarginal cell being subquadrate.

Habitat.—Texas.

Described from one specimen in Belfrage collection.

Rhysipolis orchesiæ n. sp.

Female.—Length, 2mm; ovipositor, $\frac{2}{5}$mm. Black, smooth, polished; palpi and legs, yellowish white. The antennæ are broken off at tips, two basal joints pale yellow, flagellum, black; parapsidal grooves, distinct, not, however, extending to base of scutellum; the middle lobe is delicately rugose posteriorly; side of collar, mesopleuræ, excepting a subconvex space below posterior wings, and metathorax, rugose; abdomen ovate, subpetiolated, the two basal segments longitudinally striated, the following segments smooth polished. Wings, hyaline, iridescent, veins, brown; venation as in species just described, excepting the 2d submarginal cell is trapezoidal.

Habitat.—Grand Ledge, Michigan.

Described from a single female, labeled No. 2465°, reared from a pupa of *Orchesia castanea*, taken at Grand Ledge, Michigan, July 24, 1881.

Subfamily SPATHIINÆ.

SPATHIUS Nees.

Spathius sequoiæ n. sp.

Female.—Length, 3mm; ovipositor, $1\frac{2}{5}$mm. Reddish-brown; sutures, mesopleuræ, and metathorax blackish; abdomen from the middle of 2d segment piceo-black. Head subquadrate, smooth, polished; eyes black; mandibles very small, bidentate, the teeth and tips black; antennæ long, slender, 25-jointed; thorax delicately shagreened; parapsidal grooves distinct, converging and meeting about the middle of the mesonotum, the middle lobe with a delicate longitudinal line down the

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center; metathorax minutely rugulose, with two parallel longitudinal keels on the disk; legs brown, the trochanters and tarsi paler; abdomen smooth, polished, the petiole two-thirds the length of the abdomen, delicately aciculated, yellowish. Wings fusco-hyaline, clear at base and at apex, with a hyaline streak extending across the wings from the base of the stigma; veins brown.

Habitat.—Alameda County, California.

Described from two specimens received from Mr. Albert Koebele, labeled "Parasite on coleopterous larva on redwood." No date is given.

Subfamily PAMBOLINÆ.

DIMERIS Ruthe.

Dimeris rufipes n. sp.

Female.—Length, 2^{mm}; ovipositor, $\frac{2}{5}^{mm}$. Black, polished; legs, lateral margins of 1st abdominal segment, the sides and sides of the 2d segment, rufous; head subrotund, smooth, the face pubescent; mandibles red; palpi pale; antennæ 17-jointed, terminal joints of flagellum, submoniliform, the terminal joint being two and a half times as long as the preceding; parapsidal grooves distinct, converging and meeting posteriorly; the collar and metathorax rugose, the latter also areolated with the posterior angles subconic; abdomen long, subcompressed along the sides, a little longer than the head and thorax together; the 1st segment rugose, the following smooth but more or less wrinkled. Wings hyaline, veins yellowish, stigma and costæ brown; the submedian cell is much longer than the median, while the 3d cubital cell is not entirely closed.

Habitat.—Lafayette, Indiana.

Described from a single specimen received from Mr. F. M. Webster, of Lafayette, Indiana.

Subfamily DORYCTINÆ.

DORYCTES Haliday.

Doryctes longicauda n. sp.

Female.—Length, $4\frac{4}{5}^{mm}$; ovipositor, 8^{mm}. Stature and form similar to *Exothecus aciculatus* Cr., but at once recognized by the very long ovipositor and its different sculpture. Head, antennæ, legs, and the middle lobe of mesothorax, brown; the head is finely rugose, subquadrate; the whole thorax is rugose, the metathorax having a delicate median longitudinal groove anteriorly; the two basal abdominal segments are longitudinally striate, the following segments smooth and polished, although under a high power they exhibit a delicate punctuation. Wings dusky, the veins pale; the venation as in *E. aciculatus* Cr., which belongs to this group.

Habitat.—Texas.

Described from one specimen in Belfrage collection.

Doryctes incertus n. sp.

Female.—Length, 5mm; ovipositor, 1mm. Black; legs honey-yellow; abdomen beneath more or less rufous. Head quadrate, the vertex smooth, polished, face rugose; thorax rugose, the parapsidal grooves distinct anteriorly, obliterated posteriorly, the surface of middle lobe posteriorly depressed and coarsely rugose just in front of the scutellum; mesopleura smooth with a large groove across the disk; tegulæ yellow; metathorax finely rugose and areolated with distinct raised lines, the two basal areas large, quadrilateral; abdomen ovate, about as long as the head and thorax together, the 1st segment coarsely, longitudinally striate, the following smooth and polished; the segments of this portion of the abdomen are so finely separated that the whole surface has the appearance of one solid polished segment. Wings hyaline, very slightly dusky; the veins pale brown.

Described from a single specimen, without locality, but taken probably at Washington, D. C.

Doryctes mellipes n. sp.

Female.—Length, 5mm; ovipositor, $1\frac{3}{5}$mm. In stature and color this species agrees exactly with *D. incertus*, and in sculpture, excepting it is more coarsely rugose. The vertex of the head is not smooth but rugose; back of the ocelli the rugosities become transversely striate; the thorax is uniformly rugose, coarser than in *D. incertus;* the upper margin of the mesopleura beneath the wings is rugose, while the metathorax is not as distinctly areolated and the ovipositor is longer; otherwise similar.

Habitat.—Central Missouri.

Described from one specimen, labeled "Parasite from a borer in decayed cherry-wood, April 27, 1888."

Doryctes texanus n. sp.

Female.—Length, 5mm; ovipositor, $5\frac{2}{5}$mm. Brown; thorax black; legs rufous, the anterior and middle pairs more or less yellowish. Head transversely striate above; palpi long, pale yellowish; antennæ long, very slender, multiarticulated; thorax rugose, the parapsidal grooves distinct; metathorax slightly longer than high, rugose, with two slight keels posteriorly where the abdomen is attached; abdomen 6-jointed, shaped somewhat as in *Chelonus*, as long as the head and thorax together, rugose, the rugosities somewhat longitudinally directed on the 1st and 2d segments; the 3d and following short segments much smoother; the 1st and 2d segments comprise three-fourths of the length, the 2d being the longest; the 1st has two keels at base hardly extending to the middle of the segment, the 2d has an undulated cross-furrow beyond the middle, and another cross-furrow just back of it, between it and the apex of the segment which curves just before reaching the lateral margins and connects with the first, thus forming on the segment a transverse incised space which will readily distinguish the species;

the base of the 1st, apex of the 2d and 3d segments are more or less dusky. Wings hyaline, the stigma and veins brown; venation as in previous species.

Habitat.—Texas.

Described from one specimen. (Coll. Belfrage.)

Subfamily RHYSSALINÆ.

RHYSSALUS Haliday.

Rhyssalus atriceps n. sp.

Female.—Length, 2^{mm}; ovipositor, $\frac{2}{5}^{mm}$. Head smooth, polished, black; thorax, legs, and abdomen, pale ferruginous. Antennæ 22-jointed, basal five or six joints yellowish, beyond dusky; the 3d joint is the longest, about five times as long as wide, the following joints gradually subequal; parapsidal grooves distinct, converging and meeting before reaching the base of the scutellum, the posterior portion of the middle lobe roughened, with a slight keel medially extending to the base of the scutellum; pleura delicately shagreened; metathorax rugose, areolated; abdomen ovate, strigose, the three basal segments occupying most of the surface, the following very minute, together not longer than half the length of the 3d. Wings hyaline, veins yellowish; the submedian cell is longer than the median, the recurrent nervure interstitial with the 1st transverse cubital, the latter oblique, the second submarginal cell, therefore, subtrapezoidal.

The male differs from the female only in having the terminal abdominal segment beyond the 3d longer; together they are as long as the second segment.

Described from five specimens, two male and three female, reared August 15, 1886, from a Tortricid, *Cacœcia rosaceana* Harris.

Rhyssalus similis n. sp.

Male.—Length, $1\frac{3}{5}^{mm}$. Head and apex of abdomen, black; thorax and abdomen, reddish-brown; the 2d abdominal segment, yellow. Antennæ, 20-jointed, dusky, the basal joint yellowish; palpi, pale. The head and thorax are smooth, polished; parapsidal grooves distinct; metathorax rugose, areolated; the 1st abdominal segment and the 2d, at base, are delicately aciculated; beyond smooth; wings, hyaline; the venation as in species just described.

Described from two male specimens, labeled No. 186°, reared August 8, 1884, from an unknown larva taken on hop vine.

Rhyssalus loxoteniæ n. sp.

Male and female.—In size, sculpture, and general appearance this species is exactly similar to *R. atriceps*, only the mesothoracic lateral lobes laterally, and the middle lobe anteriorly, pleura, metathorax, the 1st abdominal segment and the small apical segments beyond the 2d are dusky or black; the 2d segment is very long, seemingly composed of the 2d and 3d soldered together, at least in one specimen this seg

ment is partially divided by a transverse suture laterally. The two basal antennal joints, the collar, and legs are yellow; antennæ, 22-jointed; otherwise as in *R. atriceps*.

The male is similar to the female, only the 1st abdominal segment and the terminal joints beyond the 2d are black; the small apical segments have a transverse row of punctures across each segment.

Habitat.—Lafayette, Indiana.

Described from three specimens, one male, two females, labeled No. 3412°, and reared June 3, 1883, from *Loxotenia clemensiana*, a leaf-folder on wheat received from Mr. F. M. Webster, of Lafayette, Indiana.

(?) **Rhyssalus selandriæ** n. sp.

Female.—Length, $3\frac{2}{5}^{mm}$; ovipositor, 1^{mm}. Honey-yellow; form elongated. The head, antennæ, and ovipositor, pale ferruginous; eyes, brown. Antennæ, 31-jointed, very long and slender, about one and a half times as long as the whole insect, the flagellar joints being about six times as long as wide; parapsidal groove distinct; the scutellum with a transverse, crenulated furrow at base; metathorax smooth but delicately areolated; abdomen, ovate; the 1st and basal half of 2d, the transverse furrow across it, and the sutures of the 3d and 4th segments, longitudinally aciculated; rest of insect smooth, polished. Wings, hyaline; veins, pale yellowish; the 1st transverse cubital nervure is very delicate, almost obliterated.

Described from two female specimens, labeled, "Probably parasitic on *Selandria cerasi*, July 5, 1879." (Coll. C. V. Riley.)

Notwithstanding the three submarginal cells, this species is closely related to the genus *Hecabolus*, and the *tout ensemble* like *Cœnophanes* Förster, and it probably belongs in the group with these genera. The groups *Hecabolinæ* and *Rhyssalinæ* are separated upon very slight differences, and it would be more natural to unite them as one group.

(?) **Rhyssalus trilineatus** n. sp.

Male.—Length, 2^{mm}. Head, thorax, and 1st abdominal segment black; two basal antennal joints, palpi, tegulæ, and legs pale honey-yellow or yellowish white; flagellum and abdomen dusky, the latter brownish. The head is transverse, smooth, polished; mandibles pale, tips black; antennæ 21-jointed, slender, the flagellar joints of nearly equal length, about 4 times as long as wide; parapsidal grooves distinct, yellow, the middle lobe impressed posteriorly in front of the scutellum, with a central *grooved* line extending to the base of the scutellum; prothorax yellow; the scutellum has a grooved line across the base, separated into two equal portions by a raised line in the middle; metathorax rugose, with two keels down the center; abdomen ovate, the 1st segment rugose, the others irregularly wrinkled. Wings hyaline; veins pale brown; the submedian cell is longer than the median, and the recurrent nervure is not interstitial, but joins the 2d submarginal cell at its lower posterior angle.

Described from a single specimen labeled No. 2871°, reared May 14, 1883, from a case-bearing Tineid *Coleophora caryæfoliella* Clem., found on hickory.

Rhyssalus oscinidis n. sp.

Male.—Length, $1\frac{2}{5}^{mm}$. Black, smooth, shining; lower portion of cheeks, face, palpi, legs, and 2d abdominal segment honey-yellow; antennæ long, slender, 25-jointed, the 2d joint and the flagellum dusky, the basal joint and the suture between the 2d and 3d yellow; thorax smooth, without parapsidal grooves; scutellum has a large lunate fovea at base, the bottom of which is crenulate with raised lines; metathorax rugose; abdomen oval, the 1st segment aciculated, the following smooth, polished; wings hyaline, the veins pale brown; the transverse medial nervure is almost interstitial with the basal, while the recurrent nervure is interstitial with the 1st transverse cubital; the 2d submarginal cell is twice the length of the 1st.

Habitat.—Washington, D. C.

Described from one specimen, reared July 6, 1886, from a dipterous leaf-miner, *Oscinis* sp., found on *Plantago major*.

Rnyssalus carinatus n. sp.

Male.—Length, 3^{mm}. Head, thorax, and dorsal surface of abdomen black; two basal antennal joints, legs, sides of abdomen, and venter honey-yellow; palpi pale; flagellum of antennæ dark brown; mandibles brown, tips black. The vertex of head is smooth, polished; the face rugose, pubescent; antennæ 45-jointed, the 3d joint the longest, the 4th slightly shorter, while the following are about twice as long as wide; parapsidal grooves deep, distinct, the dorsal surface of the lobes smooth, the rest of the thorax rugose, pubescent; metathorax coarsely rugose, areolated. The abdomen is ovate, the basal segment rugose with two prominent keels, the 2d segment aciculated at base, while the following segments are smooth. Wings hyaline, iridescent, veins brown; the submedian cell is distinctly longer than the median; the recurrent nervure is not interstitial with the 1st transverse cubital nervure, but joins the 1st submarginal cell between its middle and the apex.

Habitat.—Missouri.

Described from one specimen. (Coll. C. V. Riley.)

ONCOPHANES Förster.

Oncophanes melleus n. sp.

Female.—Length, 2^{mm}; ovipositor, about $\frac{2}{5}^{mm}$. Pale honey-yellow; eyes, tips of mandibles, dorsal surface of metathorax, and 1st abdominal segment black. The parapsidal grooves are distinct, but do not extend to the base of the scutellum; the middle lobe has a longitudinal groove down the center, and the depressed posterior portion, in front of the scutellum, is finely punctate; the scutellum has a transverse groove at base, the bottom of which is crenulated; metathorax smooth

but areolated, the median keel quite distinct; abdomen ovate; the 1st segment is roughened, the plate distinct, narrowed at tip, the sides parallel; the other segments are smooth and more or less obfuscated. Wings hyaline, the stigma and veins pale; the 1st branch of the radius issues from beyond the middle of the stigma, the 2d branch being but slightly longer than the 1st, while the 1st transverse cubital nervure is very oblique and interstitial with the recurrent nervure; the 2d submarginal cell is, therefore, very much longer along its lower than along its upper margin.

Habitat.--Washington, D. C.

Described from four specimens, three having lost their heads and one its antennæ, reared August 24, 1884, from a small larva found on oak.

Subfamily RHOGADINÆ.

PETALODES Wesmael.

(?) Petalodes politus n. sp.

Male.—Length, 11^{mm}. Black, polished; palpi, anterior and middle legs, and posterior coxæ, trochanters and tarsi, honey-yellow; posterior femora and tibiæ rufous. Antennæ long, involute at tips, 43-jointed, the two basal joints and the two following more or less yellow, the rest black; the joints of the flagellum are a little more than four times longer than wide. The head is shaped as in the genus *Rhogas;* vertex smooth, a deep excavation in front of the ocelli; the inner orbits and face punctate, the latter rugose-punctate and pubescent; mandibles rufous at base; maxillary palpi unusually long, when extended reaching beyond the anterior coxæ, 5-jointed, the 1st annular, the 2d half the length of the 3d, dilated, especially to one side at base, the following joints long and cylindrical, the terminal joint being slightly longer than the 4th; labial palpi short, 3-jointed, not as long as the 2d and 3d joints of the maxillary palpi united, the basal joint is swollen, the other two cylindrical, the 3d being very short. Parapsidal grooves distinct, deep, converging and meeting posteriorly, the middle lobe being prominent; the collar is rugose; disks of mesopleura smooth, the margins rugose; metathorax rugose, areolated, the spiracles oval. The abdomen is long, linear, subcompressed, one and a third times longer than the head and thorax together, black, polished, the ventral surface of the 1st and 2d segments and the incisions of 3d and 4th only honey-yellow; the 1st segment above or dorsally, is depressed about the middle, deeply so laterally, and this portion is keeled to near base of segment, the apex convex; the tip of the abdomen is pubescent. Wings hyaline; the stigma and veins, more or less black, the costæ, median and submedian veins being yellowish toward their base; the submedian cell is not longer than the median and the 2d submarginal cell is trapezoidal; otherwise the venation is as in *Rhogas.*

Habitat.—Lansing, Michigan.

Described from one male specimen received from Prof. A. J. Cook. This insect shows strong affinities with *Macrocentrus*, but as the mandibles form apparently a semicircular opening, it has not been placed in that group, and is doubtfully referred to the above genus.

HETEROGAMUS Wesmael.

To this genus belong *Rh. delicatus* Cr., *Rh. fumipennis* Cr., and *Rh. texanus* Cr.

RHOGAS Nees.

Rhogas harrisinæ n. sp.

Male.—Length, $5\frac{1}{5}$mm. Pale honey-yellow; eyes large, prominent, black, slightly emarginated opposite base of antennæ; antennæ long, very slender, 42-jointed, the flagellar joints after the 1st a little more than thrice as long as wide; metathorax delicately rugose; abdomen ovate, sessile, the 1st, 2d, and basal portion of the 3d segments longitudinally aciculated and without a central longitudinal carina, the following segments smoother, delicately punctate; wings hyaline, strongly iridescent, the costæ and stigma yellow, the median, submedian, and basal veins and the veins surrounding the 1st and 2d discoidal cells, and the 1st submarginal cell, black or very dark brown, piceous; the 2d submarginal cell is very long, trapezoidal, slightly narrowed at apex.

Habitat.—Jacksonville, Florida.

Described from one specimen sent to the Department by the writer, who reared it in October, 1881, from the larva of *Harrisina americana* Harris, taken on grape-vine.

It appears closely allied to *Rh. melleus* Cr., but is at once separated from it and from other species by the absence of the longitudinal central carina on basal abdominal segment.

Rhogas pubescens n. sp.

Male.—Length, 9mm. Similar in stature to *Rh. atricornis* Cr. Head and thorax black, rugose, covered with a rather dense white pubescence, denser on face, pleura, and metathorax; palpi, abdomen, and legs rufous, pubescent; antennæ black, 68-jointed, the joints of the antennæ being about as long as wide; metathorax rugose, with only a slight keel at base medially; the posterior femora are slightly swollen, about as in *Rh. mandibularis* Cr.; the abdomen is rugose, the rugosities on the terminal segments being finer and the surface shining; there is a distinct medial longitudinal carina on 1st and 2d segments and at the base of 3d. Wings dusky hyaline; the costæ and stigma black, the veins brown; the 2d submarginal cell is quadrate, a little longer than high.

Habitat.—Wisconsin.

Described from one specimen.

The number of antennal joints, more densely pubescent body and color, will readily separate this species from any other in our fauna.

Rhogas geometræ n. sp.

Male.—Length, $5\frac{2}{5}$mm. Very close to *Rh. rileyi*, Cr., only slightly smaller and more slender and the sculpture finer, as in *Rh. intermedius* Cr. Antennæ 50-jointed, black, the joints of the flagellum being slightly longer than wide; eyes black, subreniform; parapsidal grooves entirely wanting; metathorax with delicate median and lateral keels, the former forked at apex; a distinct longitudinal medial keel on 1st and 2d abdominal segments, becoming almost obsolete on the 3d, only traceable at base. The wings are hyaline, strongly iridescent; the 2d submarginal cell is not quite twice as long as the 1st branch of the radial; the 1st transverse cubital vein is slightly oblique and about as long as the 1st branch of the radius.

Habitat.—Missouri.

Described from three male specimens, reared from an unknown geometrid larva, May 5, 1877. (Coll. C. V. Riley.)

This species is separated from *Rh. rileyi* Cr. and *Rh. intermedius* Cr. by the absence of parapsidal grooves, different venation, and the number of antennal joints.

Rhogas platypterygis n. sp.

Male and female.—Length, 5mm. This species very closely resembles *Rh. geometræ*, agreeing in stature and sculpture; it is, however, paler or yellowish-brown, and *has distinct parapsidal grooves.* The female antennæ are but 35-jointed, pale brown, the flagellar joints hardly twice as long as wide; in male 34-jointed, the flagellar joints being thrice as long as wide; wings hyaline, strongly iridescent; veins brown excepting the costæ, median and submedian veins basally; the stigma at base and post-marginal vein are yellow; the 2d submarginal cell is more than twice as long as the 1st branch of the radius; the 1st transverse cubital nervure is straight, nearly twice as long as the 1st branch of the radius, parallel with the 2d transverse cubital nervure, but half as long again as that vein; the 2d submarginal cell is, therefore, long and narrowed apically.

Described from five specimens, one male and four females, labeled No. 2907°, reared October 23, 1883 from a lepidopteron, *Platypteryx* sp., found on alder.

Rhogas simillimus n. sp.

Male.—Length, $5\frac{2}{5}$mm. This species is almost exactly like *Rh. platypterygis*, only it is slightly darker in color. The ocelli are placed on a black spot and the antennæ are 44-jointed, black, excepting the two basal joints, the flagellar joints being almost twice as long as wide; the 1st transverse cubital nervure is about as long as the 1st branch of the radius, slightly obliquely directed; while the 2d transverse cubital nervure is only slightly shorter than the 1st; the stigma and veins are brown.

Habitat.—New Hampshire.

Described from one specimen, labeled Holderness, N. H., September, 1883. This species agrees somewhat with *Rh. fulvus*, but the eyes are emarginated directly opposite the base of the antennæ.

Rhogas nolophanæ n. sp.

Female.—Length, 5 to $5\frac{3}{5}$mm. This species in color and structure is also like *Rh. platypterygis*. The antennæ are 39 jointed, concolorous with the body, the flagellar joints being slightly more than twice longer than wide; the venation as in *Rh. simillimus*, only the stigma and veins are yellowish; the stigma is slightly dusky apically.

Habitat.—Missouri.

Described from three specimens, all females, labeled No. 41xo, and reared November 3, 1871, from *Nolophana malana* Fitch. (Coll. C. V. Riley.)

Rhogas ceruræ n. sp.

Female.—Length, $3\frac{3}{5}$mm [male 3mm]. This is still another species that could be confused with *Rh. platypterygis*, agreeing with it in color and sculpture; it is, however, slightly smaller; the parapsidal grooves sharply defined, complete; the antennae in female 32-jointed, in male 31-jointed, the flagellar joints being about twice as long as wide; the venation of the wings is exactly as in *Rh. platypterygis*.

Habitat.—California.

Described from four specimens, three females, one male, reared by Mr. Albert Koebele, in Napa County, California, from *Cerura* sp. found on willow, in August, 1887.

Subfamily CHELONINÆ.

TETRASPHÆROPYX n. g.

The whole insect is very hairy; antennæ very long, multiarticulate-thorax without distinct parapsidal grooves; metathorax short, roundedly truncate posteriorly, medially keeled; the abdomen is divided into four distinct segments, the sutures strongly constricted, the basal two segments having a delicate, central, longitudinal carina; while the 2d submarginal cell is quadrate not as long as the 1st branch of the radius.

This genus is very close to *Sphæropyx* Haliday and *Phanerotoma* Wesmael, but can at once be separated from them by the number of abdominal segments and the quadrate 2d submarginal cell.

Tetrasphæropyx pilosus Cr.

Rhogas pilosus Cress., Tran. Am. Ent. Soc., IV. p. 189.

Habitat.—Texas.

Three specimens of this rare insect, in the Belfrage collection now the property of the U. S. National Museum, convince me that Mr. Cresson was wrong in placirg this Braconid in the group *Rhogadinæ*, that it belongs with the Cryptogasters in the above group, and is the type of a new genus.

CHELONUS Jurine.

Chelonus lavernæ n. sp.

Male.—Length, $3\frac{1}{5}$ mm. Black, opaque, densely finely rugoso-punctate, covered with a short, white, sericeous pile. The palpi are pale; antennæ broken; scutellum sharply triangular; metathorax short, abruptly truncate behind, the face of the truncature slightly hollowed, the posterior lateral angles prominent, subacute; abdomen about the length of the thorax, convexly rounded off laterally and posteriorly; there is a slight indication of lateral keels, for a short distance, basally; the legs are black; the tips of the anterior and middle femora, their tibiæ and tarsi, honey-yellow; posterior legs all black except tibiæ basally. Wings hyaline, the parastigma, the stigma, and radius, black or brownish-black; other veins yellowish.

Habitat.—Kirkwood, Missouri.

Described from a single specimen labeled "Parasite on *Laverna eloisella* Clem., October 18, 1881," received from Miss M. E. Murtfeldt.

Chelonus pallidus n. sp.

Female.—Length, $3\frac{3}{5}$ mm. Head, antennæ, dorsum of mesonotum, postscutellum, posterior coxæ and apical tips of femora, and tips of tibiæ black; scape of antennæ, beneath, mandibles except tips, palpi, collar, pleura, scutellum, metathorax, and abdomen honey-yellow. The head is transverse, finely punctate, delicately, transversely aciculated on occiput; thorax rugose, with distinct coarser rugosities on the disk of mesonotum; metathorax rugose; there are two prominent, subacute projections just above where the abdomen joins the thorax, and the lateral posterior angles are very prominent. Wings hyaline; the stigma and veins blackish.

Habitat.—Maryland.

Described from a single specimen, labeled No. 3372°, reared June 2, 1884, from a *Chlorops* on wheat, sent to the Department by Mr. A. H. Carson, of Hernwood Farm, Church Hill, Queen Anne's County, Maryland.

Chelonus nigripennis n. sp.

Male.—Length, $2\frac{4}{5}$ mm. This is a short, stout, intensely black, opaque species, with a coarse, dilated, reticulated punctuation on thorax, pleura, and abdomen, the sculpture of the abdomen being, however, longitudinally directed. The head is finely sculptured, coarser on face; mandibles rufous, tips black; palpi dusky; antennæ 20-jointed; scutellum coarsely rugoso-punctate; metathorax abruptly truncate behind, the lateral posterior angles very prominent; the short dorsal surface is medially keeled and there are some more or less distinct raised lines laterally. The abdomen is well rounded posteriorly, bicarinate basally, very rugose; from the hollow beneath, at the tip, project two hairy appendages. Wings blackish-fuscous; the costæ, stigma, and parastigma,

black; the other veins dark brown; the 1st branch of the radius is about one and a half times longer than the 2d branch.

Habitat.—Washington, D. C.

Described from one specimen.

ASCOGASTER Wesmael.

Ascogaster flaviceps n. sp.

Female.—Length, $4\frac{1}{5}$mm. Head, palpi, two basal joints of antennæ, and legs, honey-yellow; flagellum, thorax, and abdomen, black. The head is finely confluently punctate; antennæ 27-jointed, involuted at tips, the scape long, a little longer than the 1st joint of the flagellum; the latter is about five times as long as wide; thorax confluently punctate, the posterior surface of middle lobe, rugose; the parapsides are not distinct, only indicated by some punctures; metathorax rugose, sloping posteriorly with two short, acute carinæ on the disk, and acute lateral angles posteriorly; the abdomen is as long as the head and thorax together, gradually narrowed posteriorly, the tips roundedly truncate, the whole surface being uniformly rugose, with two moderately long keels basally. Wings hyaline, iridescent; stigma and veins brown; the parastigma and the base of the median and anal nervures yellowish; the 1st discoidal cell is distinctly separated from the 1st submarginal, and the recurrent nervure is interstitial with the 1st transverse cubital nervure, the 2d transverse cubital being very pale or hyaline.

Habitat.—Texas.

Described from one specimen in Belfrage collection.

Subfamily SIGALPHINÆ.

SCHIZOPRYMNUS Förster.

Schizoprymnus texanus Cress.

Sigalphus texanus Cress.

Three specimens of this species, labeled No. 216^{01}, were reared May 22, 1880, from a gall, *Trypeta solidaginis*, from which also issued beetles, (*Mordellistena unicolor* Leconte); other specimens that can not be separated are numbered 2493^{04}, and were reared December 13, 1881, from a Trypeta gall sent to the Department by Mr. H. K. Morrison, collected in Utah.

Schizoprymnus americanus n. sp.

Female.—Length, 6mm. Black; confluently punctate, sparsely pubescent. The abdomen is one solid carapace (although two, more or less distinct, oblique sutures can be detected laterally), one-third longer than the head and thorax together, brown, pubescent. Head transverse; a sharp keel extends from first ocellus to between the antennæ; clypeus sunken, with deep foveæ on each side; mandibles black; palpi pale; antennæ reach to apex of metathorax; parapsidal grooves are

indicated posteriorly, obliterated anteriorly; scutellum convex, rather smooth dorsally, with large, deep foveæ at base; metathorax short, with lateral carinæ, a slender, sharp spine in the middle on the superior edge of the truncature, and the posterior lateral angles are prominent, *laminate*, superiorly deeply impressed; legs rufous, all the coxæ black; the extreme tips of posterior tibiæ and tarsi more or less dusky. The abdomen is uniformly rugose without basal carinæ, and with a deep vertical, longitudinal sulcus at apex; the raised rim surrounding the venter is very prominent, abruptly broken opposite the insertion of the ovipositor and subacute; the ovipositor is slightly exserted, as long as the basal joint of hind tarsi. Wings dusky hyaline; costæ and stigma black; veins brown; there are but two submarginal cells, and the 1st submarginal is distinctly separated from the 1st discoidal.

Habitat.—Texas.

Described from a single specimen in the Belfrage collection. The European type of this genus is *Sigalphus obscurus* Nees. Mr. Marshall does not include it in his tables of the *Sigalphinæ*, probably because it is not found in England, but the genus seems to be founded upon good, distinctive characters, and I believe it should be recognized.

UROSIGALPHUS n. g.

This genus is at once distinguished from *Schizoprymnus* by the submedian cell being much longer than the median; the antennæ 16-jointed; abdomen oval, highly convex, and without a trace of a suture, the apex without a distinct sulcus; the ovipositor is distinctly exserted; in one species it is nearly twice the length of the insect; the apex of the abdomen in the male is armed with two porrect spines, the genital claspers being long, pendulous, and hairy; metathorax, in both sexes, is short, obliquely truncate behind, the superior edge being distinctly margined, the posterior lateral angles not at all prominent, while the posterior femora are quite robust, or somewhat swollen. (Type: *Urosigalphus armatus.*)

Urosigalphus armatus n. sp.

Female.—Length, $6\frac{2}{5}$ mm; ovipositor, 10mm. Black, subopaque, coarsely punctuate and rugose, covered with a sparse, white pubescence, denser on face and abdomen.

Head transverse, punctulate, some of the punctures confluent on vertex; the stemmaticum is subpyramidal, three-angulated, the ocelli placed at the base of each face; antennæ 16-jointed, black, reaching to the base of the abdomen, the four or five basal joints of flagellum being about five times as long as wide; thorax punctate, the parapsidal grooves obliterated and their place filled with coarse, dilated, reticulated punctures; scutellum rounded off posteriorly and reticulated with coarse punctures; metathorax short, roughened with coarse, reticulated punctures, obliquely truncate behind, the superior edge of the truncature

being distinctly margined, the face having two keels; abdomen oval, rugose with coarse, reticulated punctures, the raised lines of which are longitudinally directed, the apex rounded; ovipositor exserted, very long, the whole base projecting below the abdomen, possibly abnormally so from an injury; legs, including coxæ, rufous, the posterior tibiæ and tarsi black, their femora swollen. Wings dusky hyaline, the costæ and stigma black; other veins dark brown; the submedian cell is much longer than the median; the 1st discoidal cell is distinctly separated from the 1st submarginal; the recurrent nervure joins the 1st submarginal cell a little beyond the middle, the 1st branch of the radius being slightly shorter than the 1st transverse cubital nervure.

The male is only 6^{mm} long, colored and sculptured as the female, but is at once distinguished from it by the two porrect spines at apex of abdomen, the absence of the ovipositor, and the projecting genital tubercles or claspers.

Habitat.—Tennessee.

Described from two specimens, one male and one female.

Urosigalphus robustus n. sp.

Female.—Length, 4^{mm}. Black, very coarsely punctate; the abdomen sculptured as in *C. sericeus* Say; palpi brown; antennæ black (broken); the scutellum and disk of mesonotum are roughened with coarse, dilated, reticulated punctures; the metathorax as in previous species; legs honey-yellow; coxæ black; the posterior femora stout, swollen; the abdomen is not as long as the head and thorax together, oval, full, with a slight sulcus at apex beneath; the sculpture is coarse, the raised lines longitudinally directed; no keels at base, the ovipositor slightly exserted; wings blackish; costæ and stigma black; venation as in *U. armatus.*

Habitat.—Virginia.

Described from one specimen.

Subfamily AGATHIDINÆ.

PARAGATHIS n. g.

This genus is founded upon *Microdus thoracicus* Cress., and is intermediate between *Microdus* and *Agathis.*

The form is robust, the head not rostriform, although the tongue is very much elongated, bee-like, the length of the head, the apex bilobed, the maxillary and labial palpi both being 5-jointed; the basal joint of the posterior tarsi are stout, slightly flattened; antennæ 30-jointed, the flagellar joints after the 8th not longer than wide; venation as in *Agathis.*

Paragathis thoracicus Cress.

Microdus thoracicus Cr., Trans. Am. Ent. Soc., IV, p. 181.

MICRODUS Nees.

Microdus grapholithæ n. sp.

Female.—Length, $4\frac{4}{5}^{mm}$; ovipositor, 4^{mm}. An elongated, slender form, honey-yellow; eyes purplish; antennæ black above, yellow beneath; tarsi, except the last joint, white; the posterior femora have a black spot above at apex, their tibiæ and spurs white, the former with a black spot on upper surface at base and the apex black; the tarsi black, the 1st joint at base and the following joints ringed with white; metathorax rugose with lateral keels and two parallel keels on the disk; abdomen long, linear, slightly longer than the head and thorax together, smooth, polished, the segments hardly distinguishable; ovipositor black; wings hyaline; costæ and stigma black; veins yellowish; the areolet triangular; the cubitus or the vein separating the 1st discoidal and 1st submarginal vein is not entirely obliterated, the basal portion remaining, so that while the 1st submarginal and 1st discoidal cells are confluent they are partially separated.

The male agrees with the female structurally, only the head is brownish on vertex; the disk of metathorax, 1st abdominal segment, and the apex of the abdomen black.

Habitat.—Kirkwood, Missouri.

Described from two specimens, one male and one female, received from Miss Mary E. Murtfeldt, labeled "Parasite on *Grapholitha malachitana* Zell."

The species seems to be nearly related to *Microdus pallens* Cress.

Microdus albocinctus n. sp.

Female.—Length, $5\frac{3}{5}^{mm}$; ovipositor, 4^{mm}. Polished black; antennæ involuted at tips, brown, the scape basally and the apex of the 2d joint yellowish; mandibles and palpi white; mesopleura, metapleura, and legs honey-yellow; the posterior legs are annulated with white and marked as in previous species; the cheeks superiorly are angularly produced posteriorly, a peculiarity never noticed in other species, and may prove to be a deformation in this one. The parapsidal grooves are deep, punctulate at bottom; pleura very hairy; metathorax rugose with some raised lines; abdomen linear, as long as the head and thorax together, all shining, but the 1st segment is delicately longitudinally aciculated, and the 2d segment delicately shagreened. Wings hyaline; costæ and stigma dark brown; the other veins paler; venation normal.

Habitat.—Kirkwood, Missouri.

Described from a single specimen labeled "Parasite on a Tortricid on chestnut, June 20, 1886."

Seems to be allied to *Microdus annulipes* Cress., but the wholly black abdomen and its sculpture will at once separate it.

Microdus aciculatus n. sp.

Male and female.—Length, 4 to $4\frac{4}{5}^{mm}$; ovipositor, 4^{mm}. Black, polished, sparsely punctulate; antennæ, palpi, and legs, excepting tibial spurs

and sutures of joints, entirely black; the parapsidal grooves deep; metathorax rugose, without keels; the abdomen varies from a dark red more or less suffused to yellowish-red; in one specimen the apex is entirely black; the 1st and 2d segments, and the 3d segment for more than half its length are longitudinally aciculated, the following segments are smooth; the 2d and 3d segments are divided into two parts by a distinct transverse groove; ovipositor black; wings black; stigma and veins dark brown. The male does not differ structurally from the female.

Habitat.—Texas.

Described from six specimens, one male and five females, in Belfrage collection.

ORGILUS Haliday.

Orgilus terminalis n. sp.

Male.—Length, 7^{mm}. Sanguineous, smooth, polished; antennæ, palpi, scutellum, and metathorax dorsally, wings, anterior and middle coxæ and trochanters, a streak above on middle tibiæ, apex of posterior tibiæ, all tarsi, and the terminal abdominal segments from the 4th inclusive, black. The parapsidal grooves are deep with punctures at bottom; all sutures punctulate; the mesopleura with a crenulated sulcus across the disk; metathorax rugose; abdomen longer than head and thorax together, perfectly smooth, polished, except the 1st segment, which is finely aciculated. The 1st discoidal cell is separated from the 1st submarginal cell, the areolet subobliterated, the 1st transverse cubital nervure being very long, more than thrice as long as the 1st branch of the radius.

Habitat.—Colorado.

Described from one specimen.

Orgilus Rileyi n. sp.

Female.—Length, 7^{mm}. Sanguineous; the head, palpi, antennæ, prosternum, mesosternum, mesopleura, metathorax, anterior and middle legs and the trochanters and tibiæ and tarsi of the posterior legs, black.

The head when viewed from in front is triangular, antero posteriorly rather thin, the face finely punctulate, slightly ridged in the middle, pubescent; clypeus transverse, smooth, polished, subconvex; mandibles long, black, sickle-shaped, with two teeth at apex, one smaller and shorter than the other; sides of collar, pleura and metathorax rugose; the mesopleura has a large furrow across the disk; abdomen smooth, polished; the ovipositor very short, not longer than the 3d joint of posterior tarsi, black. Wings black with a large irregular, white spot in 1st submarginal cell and extending below the areolet and back of the 1st discoidal cell; the areolet is rather large, the bounding veins forming almost a perfect quadrate cell.

Habitat.—Unknown, probably Missouri.

Described from a single specimen in the Riley collection.

Subfamily EUPHORINÆ.

PERILITUS Nees.

Perilitus gastrophysæ n. sp.

Female.—Length, $2\frac{3}{5}$mm; ovipositor, $\frac{4}{5}$mm. Polished; stemmaticum, antennæ, thorax, and abdomen, black; head and legs red. Antennæ 22-jointed; palpi yellowish; parapsidal grooves distinct, converging, but not meeting posteriorly, the middle lobe thus formed posteriorly or just in front of the scutellum is slightly depressed, punctulate; scutellum triangular, with a deep transverse groove at base; metathorax rugose, with some raised lines; abdomen petiolated, the petiole dilated at apex, longitudinally aciculated, and more or less reddish basally. Wings hyaline, veins brown; the 1st discoidal and 1st submarginal cells confluent, the marginal cell semicordate; the submedian cell is slightly longer than the median.

Habitat.—Washington, D. C.

Described from two specimens, labeled No. 329 L°, reared May 31 and June 26, 1886, from *Gastrophysa cyanea.*

WESMAELIA Förster.

Wesmaelia Rileyi n. sp.

Female.—Length, $2\frac{1}{5}$mm. Black, smooth, polished; ocelli, two basal joints of antennæ, and legs yellowish; the abdomen more or less piceo-black. The head is transverse, much wider than the thorax; antennæ 13-jointed, the two basal joints globular and of nearly the same size; thorax ovoid, short; the mesonotum convex, smooth, without parapsidal grooves; collar not apparent; tegulæ and surrounding surface yellow; scutellum convex, smooth, polished, with a deep transverse groove at base; metathorax areolated; the legs are very long, slender, the hind pair being much longer than the others; the middle femora are much longer than their tibiæ, the latter but slightly longer than the tarsi, with a single apical spur; the posterior coxæ are lengthened, cylindrical; the femora and tibiæ of about equal length, the latter with two apical spurs, the tarsi but slightly shorter than the tibiæ, the basal joint being thickened and as long as all the other joints combined.

Abdomen long, subcompressed, shaped very much as in the ophionid genus *Limneria*, the 1st and 2d segments forming a long petiole, the 2d being slightly longer than the 1st; the ovipositor is short. Wings hyaline, veins brown; the marginal cell is long, lanceolate; the radius has but two branches, the 1st forming a right angle with the 2d; the 1st submarginal and the 1st discoidal cells confluent, rhomboidal; the submedian cell being slightly shorter than the median.

Described from six specimens in the Riley collection.

This remarkable insect agrees with the definition of this genus, but seems out of place in the group, and more closely allied with the group *Aphidiinæ*, where it may ultimately be placed.

Sept. 25, 1889.

Subfamily METEORINÆ.

METEORUS Haliday.

Meteorus coquilletti n. sp.

Male.—Length, $3\frac{2}{5}$ mm. Pale yellow ferruginous, shining, covered with fine, short pubescence; eyes purplish-brown; stemmaticum black; antennæ very long, slender, dusky towards tips; metathorax finely rugose with a delicate carina down the center; abdomen polished, the 1st segment longitudinally aciculated. Wings hyaline, iridescent; the stigma and veins pale yellowish; the 2d branch of the radius is a little longer than the 1st, but one-third shorter than the 2d branch of the cubitus, the 2d submarginal cell is therefore much shorter than wide, and not quadrate.

Habitat.—Los Angeles, California.

Described from two specimens, received from Mr. D. W. Coquillett, labeled "Bred from *Agrotis* sp. (?) July 3."

It is closely allied to *M. communis* Cress., but is smaller. and the shape of the 2d submarginal cell will distinguish it.

Meteorus œcopsidis n. sp.

Male.—Length, $4\frac{1}{5}$ mm. Pale yellow ferruginous, covered with a short, sericeous pubescence; eyes large, purplish-brown, with decided violet reflections in certain lights, and converging toward each other basally, stemmaticum more or less black; palpi pale; antennæ long, 29-jointed, dusky apically, the joints of the flagellum about three and one-half to four times as long as wide; parapsides obliterated, the mesonotum being a solid piece; metathorax minutely rugose, the disk dusky; no carina; abdomen normal, the 1st segment coarsely aciculated, the post-petiole black; the 3d segment is also more or less black, piceo-black posteriorly. Wings hyaline; veins pale yellowish brown; the 2d branch of the radius is about one-third longer than the 1st, and half the length of the 1st transverse cubital nervure, the latter oblique, the 2d transverse cubital nervure being slightly shorter but parallel with it; the 2d submarginal cell is, therefore, twice as wide as long; the submedian cell is as much longer than the median as the length of the transverse median nervure.

Habitat.—Washington, D. C.

Described from a single specimen, labeled "Parasite on *Œcopsis*, August 10, 1888."

This species is also allied to *M. communis* Cress., in stature and color, but the smoothness of the mesonotum, the length of the submedian cell, and the shape of the 2d submarginal cell at once separate it.

Meteorus floridanus n. sp.

Male.—Length, $3\frac{4}{5}$ mm. The general color is paler than in the previous species, but the antennæ are 32-jointed, the flagellum dark-brown, the stemmaticum black, the lateral lobes of mesonotum and the dorsal surface of abdomen more or less black; the base of the petiole yellow,

the 2d abdominal segment also yellowish in the middle and along the basal suture. Wings hyaline, iridescent; the venation is similar to *M. œcopsidis*, only the 1st and 2d transverse cubital veins are not parallel, but convergent, the 2d submarginal cell therefore trapezoidal.

Habitat.—Cocoanut Grove, Florida.

Described from a single specimen, reared from the larva of an *Arctiid* found on *Chrysobalanus*, and collected by Mr. E. A. Schwarz.

Meteorus orchesiæ n. sp.

Male and female.—Length, $3\frac{2}{5}$ to $4\frac{1}{5}$ mm; ovipositor, 3 to 4 mm. Head, thorax, 1st abdominal segment, and usually the tips of the abdomen, black; collar, legs, and abdomen, except as mentioned, vary from a honey-yellow to pale yellow ferruginous. The face in the male is ferruginous, antennæ 34-jointed, long; in female antennæ 24-jointed, shorter. The parapsidal grooves are distinct, converge behind, but do not quite reach to the base of the scutellum; the middle lobe posteriorly is finely shagreened; in the male the pleura and scutellum are ferruginous; metathorax coarsely rugose, delicately areolated; the 1st abdominal segment is longitudinally aciculated. Wings hyaline, iridescent; the costæ and stigma brown, the latter having a yellow spot at the base; veins yellowish; the 2d branch of the radius is about twice as long as the 1st, the 2d submarginal cell trapezoidal.

Habitat.—Grand Ledge, Michigan.

Described from six specimens, three males and three females, labeled No. 2465°, reared July 24, 1881, from *Orchesia castanea* found in brown woody fungus growing at the above place.

Meteorus euchromiæ n. sp.

Male and female.—Length, $3\frac{2}{5}$ to $4\frac{1}{5}$ mm; ovipositor, 1 mm. Pale yellow-ferruginous; eyes very large, purplish brown; palpi and legs pale; post-petiole dorsally black. The antennæ are 25-jointed in female, 31-jointed in the male; parapsidal grooves obliterated, or at least not sharply defined, the middle lobe being more or less shagreened and the parapsidal grooves only indicated by shagreened lines; metathorax minutely rugose, the lateral and medial carinæ only faintly traceable; abdomen normal, the 1st segment or petiole, strongly, longitudinally aciculated. Wings hyaline, iridescent; the costæ to the parastigma, median and submedian, and basal veins dark brown or black; other veins, including the stigma, yellowish; the 2d branch of the radius is only a little longer than the 1st, and shorter than the 2d branch of the cubitus; the 1st transverse cubital nervure is oblique and not interstitial with the recurrent nervure; the 2d submarginal cell is therefore trapezoidal.

Habitat.—Caracas, Venezuela.

Described from several specimens, in both sexes, received September 23, 1886, from Dr. A. Ernst, of Caracas, who reared them from *Euchromia eriphria* Fabr.

Subfamily CALYPTINÆ.

EUBADIZON Nees.

Eubadizon phymatodis n. sp.

Female.—Length, 5^{mm}; ovipositor, $4\frac{4}{5}^{mm}$. Black, polished; face covered with white sericeous pile; palpi pale; legs, excepting posterior coxæ basally, reddish-yellow. Antennæ 28-jointed, black, except the suture between the 2d and 3d joints, tips involuted; when extended backwards the antennæ reach a little beyond the base of the abdomen. The mesothoracic parapsidal grooves are deep and converge and meet before attaining the base of the scutellum, thence as a delicate keel; the sides of the collar and the mesopleura, although shining, are finely rugose; scutellum smooth with a large fovea at base, metathorax and the 1st, 2d, and 3d abdominal segments rugose. Wings hyaline, veins brown, stigma black; the venation as in *E. pleuralis* Cress., only the transverse median nervure is interstitial with the basal nervure.

The male does not differ structurally from the female except in having 31-jointed antennæ and the posterior portion of the middle mesothoracic lobe being coarsely punctulate.

Habitat.—Washington, D. C.

Described from three specimens, two males and one female, reared April 11, 13, and 16, 1889, from *Phymatodes amœnus* Say.

The sculpture of the three basal abdominal segments will at once separate this species from *E. americanus* Cress., to which it seems most closely allied.

Eubadizon incognitus n. sp.

Female.—Length, 3^{mm}; ovipositor, $1\frac{1}{2}^{mm}$. Black, shining, covered with a short, sparse pubescence; face prominent, opaque, finely punctulate, pubescent; two deep foveæ at basal corners of clypeus; palpi pale; antennæ 30-jointed, the two basal joints above black, beneath brown; flagellum brown; mesothoracic parapsidal grooves deep, punctulate at bottom, and converging and meeting before reaching the base of the scutellum; collar at sides confluently punctured; mesopleura smoother, with a deep, punctulate sulcus across the disk; metathorax as long as wide, rugose; legs reddish yellow, the tips of posterior femora and their tarsi slightly dusky; abdomen as long as the thorax, the 1st segment minutely sculptured, with a more or less longitudinal, glabrous line basally; the following segments smooth, polished, the 2d segment only exhibiting a slight microscopical sculpture toward the base. Wings hyaline, the venation as in *E. pleuralis* Cress., only the cubitus is broken near the base and does not attain the apical margin.

Habitat.—Kirkwood, Missouri.

Described from two specimens, received from Miss M. E. Murtfeldt labeled "Parasite on 97M, October 9."

Subfamily BLACINÆ.

GANYCHORUS Haliday.

Ganychorus atricornis n. sp.

Male and female.—Length, $2\frac{3}{5}$ to 3^{mm}; ovipositor, 1^{mm}. Black, polished; palpi and legs, honey-yellow; posterior tibiæ above and tarsi, dusky; mandibles black; antennæ 23 jointed in male, 24-jointed in female; the basal joints of the flagellum are about four times as long as wide; mesothoracic parapsidal grooves deep, punctulate at bottom; mesopleura smooth; metathorax minutely rugose; abdomen oval, depressed, the 1st segment sculptured and with two keels basally, the following segments smooth, polished. Wings hyaline, iridescent; the stigma, parastigma, and most of the costæ black; other veins yellowish; the transverse median nervure is almost interstitial with the basal nervure; the recurrent nervure joins the 1st submarginal cell between the middle and its apex, while the 2d branch of the radius is slightly curved at base.

Habitat.—San Mateo County, California.

Described from three males and one female, labeled No. 147°, reared in December, 1885, by Mr. Albert Koebele, from a Cynipid gall found on *Quercus Douglasii.*

Ganychorus orchesiæ n. sp.

Female.—Length, $2\frac{4}{5}^{mm}$; ovipositor, $2\frac{1}{2}^{mm}$. Stature and color similar to *G. atricornis*, only the antennæ are 23-jointed, brown; the mandibles and palpi yellow; the venter piceo-black; the parapsidal grooves distinct but not deep; the metathorax broader than long, minutely rugose and rounded off posteriorly; the 1st abdominal segment longitudinally aciculated; the legs of a uniform reddish-yellow; the costæ and stigma are brown, while the veins are pale yellow.

Habitat.—Grand Ledge, Michigan.

Described from a single specimen, labeled No. 2465°, reared July 24, 1881, from *Orchesia castanea*, found in brown fungus along with *Meteorus orchesiæ.*

(?) **Ganychorus gelechiæ** n. sp.

Female.—Length, $2\frac{2}{5}^{mm}$; ovipositor, 1^{mm}. A small, elongated, minutely shagreened, opaque, yellow-ferruginous species; the stemmaticum black; the vertex of head, lobes of mesothorax, scutellum, postscutellum, and apical margins of metathorax dusky. The antennæ are more than 20-jointed (broken off at tips), about the length of the insect; the mesothoracic parapsidal grooves are distinct, and converge and meet before attaining the base of the scutellum, the middle lobe thus formed being triangular; the metathorax is a little longer than wide; abdomen long, ovate, as long as the head and thorax together, delicately shagreened. Wings hyaline, narrowed; the transverse median nervure is distinctly interstitial with the basal nervure; other-

wise the venation is similar to the previously-described species; the veins are yellowish.

Habitat.—Kirkwood, Missouri.

Described from a single specimen received from Miss Murtfeldt, labeled "Parasite on *Gelechia prunifoliella*, May 15."

This insect is hardly congeneric with the above species, approaching more closely to the genus *Eubadizon*.

The subfamilies *Calyptinæ* and *Blacinæ* seem to run into each other, and are with difficulty distinguished from each other, the closed anal cell in the former having but slight value.

Subfamily ALYSIINÆ.

DIASPASTA Förster.

In this genus should be placed *Alysia rudibunda* Say.

APHÆRETA Förster.

Aphæreta muscæ n. sp.

Male and female.—Length, 2^{mm}; ovipositor, $\frac{3}{5}^{mm}$. Black, polished; two basal joints of antennæ, mandibles, legs, and 1st abdominal segment honey-yellow; the head is large, transverse, cheeks piceous; antennæ long, 21-jointed, the basal joint swollen, oval; the joints of the flagellum are long, cylindrical, the 2d about one-third longer than the 1st, the terminal joint fusiform and stouter than the one preceding it; in the male the antennæ are longer, 26-jointed; thorax ovoid, smooth, without grooves; metathorax rugulose posteriorly, and with an acute, short, longitudinal carina basally; abdomen oval, the 1st segment slightly aciculated. Wings large, broad, the veins pale brown; the stigma is long and narrow, extending to the apex of the wings; the 2d submarginal cell is very long and narrowed at apex, longer than the length of the basal nervure, the 1st transverse cubital nervure being a little longer than the 1st branch of the marginal nervure and about twice as long as the 2d transverse cubital nervure; the 3d branch of the marginal nervure extends straight across to the apex of the wing, and makes a very large marginal cell.

Habitat.—Fortress Monroe, Virginia, and central Missouri.

Described from many specimens, in both sexes, labeled No. 4309°, reared July 7, 1888, from the puparium of a *Musca* collected at Fortress Monroe; and a single male in Riley collection, labeled Central Missouri.

This species or those described below may be the *A.* (*Trichesia*) *auripes* Prov., Faun. Ent. Can., II, p. 537, but I can not positively tell, Abbé Provancher's description being so imperfect; he does not give the number of joints in the antennæ, nor describe the venation of the wings; if his figure of the wing (Fig. 71) is accurately drawn then none of them can be identical.

Aphæreta californica n. sp.

Female.—Length, $1\frac{1}{5}$ to $1\frac{3}{5}$mm; ovipositor, $\frac{3}{5}$mm. In the number of joints in the antennæ and in color this species is an exact counterpart of the preceding, but it is proportionately smaller; there is a distinct longitudinal grooved line on vertex, extending from ocelli to occiput, and the 2d transverse cubital nervure of anterior wing is much shorter, the 2d submarginal cell being thereby much more narrowed at apex than in *A. muscæ*.

Habitat.—Los Angeles County, California.

Described from six specimens, labeled No. 136°, reared in September, 1886, by Mr. Albert Koebele, from a dipterous larva in dead and injured roots of *Typha latifolia*.

Aphæreta oscinidis n. sp.

Female.—Length, 2mm; ovipositor, $\frac{4}{5}$mm. This species could easily be confounded with both of the above, agreeing with them in colorational details, except as follows: The veins of the wings are dark brown; the apical margins of 3d and 4th abdominal segments are piceous; it has a groove extending from ocelli to occiput as in *A. californica;* but what will readily separate the species are the antennæ; these are 23-jointed.

Habitat.—Washington, D. C.

Described from a single specimen, labeled 4310°, reared July 7, 1888, from a dipterous miner, *Oscinis* sp., mining the leaves of *Plantago major*.

ADELURA Förster.

Adelura subcompressa n. sp.

Male and female.—Length, $1\frac{1}{5}$ to $1\frac{3}{5}$mm; ovipositor, about $\frac{2}{5}$mm. Black, smooth, polished; antennæ, brown; legs, flavo-testaceous; abdomen, piceous; the 1st segment at base and sutures of ventral segments paler. The antennæ in the male are 16-jointed, in the female 15 jointed; the 1st joint of the flagellum is a little longer than the 2d; the 2d and following joints long-moniliform; thorax ovoid, smooth, polished, without grooves; metathorax delicately areolated; abdomen as long as the head and thorax together, subcompressed; the 1st segment delicately aciculated. Wings, hyaline, iridescent; veins, brown; the 2d discoidal cell is much contracted; the recurrent nervure joins the 2d submarginal cell at its basal angle, and is almost interstitial with the 1st transverse cubital nervure; the 2d submarginal cell is very long and narrow, more than twice the length of the 1st; while the 1st branch of the radius is not half the length of the oblique 1st transverse cubital.

Habitat.—Los Angeles County, California.

Described from one male and one female, received from Mr. Albert Koebele, labeled "Observed ovipositing in dipterous larvæ in rotten fungus."

Adelura dimidiata n. sp.

Male.—Length, $1\frac{1}{5}$mm. Black, smooth, polished; flagellum of antennæ, brown; the basal joints of antennæ, palpi, legs, tip of metathorax, more

or less, and the two basal segments of abdomen, pale yellowish; the tip of the abdomen is black or piceo-black. The antennæ are broken off at tips, but the joints of the flagellum remaining are cylindrical, the 1st the longest, the 2d and following about twice as long as wide.

Thorax ovoid, smooth, polished, without grooves; the mesapleura with a crenulate furrow across the disk; metathorax delicately areolated. Wings, hyaline, iridescent; veins, brown; the venation is similar to the preceding species, only the 1st branch of the radius is very short, about one-fifth the length of the oblique 1st transverse cubital nervure; the 2d submarginal cell is, therefore, proportionately widened at base, narrowed at apex.

Habitat.—Ames, Iowa.

Described from one specimen received from Prof. H. Osborn, labeled "Bred from a dipterous larva in stem of cabbage." No date is given.

PHÆNOCARPA Förster.

Phænocarpa americana n. sp.

Female.—Length, $4\frac{2}{5}$ mm; ovipositor, $1\frac{2}{5}$ mm. Black, polished; antennæ, except dusky toward tips, mandibles, except teeth, and legs, flavo-testaceous. The face and cheeks are covered with a whitish pubescence; the antennæ are broken, but there are 17 joints remaining; the 2d flagellar joint is longer than the 1st, the following gradually becoming shorter and shorter; the mesothoracic grooves are distinct, crenulate; the middle lobe, thus formed, has a distinct, short, longitudinal grooved line posteriorly, connected at apex with two oblique grooves that extend into the parapsidal grooves; the scutellum has a deep fovea at base which is separated into two parts by a delicate keel; metathorax rugose, with a very short medial keel back of the post-scutellum; the abdomen is as long as the head and thorax together, depressed above, boat-shaped beneath; the 1st segment is aciculated, with deep lateral grooves and two delicate, longitudinal keels on the disk, beneath piceous; the following segments are smooth, polished, the sutures being with difficulty made out. Wings, hyaline; stigma and veins, brown; the submedian cell is slightly longer than the median; the 2d discoidal cell long and narrow, a complete parallelogram; the recurrent nervure is interstitial with the 1st transverse cubital nervure, the latter oblique; the 2d transverse cubital nervure is about one-third shorter than the 1st transverse cubital nervure, and surrounded by a brownish spot; the 2d submarginal cell is therefore narrowed at apex.

Habitat.—Washington, D. C.

Described from one specimen.

ISCHNOCARPA Förster.

Ischnocarpa atricornis n. sp.

Male and female.—Length, $2\frac{2}{5}$ to $2\frac{3}{5}$ mm; ovipositor, $\frac{2}{5}$ mm. Black, polished; the 2d and apical abdominal segments, piceous; palpi and legs

flavo-testaceous; mandibles black at base and with black teeth. The head is transverse; face pubescent and having a longitudinal grooved line on the disk, extending from between the antennæ; there is also a longitudinal grooved line, extending from the front ocellus between the lateral ocelli back to the occiput.

The male antennæ are 21-jointed, female 18-jointed, black, the scape piceous, the 2d joint yellow; the 1st joint of the flagellum is the longest, the 2d and following joints about twice as long as wide. Thorax ovoid, smooth, polished, without parapsidal grooves; posteriorly, just in front of the scutellum, is a short longitudinal medial groove; the scutellum has a deep transverse fovea at base with some raised lines at bottom; on the disk of the mesopleura is a long fovea, punctured at bottom; metathorax finely rugose; the abdomen is as long as the head and thorax together, subsessile, the 1st segment longitudinally striated.

Wings hyaline, iridescent; veins brown; the stigma is long, very narrow, reaching to the apex of the wing; the recurrent nervure joins the 2d submarginal cell near its base; the 1st submarginal cell is small, hardly half the length of the 2d; the subdiscoidal nervure springs from the middle of the 2d discoidal cell.

Habitat—Nyack, New York.

Described from five specimens received February 10, 1885, from Rev. J. L. Zabriskie.

Subfamily DACNUSINÆ.

ŒNONE Haliday.

Œnone Belfragei n. sp.

Male and female.—Length, 3 to $3\frac{2}{5}$mm. Black, opaque, rugosely punctate, covered with a sparse, white, sericeous pubescence; two basal joints of antennæ and legs flavo-testaceous. The head is transverse, very short, about twice as wide as long vertically; the eyes are oval and extend to the base of the mandibles; the clypeus projects much below the lower line of the eye, and with the short head and the distended mandibles gives the insect a very peculiar appearance. Antennæ 31-jointed in the male, 29-jointed in the female; the thorax is shorter than the abdomen, with distinct parapsidal grooves, the middle lobe has a punctured longitudinal groove down the center; metathorax areolated; abdomen oval, the sculpture having a longitudinal direction, the 1st segment being more distinctly striated; in the female it is 4-segmented, in the male 5-segmented, the terminal segments being very small. Wings hyaline, iridescent; veins brown; the recurrent nervure joins the 1st submarginal cell between the middle and the apex; the submedian cell is slightly longer than the median.

Habitat.—Texas.

Described from four specimens, two male and two female, in collection Belfrage.

DACNUSA Haliday.

Dacnusa oscinidis n. sp.

Male and female.—Length, $1\frac{3}{5}$mm. Black, smooth, polished; two basal antennal joints, palpi, and legs, honey-yellow; the 1st and two-thirds of the 2d abdominal segments reddish-yellow: antennæ in male 24-jointed (broken in female), cylindrical, very pubescent; the 1st joint of the flagellum is longer than the 2d, the following joints about four times as long as wide; thorax ovoid, smooth, polished, without grooves; metathorax minutely sculptured, pubescent; abdomen oval, the 1st segment finely aciculated and keeled. Wings hyaline, iridescent; veins pale brown; the stigma very large, lanceolate, the marginal nervure springing from before its middle, the 1st branch of which is shorter than the 1st transverse cubital nervure, the 2d branch curving and extending to the apex of the wing, forming a very large marginal cell; the 1st submarginal and the 1st discoidal cells are rather small and about the same size; the submedian cell is longer than the median.

Habitat.—Kirkwood, Missouri.

Described from two specimens, one male and one female, received from Miss M. E. Murtfeldt, labeled "Parasite on dipterous miner, *Oscinis* sp. on honey-suckle, April 6, 1885."

Dacnusa confusa n. sp.

Male.—Length, $2\frac{1}{5}$mm. Black, polished; two basal joints of antennæ and legs, honey-yellow; tarsi dusky. Antennæ 30-jointed, cylindrical, the 1st joint of the flagellum is the longest, slightly longer than the 2d, the following joints after the 3d are about twice as long as wide; thorax ovoid, without parapsidal grooves, but there is a deep longitudinal medial groove posteriorly; in one specimen this groove extends nearly the whole length of the mesonotum, in the other hardly half the length; the scutellum has a large, deep, transverse fovea across the base, separated into two parts by a delicate carina and with some raised lines at the bottom; mesopleura pubescent with a glabrous spot on the disk; mesothorax minutely rugose with a short keel back of the post-scutellum; abdomen oval, depressed, the 1st segment is rugose, the tubercles somewhat prominent, the following segments smooth, polished. Wings hyaline, iridescent; the stigma and veins brown; the stigma is long, lanceolate; the 1st branch of the radius is slightly shorter than the transverse cubital nervure, the 1st submarginal cell is a little larger than the 1st discoidal.

Habitat.—Monroe, Michigan.

Described from two specimens, labeled No. 2464^{oa}; reared from a lepidopterous leaf-miner on rose.

I doubt the correctness of this statement, and rather surmise that this was a *dipterous* and not a lepidopterous leaf-miner, as all other *Dacnusæ* known to me have been reared from dipterous larvæ; unity of habit would therefore exclude the genuineness of this observation.

Dacnusa flavocincta n. sp.

Male.—Length, 2^{mm}. Polished black; legs reddish-yellow; tarsi and posterior tibiæ, dusky; the 2d abdominal segment above, except the extreme apical margin, brownish-yellow, the following segments piceo-black. The antennæ are entirely black, nearly twice the length of the insect, 36-jointed; the 1st joint of the flagellum is two-thirds longer than the 2d, the following joints about twice as long as wide; thorax ovoid, perfectly smooth and without grooves; mesopleura smooth; metathorax minutely rugose, pubescent; abdomen ovate, the 1st segment aciculated and with a longitudinal keel down the center. Wings hyaline; stigma and veins brown; the venation is exactly as in *D. confusa*, only the stigma is slightly narrower, and the 1st branch of the radius is as long as the transverse cubital nervure.

Habitat.—Andersonville, Tennessee.

Described from a single specimen, labeled No. 3084^{01}, reared from a dipterous leaf-miner on wheat. Sent to the Department by Mr. J. K. P. Wallace.

SYNALDIS Förster.

Synaldis ulmicola n. sp.

Female.—Length, 1$\frac{2}{5}^{mm}$. Black, polished; legs, including the coxæ, flavo-testaceous; the 1st abdominal segment and venter, piceous. The head is transverse, broader than the thorax, face hairy; antennæ 15-jointed, moniliform beyond the 1st joint of the flagellum, the 1st flagellar joint cylindrical and much thinner than the following joints; thorax ovoid, smooth, polished, without grooves and with some sparse long hairs on the disk; mesopleura with a large crenulate fovea across the disk; metathorax minutely rugose; abdomen ovate, subsessile, depressed above, subcompressed below, the 1st segment aciculated; ovipositor very slightly exserted, black. Wings hyaline, iridescent; veins pale brown; the 1st submarginal cell is very large, nearly three times as long as the 1st discoidal, the 1st branch of the radius being nearly twice as long as the basal nervure; other characters as in *Dacnusa*.

Habitat.—St. Louis, Missouri.

Described from a single specimen, labeled No. 1007P°, reared October 14, 1878, from a dipterous larva found on elm. Collection C. V. Riley.

This Försterian genus is not included in Mr. Marshall's Monograph of British Braconidæ, but it appears to me to be a valid one, readily separated from *Dacnusa* by the shape of the 2nd submarginal cell and the antennal characters.

CŒLINIUS Nees.

Cœlinius longulus n. sp.

Male.—Length, 5^{mm}. Black, smooth, polished; palpi dusky; the antennæ, except the scape and 2d joint beneath, black; legs testaceous, the coxæ and the 1st joint of the trochanters, piceous black; all tarsi,

and posterior femora above toward apex, and the upper surface of tibiæ, more or less dusky; middle of abdomen reddish, shading into piceous black posteriorly, the 2d segment having a large yellow blotch on the disk.

The oblong head is a little longer than wide, with a distinct grooved line extending from ocelli back to occiput; the antennæ are long and slender, more than 30-jointed (the tips are broken and exact number can not be stated), the 1st joint of the flagellum is the longest, about four times as long as wide, the three following about thrice, and the others twice as long as wide. The mesothoracic parapsidal grooves are only indicated anteriorly, but just in front of the scutellum is a row of coarse punctures, evidently the posterior portion of the grooves; the scutellum has a deep transverse fovea at base, the bottom of which shows some delicate raised lines; the margins of the mesopleura are punctured, the sutures punctulate, the disk smooth but with a longitudinal grooved line a little below the middle; metathorax rugose with indications of a medial carina basally; abdomen long, linear, much longer than the head and thorax together, depressed or compressed from above and below; the petiole is black, as long as the trochanters and femora combined, minutely rugose, the spiracles placed much before the middle. Wings cinereous hyaline; veins dark brown.

Habitat.—Garland, Colorado.

Described from a single specimen collected by Mr. E. A. Schwarz.

This species is the largest form yet discovered in our fauna, and can not be confounded with any other.

Subfamily MACROCENTRINÆ.

ZELE Haliday.

Zele terminalis n. sp.

Male.—Length, $4\frac{1}{5}$mm. Head, thorax, and terminal segments of abdomen, black; metathorax brown; palpi and legs, pale yellow-ferruginous; antennæ black, covered with white hairs; two basal antennal joints and basal two-thirds of 1st joint of flagellum, yellow; the 1st joint of the flagellum is about eight times as long as thick, the others subequal (tips are broken off, but there are 34 joints remaining). The head and thorax are smooth, polished; collar yellow above and at sides, beneath black; parapsidal grooves distinct; mesopleura with a large, oval fovea just beneath the wing, and a broad, longitudinal sulcus below the middle posteriorly, its surface being minutely wrinkled; metathorax coarsely rugose, a little longer than wide; abdomen linear, longer than the head and thorax; the first three segments yellow-ferruginous, and delicately longitudinally aciculated, the following segments smooth, black, and polished. Wings hyaline, iridescent; veins brown; the recurrent nervure interstitial with the 1st transverse cubital nervure.

Habitat.—Missouri. Collection C. V. Riley.

Described from a single male specimen.

This species seems to be entirely distinct from all of the other described forms in our fauna.

Subfamily DIOSPILINÆ.

PROMACHUS Marshall.

Promachus sanguineiventris n. sp.

Female.—Length, 7^{mm}; ovipositor, 5$\frac{1}{5}^{mm}$. Head, antennæ, thorax, legs, and ovipositor, black; abdomen sanguineous, attached to the superior margin of the thorax; the tibiæ covered with fuscous pile. The head is smooth, polished; face punctulate, pubescent; antennæ 34-jointed, the length of the insect; thorax smooth; parapsidal grooves deep, broad, smooth, converging and meeting at about half the length of the mesonotum; the middle lobe small and prominent, ending in a carina posteriorly; mesopleura with coarse, deep foveæ on the disk and along the lower and posterior sutures; metathorax coarsely rugose, yellowish-red towards apex; abdomen oval the length of the thorax, the 1st segment with four black keels—two laterals and two on the disk. Wings black; the stigma, costæ, median, submedian, and basal veins, black; other veins brown; tegulæ yellowish.

Habitat.—Missouri. Collection C. V. Riley.

Described from one specimen.

This species might be confused with *Promachus saperdæ* Riley, but its larger size and different sculpture ought to readily distinguish it.

Promachus rubriceps n. sp.

Male.—Length, 3$\frac{1}{5}^{mm}$. Head red; stemmaticum and anteriorly to base of antennæ, the occiput, and hinder margins of cheeks to base of mandibles, with the tips of mandibles, black; two basal joints of antennæ, palpi, and legs, honey-yellow; flagellum of antennæ, coxæ, thorax, and abdomen, black. The head in front of the ocelli has deep grooves for the reception of the antennal scape, separated by a sharp ridge extending between the base of the antennæ; the face is minutely punctulate, covered with white sericeous hairs; antennæ 27-jointed, the scape long; sides of thorax rugose covered with long, white hairs; the parapsidal grooves broad, reticulate with coarse punctures, the middle lobe with a distinct carina posteriorly; the scutellum has a deep fovea at base, in the bottom of which are some raised lines; metathorax rugose; abdomen long, ovate, subpetiolate, attached to the upper posterior margin of the thorax, much above the base of the posterior coxæ, and strongly suggestive of an affinity with the *Evaniidæ*. Wings hyaline; the venation as in previous species.

Habitat.—Washington, D. C.

Described from two specimens, labeled No. 2566°, reared February 14, 1884, from *Sternidius alpha*, living in the pith of *Rhus glabra*.

Subfamily OPIINÆ.

OPIUS Wesmael.

Opius anthomyiæ n. sp.

Female.—Length, 4^{mm}. Black, smooth, polished, the terminal segments with the sutures after the 3d more or less piceous; palpi white; legs honey-yellow. The antennæ are long, cylindrical, 40-jointed; parapsidal grooves not impressed; on the posterior portion of the mesonotum, immediately in front of the scutellum, is a large, deep, oval fovea, the bottom of which is transversely wrinkled; mesopleura rugulose beneath the anterior wings and along the basal margins, the disk smoother with an irregular impression; the scutellum is much elevated, the disk rugose, with a deep transverse fovea at base, divided into two parts by a delicate carina; metathorax rugose. The abdomen is cylindric-ovate, sessile, the ovipositor hardly exserted; the 1st segment is sculptured and with lateral longitudinal grooves. Wings hyaline, iridescent; stigma and veins pale brown; the submedian cell is slightly longer than the median; the recurrent nervure joins the 2d submarginal cell at the basal angle, and is almost interstitial with the 1st transverse cubital nervure; the 1st branch of the radius is very short, about one fifth the length of the 2d branch; the 2d submarginal cell is longer than the 1st, and its upper margin is much shorter than the lower.

Habitat.—Lansing, Michigan.

Described from one specimen received from Prof. A. J. Cook, labeled "Ac. Cat. 722, parasite on *Anthomyia*, mining leaves of dock."

Opius foveolatus n. sp.

Male.—Length, 3^{mm}. Black, smooth, polished; the terminal one-third of 2d abdominal segment and the following segments, except sutures, brown; palpi pale; legs reddish yellow. The antennæ are but 35-jointed, slender, cylindrical, pubescent; the parapsidal grooves are sharply defined anteriorly for two-thirds the length of the mesonotum; posteriorly they are entirely wanting; there is an oval depression or fovea on mesonotum just in front of the scutellum, as in previous species, but not so deep; mesopleura smooth, with a shallow, impressed line on the disk; scutellum rugose, foveate at base, the fovea divided into two parts by a carina; metathorax rugose, a carina on the postscutellum; abdomen ovate, smooth, polished, the 1st segment longitudinally aciculated. Wings hyaline, iridescent; stigma and veins pale yellowish brown; the venation is similar to *O. anthomyiæ*, only the 1st branch of the radius is about half the length of the 2d branch.

Habitat.—Ames, Iowa.

Described from one specimen, received from Prof. H. Osborne, labeled "Parasite on pig-weed leaf-miner." The paucity of joints in the antennæ, less elevated scutellum, sculpture, and venation of anterior wings, will readily separate this species.

PHÆDROTOMA Förster.

(?) **Phædrotoma sanguinea** n. sp.

Male and female.—Length, $5\frac{1}{5}$ to 6^{mm}; ovipositor, 3^{mm}. Sanguineous, smooth, polished; eyes, stemmaticum, antennæ, legs, and ovipositor black; posterior coxæ red. The antennæ in the male are very long, 48-jointed, in the female broken; the parapsidal grooves are only indicated anteriorly, the middle lobe posteriorly has a deeply-impressed fovea; the fovea at base of the scutellum has several raised lines at the bottom; metathorax somewhat rugose; abdomen sessile, ovate, the upper surface convex, beneath in the male concave, in the female compressed into a keel; the plate of the 1st segment is trapezoidal, its disk lined; the following segments smooth, polished. Wings smoky; the submedian cell longer than the median, and the recurrent nervure joins the 2d submarginal cell just beyond the 1st transverse cubital nervure, almost interstitial with it.

Habitat.—Washington, D. C.

Described from several specimens, labeled No. 3737^{x}, reared October 3, 1885, from a *Trypeta* living in bolls of *Solanum carolinense.*

Subfamily **LIOPHRONINÆ.**

CENTISTES Haliday.

Centistes virginiensis n. sp.

Female.—Length, $1\frac{2}{5}^{mm}$; ovipositor, $\frac{3}{5}^{mm}$. Black, smooth, polished; antennæ 17-jointed, moniliform, brownish-black; legs brown, obfuscated; parapsidal grooves sharply defined, converging and meeting at base of scutellum; metathorax minutely rugose; abdomen oval, convex above and composed of only three segments. Wings hyaline, pubescent; veins pale brown.

Habitat.—Virginia.

Described from a single specimen, captured at large, May 15, 1881.

Subfamily **HELCONINÆ.**

HELCON Nees.

Helcon grandis n. sp.

Female.—Length, 11^{mm}; ovipositor, 12^{mm}. Black, polished; the pleura, metathorax, and legs piceous; tarsi fulvous. On the vertex are scattered punctures, becoming thicker and confluent around orbits and on face and cheeks; antennæ 38-jointed; parapsidal grooves distinct, coarsely punctured; collar, mesopleura, and metathorax coarsely rugose; scutellum with a large deep fovea at base, separated by a carina into two parts, and each part has a large puncture at bottom; abdomen a little longer than the head and thorax together, subcompressed, smooth, polished, black, except the disks of the two short terminal segments and the sutures of the ventral segments, which are brown. Wings fuscous; stigma and veins piceous black.

Habitat.—Louisiana.

One specimen received from Mr. Tyler Townsend. This species could only be confounded with *H. occidentalis* Cr., but it is larger, and the punctured head, sculpture of pleura and metathorax, and the darker colored legs, will at once distinguish it.

GYMNOSCELIS Förster.

Gymnoscelis yukonensis n. sp.

Female.—Length, 8^{mm}; ovipositor, 6$\frac{3}{5}^{mm}$. Polished black, legs rufous, tips of posterior femora, tibiæ, and tarsi, black; sides of abdomen more or less rufous. The vertex of head is smooth with a few widely separated punctures; face roughly punctured, pubescent; the maxillary palpi, long, 5-jointed; prothorax rugosely punctate; mesonotum polished; parapsidal grooves distinct, the disks of the lobes slightly punctured, the posterior surface of the middle lobe rugoso-punctate; mesopleura smooth, polished, the surrounding margins rugose; metathorax and metapleura very coarsely rugose; abdomen long, above subconvex, the 1st segment and the 2d basally rugose, the following segments smooth. Wings hyaline, veins piceous; the 1st branch of the radius about as long as the 2d, the 2d submarginal cell being trapezoidal.

Habitat.—Fort Yukon, Alaska.

Described from one specimen, received from Mr. L. M. Turner, 1877.

Subfamily APHIDIINÆ.

As the forms in this group have been arranged in accordance with the views of Dr. Arnold Förster, I give below a table for determining the genera:

TABLE OF GENERA.

1. Wings with less than three cubital cells ..... 2.
   Wings with three cubital cells.
   Abdomen round; oviduct curved beneath the abdomen..*G.* (1) *Toxares* Westw.
   Abdomen lanceolate; oviduct not curved beneath the abdomen.
   G. (2) *Ephedrus* Hal.
2. Abdomen lanceolate ..... 3.
   Abdomen round; oviduct curved between the abdomen.....*G.* (3) *Monoctonus* Hal.
3. First cubital and first discoidal cells confluent or not existing ..... 4.
   First cubital and first discoidal cells separated.....*G.* (4) *Praon* Hal.
4. First cubital cell and first discoidal cell not closed by a transverse vein ..... 5.
   First cubital cell and first discoidal cell confluent, closed by a cubital transverse vein.
   Metathorax much hump-shaped.....*G.* (5) *Cœlonotus* Först.
   Metathorax not very hump-shaped.
   Radius much elongated, inclosing more than two-thirds of the radial area.....*G.* (6) *Aclitus* Först.
   Radius shortened, inclosing hardly one-third of the radial area.
   G. (7) *Aphidius* Nees.

5. Radius distinctly present ..... 6.
   Radius wholly wanting ..... *G.* (8) *Paralipsis*, Först.
6. Wings with no cubital transverse vein ..... 7.
   Wings with a cubital transverse vein ..... *G.* (9) *Lysiphlebus* Först.
7. Wings with no hind middle humeral cell ..... 8.
   Wings with a hind middle humeral cell ..... *G.* (10) *Diæretus* Först.
8. Fore middle humeral cell closed; metathorax not areolated ..... 9.
   Fore middle humeral cell open; metathorax areolated.
   Female with horn-like appendages on the tip of the abdomen; postmarginal branch shorter than the marginal branch in both sexes. *G.* (11) *Trioxys* Hal.
   Female with no hornlike appendages on the tip of the abdomen; male with a postmarginal which is longer than the marginal branch; radius much elongated ..... *G.* (12) *Lipolexis* Först.
9. Female with no horn on the tip of the abdomen ..... *G.* (13) *Adialytus* Först.

PRAON Haliday.

(*Aphidaria* Prov., Add. Faun. Hym., p. 152, November, 1886.)

Praon humulaphidis n. sp.

Length, about 3^{mm}. Smooth, polished, bright yellow-ferruginous; vertex of head brown; ocelli, eyes, antennæ, except the two basal joints and base of 3d joint, mesonotum, and scutellum, black; metascutellum convex, brown.

The parapsidal grooves are distinct, sharply defined, converging and almost meeting just in front of the scutellum; metathorax smooth, rounded; the scutellum smooth, with a deep transverse fovea at base; wings, hyaline; veins, pale brown.

Habitat.—Richfield Springs, New York.

Described from one broken specimen, labeled No. 4123^{0}, reared June 15, 1887, from a hop Aphis, *Siphonophora* sp.

I should have refrained from describing this species but for its being a reared specimen with such striking colors that its identification, even from the poor description, can easily be made.

Praon virginiensis n. sp.

Male.—Length, $2\frac{3}{5}^{mm}$. Smooth, polished; the head, antennæ, except two basil joints, and mesonotum, black; clypeus, lower portion of cheeks, mandibles, collar, pleura, metathorax, abdomen, and legs, yellow-ferruginous. The parapsidal grooves are distinct as in previous species, the scutellum is similar; but the metathorax is smooth, with a delicate medial carina; abdomen long lanceolate, longer than the head and thorax together, the disk obfuscated; the petiole is a little longer than wide, with delicate lateral grooves and faint medial keel. Wings, hyaline; veins, brown.

Habitat.—Arlington, Virginia.

Described from a single specimen that had the antennæ broken off at tips.

Sept. 27, 1889.

APHIDIUS Nees.

TABLE OF SPECIES.

Males.

1. Antennæ less than 20-jointed ..... 3.
   Antennæ 20-jointed ..... 2.
   Antennæ more than 20-jointed.
   Black, except the legs.
   Antennæ 26-jointed ..... *A. procephali* n. sp.
   Antennæ 22-jointed, sometimes 21-jointed, the two terminal joints being connate ..... *A. pterocommæ* n. sp.
2. Second branch of radius not longer than the transverse cubital.
   A. avenaphis Fitch.
   Second branch of radius distinctly longer than transverse cubital...*A. lachni* n. sp.
3. Antennæ 16-jointed ..... 4.
   Antennæ 19-jointed.
   Head black or piceous; thorax, abdomen, and legs honey-yellow.
   A. xanthus n. sp.
   Head and thorax black; abdomen brown or piceous.
   Hind coxæ and legs brown; trochanters and knees yellowish.
   A. obscuripes n. sp.
4. Head and thorax black; abdomen black or piceous.
   Middle and posterior coxæ black ..... *A. phorodontis* n. sp.

Females.

1. Large size.
   Head and abdomen piceous black; thorax and legs ferruginous.
   A. bicolor n. sp.
   Moderate or small-size species.
   Antennæ 17-jointed or less ..... 2.
   Antennæ 19-jointed.
   Hind coxæ black; petiole yellow basally..... *A. californicus* n. sp.
   Hind coxæ pale brown; petiole black..... *A. lachni* n. sp.
2. Antennæ 16-jointed or less ..... 3.
   Antennæ 17-jointed.
   Head black or piceous; thorax, abdomen, and legs yellow ferruginous.
   A. pallidus n. sp.
   Head and thorax wholly black ..... *A. avenaphis* Fitch.
   Collar, pleura, and metathorax, brown ..... var. *A. avenaphis* Fitch.
3. Antennæ 16-jointed.
   Petiole black or piceous, not constricted ..... *A. obscuripes* n. sp.
   Petiole wholly yellow, strongly constricted at middle..... *A. confusus* n. sp.
   Antennæ 14-jointed.
   Petiole constricted, basally yellow ..... *A. phorodontis* n. sp.

Aphidius bicolor n. sp.

Female.—Length, $5\frac{3}{5}$ mm. Head and abdomen piceous black; a blotch back of the ocelli and face ferruginous; antennæ broken at tips; two basal joints ferruginous, flagellum black, the joints being about one and a half times longer than thick; thorax ferruginous, smooth, polished, except the disk of mesonotum, which is shagreened; metathorax black, minutely rugose, its posterior face very oblique and centrally

hollowed, the posterior lateral angles subacute; abdomen long, lanceolate, almost twice as long as the head and thorax together, subcompressed at apex, the tip of the ovipositor being seen projecting upward between the ventral valves; the petiole is about as long as the hind coxæ and trochanters combined, rugose, black, and opaque; legs concolorous with the body, except the posterior tibiæ along their upper surface and their tarsi, which are fuscous. Wings hyaline; veins brown.

Habitat.—Washington, D. C.

Described from one specimen, labeled "D. C., May 18, 1882." It is the largest species known to me, and resembles a species I have reared in Florida from *Lachnus australis*, named in MS. *Aphidius pinaphidis.*

Aphidius procephali n. sp.

Male.—Length, $2\frac{2}{5}$ mm. Black, polished; the 3d abdominal suture and legs, except coxæ, brown, anterior pair of legs paler, coxæ black, the middle and anterior pairs brownish at apex; antennæ, 26-jointed, entirely brown-black, the joints of flagellum being a little longer than wide; disk of mesonotum aciculated; metathorax areolated; abdomen long ovate, depressed; the petiole rugose, about thrice as long as wide; wings, hyaline, iridescent; veins, brown; the 2d branch of the radius about as long as the transverse cubital nervure.

Habitat.—Washington, D. C.

Described from one specimen, labeled No. 1021P°, reared April 7, 1883, from an Aphis, *Procephalus* sp. found on *Pinus inops.*

Aphidius pterocommæ n. sp.

Male.—Length, $2\frac{4}{5}$ mm. Black, polished; abdomen, piceous black; legs, dark brown; coxæ and trochanters, black; posterior femora, piceous black; antennæ, 22-jointed (in one specimen the two terminal joints are connate, making but 21 joints); the joints of the flagellum are hardly twice as long as wide; thorax entirely smooth, polished; metathorax areolated, the surface of some of the areolæ more or less punctured; abdomen long ovate, depressed; the petiole rugose, twice as long as wide, and constricted at the middle; wings, hyaline; veins, brown; the 2d branch of the radius much longer than the transverse cubital nervure.

Habitat.—Washington, D. C.

Described from two specimens, labeled No. 2939°, reared April 5, 1883, from willow Aphid, *Pterocomma salicicola* Uhler.

Aphidius avenaphis Fitch.

Praon avenaphis Fitch, Sixth N. Y. Report, p. 98.

Specimens of what are undoubtedly this species are in the collection, labeled 2721°1, reared June 17 and 20, 1882, from the wheat Aphis, *Siphonophora avenæ.* Some specimens agree exactly with Fitch's description; others vary considerably in color, having the collar, pleura, metathorax, and abdomen entirely brown or more or less dusky; the female has but

17-jointed antennæ, a fact not mentioned by Fitch; the specimens with 20-jointed antennæ, as described by him, being males.

Habitat.—Washington, D. C., and Lafayette, Indiana. (F. M. Webster.)

Aphidius lachni n. sp.

Female.—Length, $2\frac{2}{5}$ mm. Black, polished; collar to tegulæ, and more or less of mesopleura, and the legs, including all coxæ, pale ferruginous; abdomen, piceous; the sutures, pale; petiole, black. The antennæ are 19-jointed, black; the suture between 2d and 3d joints only pale; the joints of the flagellum are at least twice as long as thick, pubescent; thorax smooth, impunctured; metathorax areolated; the legs, metathorax, petiole, and abdomen are more distinctly covered with white hairs than usual; the petiole is nearly thrice as long as wide, black, delicately sculptured, and slightly constricted at the middle; wings, hyaline; the veins, dark brown; the 2d branch of the radius being about one and a half times as long as the transverse cubitals.

The male differs from the female in having a darker colored abdomen, either black or piceous; the 2d suture only pale, while the antennæ are 20 or 21 jointed, the long terminal joint being sometimes divided into two joints.

Habitat.—Alameda County, California.

Described from several specimens, labeled No. 367°, reared in November, 1887, by Mr. Albert Koebele, from an Aphid, *Lachnus* sp., on Poplar.

Aphidius californicus n. sp.

Female.—Length, $2\frac{2}{5}$ mm. Black, polished; the mouth parts pale; legs honey-yellow, hind coxæ black; anterior half of the strongly constricted petiole, honey-yellow; postpetiole, black; the sutures between petiole and 2d and between the 3d and 4th segments, pale yellowish. The antennæ are 19 jointed, much more slender than in *A. lachni*, the joints of the flagellum being at least two and a half times as long as wide; thorax smooth, impunctured; metathorax, areolated and rugose; abdomen about one-third longer than the head and thorax together, long, lanceolate, pointed at apex. Wings, hyaline; veins, brown; the basal nervure almost black; the 2d branch of the radius is nearly twice the length of the transverse cubital nervure.

Habitat.—Placer County, California.

Described from one specimen, labeled "Placer County, Cal., August," and sent to the Department by Mr. Albert Koebele.

Aphidius obscuripes n. sp.

Female.—Length, 2 mm. Black, polished; face, mouth parts and antennal tubercles, brownish-yellow; legs brown; front coxæ and femora, except along the upper surface, and all trochanters, pale brownish-yellow; hind coxæ and femora unicolorous, dark brown; abdomen piceous brown, the 2d, 5th, and 6th sutures yellowish-white. The antennæ are

16-joint, black, the joints of the flagellum are about two and a half times longer than thick, the terminal joint being longer and stouter; thorax smooth, polished, the upper margin of collar, triangular piece in front of the tegulæ, and the tegulæ piceous or brownish; metathorax smooth, distinctly areolated; abdomen as usual, long, lanceolate, about twice as long as the thorax; the petiole about twice as long as wide, with prominent tubercles. Wings hyaline; stigma and veins pale, the basal nervure brown; the 2d branch of the radius is not as long as the transverse cubital nervure, the latter being hyaline.

The male has 19-jointed antennæ, the metathorax piceous, the 1st and 2d abdominal sutures only pale, while the veins of anterior wings are a little darker, and the 2d branch of the radius is, at least, as long as the transverse cubital.

Habitat.—Lafayette, Indiana.

Described from two specimens, one male and one female, labeled No. 83[7], received from Mr. F. M. Webster.

Aphidius xanthus n. sp.

Male.—Length, $1\frac{2}{5}$mm. Honey-yellow, smooth, polished; head black, disk of mesonotum obfuscated or brownish; antennæ 19-jointed (?); thorax with parapsidal grooves anteriorly which become obsolete before attaining the middle of mesonotum; metathorax smooth, polished, not areolated; abdomen longer than the head and thorax together; the petiole about thrice as long as wide and of a uniform thickness throughout, the spiracles not prominent; wings hyaline; veins pale brown, subhyaline; the 2d branch of the radius is about as long as the transverse cubital nervure.

Habitat.—Bushberg, Mo.

Described from a single specimen in Riley collection, labeled No. 700P[01], reared September 23, 1876, from a seed-pod-shaped gall on *Solidago*.

From this gall were also reared Cecidomyious flies, and it is indicated in Professor Riley's "Note Book" as a Cecidomyid gall, but the rearing of this parasite would, however, seem to indicate that the gall was Aphidian and that the *Aphidius* and the *Cecidomyia* were true parasites.

I have reared *Cecidomyiæ* from Aphids in Florida, Mr. James Fletcher from Aphids in Canada, and several instances of such rearings are recorded abroad.

Aphidius pallidus n. sp.

Female.—Length, 2mm. Smooth, polished; head black, face piceous; thorax, legs, and abdomen, pale yellow-ferruginous, the dorsum of mesonotum piceous black, the dorsum of abdomen pale brownish. The antennæ are 17-jointed, black, the two basal joints pale beneath; the joints of the flagellum are hardly thrice as long as thick; metathorax areolated; abdomen normal; the petiole is yellowish-white, about twice as long as wide, slightly narrowed basally, the spiracles distinct, but

not prominent. Wings hyaline; veins pale; the 2d branch of the radius is more than twice as long as the transverse cubital nervure.

Habitat.—Lafayette, Ind.

Described from one specimen received from Mr. F. M. Webster.

Aphidius phorodontis n. sp.

Female.—Length, $1\frac{2}{5}$ mm. Black, polished; mouth parts pale; legs and abdomen rufo-piceous; trochanters, knees, and the petiole of abdomen at base, yellowish. The antennæ are 14-jointed, very slightly and gradually thickened toward apex, black, the two basal joints piceous, the 3d and 4th joints beneath yellowish, the joints beyond the 5th are about twice as long as thick; the parapsidal grooves are faintly distinguishable anteriorly; metathorax areolated, the surface of the areolets somewhat wrinkled; the abdomen is not longer than the head and thorax combined; the petiole about thrice as long as wide, the post-petiole widened. Wings hyaline; stigma and veins pale; the 3d discoidal cell is very narrow; the 2d branch of the radius as long as the transverse cubital nervure.

The male differs from the female in having 16-jointed antennæ.

Habitat.—Ottawa, Canada.

Described from several specimens, labeled No. 4273°, received from Mr. James Fletcher, January 9, 1889, and bred from *Phorodon mahaleb.*

Aphidius confusus n. sp.

Female.—Length, 2 mm. Black, polished; legs honey-yellow, the upper surface of anterior and middle femora and tibiæ, brown; the posterior coxæ, femora, and middle of tibiæ, black; abdomen honey-yellow, disks of the segments pale brownish. The antennæ are 16-jointed, black; the joints of the flagellum are about twice as long as thick; the mesothoracic parapsidal grooves are slightly indicated anteriorly; metathorax smooth, areolated; abdomen a little longer than the head and thorax together, lanceolate; the petiole a little more than thrice longer than wide and slightly narrowed at base. Wings hyaline; stigma and veins pale brown; the 2d branch of the radius only slightly longer than the transverse cubital nervure.

Habitat.—Los Angeles, California.

Described from a single specimen, received from Mr. Albert Koebele. This specimen was reared in April from an Aphis on orange.

LYSIPHLEBUS Förster.

TABLE OF SPECIES.

Males.

1. Antennæ 15-jointed or less ..... 2.
   Antennæ 18-jointed.
   Collar, pleura, and metathorax black; petiole short, brown.
   L. cerasaphis Fitch.
   Collar, pleura, and metathorax yellow; petiole long, yellow.
   L. multiarticulatus Ashm.

2. Antennæ 14-jointed ..... 4.
Antennæ 15-jointed.
Head and thorax not entirely black ..... 3.
Head and thorax entirely black.
Hind coxæ black or black basally.
Petiole black or piceous ..... *L. cucurbitaphidis* n. sp.
Petiole yellow or yellowish-brown.
Terminal antennal joint not longer than the preceding.
L. eragrostaphidis n. sp.
Terminal antennal joint longer than the preceding.
L. Coquilletti n. sp.
Hind coxæ not black, either testaceous or yellow.
Hind tarsi as long as their tibiæ; third antennal joint nearly thrice as long as thick ..... *L. citraphis* Ashm.
Hind tarsi shorter than their tibiæ; third antennal joint hardly twice as long as thick ..... *L. myzi* n. sp.
3. Face yellow; collar, pleura, and metathorax rufo-testaceous ... *L. ribaphidis* n. sp.
Face piceous; collar yellow, pleura black, metathorax piceous at apex.
L. testaceipes Cress.
Variable; wholly brownish piceous or yellow-ferruginous ..... *L. minutus* n. sp.
4. Hind and middle coxæ black, or at least so basally; legs brown.
L. abutilaphidis n. sp.
Hind coxæ brown.
Face piceous; terminal antennal joint not or hardly longer than the preceding joint ..... *L. baccharaphidis* n. sp.
Face black; terminal antennal joint one-third longer than the preceding joint ..... *L. gossypii* n. sp.
Hind coxæ yellow.
Petiole yellow, the abdomen shading into black posteriorly .... *L. tritici* n. sp.

Females.

1. Antennæ 13-jointed or less ..... 2.
Antennæ 14-jointed.
Middle and posterior coxæ piceous black; legs dark brown .. *L. piceiventris* n. sp.
2. Antennæ 12-jointed ..... 3.
Antennæ 13-jointed.
Middle and posterior coxæ black or brown-black.
Metathorax black; terminal antennal joint one-third longer than the preceding joint.
Petiole short; brown or black ..... *L. cucurbitaphidis* n. sp.
Petiole long yellow ..... *L. abutilaphidis* n. sp.
Metathorax piceous or brown; petiole brown; terminal antennal joint not longer than the preceding ..... *L. gossypii* n. sp.
Hind coxæ black or black basally.
Hind tarsi not longer than the hind tibiæ.
Legs pale brownish-yellow, sometimes obfuscated.
L. eragrostaphidis n. sp.
Legs bright honey-yellow ..... *L. Coquilletti* n. sp.
Hind tarsi distinctly longer than hind tibiæ.
Hind femora and tibiæ dark brown; petiole yellowish, the 1st abdominal segment brown ..... *L. baccharaphidis* n. sp.
Hind femora and tibiæ honey-yellow; petiole and the 1st abdominal segment yellow ..... *L. persicaphidis* n. sp.

Antennæ 13-jointec—Continued.
All coxæ brownish yellow, sometimes dusky basally.
Basal joint of hind tarsi not longer than the three following joints.
Antennæ brown to brown-black, but yellowish beneath, the two basal joints, and one, two, or more of the following joints always yellowish beneath ..... *L. citraphis* Ashm.
Basal joint of hind tarsi as long as the four following joints.
Antennæ brown-black ..... *L. myzi* n. sp.
All coxæ honey-yellow.
Legs honey-yellow; posterior femora and tibiæ sometimes brown.
Terminal antennal joint fusiform twice the length of the preceding joint; hind legs usually brown ..... *L. testaceipes* Cress.
Terminal antennal joint not twice the length of the preceding.
Joints of flagellum twice as long as thick ..... *L. tritici* n. sp.
Joints of flagellum about thrice as long as thick.
L. salicaphis Fitch.
3. Color variable; wholly brownish-piceous or yellow-ferruginous .. *L. minutus* n. sp.

Lysiphlebus multiarticulatus n. sp.

Male.—Length, 2^{mm}. Upper portion of head, mesonotum, and scutellum black, the rest of the insect yellow-ferruginous; antennæ 18-jointed, acuminated toward apex, brown-black, the two basal joints beneath brownish-yellow, the joints of flagellum about two and a half times as long as thick; metathorax delicately areolated; all tibiæ and tarsi fuscous; abdomen ovate, the petiole and 2d segment yellowish, beyond brown; wings hyaline; veins pale brown, the stigma subhyaline.

Habitat.—Lafayette, Indiana.

Described from one specimen, received from Mr. F. M. Webster.

Lysiphlebus ribaphidis n. sp.

Male.—Length, $1\frac{4}{5}$^{mm}. Head and thorax black; face, base of antennæ, and legs honey-yellow; collar, pleura, and apex of metathorax rufo-testaceous; abdomen flavo-testaceous, dorsally dusky or brown. Antennæ 15-jointed, flagellum brown, the joints hardly thrice as long as thick. Wings hyaline; veins brown-black, the stigma whitish.

Habitat.—Lafayette, Indiana.

Described from two specimens labeled No. 3935°, received from Mr. F. M. Webster. These specimens were reared July 12, 1886, from the currant Aphis.

Lysiphlebus piceiventris n. sp.

(?) *Female.*—Length, $1\frac{3}{5}$^{mm}. Black, smooth, polished; antennæ, legs, and abdomen dark brown or piceous, middle and posterior coxæ black, posterior femora obfuscated; antennæ 14-jointed, the joints of the flagellum about twice as long as thick; metathorax smooth on the disk, with delicate ridges at sides; abdomen ovate, the petiole short, gradually widened posteriorly, with prominent spiracles a little before the middle, the 1st and 2d abdominal sutures pale; wings hyaline, veins brown.

Habitat.—Los Angeles, California.

Described from a single specimen, received from Mr. Albert Koebele.

Lysiphlebus cucurbitaphidis n. sp.

Female.—Length, 1^{mm}. Black, smooth, polished; antennæ dark brown, 13-jointed, the 1st joint of the flagellum is slightly more than twice longer than thick, the following joints about twice as long as thick, the terminal joint being longer; legs brown; the anterior and middle coxæ and all the trochanters yellowish, the posterior coxæ and sometimes the middle pair basally, black or brown-black; abdomen dark brown, the petiole very short, widened behind; wings hyaline, veins brown; the radius is very angularly bent, the 2d branch being as long as the 1st. The male has 15 jointed antennæ, flagellar joints twice as long as thick, the last not longer than the preceding.

Habitat.—Lafayette, Indiana.

Described from many specimens, labeled No. 3610^{01}, reared by Mr. F. M. Webster from *Siphonophora cucurbitæ* Thomas.

Lysiphlebus eragrostaphidis n. sp.

Male and female.—Length, 2^{mm}. Black, smooth, polished; legs pale brownish-yellow, the posterior coxæ black except at tip, the posterior femora, tibiæ, and tarsi dark brown, the tibiæ at base yellowish; the basal joint of tarsi is not longer than the three following joints; metathorax smooth, delicately areolated; abdomen long, lanceolate, pointed at apex, the petiole smooth, yellow, slightly widened posteriorly, the following segments, except sometimes the base of the second, are dark brown, shading into black towards apex, the 3d segment occasionally has a pale spot laterally. Wings hyaline; the stigma and veins dark brown. The female has 13-jointed antennæ, the 1st joint of the flagellum is hardly thrice as long as thick, the following joints slightly shorter, the terminal joint being fusiform and twice as long as the preceding. The male has 15-jointed antennæ, the joints of the flagellum being about twice as long as thick, fluted, the terminal joint pointed and longer than the preceding; the legs are usually darker than in the female; the anterior and middle pairs usually obfuscated along the upper surface, the posterior pair being much darker, the middle and posterior coxæ are sometimes black basally, the apex brown; the abdomen is long ovate, the petiole yellow, the following segments dark reddish-brown.

Habitat.—Lafayette, Indiana, and Los Angeles, California.

Described from specimens received from Mr. F. M. Webster, labeled "Swept from *Eragrostis*, October 4, 1885;" and specimens received from Mr. Coquillett, labeled No. 92, reared from an Aphis on *Eragrostis;* and others labeled, "Parasite on *Siphonophora* sp. on *Audibertia stochoides.*"

Lysiphlebus Coquilletti n. sp.

Male and female.—Length, 2^{mm}. Black, smooth, polished; legs honey-yellow, a dark streak along the upper surface of middle femora and tibiæ, the posterior coxæ black at base, their femora black or brown-black, their tibiæ, except at base and the tarsi, brown; abdomen long

lanceolate, pointed at tip, the petiole honey-yellow, 3d and 4th sutures pale. Wings hyaline, stigma and veins brown. The female has 13-jointed antennæ, the two basal joints yellowish-brown beneath, the joints of flagellum nearly thrice as long as thick, the terminal joint very large fusiform, twice as long as the preceding joint. The male has 15-jointed antennæ, dark brown, the joints of the flagellum are only about twice as long as thick, the terminal joint not longer than the preceding, fusiform; the legs are darker than in the female, the middle tibiæ and tarsi dusky; abdomen ovate, black, the petiole yellowish; the 2d branch of the radius is not as long as the 1st.

Habitat.—Los Angeles, California.

Described from five specimens, received from Mr. Coquillett, labeled No. 99, reared from *Myzus* species on *Hosackia glabra.* This species is very close to *L. eragrostaphidis* and may be a variety.

Lysiphlebus citraphis Ashm.

? *Aphidius citraphis* Ashm., Orange Ins., 1880, p. 71.
Trioxys testaceipes Cress. (pars), U. S. Agri. Rep., 1879, p. 208.
Aphidaria basilaris Prov., Add. à la Faune Hym., p. 396, 1888.

This species is parasitic on the orange Aphis, *Siphonophora citrifolii* Ashm.; it is identical with some of the forms described by Mr. Cresson (*loc. cit.*), but as that author confused three species, which bear a superficial resemblance to each other, reared from the cotton Aphis, orange Aphis, and wheat Aphis, I have retained the name given by me to the species reared from the orange Aphis, his name for the species reared from the cotton Aphis, and given the name *L. tritici* to the species reared from the wheat Aphis, which, under the circumstances, is, I believe, admissible. See the table for the characters that separate them.

Lysephlebus myzi n. sp.

Male and female.—Length, 2^{mm}. Black, smooth, polished; metathorax smooth with delicate lateral ridges; coxæ brownish yellow, the posterior pair dusky basally, the trochanters and legs yellowish, the middle femora, and the posterior femora and tibiæ and tarsi, more or less brown; the basal joint of hind tarsi is about as long as the four following joints; abdomen long, lanceolate, pointed at apex, and at least one-third longer than the head and thorax together, brown, the petiole yellow, apex of 2d and base of 3d and 4th segments pale. Wings, hyaline; stigma and veins pale brown; the 2d branch of the radius is shorter than the 1st. The female has 13-jointed antennæ, dark-brown, the suture between the 2d and 3d joints pale, the 1st joint of the flagellum is almost thrice as long as thick, the following joints more than twice longer than thick, the terminal joint being one-third longer than the preceding. The male has 15-jointed antennæ, the 3d joint being hardly twice as long as thick; the posterior tarsi are shorter than their tibiæ; the abdomen, including the petiole, brown, the apex of 2d segment yellowish-white.

Habitat.—Lansing, Michigan.

Described from four specimens, labeled No. 258[x], reared from currant Aphis, *Myzus ribis* Linn., received from Prof. A. J. Cook.

Lysiphlebus testaceipes Cress.

Trioxys testaceipes Cress., U. S. Agric. Report, 1879, p. 208.

Habitat.—Southern States.

Many specimens of this species are in the collection, all reared from the cotton Aphis. No. 46[a] reared May 19, 1879; others at Selma, Alabama, by Mr. W. H. Patton, October 19, 1879, and at Wedgefield, South Carolina, by Mr. Thomas McCutcheon, July 24, 1886.

Lysiphlebus gossypii n. sp.

Male and female.—Length, 1 to $1\frac{1}{5}$[mm]. Black, smooth, polished; metathorax piceous, delicately areolated; legs brown or piceous, all trochanters and anterior and middle legs beneath and knees of posterior legs, paler; middle coxæ black basally, posterior coxæ black, tips pale; abdomen long, lanceolate, pointed at apex, black beyond 2d segment; petiole yellow at base, piceous posteriorly, 1st suture whitish, 2d segment piceous, the apex and 2d suture pale. Wings hyaline; stigma and veins pale brown; the 2d branch of the radius about as long as the 1st. The antennæ in female are 13 jointed, dark brown, the joints of flagellum a little more than twice longer than thick, the terminal joint not longer than the preceding. The male has 14-jointed antennæ, the joints of flagellum a little more than twice longer than thick, the 1st joint of flagellum being stouter than the others, the terminal joint being slightly longer than the preceding, fusiform; the basal joint of hind tarsi is hardly as long as the three following joints united.

Habitat.—Columbia, South Carolina.

Described from many specimens, labeled No. 2400, received from Prof. G. F. Atkinson, and reared from cotton Aphis, *Aphis gossypii.*

Lysiphlebus abutilaphidis n. sp.

Male and female.—Length, $1\frac{1}{5}$[mm]. Black, smooth, polished; metathorax smooth, delicately areolated, black; legs honey-yellow, two-thirds of the hind coxæ basally and their femora brown; abdomen long, brown, the sutures a little paler, the extreme apex black, the petiole very long, very narrow at base, and bright yellow or sulphur yellow; wings hyaline, the stigma and veins pale brown, the 2d branch of the radius much shorter than the 1st.

The antennæ in the female are 13-jointed, dark brown, slightly thickened toward apex or subclavate, the 1st joint of flagellum hardly twice as long as thick, the following joint a little longer or about two and a half times as long as thick, the terminal joint being the longest and thickest joint, about one third longer than the preceding. In the male the antennæ are 14-jointed, uniformly cylindrical throughout, the joints of the flagellum being about two and a half times as long as thick, except the 1st joint, which is slightly longer, the terminal joint being much longer than the preceding; the legs are brown, the middle and

posterior coxæ black or black basally; the abdomen ovate, brown, the petiole as wide at base as at apex and yellowish brown.

Habitat—Los Angeles, California.

Described from four specimens received from Mr. D. W. Coquillett, labeled No. 93, reared from an Aphis *Siphonophora* sp. on abutilon.

Lysiphlebus tritici n. sp.

Male and female.—Length, $1\frac{3}{5}^{mm}$. Black, smooth, polished; metathorax smooth, black, with delicate lateral ridges; legs, including coxæ, honey-yellow, the posterior femora sometimes pale brownish; abdomen as usual, brownish-piceous, the petiole honey-yellow, slightly widened posteriorly; wings hyaline, the stigma and veins pale brown, the 2d branch of the radius as long as the 1st.

The antennæ in the female are 13-jointed, brown, the joints of the flagellum about twice as long as thick, the terminal joint about one-third longer than the preceding. The male has 14-jointed antennæ, the joints of the flagellum about two and a half times as long as thick, the terminal joint being longer and thicker than the others; the abdomen is brown, black at apex, the petiole and the basal portion of the 3d segment honey-yellow, or pale yellow-ferruginous; the hind tarsi are about as long as their tibiæ, the basal joint being about as long as the three following joints.

Habitat—Cadet, Missouri.

Described from several specimens received from Mr. J. W. Barlow, labeled No. 2721, reared June 20, 1882, from wheat Aphis, *Aphis avenæ*.

Lysiphlebus persicaphidis n. sp.

Female.—Length, 2^{mm}. Black, smooth, polished; face piceous; metathorax smooth, black, delicately areolated; legs, including coxæ, pale yellow-ferruginous, the posterior tarsi being distinctly longer than their tibiæ, about the length of the last joint; the abdomen long lanceolate, hardly one-third longer than the head and thorax together, pointed at apex; the petiole and 1st segment and base of 3d pale yellow-ferruginous, from thence dark brown; wings hyaline, stigma and veins brown, the 2d branch of the radius is a little shorter than the 1st.

The antennæ are 13-jointed, piceous black, the 1st joint beneath pale yellow-ferruginous, the joints of the flagellum less than thrice as long as thick, the terminal joint longer, fusiform.

Habitat.—Fresno County, California.

Described from one specimen received from Mr. Albert Koebele, reared in May, 1886, from Aphis on peach.

Lysiphlebus baccharaphidis n. sp.

Male and female.—Length, $1\frac{3}{5}^{mm}$. Black, smooth, polished; face more or less piceous, the clypeus prominently convex and always piceous; metathorax areolated; legs pale brownish, the posterior pair dark brown, their coxæ black, trochanters and knees pale yellowish; abdomen long lanceolate, brown, the petiole and 3d segment along the sides

pale or yellowish; wings hyaline; stigma and veins brown; the 2d branch of the radius only half the length of the 1st.

The antennæ in the female are 13-jointed, brown-black, the tip of 2d joint being pale, the joints of flagellum about two and a half times as long as thick, the terminal joint being longer than the preceding.

The male has 14-jointed antennæ, the joint of the flagellum being a little more than twice as long as thick, the terminal joint not longer than the preceding; legs and abdomen brown; the 2d branch of the radius is about as long as the 1st branch.

Habitat.—Los Angeles, California.

Described from four specimens labeled No. 94, received from Mr. D. W. Coquillett, reared from an Aphis on *Baccharis viminalis.*

Lysiphlebus salicaphis Fitch.

Trioxys salicaphis Fitch, First Report, p. 136.

In the collection are specimens of a species, agreeing with Dr. Fitch's description, labeled No. 165°L, reared by Prof. Riley from grape Aphis, *Siphonophora vitifolii* Thos., in Missouri; also other specimens reared at the Department, September 10, 1886.

DIÆRETUS Förster.

Diæretus americanus n. sp.

Male.—Length, $1\frac{3}{5}$mm. Black, smooth, polished; two basal joints of antennæ pale yellow-ferruginous, flagellum dark brown; palpi, white; collar sides piceous; the triangular piece just beneath base of anterior wing very hairy; legs, pale brownish-yellow; metathorax, black; abdomen, brown, blackish toward apex; petiole, yellowish.

The antennæ are longer than the insect, 18-jointed; the joints of the flagellum less than thrice as long as thick, the terminal joint being nearly twice as long as the preceding; mesothorax smooth, polished, the parapsidal grooves distinct, converging and almost meeting at base of scutellum; metathorax areolated by a delicate medial longitudinal keel and lateral keels, microscopically punctate, finely pubescent; abdomen ovate, the petiole very slightly longer than wide, the sides parallel. Wings, hyaline; the stigma and veins brown. There is a cubital vein starting from near the apex of the basal vein, almost from the parastigma, and extending entirely across the wing to the apex; hind wing with a single closed humeral cell.

Habitat.—Lafayette, Indiana.

Described from two specimens received from Mr. F. M. Webster.

Diæretus Websteri n. sp.

Male.—Differs from the preceding in having 19-jointed antennæ, the two basal joints yellowish, the 1st joint of flagellum being thrice as long as thick, the following slightly shorter, the terminal joint not longer than the preceding; the abdomen is brownish-yellow, dusky toward apex, the petiole not longer than wide; while the metathorax is without the delicate longitudinal medial keel.

Habitat —Lafayette, Indiana.

Described from one specimen received from Mr. F. M. Webster.

Diæretus brunneiventris n. sp.

Male.—Differs from both of the above in having the face and lower portion of the cheeks brownish-yellow, and the triangular piece beneath anterior wings, sides of collar and metathorax, brown. The abdomen is brown; the petiole yellow, a little longer than wide, the spiracles prominent. The antennæ are 19-jointed, the two basal joints and the base of the 3d, honey-yellow, the flagellum brown-black, the 1st joint thrice as long as wide, the others slightly shorter, the terminal joint shorter than the preceding.

Habitat.—Lafayette, Indiana.

Described from one specimen received from Mr. F. M. Webster.

This genus, with the genera *Toxares*, *Ephedrus*, *Monoctonus*, and *Præon*, all have a complete cell in the hind wing, the other genera (except, possibly, *Cœlonotus* and *Aclitus*, which are unknown to me) are without a cell.

TRIOXYS Haliday.

Trioxys rhagii n. sp.

Female.—Length, $2\frac{3}{5}$ mm. Black, smooth, polished; clypeus piceous; palpi brown; antennæ 11-jointed, the first three joints yellowish, flagellum black, the 1st joint of the flagellum is cylindrical, the same thickness throughout and a little thinner than the following joints, the following joints slightly shorter, the last being the longest joint and at least one-third longer than the preceding; mesonotum smooth, without parapsidal grooves; metathorax distinctly areolated; legs, including coxæ, flavo testaceous; abdomen long, lanceolate, piceous-black, terminating in two long prongs, the oviduct curved downward between them, the ovipositor slightly exserted; the 1st and 2d sutures are yellowish-white, the petiole twice as long as wide, the spiracles situated a little beyond the middle. Wings hyaline; costæ and basal veins brown; stigma and the other veins pale; the radius is long, about twice the length of the post-marginal; hind wings without a cell.

Habitat.—Ridgewood, New Jersey.

Described from one specimen in Riley collection, labeled No. 275^{x}, reared November 16, 1871, from *Rhagium lineatum*.

LIPOLEXIS Förster.

TABLE OF SPECIES.

Males.

Antennæ 17-jointed ..... *L. piceus* Cress. = *T. rapæ* Curtis (?).

Antennæ 16-jointed.

All coxæ dark brown or black ..... *L. chenopodiaphidis* n. sp.

Hind coxæ black only at base, others yellow ..... *L. salicaphidis* n. sp.

Females.

Antennæ 15-jointed..... .....*L. salicaphidis* n. sp.
Antennæ 14-jointed.....*L. piceus* Cress. = *T. rapæ* Curtis (?).
Antennæ 13 jointed.....*L. chenopodiaphidis* n. sp.

Lipolexis piceus Cress.

Trioxys piceus Cress., U. S. Agric. Report, 1879, p. 260.
? *Aphidius* (*Trionyx*) *rapæ* Curtis, Farm Insects, p. 73.

I can discover no difference between this species and specimens of an insect received from Mr. E. A. Fitch, of Essex, England, named *Trioxys rapæ* Curtis, but there is some doubt in my mind as to whether this is Curtis's species, as Mr. Marshall, in his catalogue of British Hymenoptera, places *T. rapæ* of Curtis in the genus *Toxares* Westwood.

The species is parasitic on *Aphis brassicæ* Linn., and has been reared from this Aphid by different observers from Florida to California.

Lipolexis salicaphidis n. sp.

Male and female.—Length, $1\frac{3}{5}$ mm. Black, smooth, shining; mouth parts pale; the antennæ are 15-jointed in the female, the 1st joint of the flagellum about thrice as long as thick, the following joints shorter; in the male there are 16 joints, the joints of the flagellum about equal in length, the terminal joint not being longer than the preceding; metathorax areolated; legs honey-yellow, the posterior coxæ at base and their femora, tibiæ, and tarsi obfuscated or brown; abdomen long, lanceolate in the female, the petiole dull yellow, the rest of the abdomen piceous black; wings hyaline, the stigma and veins pale brown. The petiole in the male shows only a little yellow at base.

Habitat.—Los Angeles, California.

Described from six specimens labeled No. 73, received from Mr. D. W. Coquillett, reared from an Aphis on *Salix*.

This species can not be the *Trioxys salicaphis* Fitch on account of the number of antennal joints.

Lipolexis chenopodiaphidis n. sp.

Male and female.—Length, 2 to $2\frac{1}{5}$ mm. This species is very similar to *L. piceus* Cress., but the female has but 13 joints in the antennæ, the male 16 joints. All the coxæ in the male are piceous black, the legs being dark brown, the knees paler, the abdomen dark brown, with pale sutures in the male; in the female the abdomen is brown, the anterior and middle coxæ and all trochanters honey-yellow; the terminal joint in the female is much longer than the preceding joint, while in the male it is not as long as the preceding joint.

Habitat.—Los Angeles, California.

Described from five specimens, labeled No. 80, received from Mr. D. W. Coquillett, reared from an Aphid on *Chenopodium album*.